UNIVERSITY OF CALIFORNIA, SAN DIEGO

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093-0227

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

CalCOFI Cruise 0101
7 – 26 January 2001

CalCOFI Cruise 0104
6 April – 3 May 2001

SIO Reference 02-07
18 May 2002

Approved for distribution:

_____
Charles F. Kennel, Director

CONTENTS

INTRODUCTION

The data in this report were collected during cruises 0101* and 0104 of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the NOAA ship RV *David Starr Jordan*. 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. Data from 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.calcofi.org).

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, oxygen and nutrients were determined at sea 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. Salinity samples were drawn in to 200 ml Kimax high-alumina borosilicate bottles that were rinsed three times with sample prior to filling. The results were compared with the CTD salinity in order to verify that the rosette bottle did not mis-trip or leak. The salinometer was standardized before and after each group of samples with substandard seawater. Periodic checks on the conductivity of the substandard were made by comparison with IAPSO Standard Seawater batch P134. 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.

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

Nutrient samples were analyzed at sea for dissolved silicate, phosphate, nitrate and nitrite using procedures similar to those described in Gordon et al., 1993. Samples were collected in 45 ml high-density polypropylene screw-capped tubes which were rinsed three times prior to filling. Standardizations were done at the beginning and end of each group of samples with a set of mid-concentration range standards prepared fresh for each run. Samples

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

not analyzed immediately after collection were refrigerated and run the following day. Sets of six different concentration standards were analyzed periodically to determine the deviation from linearity as a function of concentration, primarily for the silicate and nitrate analyses. Final sample concentrations were corrected for deviations from linearity.

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 Model 10-005 R on cruise 0101 and a Turner Designs Fluorometer Model 10-AU-005-CE on cruise 0104 (Yentsch and Menzel, 1963; Holm-Hansen *et al*., 1965). Inexperience with the new Turner Designs fluorometer on cruise 0104 lead to the loss of several chlorophyll samples.

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

Primary productivity samples were taken each day shortly before local apparent noon (LAN). Primary production was estimated from ^{14}C uptake using a simulated *in situ* technique. Light penetration was estimated from the Secchi depth (assuming that the 1% light level is three times the Secchi depth). The depths with ambient light intensities corresponding to light levels simulated by the on-deck incubators were identified and sampled on the 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). 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 that are not presented in this report. These programs include:

1) *Underway Data*. Seawater was pumped onboard the ship by two separate pumps using two different flow systems. Continuous near surface measurements of temperature, salinity and chlorophyll fluorescence were recorded from water pumped through the ship's uncontaminated seawater system. The data were logged at one-minute intervals. Pelagic fish eggs were collected underway throughout the entire CalCOFI pattern with a separate large volume pump system. This pump drew a continuous subsurface sample of approximately 640 liters per minute, which was concentrated and then collected by a 505µm sieve. Subsamples were taken at intervals ranging from 10 to 30 minutes, depending on the egg concentration, for enumeration of all retained fish eggs. On Cruise 0104 the underway sampling of physical and chemical properties as well as egg pumping extended north of the usual CalCOFI cruise track to sample lines 60, 63, 67, 70 and 73 from the most shoreward stations offshore to station 80 on each line.

2) *ADCP*. Continuous profiles of ocean currents and acoustic backscatter between 20 and 400 meters deep were measured along the shiptrack from a hull-mounted 150 kHz Acoustic Doppler Current Profiler (ADCP). The ADCP data were averaged over 3-minute intervals. Sixty 8-meter depth bins were recorded.

TABULATED DATA

CTD/Rosette Cast Data

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

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

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

Primary Productivity Data

In addition to the normal hydrographic data also reported in the rosette cast data section, the tabulated data include: the *in situ* light levels at which the samples were collected, the uptake from each of the replicate light bottles, uptake 1 and uptake 2 (which have been corrected for dark uptake by subtracting the dark value), the mean of the two uptake values and the dark uptake. The uptake values are totals for the incubation period. Also shown are the times of LAN, civil twilight, and the value of the mean uptake integrated from the surface to the deepest sample, assuming the shallowest value continues to the surface and that negative values (when dark uptake exceeds light uptake) are zero. The uptake data have been presented to two significant digits (values <1.00) or one decimal (values >1.00). Precision of the higher production values may not warrant all of the digits presented. Incubation
time, LAN, and civil twilight are given in local Pacific Standard Time (PST); to convert to UTC, add eight hours to the PST time. Incubation light intensities are listed in a footnote at the bottom of each page.

Macrozooplankton Data

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

FOOTNOTES

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

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

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FIGURES

Cruise 0101

1. CalCOFI Cruise 0101 track and station positions.

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

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

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

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

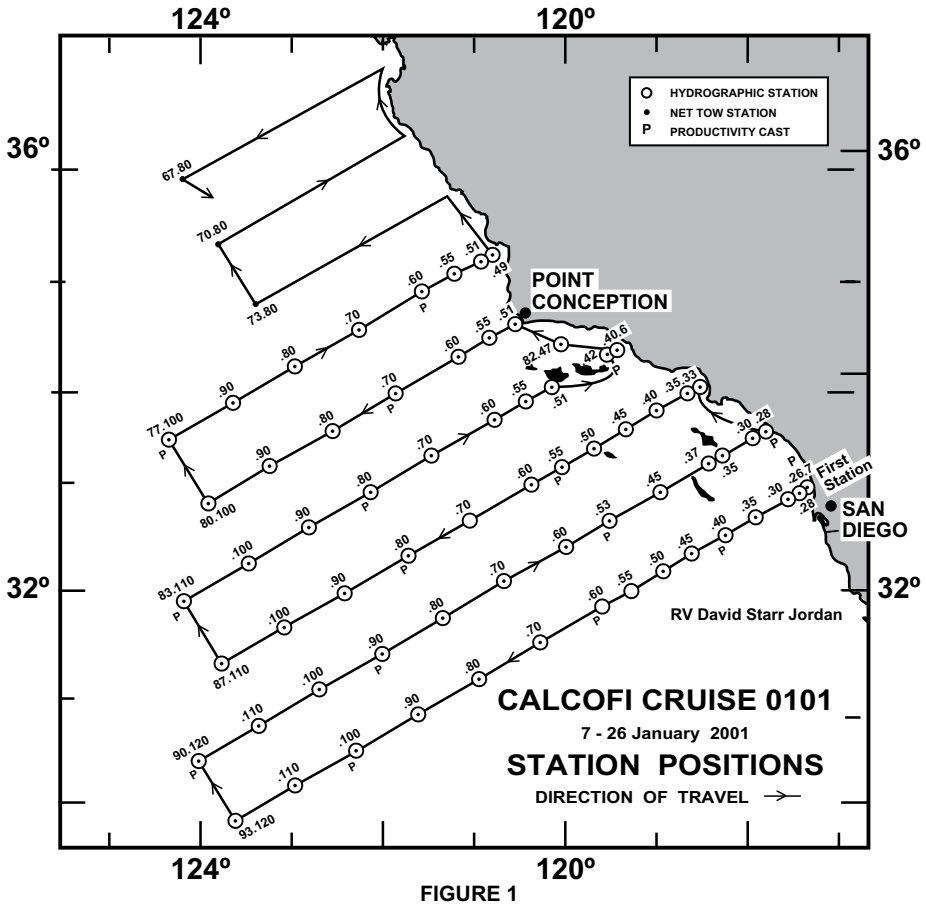

FIGURE 1

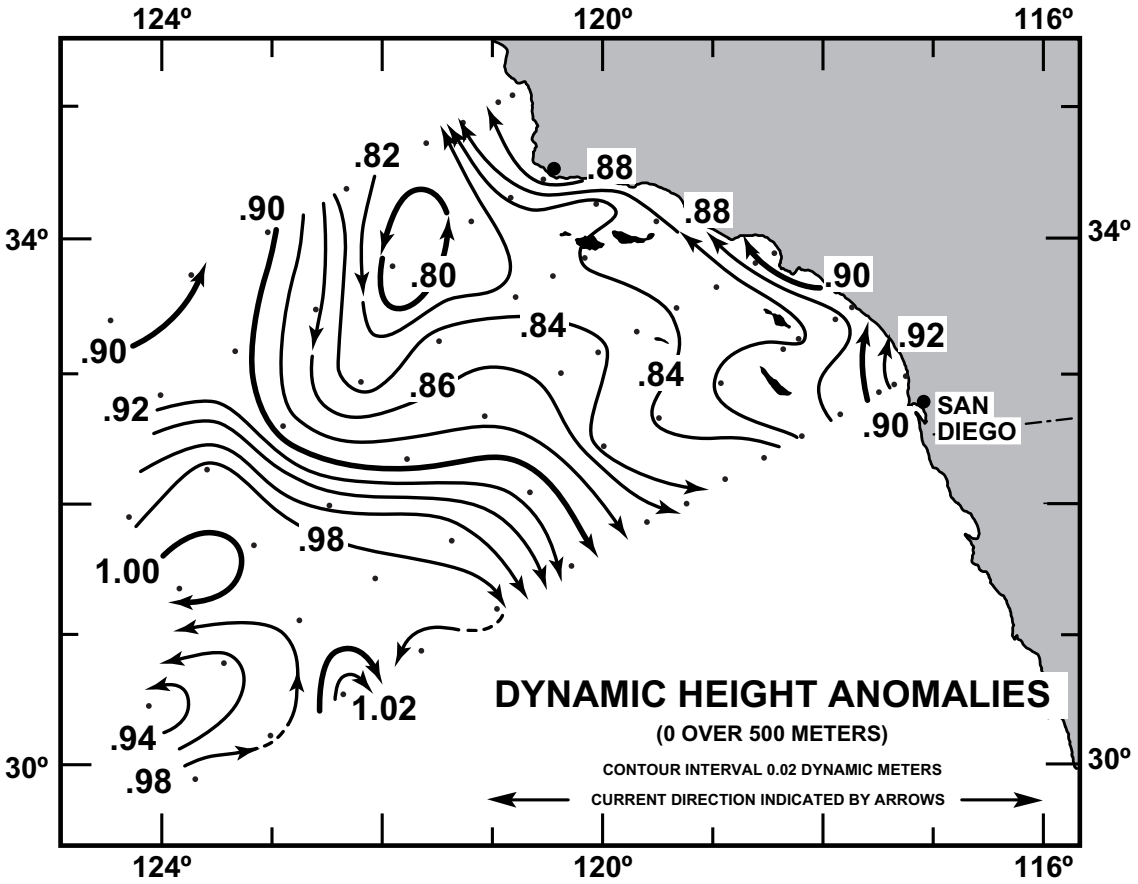

FIGURE 2

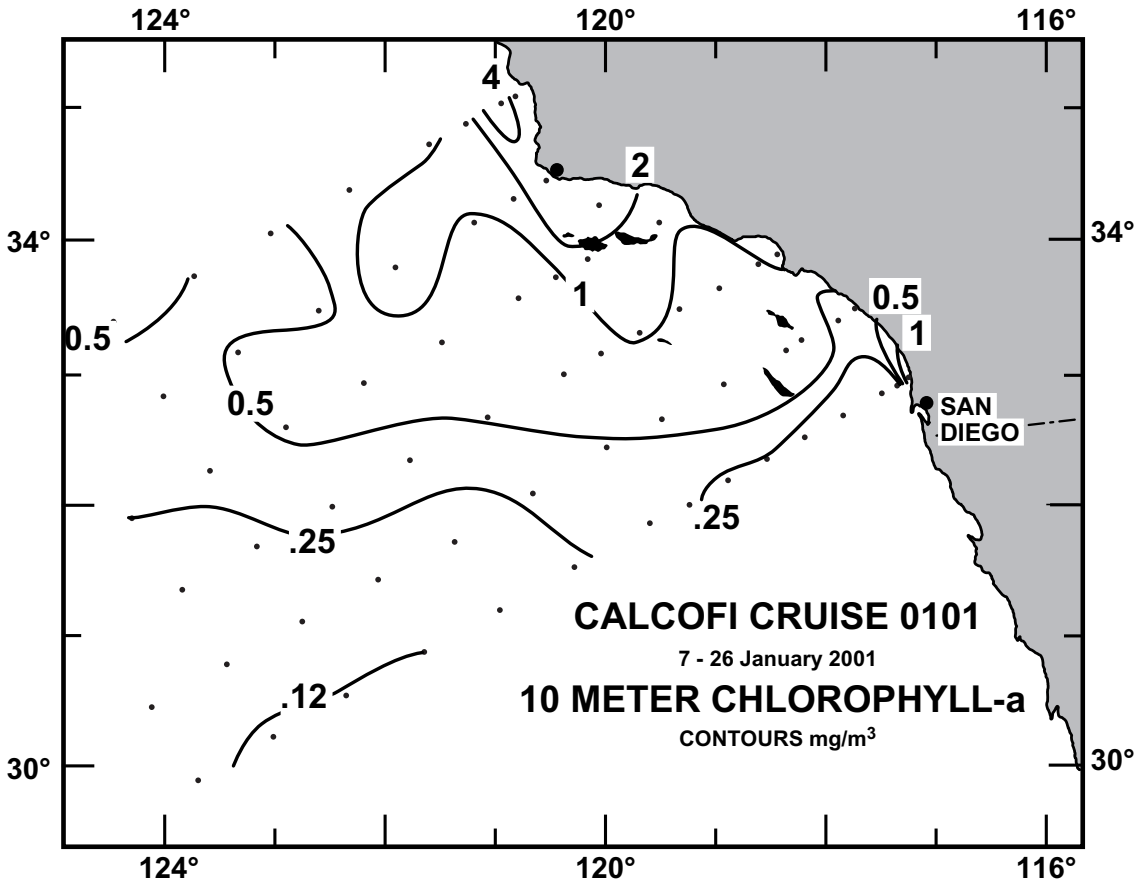

FIGURE 3A

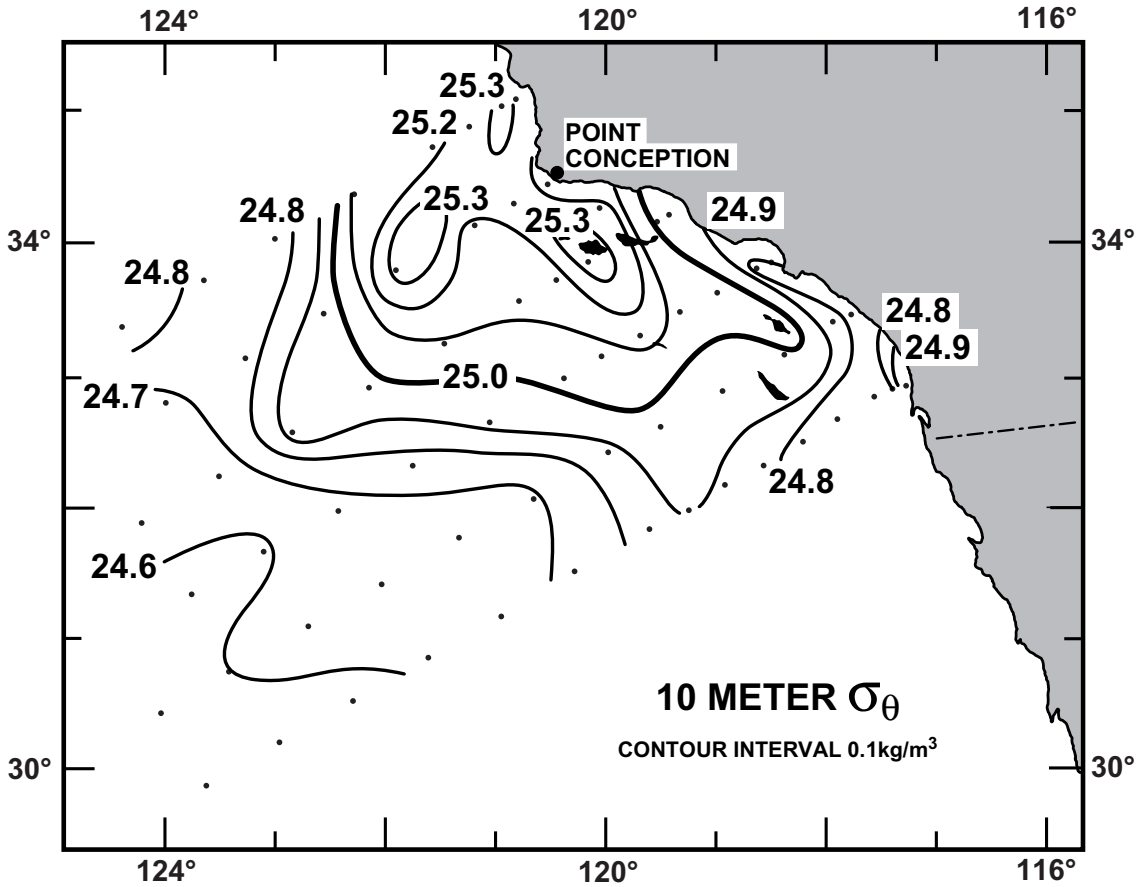

FIGURE 3B

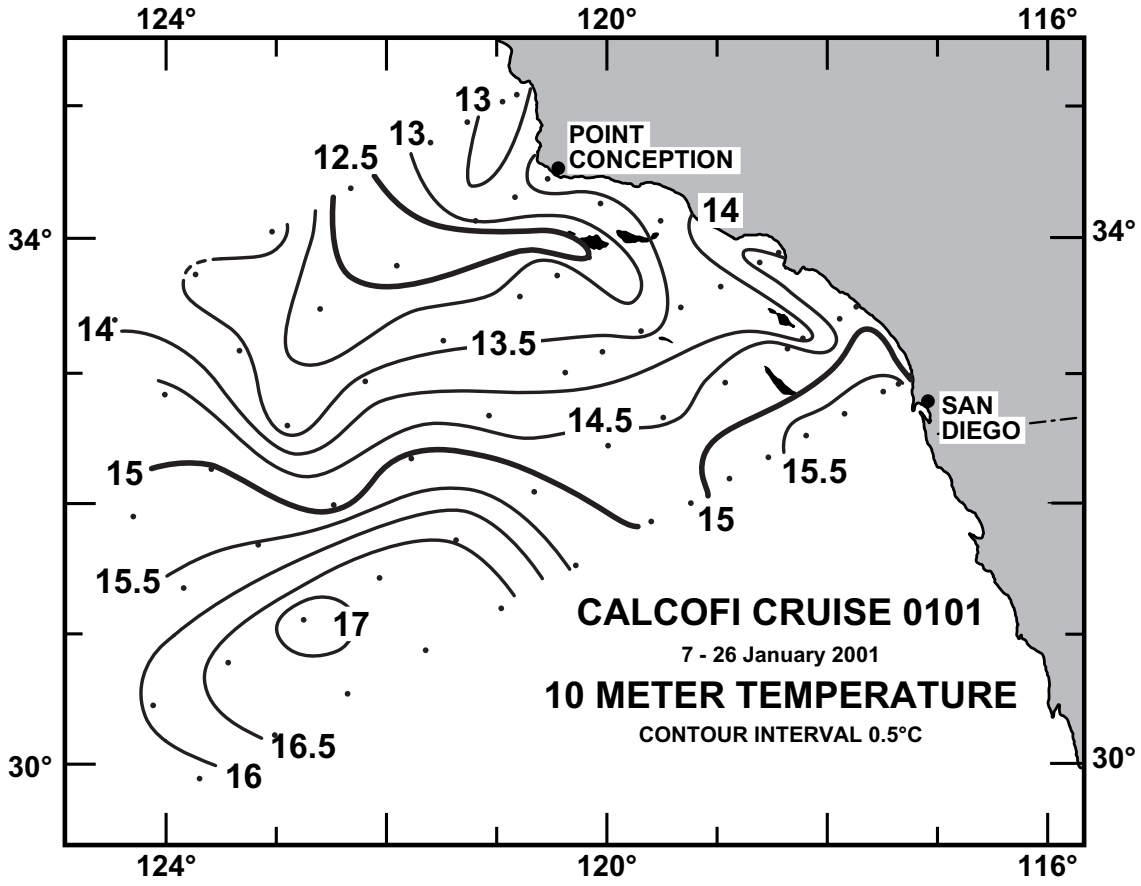

FIGURE 3C

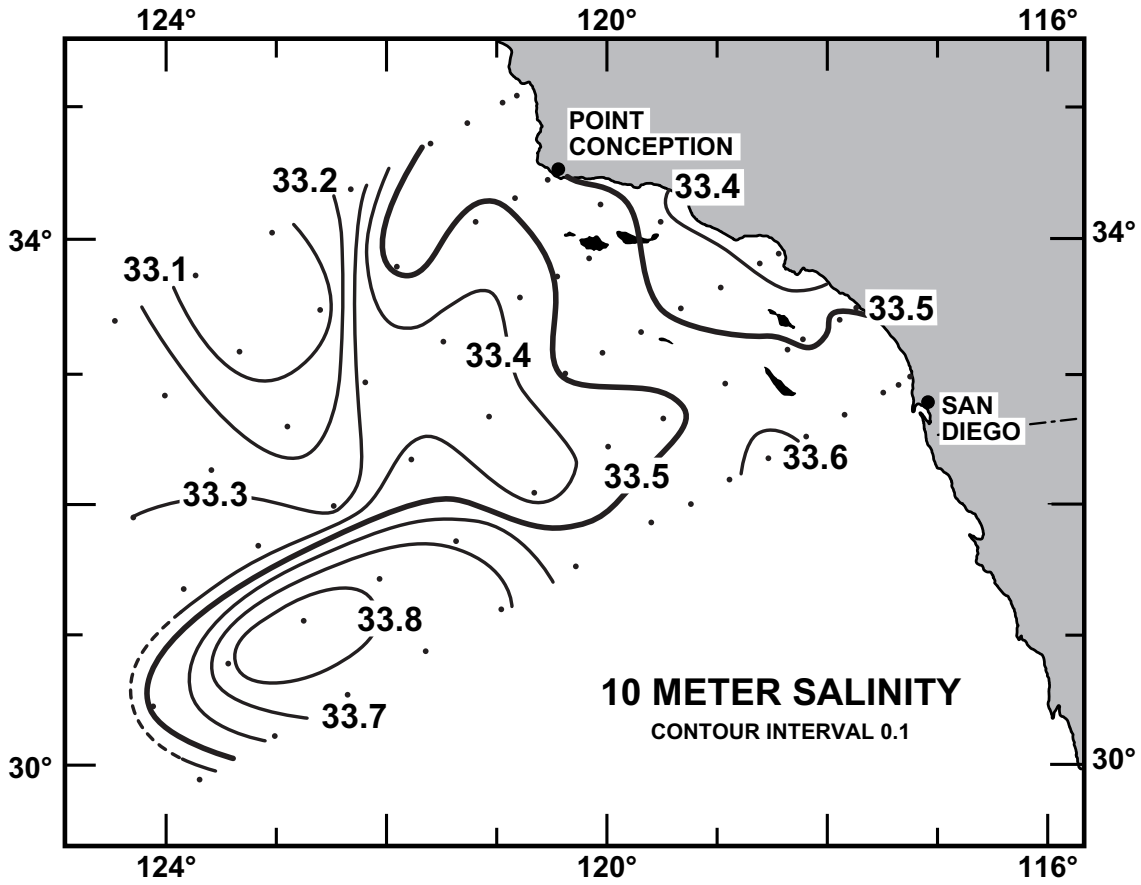

FIGURE 3D

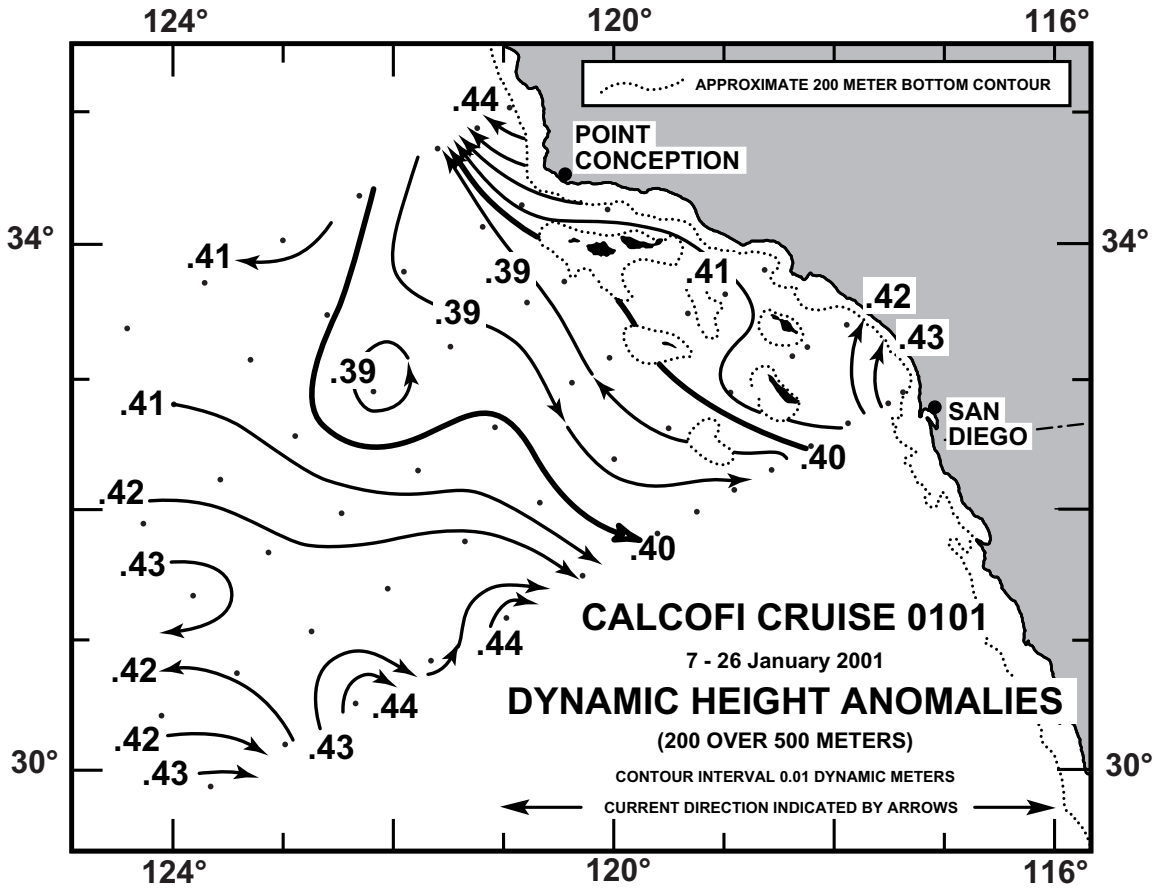

FIGURE 4A

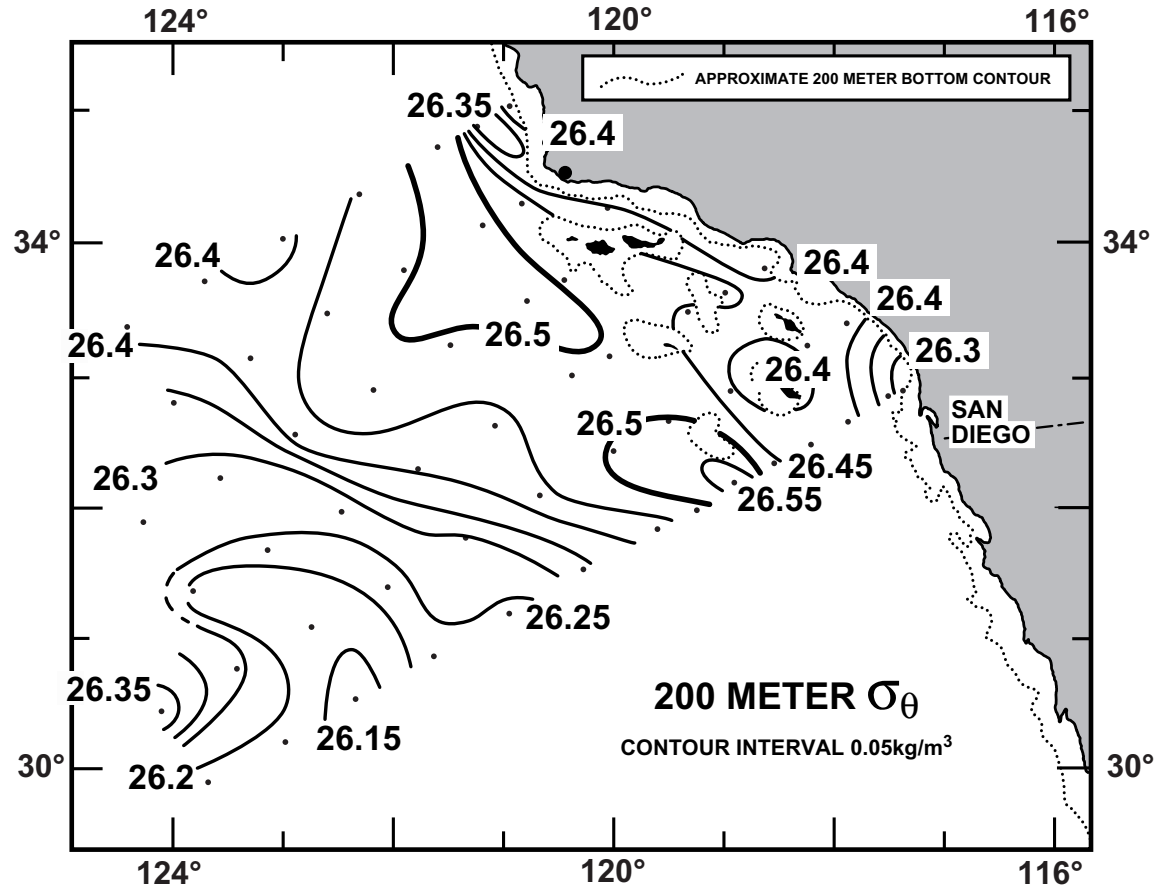

FIGURE 4B

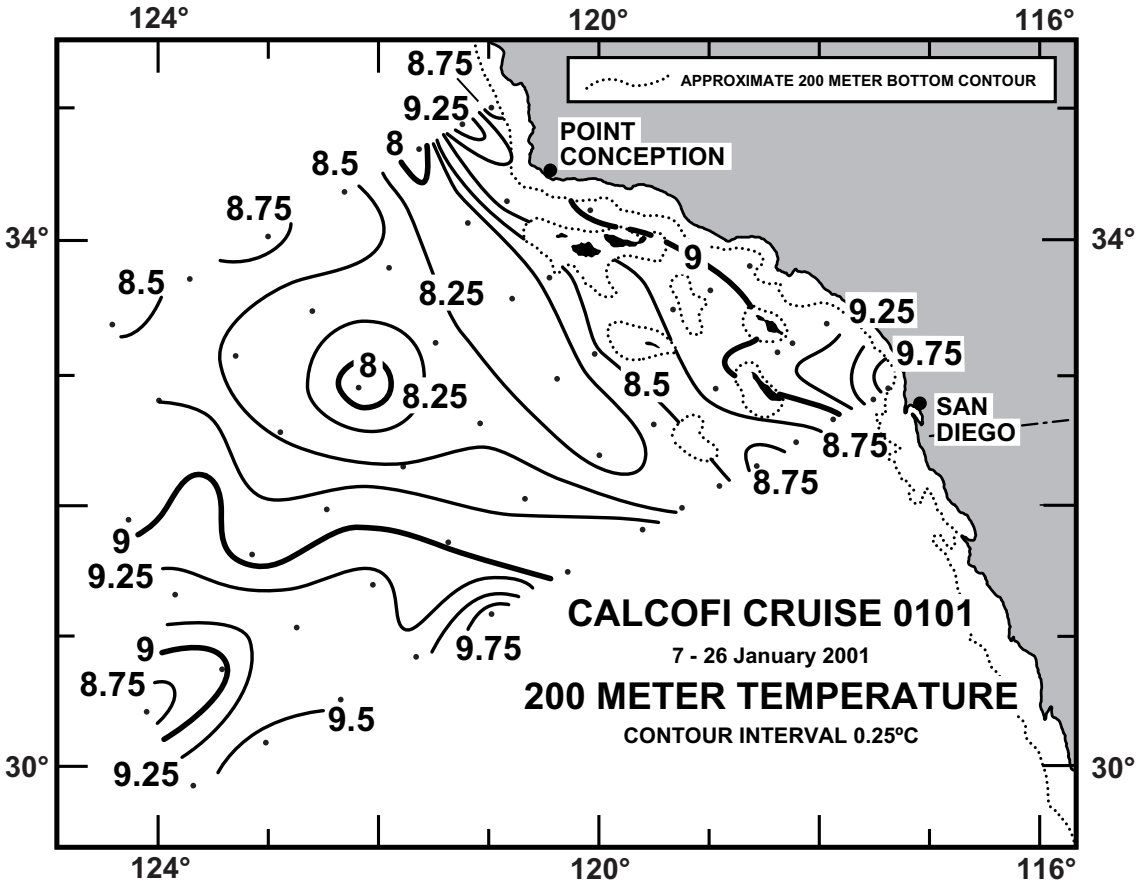

FIGURE 4C

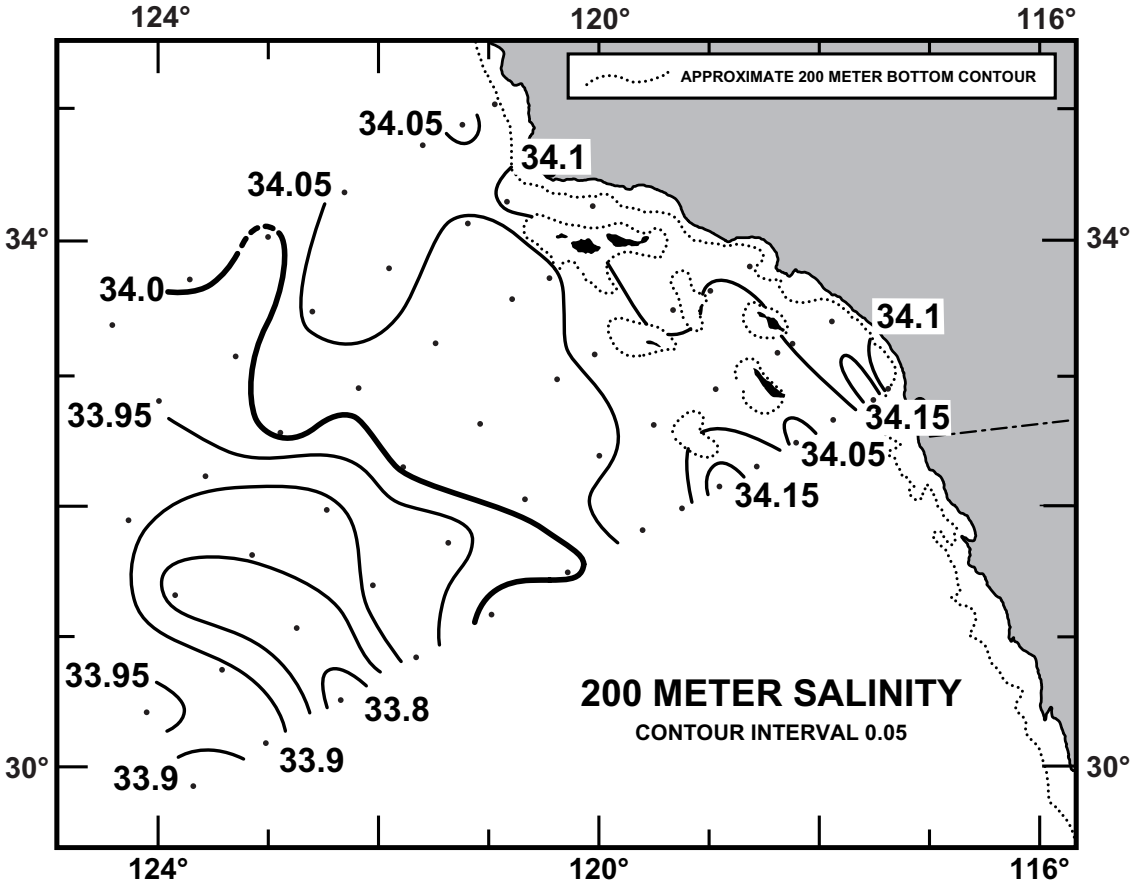

FIGURE 4D

CALCOFI CRUISE 0101

11 - 14 January 2001

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

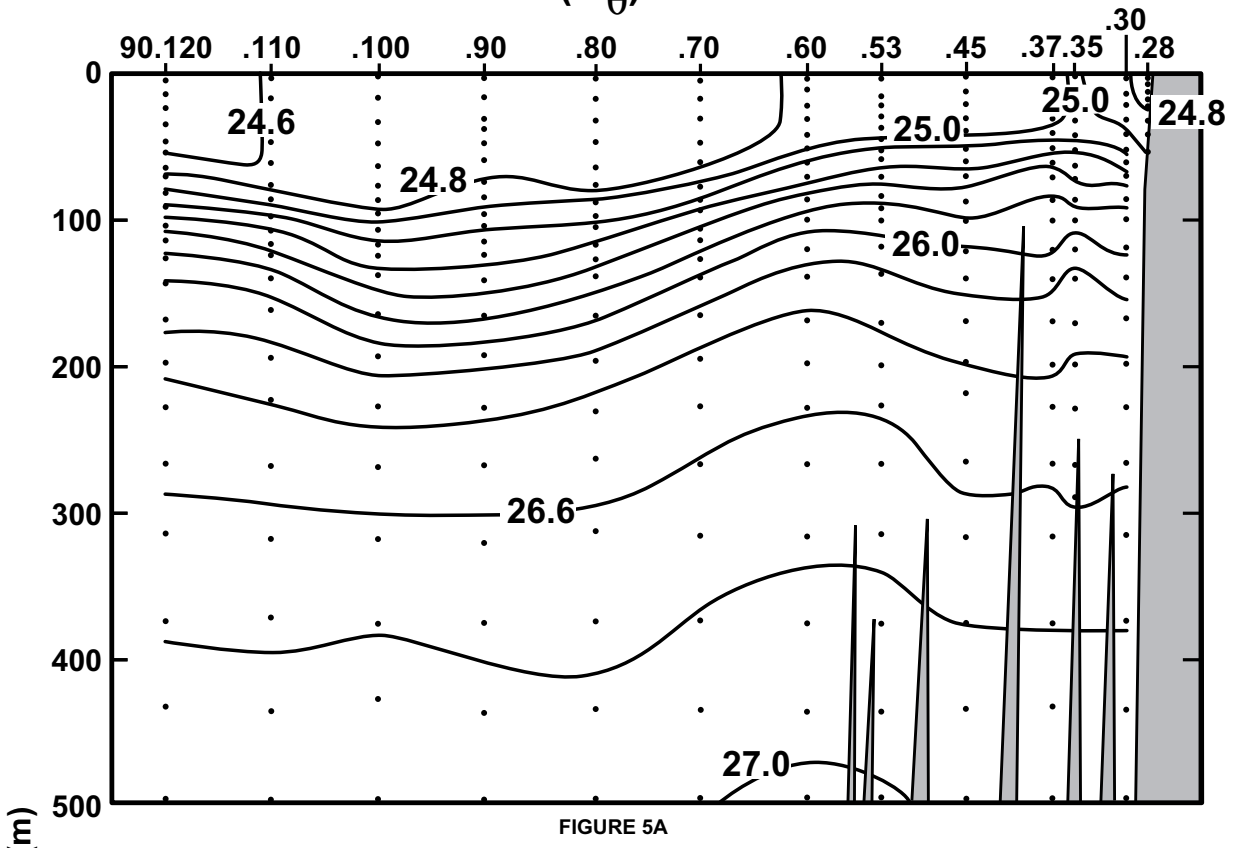

FIGURE 5A

TEMPERATURE (ºC) ALONG CALCOFI LINE 90

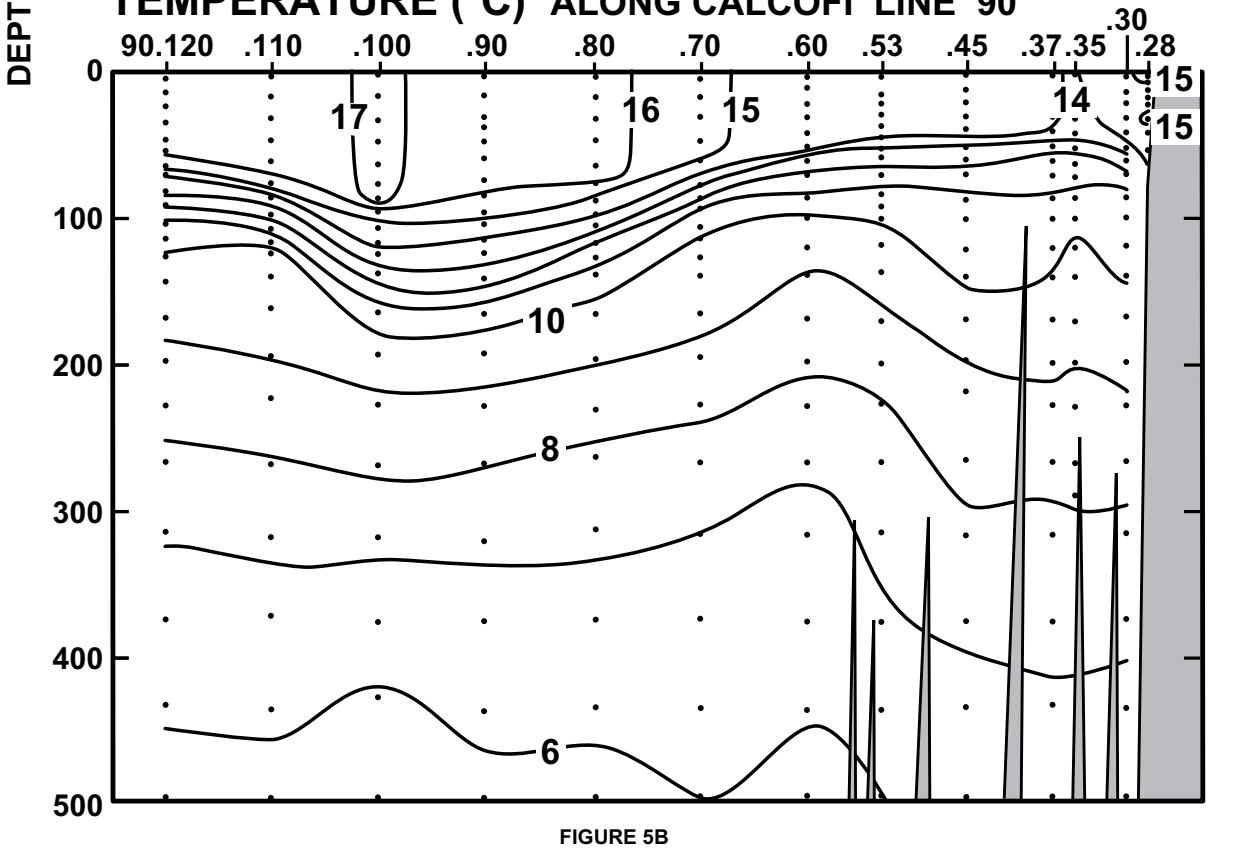

FIGURE 5B

CALCOFI CRUISE 0101

11 - 14 January 2001

SALINITY ALONG CALCOFI LINE 90

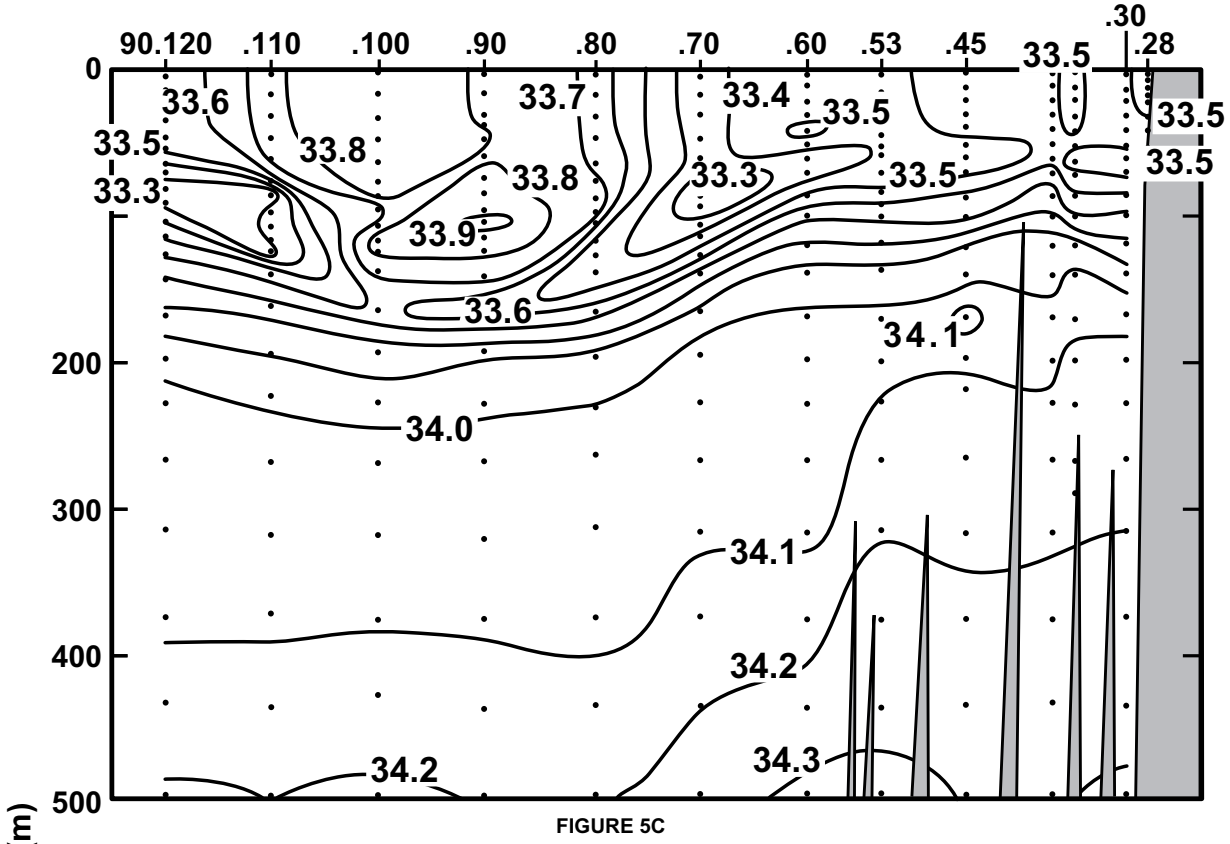

FIGURE 5C

SILICATE (μM/l) ALONG CALCOFI LINE 90

DEPTH (m)

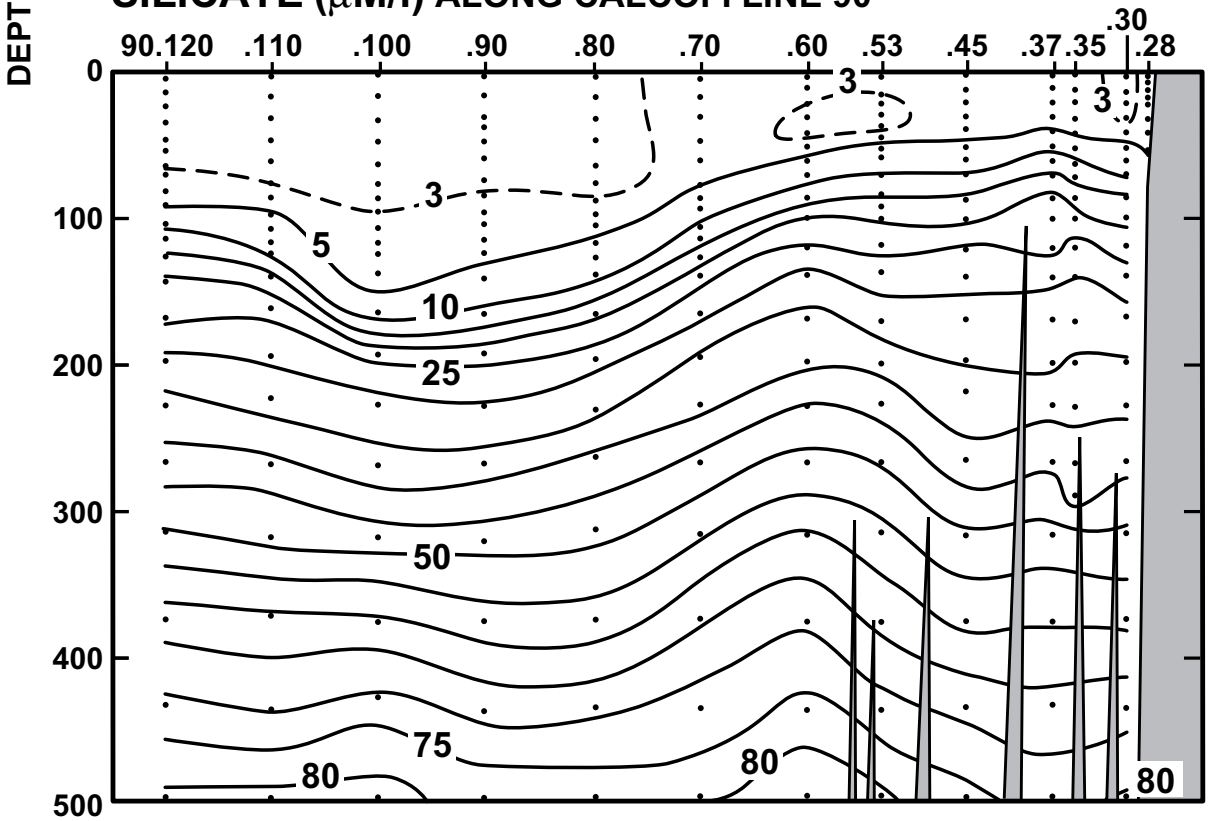

FIGURE 5D

CALCOFI CRUISE 0101

11 - 14 January 2001

NITRATE (μM/l) ALONG CALCOFI LINE 90

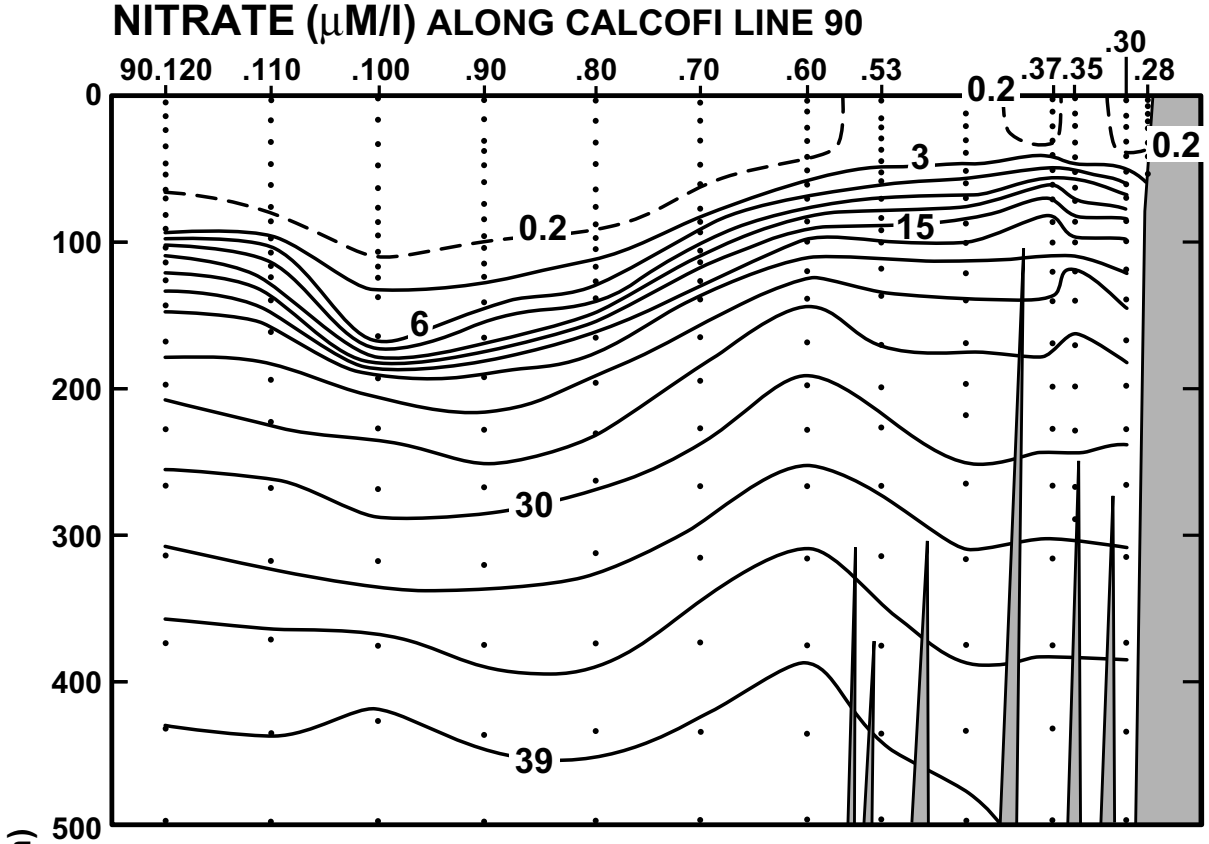

FIGURE 5E

PHOSPHATE (μM/l) ALONG CALCOFI LINE 90

DEPTH (m)

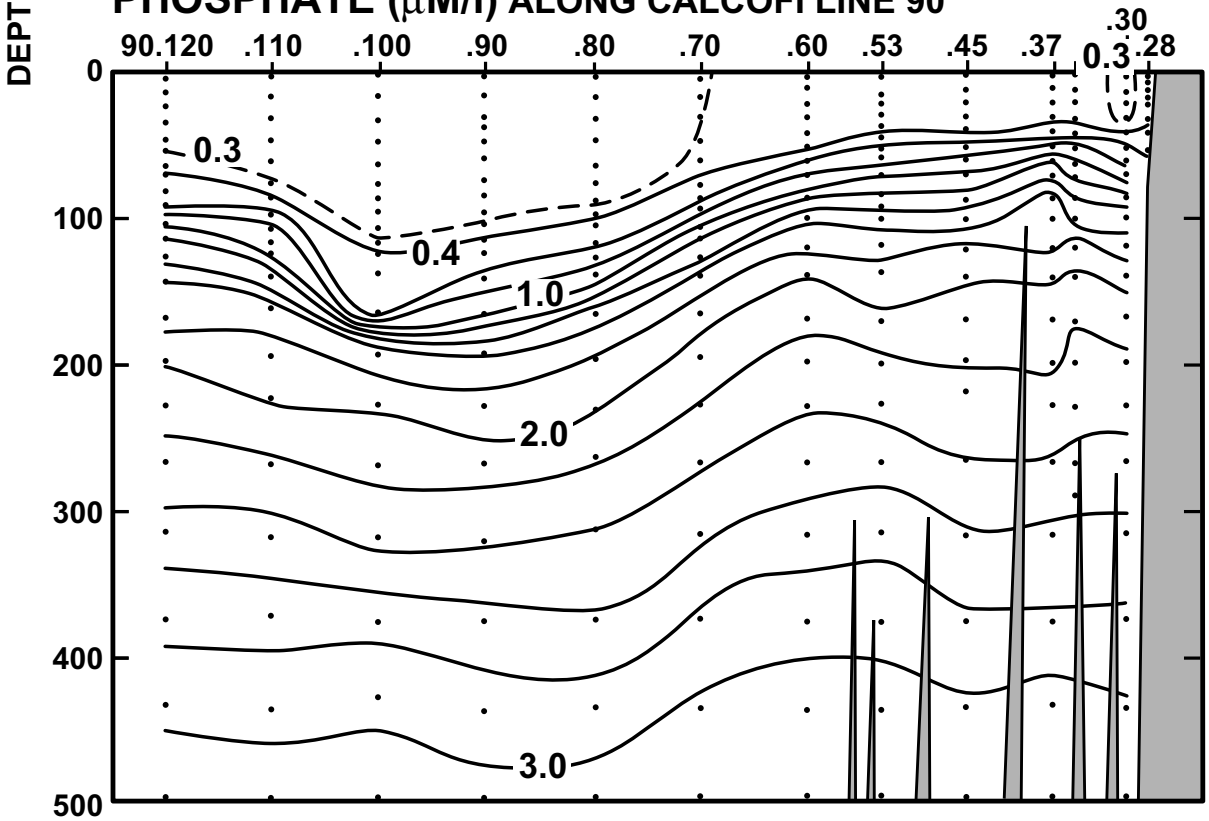

FIGURE 5F

CALCOFI CRUISE 0101

11 - 14 January 2001

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

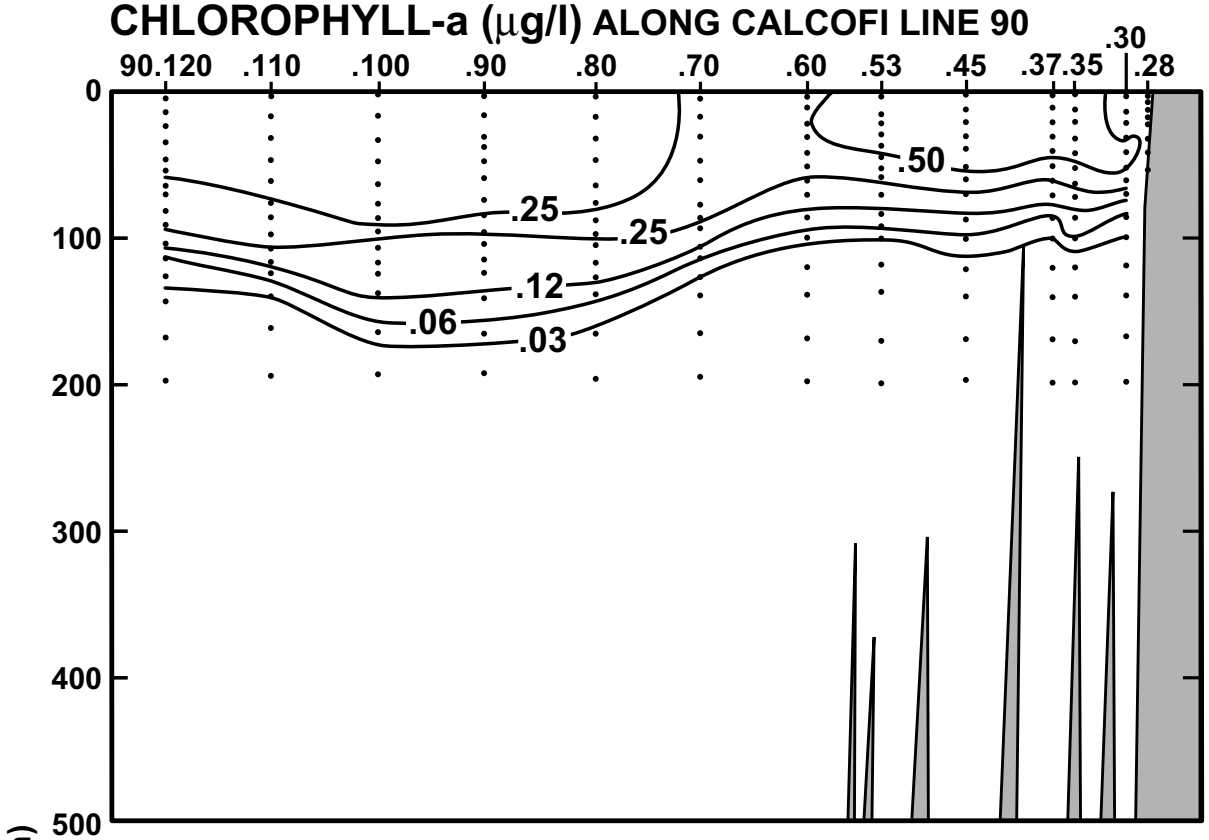

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

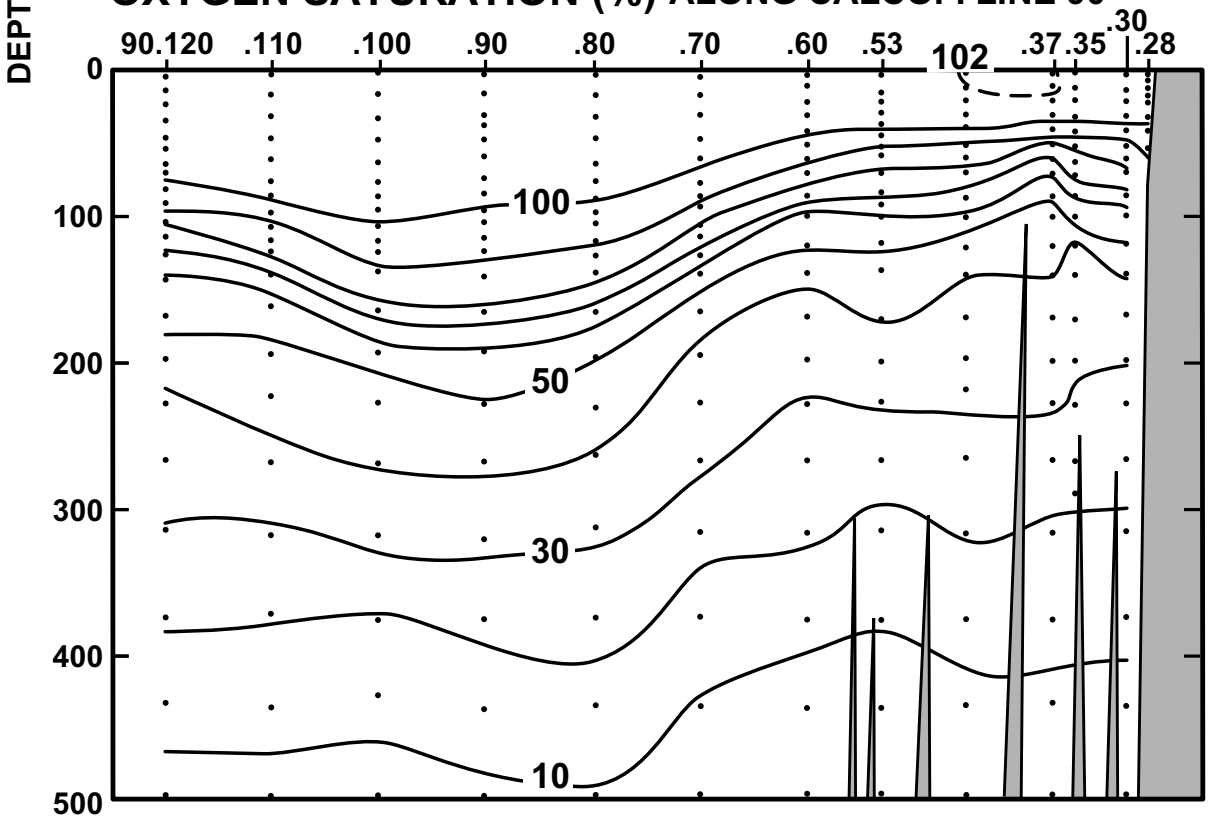

FIGURE 5H

CALCOFI CRUISE 0101

11 - 14 January 2001

OXYGEN (ml/l) ALONG CALCOFI LINE 90

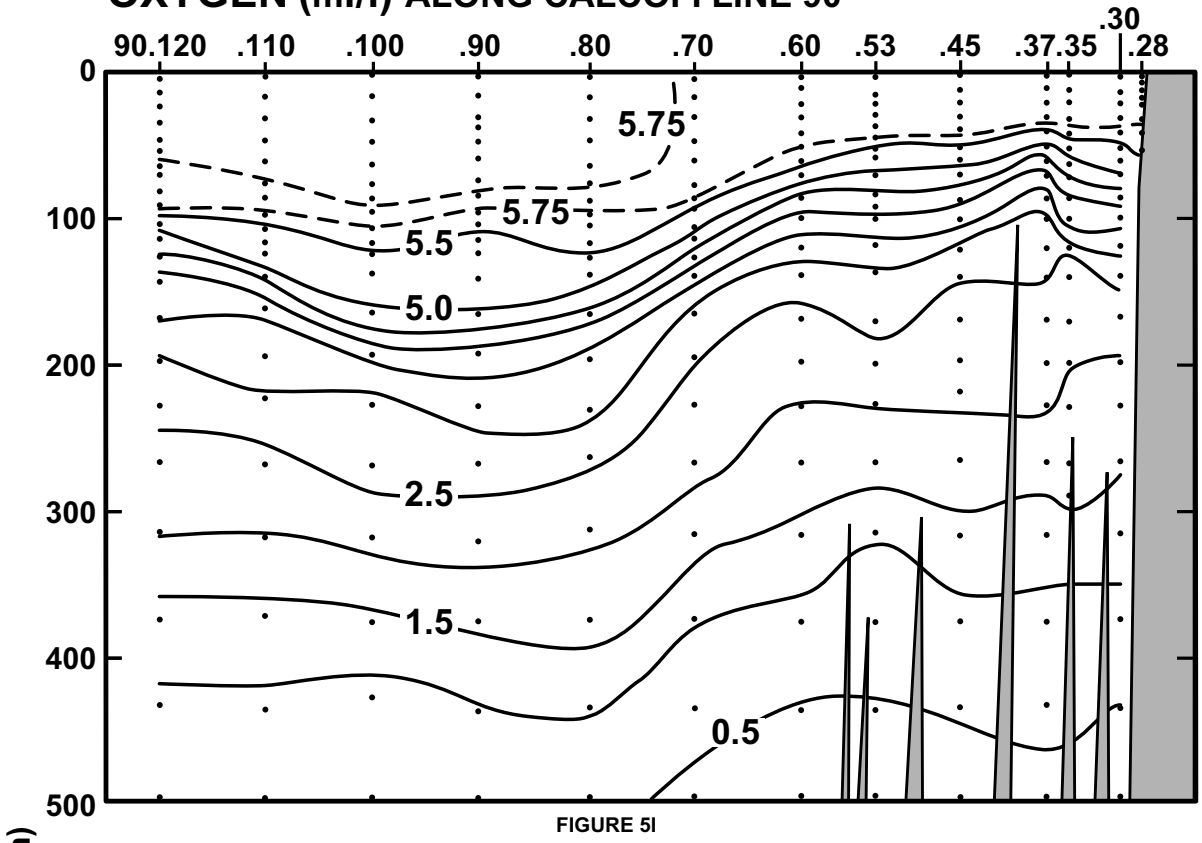

FIGURE 5I

DEPTH (m)

NITRITE (μM/l) ALONG CALCOFI LINE 90

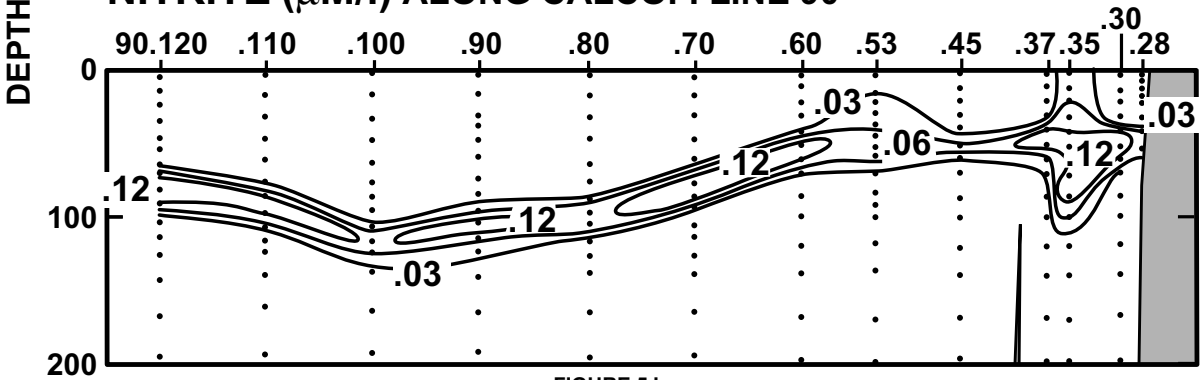

FIGURE 5J

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

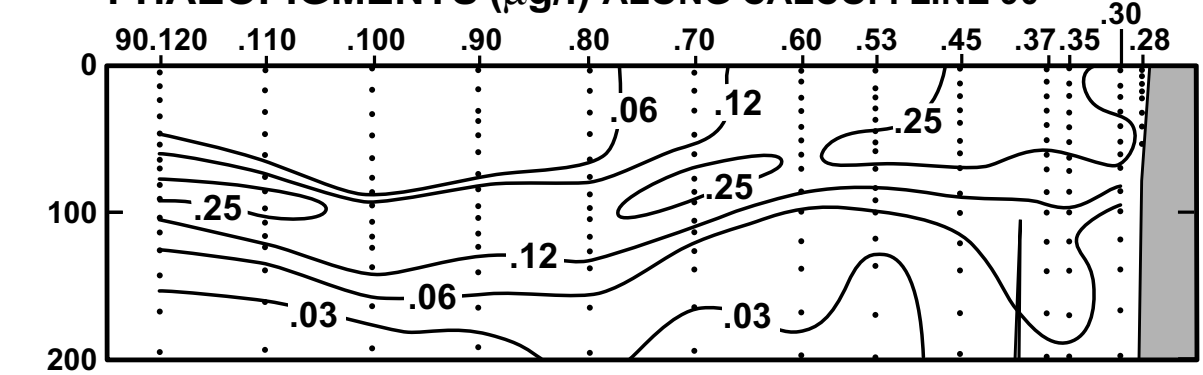

FIGURE 5K

PERSONNEL

CalCOFI Cruise 0101

SHIP'S CAPTAIN

P. Scott Hill, D.S. *Jordan*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participating (Legs)
Wilkinson, James R. (Chief Scientist)	Programmer Analyst, SIO	1,2,3
Becker, Susan M.	Staff Research Associate, SIO	1,2,3
Cummings, Sherry L.	Staff Research Associate, SIO	1,2,3
Dotson, Ronald C.	Fishery Biologist, NMFS	1,2,3
Goericke, Ralf	Assistant Research Oceanographer, SIO	1,2
Griffith, David A.	Fishery Biologist, NMFS	3
Gruber, Dennis W.	Staff Research Associate, SIO	1,2,3
Hays, Amy E.	Fishery Biologist, NMFS	1,2,3
Lim, Younghwa	Student, Seoul National University, Korea	1,2,3
Manion, Susan M.	Fishery Biologist, NMFS	1
Oedekoven, Cornelia	Seabird Biologist, Pt. Reyes Bird Observatory	1,2,3
Poteau, Antoine	Marine Technician, SIO	1,2,3
Wolgast, David M.	Staff Research Associate, SIO	1,2,3

Leg 1: San Diego to Dana Point, California, 7-14 January, 2001
Leg 2: Dana Point to Ventura, California, 14-19 January, 2001
Leg 3: Ventura to San Diego, California, 19-26 January, 2001

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
35 5.4 N	120 46.7 W	23/01/01	0343 UTC	68 m	300 07 kn			1019.8 mb	16.0 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	12.94	12.94	33.534	25.270	269.1	0.000	5.85	97.7	5.7	0.56	3.7	0.20	1.90	0.49	0	
2		12.94	12.94	33.534	25.270	269.2	0.005	5.85	97.7	5.7	0.56	3.7	0.20	1.90	0.49	2	215
6		12.94	12.94	33.533	25.269	269.3	0.016	5.82	97.2	5.9	0.56	3.7	0.20	2.12	0.51	6	207
10		12.94	12.94	33.534	25.270	269.3	0.027	5.81	97.0	5.7	0.55	3.8	0.21	2.15	0.56	10	206
19		12.84	12.84	33.535	25.291	267.6	0.051	5.63	93.8	6.1	0.59	4.3	0.23	2.09	0.65	19	205
20	ISL	12.81	12.81	33.536	25.297	267.0	0.054	5.58	92.9	6.3	0.61	4.6	0.23	1.97	0.63	20	
29		12.42	12.42	33.555	25.388	258.6	0.077	5.09	84.1	8.9	0.81	7.6	0.23	0.77	0.47	29	204
30	ISL	12.37	12.37	33.557	25.399	257.6	0.080	5.04	83.2	9.2	0.83	7.9	0.23	0.71	0.47	30	
39		11.99	11.98	33.581	25.490	249.1	0.103	4.68	76.6	11.4	1.00	10.0	0.18	0.45	0.46	39	203
49		11.68	11.67	33.614	25.574	241.4	0.127	4.41	71.7	13.9	1.17	12.5	0.14	0.34	0.50	49	202
50	ISL	11.63	11.62	33.619	25.587	240.1	0.130	4.35	70.7	14.3	1.19	12.8	0.13	0.32	0.49	50	
57		11.26	11.25	33.651	25.680	231.5	0.146	3.95	63.7	16.7	1.35	15.1	0.09	0.19	0.45	57	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
35 1.4 N	120 55.0 W	23/01/01	0121 UTC	229 m	230 04 kn	300 05 11	0	1018.2 mb	12.6 C	11.9 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	12.82	12.82	33.536	25.295	266.7	0.000	6.62	110.3	2.1	0.33	0.2	0.05	6.35	1.37	0	
2		12.82	12.82	33.536	25.295	266.8	0.005	6.62	110.3	2.1	0.33	0.2	0.05	6.35	1.37	2	215
10		12.73	12.73	33.536	25.313	265.3	0.027	6.52	108.4	2.5	0.36	0.6	0.07	6.26	1.49	10	214
20		12.67	12.67	33.537	25.326	264.3	0.053	6.03	100.1	3.7	0.48	2.1	0.13	3.88	1.30	20	213
30		12.58	12.58	33.535	25.342	263.0	0.079	5.94	98.5	4.0	0.52	2.8	0.15	4.22	1.52	30	212
40		12.52	12.51	33.540	25.358	261.8	0.106	5.65	93.5	5.6	0.62	4.3	0.18	2.42	1.10	40	211
50		12.39	12.38	33.549	25.390	259.0	0.132	5.42	89.5	7.0	0.72	5.9	0.22	1.39	0.81	50	210
59		11.59	11.58	33.560	25.549	244.0	0.154	4.75	77.1	11.0	1.01	10.8	0.16	0.82	0.53	59	209
69		10.89	10.88	33.636	25.735	226.5	0.178	3.98	63.7	16.3	1.36	16.1	0.04	0.17	0.37	69	208
75	ISL	10.58	10.57	33.688	25.830	217.6	0.191	3.65	58.0	18.8	1.51	18.3	0.03	0.13	0.33	75	
84		10.21	10.20	33.769	25.957	205.6	0.210	3.28	51.7	22.1	1.68	20.9	0.02	0.06	0.30	84	207
100		9.72	9.71	33.908	26.148	187.7	0.242	2.84	44.4	27.4	1.93	24.5	0.00	0.03	0.19	101	206
119		9.42	9.41	33.969	26.246	178.8	0.277	2.57	39.9	30.1	2.03	26.1	0.00	0.02	0.16	120	205
125	ISL	9.35	9.34	33.988	26.272	176.5	0.287	2.50	38.7	30.9	2.06	26.5	0.00	0.02	0.18	126	
138		9.23	9.21	34.023	26.319	172.2	0.310	2.38	36.8	32.5	2.12	27.3	0.01	0.02	0.22	139	204
150	ISL	9.13	9.11	34.037	26.346	169.9	0.330	2.29	35.3	33.4	2.15	27.8	0.01	0.02	0.19	151	
168		8.99	8.97	34.044	26.374	167.6	0.361	2.20	33.8	34.5	2.19	28.3	0.01	0.02	0.13	169	203
200		8.67	8.65	34.052	26.431	162.7	0.414	2.26	34.5	36.8	2.24	29.2	0.02	0.01	0.13	201	202
220		8.21	8.19	34.071	26.517	154.7	0.445	2.04	30.8	40.9	2.35	30.7	0.01			221	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 53.2 N	121 11.9 W	22/01/01	2117 UTC	562 m	200 04 kn	280 10 12	1	1018.8 mb	14.2 C	12.5 C	15m	1/8 CI

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.28	13.28	33.526	25.196	276.1	0.000	6.12	102.9	4.6	0.43	1.7	0.08	2.07	0.46	0	
2		13.28	13.28	33.526	25.196	276.2	0.006	6.12	102.9	4.6	0.43	1.7	0.08	2.07	0.46	2	220
9		13.15	13.15	33.527	25.223	273.8	0.025	6.15	103.2	4.5	0.44	1.8	0.08	1.65	0.65	9	219
10	ISL	13.14	13.14	33.527	25.225	273.6	0.028	6.15	103.1	4.5	0.44	1.8	0.08	1.66	0.65	10	
19		13.09	13.09	33.526	25.234	273.0	0.052	6.12	102.5	4.3	0.44	1.8	0.08	1.98	0.69	19	218
20	ISL	13.09	13.09	33.526	25.234	273.0	0.055	6.12	102.5	4.3	0.44	1.8	0.08	1.99	0.69	20	
29		13.05	13.05	33.525	25.242	272.6	0.079	6.08	101.8	4.0	0.44	1.8	0.08	2.05	0.67	29	217
30	ISL	13.03	13.03	33.524	25.245	272.3	0.082	6.06	101.4	4.2	0.45	1.9	0.09	2.01	0.67	30	
39		12.61	12.60	33.535	25.336	263.8	0.106	5.55	92.0	6.0	0.65	5.1	0.16	1.37	0.56	39	216
49		11.34	11.33	33.635	25.653	233.9	0.131	4.12	66.5	14.1	1.24	14.0	0.07	0.27	0.25	49	215
50	ISL	11.28	11.27	33.642	25.669	232.3	0.133	4.05	65.3	14.5	1.27	14.5	0.06	0.26	0.25	50	
59		10.98	10.97	33.686	25.758	224.1	0.154	3.73	59.8	16.5	1.43	16.9	0.03	0.17	0.23	59	214
69		10.90	10.89	33.694	25.778	222.4	0.176	3.66	58.6	16.9	1.46	17.3	0.02	0.14	0.19	69	213
75	ISL	10.82	10.81	33.701	25.798	220.6	0.190	3.62	57.8	17.4	1.48	17.7	0.02	0.12	0.18	75	
84		10.64	10.63	33.720	25.845	216.4	0.209	3.52	56.0	18.7	1.54	18.7	0.02	0.10	0.17	84	212
100		10.08	10.07	33.802	26.005	201.4	0.243	3.17	49.9	22.5	1.73	21.6	0.01	0.05	0.13	101	211
119		9.77	9.76	33.889	26.126	190.3	0.280	2.83	44.2	26.1	1.88	23.9	0.01	0.02	0.11	120	210
125	ISL	9.70	9.69	33.908	26.152	187.9	0.291	2.75	42.9	26.9	1.91	24.4	0.01	0.02	0.11	126	
139		9.58	9.56	33.944	26.200	183.6	0.317	2.61	40.6	28.3	1.98	25.2	0.00	0.02	0.10	140	209
150	ISL	9.48	9.46	33.972	26.239	180.2	0.337	2.51	39.0	29.4	2.03	25.8	0.00	0.02	0.10	151	
169		9.36	9.34	34.010	26.288	175.8	0.371	2.37	36.7	31.0	2.10	26.7	0.00	0.01	0.11	170	208
199		9.31	9.29	34.035	26.317	173.8	0.424	2.27	35.1	31.8	2.13	27.1	0.00	0.01	0.09	200	207
200	ISL	9.30	9.28	34.037	26.320	173.5	0.425	2.26	35.0	31.9	2.13	27.1	0.00			201	
228		9.05	9.03	34.095	26.406	165.8	0.473	2.00	30.8							229	206
250	ISL	8.81	8.78	34.119	26.463	160.7	0.509	1.87	28.6	36.5	2.28	29.0	0.00			252	
268		8.61	8.58	34.132	26.504	157.1	0.537	1.79	27.3							270	205
300	ISL	8.33	8.30	34.157	26.567	151.5	0.587	1.60	24.2	42.1	2.45	31.0	0.00			302	
318		8.19	8.16	34.166	26.596	149.1	0.614	1.50	22.7	44.4	2.51	31.8	0.00			320	204
378		7.68	7.64	34.161	26.667	143.0	0.701	1.40	20.9	49.2	2.60	33.2	0.00			380	203
400	ISL	7.42	7.38	34.150	26.696	140.4	0.733	1.34	19.9	51.8	2.65	34.1	0.00			403	
438		6.94	6.90	34.140	26.755	135.0	0.785	1.18	17.3	57.7	2.76	35.9	0.00			441	202
500	ISL	6.30	6.26	34.194	26.883	123.2	0.865	0.68	9.8	72.2	3.02	38.2	0.02			504	
513		6.16	6.11	34.206	26.911	120.6	0.881	0.58	8.4	75.3	3.07	38.7	0.03			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 43.3 N	121 33.3 W	22/01/01	1757 UTC	930 m	130 07 kn	270 10 10	1	1019.1 mb	13.1 C	11.9 C	15m	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	13.26	13.26	33.503	25.182	277.4	0.000	6.01	101.0	4.5	0.40	1.2	0.07	0.89	0.30	0	
1	A	13.26	13.26	33.503	25.182	277.5	0.003	6.01	101.0	4.5	0.40	1.2	0.07	0.89	0.30	1	221
9	A	13.22	13.22	33.503	25.190	276.9	0.025	6.00	100.8	4.4	0.39	1.2	0.07	0.96	0.29	9	220
10	ISL	13.22	13.22	33.503	25.190	276.9	0.028	6.00	100.8	4.4	0.39	1.2	0.07	0.96	0.29	10	
19	A	13.21	13.21	33.504	25.193	276.9	0.053	6.00	100.8	4.3	0.39	1.2	0.07	0.90	0.31	19	219
20	ISL	13.21	13.21	33.504	25.193	276.9	0.055	6.00	100.8	4.3	0.39	1.2	0.07	0.90	0.31	20	
30	ISL	13.21	13.21	33.503	25.193	277.2	0.083	5.99	100.6	4.2	0.40	1.2	0.07	0.87	0.31	30	
31	A	13.21	13.21	33.503	25.193	277.3	0.086	5.99	100.6	4.2	0.40	1.2	0.07	0.87	0.31	31	218
40	A	13.21	13.20	33.503	25.193	277.5	0.111	5.99	100.6	4.0	0.40	1.3	0.07	0.87	0.31	40	217
47		13.20	13.19	33.503	25.195	277.5	0.130	5.97	100.2	3.9	0.40	1.3	0.07	0.73	0.29	47	216
50	ISL	12.76	12.75	33.461	25.250	272.3	0.139	5.81	96.6	4.7	0.50	2.7	0.09	0.57	0.27	50	
55	A	11.88	11.87	33.399	25.370	260.9	0.152	5.45	88.9	6.6	0.71	5.9	0.10	0.31	0.23	55	215
63		11.07	11.06	33.423	25.537	245.2	0.172	4.91	78.7	9.8	1.00	10.7	0.03	0.19	0.17	63	214
70		10.70	10.69	33.470	25.639	235.6	0.189	4.58	72.9	12.5	1.19	13.8	0.02	0.14	0.15	70	213
75	ISL	10.44	10.43	33.525	25.727	227.3	0.200	4.30	68.1	14.7	1.33	16.0	0.02	0.10	0.13	75	
84		10.05	10.04	33.630	25.876	213.3	0.220	3.82	60.0	18.6	1.54	19.3	0.01	0.04	0.11	84	212
100		9.69	9.68	33.757	26.035	198.5	0.253	3.33	51.9	23.1	1.73	22.4	0.00	0.02	0.22	101	211
119		9.32	9.31	33.873	26.187	184.4	0.290	2.84	43.9	27.8	1.93	25.6	0.00	0.01	0.07	120	210
125	ISL	9.18	9.17	33.906	26.235	179.9	0.301	2.72	42.0	29.3	1.99	26.4	0.00	0.01	0.06	126	
139		8.85	8.84	33.971	26.339	170.3	0.325	2.50	38.3	32.6	2.10	28.0	0.00	0.00	0.05	140	209
150	ISL	8.68	8.66	33.998	26.386	165.9	0.344	2.41	36.8	34.4	2.15	28.7	0.00	0.00	0.04	151	
169		8.44	8.42	34.023	26.443	160.8	0.375	2.31	35.1	37.0	2.20	29.4	0.00	0.00	0.04	170	208
197		8.04	8.02	34.057	26.531	152.9	0.419	2.17	32.7	41.1	2.30	30.7	0.00	0.00	0.03	198	207
200	ISL	8.00	7.98	34.060	26.539	152.2	0.423	2.15	32.3	41.6	2.31	30.8	0.00			201	
228		7.68	7.66	34.086	26.606	146.1	0.465	1.89	28.2	45.9	2.43	32.0	0.00			229	206
250	ISL	7.59	7.57	34.119	26.646	142.8	0.497	1.65	24.6	48.6	2.52	32.8	0.00			252	
269		7.53	7.50	34.146	26.676	140.2	0.524	1.45	21.6	50.9	2.60	33.5	0.00			271	205
300	ISL	7.27	7.24	34.167	26.729	135.5	0.566	1.23	18.2	55.0	2.71	34.7	0.00			302	
318		7.10	7.07	34.174	26.759	132.9	0.590	1.13	16.6	57.5	2.77	35.4	0.00			320	204
377		6.62	6.59	34.196	26.842	125.6	0.667	0.82	11.9	65.5	2.92	37.5	0.00			380	203
400	ISL	6.47	6.43	34.208	26.871	123.1	0.695	0.73	10.6	68.2	2.97	38.2	0.00			403	
437		6.23	6.19	34.227	26.918	119.0	0.740	0.61	8.8	72.6	3.04	39.1	0.00			440	202
500	ISL	5.77	5.73	34.247	26.992	112.3	0.813	0.45	6.4	80.8	3.14	40.6	0.00			504	
515		5.66	5.62	34.253	27.010	110.7	0.830	0.41	5.8	82.8	3.17	41.0	0.00			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 23.4 N	122 15.0 W	22/01/01	1037 UTC	4015 m	130 08 kn			1018.5 mb	13.5 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	12.31	12.31	33.262	25.181	277.5	0.000	6.10	100.4	5.6	0.50	2.5	0.11	0.89	0.27	0	
2		12.31	12.31	33.262	25.181	277.6	0.006	6.10	100.4	5.6	0.50	2.5	0.11	0.89	0.27	2	224
10		12.31	12.31	33.266	25.185	277.5	0.028	6.10	100.4	5.9	0.50	2.5	0.10	0.94	0.29	10	219
19		12.37	12.37	33.434	25.304	266.4	0.052	5.99	98.8	6.0	0.55	3.5	0.16	1.48	0.45	19	218
20	ISL	12.38	12.38	33.439	25.306	266.2	0.055	5.99	98.8	6.0	0.55	3.5	0.16	1.50	0.46	20	
30		12.43	12.43	33.481	25.329	264.3	0.081	5.98	98.8	5.9	0.56	3.6	0.14	1.65	0.56	30	217
40		12.40	12.39	33.501	25.350	262.5	0.108	5.88	97.1	6.0	0.59	4.0	0.15	1.13	0.54	40	216
50	ISL	12.35	12.34	33.496	25.356	262.2	0.134	5.79	95.5	6.4	0.63	4.5	0.18	0.71	0.44	50	
51		12.35	12.34	33.496	25.356	262.2	0.137	5.78	95.3	6.4	0.63	4.5	0.18	0.67	0.42	51	215
59		11.87	11.86	33.514	25.461	252.4	0.157	4.96	81.0	10.1	0.95	9.6	0.21	0.26	0.23	59	214
70		10.66	10.65	33.519	25.684	231.3	0.184	4.32	68.7	14.7	1.28	15.0	0.04	0.10	0.15	70	213
75	ISL	10.40	10.39	33.555	25.758	224.4	0.195	4.13	65.3	16.3	1.37	16.6	0.03	0.08	0.12	75	
85		10.15	10.14	33.647	25.872	213.7	0.217	3.82	60.1	19.1	1.51	18.8	0.02	0.05	0.09	85	212
100		9.87	9.86	33.765	26.012	200.7	0.248	3.35	52.4	23.1	1.69	21.6	0.01	0.03	0.08	101	211
120		9.52	9.51	33.919	26.190	184.2	0.287	2.72	42.3	28.7	1.96	25.1	0.01	0.01	0.09	121	210
125	ISL	9.49	9.48	33.935	26.208	182.6	0.296	2.68	41.6	29.3	1.97	25.4	0.01	0.01	0.09	126	
140		9.38	9.36	33.958	26.244	179.5	0.323	2.58	40.0	30.3	2.01	26.0	0.01	0.01	0.08	141	209
150	ISL	9.13	9.11	33.962	26.288	175.4	0.341	2.63	40.5	31.3	2.02	26.5	0.01	0.01	0.07	151	
170		8.63	8.61	33.978	26.379	167.0	0.375	2.69	41.0	33.7	2.05	27.6	0.01	0.00	0.06	171	208
199		8.55	8.53	34.075	26.468	159.1	0.422	2.13	32.4	38.4	2.25	29.4	0.01	0.00	0.05	200	207
200	ISL	8.55	8.53	34.078	26.470	158.9	0.424	2.11	32.1	38.5	2.26	29.5	0.01			201	
229		8.46	8.44	34.143	26.535	153.3	0.469	1.58	24.0	42.5	2.44	31.1	0.01			230	206
250	ISL	8.17	8.14	34.146	26.582	149.1	0.501	1.57	23.7	45.0	2.49	31.9	0.00			252	
268		7.86	7.83	34.136	26.620	145.6	0.527	1.56	23.4	47.2	2.52	32.5	0.00			270	205
300	ISL	7.38	7.35	34.116	26.674	140.8	0.573	1.51	22.4	51.5	2.59	33.8	0.00			302	
318		7.13	7.10	34.108	26.703	138.2	0.598	1.48	21.8	54.1	2.63	34.6	0.00			320	204
378		6.55	6.52	34.135	26.803	129.2	0.679	1.03	15.0	63.7	2.84	37.3	0.00			381	203
400	ISL	6.29	6.25	34.134	26.836	126.2	0.707	0.94	13.6	67.4	2.90	38.2	0.00			403	
437		5.89	5.85	34.136	26.889	121.3	0.752	0.82	11.7	73.5	2.98	39.6	0.00			440	202
500	ISL	5.63	5.59	34.197	26.969	114.3	0.827	0.51	7.3	81.6	3.11	41.0	0.00			504	
512		5.58	5.54	34.209	26.985	112.9	0.840	0.45	6.4	83.2	3.14	41.3	0.00			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 3.2 N	122 56.7 W	22/01/01	0459 UTC	4234 m	140 16 kn			1018.5 mb	13.8 C	12.3 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.80	13.80	33.098	24.759	317.7	0.000	6.01	101.9	3.7	0.34	0.1	0.00	0.46	0.13	0	
3		13.80	13.80	33.098	24.760	317.7	0.010	6.01	101.9	3.7	0.34	0.1	0.00	0.46	0.13	3	220
10	ISL	13.80	13.80	33.099	24.760	317.9	0.032	5.99	101.6	3.8	0.34	0.1	0.00	0.45	0.13	10	
16		13.81	13.81	33.100	24.759	318.1	0.051	5.98	101.4	3.8	0.34	0.1	0.00	0.45	0.13	16	219
20	ISL	13.81	13.81	33.100	24.760	318.2	0.064	5.99	101.6	3.8	0.34	0.1	0.00	0.45	0.13	20	
30		13.81	13.81	33.098	24.758	318.6	0.095	6.01	101.9	3.7	0.34	0.1	0.00	0.46	0.13	30	218
44		13.82	13.81	33.111	24.767	318.2	0.140	5.97	101.3	3.7	0.34	0.1	0.01	0.46	0.16	44	217
50	ISL	13.83	13.82	33.125	24.776	317.5	0.159	5.94	100.8	3.6	0.35	0.2	0.02	0.41	0.15	50	
55		13.83	13.82	33.136	24.784	316.9	0.175	5.91	100.3	3.6	0.35	0.2	0.03	0.36	0.14	55	216
65		13.51	13.50	33.229	24.922	304.0	0.206	5.86	98.8	4.0	0.43	1.3	0.14	0.22	0.12	65	215
75		12.93	12.92	33.364	25.142	283.3	0.235	5.57	92.9	4.9	0.58	4.0	0.04	0.11	0.10	75	214
84		12.27	12.26	33.338	25.250	273.1	0.260	5.45	89.6	6.3	0.70	5.9	0.02	0.09	0.10	84	213
94		11.15	11.14	33.383	25.492	250.2	0.287	5.12	82.2	9.8	0.97	10.3	0.01	0.05	0.09	94	212
100	ISL	10.81	10.80	33.402	25.568	243.1	0.301	4.97	79.2	10.9	1.05	11.6	0.01	0.05	0.09	100	
110		10.45	10.44	33.446	25.665	234.0	0.325	4.69	74.2	12.8	1.16	13.5	0.01	0.04	0.09	111	211
124		9.87	9.86	33.590	25.875	214.2	0.357	4.11	64.3	17.8	1.45	18.1	0.00	0.02	0.07	125	210
125	ISL	9.85	9.84	33.599	25.886	213.2	0.359	4.07	63.6	18.1	1.47	18.4	0.00	0.02	0.07	126	
144		9.55	9.53	33.746	26.051	197.9	0.398	3.43	53.3	23.8	1.75	22.7	0.01	0.01	0.07	145	209
150	ISL	9.49	9.47	33.785	26.091	194.2	0.410	3.27	50.8	25.0	1.81	23.6	0.01	0.01	0.07	151	
168		9.32	9.30	33.883	26.196	184.6	0.444	2.90	44.9	28.1	1.93	25.4	0.00	0.00	0.07	169	208
198		8.84	8.82	33.990	26.356	169.8	0.497	2.56	39.2	33.1	2.08	27.6	0.00	0.00	0.05	199	207
200	ISL	8.81	8.79	33.996	26.366	168.9	0.500	2.54	38.9	33.4	2.09	27.7	0.00			201	
230		8.46	8.44	34.060	26.470	159.4	0.549	2.23	33.9	37.5	2.23	29.4	0.00			231	206
250	ISL	8.19	8.16	34.076	26.524	154.6	0.581	2.11	31.9	40.3	2.30	30.3	0.00			251	
267		7.97	7.94	34.082	26.562	151.2	0.607	2.02	30.4	42.6	2.35	31.0	0.00			269	205
300	ISL	7.61	7.58	34.093	26.623	145.8	0.656	1.83	27.3	46.7	2.45	32.4	0.00			302	
317		7.44	7.41	34.099	26.652	143.2	0.680	1.73	25.7	48.9	2.51	33.1	0.00			319	204
378		6.92	6.88	34.134	26.753	134.3	0.765	1.24	18.2	57.8	2.73	35.7	0.00			380	203
400	ISL	6.80	6.76	34.158	26.788	131.2	0.794	1.07	15.7	61.0	2.81	36.5	0.00			403	
439		6.53	6.49	34.191	26.850	125.6	0.844	0.81	11.8	67.0	2.93	37.9	0.00			442	202
500	ISL	5.69	5.65	34.165	26.937	117.4	0.918	0.66	9.4	78.5	3.05	40.4	0.00			503	
514		5.50	5.46	34.160	26.956	115.6	0.935	0.62	8.8	81.2	3.08	41.0	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 43.6 N	123 38.2 W	21/01/01	2309 UTC	4039 m	140 12 kn	280 10 09	2	1018.1 mb	13.5 C	13.0 C	18m	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	13.42	13.42	33.030	24.784	315.3	0.000	6.10	102.6	5.0	0.37	0.5	0.03	0.51	0.11	0	
2		13.42	13.42	33.030	24.784	315.4	0.006	6.10	102.6	5.0	0.37	0.5	0.03	0.51	0.11	2	220
10		13.42	13.42	33.030	24.784	315.6	0.032	6.10	102.6	4.7	0.37	0.5	0.03	0.50	0.11	10	219
20		13.40	13.40	33.030	24.789	315.4	0.063	6.08	102.2	4.6	0.37	0.5	0.03	0.52	0.12	20	218
30		13.34	13.34	33.031	24.802	314.5	0.095	6.05	101.6	4.5	0.37	0.6	0.03	0.57	0.16	30	217
40		13.30	13.29	33.050	24.825	312.5	0.126	6.00	100.6	4.6	0.41	1.0	0.07	0.42	0.17	40	216
50		13.12	13.11	33.101	24.900	305.6	0.157	5.96	99.6	5.0	0.46	1.8	0.12	0.38	0.18	50	215
60		13.03	13.02	33.321	25.089	288.0	0.187	5.70	95.2	4.9	0.54	3.3	0.13	0.26	0.15	60	214
70		12.26	12.25	33.241	25.176	279.8	0.215	5.71	93.8	5.9	0.64	4.8	0.09	0.23	0.17	70	213
75	ISL	12.23	12.22	33.284	25.215	276.2	0.229	5.56	91.3	6.2	0.68	5.5	0.06	0.19	0.15	75	
85		12.11	12.10	33.384	25.316	266.9	0.256	5.23	85.7	7.2	0.79	7.3	0.02	0.10	0.11	85	212
99		10.63	10.62	33.331	25.544	245.3	0.292	5.08	80.6	10.4	1.02	11.1	0.01	0.08	0.10	99	211
100	ISL	10.56	10.55	33.336	25.560	243.8	0.294	5.05	80.0	10.7	1.04	11.4	0.01	0.08	0.10	100	
120		9.65	9.64	33.510	25.849	216.5	0.340	4.39	68.3	16.5	1.38	17.0	0.01	0.03	0.06	121	210
125	ISL	9.53	9.52	33.559	25.907	211.1	0.351	4.25	65.9	17.9	1.44	18.1	0.01	0.02	0.05	126	
139		9.31	9.29	33.688	26.044	198.3	0.380	3.92	60.6	21.3	1.59	20.6	0.00	0.01	0.04	140	209
150	ISL	9.16	9.14	33.760	26.125	190.9	0.401	3.79	58.4	23.1	1.65	21.8	0.00	0.00	0.04	151	
169		8.93	8.91	33.860	26.240	180.3	0.436	3.55	54.4	26.3	1.75	23.6	0.00	0.00	0.03	170	208
200		8.60	8.58	34.022	26.419	163.8	0.490	2.58	39.3	34.9	2.10	28.1	0.00	0.00	0.04	201	207
228		8.15	8.13	34.061	26.518	154.8	0.534	2.18	32.9	40.4	2.29	30.5	0.00			229	206
250	ISL	7.98	7.95	34.100	26.574	149.8	0.568	1.87	28.1	43.7	2.41	31.7	0.00			251	
269		7.89	7.86	34.130	26.611	146.5	0.596	1.63	24.5	46.2	2.49	32.4	0.00			271	205
300	ISL	7.66	7.63	34.156	26.665	141.8	0.641	1.38	20.6	50.1	2.60	33.6	0.00			302	
318		7.51	7.48	34.164	26.693	139.4	0.666	1.28	19.0	52.3	2.66	34.2	0.00			320	204
379		6.93	6.89	34.173	26.782	131.5	0.749	1.06	15.6	60.3	2.81	36.3	0.00			381	203
400	ISL	6.75	6.71	34.182	26.814	128.7	0.776	0.95	13.9	63.1	2.86	37.0	0.00			403	
441		6.43	6.39	34.204	26.874	123.4	0.828	0.73	10.6	68.7	2.96	38.4	0.00			444	202
500	ISL	6.02	5.98	34.233	26.950	116.6	0.898	0.54	7.8	77.0	3.09	40.2	0.00			503	
521		5.87	5.82	34.244	26.977	114.1	0.923	0.47	6.7	79.9	3.13	40.8	0.00			525	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0101 | STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 23.2 N	124 19.8 W	21/01/01	1753 UTC	4555 m	150 14 kn	240 06 07	2	1019.2 mb	13.9 C	12.9 C	20m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.84	13.84	33.225	24.849	309.1	0.000	5.99	101.7	4.0	0.36	0.3	0.02	0.52	0.26	0	
2	A	13.84	13.84	33.225	24.849	309.2	0.006	5.99	101.7	4.0	0.36	0.3	0.02	0.52	0.26	2	221
10	ISL	13.83	13.83	33.225	24.852	309.2	0.031	5.98	101.5	3.9	0.36	0.3	0.02	0.52	0.24	10	
12	A	13.83	13.83	33.225	24.852	309.2	0.037	5.98	101.5	3.9	0.36	0.3	0.02	0.52	0.23	12	220
19		13.83	13.83	33.226	24.853	309.3	0.059	5.98	101.5	3.9	0.36	0.3	0.02	0.50	0.15	19	219
20	ISL	13.83	13.83	33.226	24.853	309.4	0.062	5.97	101.4	3.9	0.36	0.3	0.02	0.50	0.15	20	
25	A	13.82	13.82	33.227	24.856	309.2	0.077	5.95	101.0	3.8	0.35	0.3	0.02	0.50	0.19	25	218
30	ISL	13.79	13.79	33.234	24.867	308.2	0.093	5.96	101.1	3.8	0.36	0.4	0.02	0.50	0.20	30	
33		13.75	13.75	33.241	24.881	307.0	0.102	5.97	101.2	3.9	0.37	0.5	0.03	0.50	0.21	33	217
41	A	13.55	13.54	33.273	24.947	301.0	0.126	5.93	100.1	4.0	0.40	0.8	0.05	0.41	0.12	41	216
50	ISL	13.45	13.44	33.290	24.980	298.0	0.153	5.92	99.8	4.0	0.41	1.0	0.07	0.45	0.14	50	
53	A	13.43	13.42	33.294	24.988	297.4	0.162	5.92	99.7	4.0	0.41	1.1	0.07	0.47	0.16	53	215
64		13.39	13.38	33.315	25.012	295.4	0.195	5.92	99.6	4.0	0.42	1.2	0.08	0.38	0.13	64	214
73	A	13.34	13.33	33.324	25.030	294.0	0.221	5.89	99.0	4.0	0.43	1.4	0.09	0.37	0.13	73	213
75	ISL	13.29	13.28	33.326	25.041	292.9	0.227	5.87	98.6	4.1	0.45	1.7	0.09	0.35	0.13	75	
87		12.46	12.45	33.309	25.191	278.8	0.261	5.64	93.1	5.9	0.64	4.8	0.09	0.18	0.11	87	212
99		10.52	10.51	33.253	25.502	249.2	0.293	5.31	84.0	9.3	0.95	9.9	0.02	0.13	0.16	99	211
100	ISL	10.42	10.41	33.261	25.525	247.0	0.296	5.28	83.4	9.6	0.97	10.3	0.02	0.12	0.16	100	
119		9.39	9.38	33.498	25.882	213.3	0.339	4.61	71.3	16.3	1.35	16.6	0.00	0.03	0.05	120	210
125	ISL	9.35	9.34	33.582	25.954	206.6	0.352	4.37	67.5	18.2	1.44	18.1	0.00	0.02	0.04	126	
140		9.26	9.24	33.735	26.089	194.1	0.382	3.83	59.1	22.3	1.62	21.2	0.00	0.01	0.03	141	209
150	ISL	9.14	9.12	33.808	26.165	187.0	0.401	3.61	55.6	24.6	1.71	22.7	0.00	0.00	0.03	151	
169		8.88	8.86	33.904	26.282	176.3	0.436	3.44	52.7	27.8	1.79	24.3	0.00	0.00	0.03	170	208
199		8.49	8.47	33.992	26.412	164.4	0.487	3.73	56.7	30.2	1.72	24.0	0.00	0.00	0.02	200	207
200	ISL	8.47	8.45	33.993	26.416	164.0	0.488	3.72	56.5	30.4	1.73	24.1	0.00			201	
229		8.01	7.99	34.000	26.491	157.3	0.535	3.21	48.3	36.3	1.96	27.2	0.00			230	206
250	ISL	7.70	7.68	34.012	26.546	152.3	0.567	2.79	41.6	40.7	2.13	29.3	0.00			251	
268		7.45	7.42	34.021	26.589	148.4	0.594	2.47	36.7	44.4	2.26	31.0	0.00			270	205
300	ISL	6.98	6.95	34.024	26.657	142.1	0.641	2.16	31.7	50.4	2.42	33.1	0.00			302	
319		6.74	6.71	34.027	26.692	139.0	0.668	2.02	29.5	53.6	2.50	34.1	0.00			321	204
378		6.44	6.41	34.083	26.776	131.6	0.747	1.36	19.7	61.7	2.75	36.9	0.00			380	203
400	ISL	6.25	6.21	34.103	26.817	128.0	0.776	1.14	16.5	66.1	2.84	38.0	0.00			403	
437		5.90	5.86	34.133	26.885	121.7	0.822	0.84	12.0	73.7	2.97	39.7	0.00			440	202
500	ISL	5.43	5.39	34.173	26.974	113.6	0.896	0.59	8.4	83.5	3.10	41.4	0.00			503	
514		5.33	5.29	34.182	26.993	111.8	0.912	0.53	7.5	85.7	3.13	41.8	0.00			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN | CALCOFI CRUISE 0101 | STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 27.0 N	120 31.0 W	20/01/01	0504 UTC	69 m	100 05 kn			1021.9 mb	13.5 C	10.2 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	13.59	13.59	33.503	25.115	283.8	0.000	5.87	99.4	5.1	0.42	1.4	0.15	2.12	0.65	0	
3		13.59	13.59	33.503	25.115	283.9	0.009	5.87	99.4	5.1	0.42	1.4	0.15	2.12	0.65	3	208
6		13.58	13.58	33.502	25.117	283.8	0.017	5.84	98.8	5.1	0.42	1.5	0.16	2.08	0.67	6	207
10		13.58	13.58	33.504	25.118	283.8	0.028	5.84	98.8	5.0	0.43	1.5	0.16	2.25	0.65	10	206
20		13.44	13.44	33.515	25.156	280.5	0.057	5.73	96.7	6.0	0.50	2.3	0.24	1.63	0.61	20	205
30		13.41	13.41	33.520	25.166	279.8	0.085	5.74	96.8	6.1	0.51	2.4	0.25	1.53	0.64	30	204
40		13.37	13.36	33.522	25.176	279.1	0.113	5.81	97.9	6.3	0.55	2.6	0.25	1.53	0.67	40	203
50		13.10	13.09	33.537	25.242	273.1	0.140	5.64	94.5	8.0	0.72	4.4	0.27	0.82	0.74	50	202
61		11.66	11.65	33.619	25.582	240.9	0.168	4.15	67.5	14.8	1.20	13.2	0.11	0.14	0.22	61	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 19.1 N	120 48.0 W	20/01/01	0754 UTC	749 m	100 06 kn			1022.8 mb	13.5 C	11.3 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.14	13.14	33.518	25.218	274.1	0.000	5.70	95.6	6.2	0.55	3.5	0.26	1.36	0.48	0	
2		13.14	13.14	33.518	25.218	274.1	0.005	5.70	95.6	6.2	0.55	3.5	0.26	1.36	0.48	2	224
10	ISL	13.11	13.11	33.517	25.223	273.8	0.027	5.68	95.2	6.2	0.56	3.5	0.26	1.56	0.50	10	
11		13.11	13.11	33.517	25.223	273.8	0.030	5.68	95.2	6.2	0.56	3.5	0.26	1.59	0.50	11	219
20	ISL	12.98	12.98	33.521	25.252	271.3	0.055	5.58	93.3	6.6	0.60	4.1	0.30	1.61	0.54	20	
21		12.96	12.96	33.522	25.257	270.9	0.057	5.57	93.1	6.7	0.61	4.2	0.30	1.61	0.54	21	218
30		12.81	12.81	33.529	25.292	267.8	0.082	5.55	92.4	7.0	0.63	4.5	0.29	1.21	0.45	30	217
41		12.59	12.58	33.541	25.345	263.1	0.111	5.17	85.7	8.5	0.76	6.6	0.24	0.80	0.35	41	216
50	ISL	12.47	12.46	33.545	25.371	260.8	0.134	4.95	81.9	9.3	0.85	8.0	0.21	0.42	0.26	50	
51		12.44	12.43	33.546	25.378	260.2	0.137	4.92	81.3	9.5	0.86	8.2	0.21	0.38	0.25	51	215
61		11.76	11.75	33.593	25.543	244.6	0.162	4.14	67.5	13.4	1.18	13.0	0.03	0.14	0.16	61	214
69		11.47	11.46	33.621	25.619	237.6	0.182	3.99	64.6	14.9	1.27	14.4	0.02	0.11	0.14	69	213
75	ISL	11.34	11.33	33.635	25.654	234.4	0.196	3.91	63.2	15.6	1.31	15.0	0.02	0.10	0.13	75	
86		11.15	11.14	33.661	25.708	229.5	0.221	3.76	60.5	16.8	1.38	16.0	0.02	0.09	0.12	86	212
100	ISL	10.83	10.82	33.715	25.808	220.3	0.253	3.47	55.5	19.3	1.53	18.1	0.01	0.05	0.10	101	
101		10.80	10.79	33.720	25.817	219.4	0.255	3.45	55.1	19.5	1.54	18.3	0.01	0.05	0.10	102	211
122		9.87	9.86	33.887	26.107	192.1	0.298	2.78	43.5	26.7	1.88	23.7	0.01	0.02	0.09	123	210
125	ISL	9.76	9.75	33.911	26.145	188.7	0.304	2.69	42.0	27.9	1.93	24.3	0.01	0.02	0.09	126	
138		9.35	9.33	34.002	26.283	175.7	0.327	2.36	36.6	32.3	2.09	26.6	0.01	0.01	0.07	139	209
150	ISL	9.18	9.16	34.041	26.341	170.4	0.348	2.22	34.3	34.0	2.16	27.5	0.01	0.01	0.08	151	
168		9.07	9.05	34.066	26.379	167.1	0.379	2.12	32.7	35.1	2.20	28.1	0.01	0.01	0.09	169	208
199		8.79	8.77	34.117	26.464	159.7	0.429	1.87	28.6	38.5	2.32	29.4	0.01	0.01	0.06	200	207
200	ISL	8.79	8.77	34.118	26.464	159.6	0.431	1.87	28.6	38.6	2.32	29.4	0.01			201	
230		8.65	8.63	34.138	26.502	156.5	0.478	1.75	26.7	40.4	2.38	30.2	0.01			231	206
250	ISL	8.46	8.43	34.153	26.544	152.9	0.509	1.63	24.8	42.6	2.44	31.0	0.00			252	
268		8.27	8.24	34.166	26.583	149.4	0.536	1.52	23.0	44.9	2.50	31.7	0.00			270	205
300	ISL	7.94	7.91	34.176	26.640	144.4	0.583	1.37	20.6	48.5	2.58	32.7	0.00			302	
319		7.76	7.73	34.180	26.670	141.8	0.611	1.29	19.3	50.6	2.63	33.3	0.00			321	204
379		7.27	7.23	34.199	26.756	134.3	0.693	1.00	14.8	57.7	2.78	35.2	0.00			381	203
400	ISL	7.09	7.05	34.202	26.783	131.9	0.721	0.92	13.6	60.4	2.83	35.9	0.00			403	
436		6.76	6.72	34.207	26.832	127.5	0.768	0.79	11.5	65.2	2.91	37.2	0.00			439	202
500	ISL	6.17	6.13	34.228	26.927	118.9	0.847	0.56	8.1	74.4	3.05	39.3	0.00			503	
514		6.04	5.99	34.233	26.947	117.0	0.864	0.51	7.3	76.4	3.08	39.8	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 9.2 N	121 8.9 W	20/01/01	1139 UTC	2166 m	330 12 kn			1021.9 mb	12.0 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	13.01	13.01	33.444	25.186	277.1	0.000	5.94	99.3	4.4	0.41	1.5	0.07	0.63	0.24	0	
2		13.01	13.01	33.444	25.186	277.1	0.006	5.94	99.3	4.4	0.41	1.5	0.07	0.63	0.24	2	220
10		13.02	13.02	33.444	25.184	277.5	0.028	5.95	99.5	4.7	0.41	1.5	0.07	0.63	0.25	10	219
20		13.02	13.02	33.445	25.186	277.7	0.055	5.93	99.1	4.5	0.41	1.5	0.08	0.63	0.24	20	218
30		13.03	13.03	33.446	25.185	278.0	0.083	5.93	99.2	4.4	0.42	1.5	0.08	0.63	0.23	30	217
39		13.03	13.02	33.450	25.188	277.9	0.108	5.91	98.8	4.4	0.42	1.7	0.08	0.62	0.25	39	216
49		12.74	12.73	33.433	25.232	274.0	0.136	5.75	95.6	5.1	0.51	3.0	0.10	0.50	0.25	49	215
50	ISL	12.70	12.69	33.428	25.236	273.6	0.139	5.75	95.5	5.2	0.51	3.1	0.10	0.50	0.25	50	
59		12.12	12.11	33.394	25.321	265.7	0.163	5.59	91.7	6.2	0.63	4.9	0.09	0.46	0.26	59	214
71		10.27	10.26	33.449	25.697	230.0	0.193	4.64	73.1	13.6	1.21	14.2	0.01	0.12	0.14	71	213
75	ISL	10.24	10.23	33.508	25.748	225.3	0.202	4.42	69.6	15.1	1.30	15.7	0.01	0.10	0.12	75	
85		10.16	10.15	33.593	25.828	217.9	0.224	3.97	62.5	18.1	1.46	18.1	0.00	0.05	0.09	85	212
100		9.75	9.74	33.760	26.028	199.2	0.255	3.27	51.1	24.0	1.75	22.8	0.00	0.02	0.07	101	211
119		9.37	9.36	33.861	26.169	186.1	0.292	2.86	44.3	28.3	1.92	25.5	0.00	0.01	0.06	120	210
125	ISL	9.27	9.26	33.884	26.204	182.9	0.303	2.79	43.1	29.3	1.96	26.1	0.00	0.01	0.06	126	
140		9.02	9.00	33.931	26.281	175.9	0.330	2.66	40.9	31.5	2.03	27.2	0.00	0.00	0.05	141	209
150	ISL	8.83	8.81	33.963	26.336	170.8	0.347	2.55	39.0	33.2	2.08	28.0	0.00	0.00	0.05	151	
169		8.50	8.48	34.012	26.426	162.5	0.379	2.36	35.9	36.4	2.17	29.2	0.00	0.00	0.05	170	208
199		8.13	8.11	34.045	26.508	155.2	0.426	2.24	33.8	40.3	2.26	30.2	0.00	0.00	0.04	200	207
200	ISL	8.11	8.09	34.046	26.512	154.8	0.428	2.23	33.6	40.5	2.26	30.3	0.00			201	
227		7.63	7.61	34.065	26.597	147.0	0.469	1.98	29.5	45.7	2.40	32.1	0.00			228	206
250	ISL	7.47	7.45	34.091	26.641	143.2	0.502	1.79	26.6	48.7	2.49	32.9	0.00			252	
269		7.39	7.36	34.114	26.670	140.6	0.529	1.63	24.2	51.0	2.55	33.5	0.00			271	205
300	ISL	7.16	7.13	34.145	26.727	135.6	0.572	1.32	19.5	55.7	2.68	34.9	0.00			302	
317		7.03	7.00	34.159	26.756	133.0	0.595	1.16	17.1	58.3	2.75	35.6	0.00			319	204
378		6.57	6.54	34.193	26.846	125.2	0.673	0.82	11.9	66.8	2.93	37.6	0.00			381	203
400	ISL	6.42	6.38	34.208	26.878	122.4	0.701	0.71	10.3	69.8	2.98	38.3	0.00			403	
437		6.17	6.13	34.233	26.930	117.7	0.745	0.56	8.1	74.7	3.06	39.4	0.00			440	202
500	ISL	5.75	5.71	34.269	27.012	110.4	0.817	0.40	5.7	82.8	3.16	40.8	0.00			504	
512		5.67	5.63	34.276	27.027	109.1	0.830	0.37	5.3	84.3	3.18	41.1	0.00			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 49.0 N	121 50.6 W	20/01/01	1747 UTC	3625 m	00 kn	310 05 05	0	1022.9 mb	12.2 C	11.9 C	14m	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	12.43	12.43	33.531	25.367	259.9	0.000	6.08	100.5	5.6	0.50	3.1	0.13	1.34	0.40	0	
2	A	12.43	12.43	33.531	25.367	259.9	0.005	6.08	100.5	5.6	0.50	3.1	0.13	1.34	0.40	2	221
8	A	12.37	12.37	33.540	25.386	258.3	0.021	6.06	100.0	5.7	0.53	3.4	0.13	1.65	0.48	8	220
10	ISL	12.34	12.34	33.544	25.395	257.5	0.026	6.04	99.6	5.8	0.54	3.6	0.13	1.60	0.49	10	
18	A	12.24	12.24	33.561	25.427	254.6	0.046	5.94	97.8	6.2	0.58	4.3	0.14	1.42	0.52	18	219
20	ISL	12.22	12.22	33.562	25.432	254.2	0.051	5.93	97.6	6.2	0.59	4.4	0.14	1.37	0.51	20	
29	A	12.15	12.15	33.567	25.449	252.8	0.074	5.89	96.8	6.4	0.61	4.8	0.15	1.00	0.46	29	218
30	ISL	12.06	12.06	33.565	25.465	251.3	0.077	5.75	94.3	7.0	0.66	5.6	0.15	0.90	0.43	30	
37	A	11.27	11.27	33.562	25.609	237.8	0.094	4.69	75.6	12.3	1.08	12.1	0.13	0.28	0.24	37	217
44		10.55	10.54	33.591	25.759	223.6	0.110	4.07	64.6	16.6	1.37	16.8	0.04	0.13	0.18	44	216
50	ISL	10.47	10.46	33.675	25.839	216.2	0.123	3.66	58.0	19.1	1.52	18.9	0.03	0.08	0.17	50	
52	A	10.44	10.43	33.697	25.861	214.1	0.128	3.54	56.1	19.8	1.56	19.4	0.03	0.07	0.17	52	215
60		10.29	10.28	33.785	25.956	205.3	0.144	3.12	49.3	22.9	1.73	21.6	0.03	0.05	0.16	60	214
70		9.96	9.95	33.839	26.054	196.1	0.164	3.01	47.2	25.1	1.81	23.1	0.02	0.02	0.11	70	213
75	ISL	9.90	9.89	33.852	26.074	194.3	0.174	2.96	46.4	25.6	1.83	23.4	0.02	0.02	0.12	75	
84		9.84	9.83	33.874	26.102	191.9	0.192	2.86	44.8	26.4	1.87	23.9	0.02	0.02	0.15	84	212
99		9.53	9.52	33.952	26.214	181.4	0.220	2.56	39.8	29.7	2.01	25.9	0.01	0.01	0.10	100	211
100	ISL	9.52	9.51	33.956	26.219	181.0	0.221	2.54	39.5	29.9	2.02	26.0	0.01	0.01	0.10	101	
119		9.39	9.38	34.012	26.284	175.2	0.255	2.33	36.1	32.1	2.10	26.9	0.01	0.01	0.10	120	210
125	ISL	9.35	9.34	34.018	26.296	174.2	0.266	2.33	36.1	32.4	2.11	27.0	0.01	0.01	0.10	126	
139		9.24	9.22	34.027	26.321	172.1	0.290	2.32	35.9	32.9	2.12	27.3	0.01	0.01	0.10	140	209
150	ISL	9.14	9.12	34.042	26.349	169.7	0.309	2.29	35.3	33.6	2.14	27.6	0.01	0.01	0.09	151	
169		8.93	8.91	34.070	26.404	164.7	0.340	2.21	33.9	35.4	2.19	28.4	0.01	0.00	0.08	170	208
199		8.50	8.48	34.101	26.496	156.5	0.389	2.03	30.9	39.6	2.30	29.9	0.00	0.00	0.07	200	207
200	ISL	8.47	8.45	34.100	26.500	156.1	0.390	2.03	30.9	39.8	2.30	30.0	0.00			201	
229		7.74	7.72	34.064	26.580	148.6	0.434	2.10	31.4	44.3	2.36	31.7	0.00			230	206
250	ISL	7.44	7.42	34.070	26.628	144.3	0.465	1.97	29.2	47.5	2.44	32.8	0.00			252	
270		7.27	7.24	34.090	26.668	140.8	0.494	1.76	26.0	50.7	2.53	33.7	0.00			272	205
300	ISL	7.15	7.12	34.141	26.726	135.8	0.535	1.35	19.9	55.7	2.70	35.1	0.00			302	
318		7.08	7.05	34.171	26.759	132.9	0.559	1.11	16.3	58.8	2.79	35.9	0.00			320	204
378		6.40	6.37	34.189	26.865	123.2	0.636	0.78	11.3	68.7	2.96	38.3	0.00			381	203
400	ISL	6.24	6.20	34.198	26.893	120.8	0.663	0.69	10.0	71.4	3.00	38.9	0.00			403	
439		6.02	5.98	34.215	26.935	117.2	0.709	0.57	8.2	75.7	3.07	39.9	0.00			442	202
500	ISL	5.66	5.62	34.250	27.008	110.7	0.779	0.40	5.7	83.4	3.17	41.2	0.00			504	
516		5.56	5.52	34.259	27.027	109.0	0.796	0.36	5.1	85.4	3.19	41.6	0.00			520	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 29.1 N	122 32.1 W	20/01/01	2356 UTC	3993 m	270 06 kn	300 06 08	1	1021.5 mb	12.5 C	11.2 C	16m	6/8 AC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.09	13.09	33.039	24.857	308.4	0.000	6.07	101.4	5.0	0.44	1.5	0.07	0.43	0.13	0	
2		13.09	13.09	33.039	24.857	308.5	0.006	6.07	101.4	5.0	0.44	1.5	0.07	0.43	0.13	2	220
10		12.73	12.73	33.029	24.920	302.6	0.031	6.10	101.1	5.0	0.45	1.6	0.07	0.44	0.15	10	219
19		12.67	12.67	33.031	24.933	301.6	0.058	6.10	101.0	5.0	0.45	1.6	0.07	0.47	0.17	19	218
20	ISL	12.67	12.67	33.031	24.933	301.6	0.061	6.10	101.0	5.0	0.45	1.6	0.07	0.47	0.17	20	
30		12.64	12.64	33.033	24.941	301.2	0.091	6.10	100.9	4.9	0.46	1.7	0.07	0.49	0.18	30	217
41		12.60	12.59	33.064	24.973	298.4	0.124	6.07	100.4	5.1	0.47	2.0	0.09	0.52	0.20	41	216
50		12.39	12.38	33.098	25.040	292.2	0.151	5.94	97.8	5.4	0.54	3.0	0.09	0.32	0.19	50	215
60		11.12	11.11	33.023	25.217	275.5	0.179	5.88	94.2	7.2	0.70	5.4	0.07	0.24	0.16	60	214
70		9.85	9.84	32.972	25.395	258.6	0.206	5.71	88.9	9.7	0.91	8.5	0.02	0.18	0.14	70	213
75	ISL	9.76	9.75	33.051	25.472	251.4	0.218	5.61	87.2	10.5	0.97	9.7	0.02	0.14	0.12	75	
86		9.55	9.54	33.176	25.604	239.1	0.245	5.39	83.5	11.7	1.06	11.6	0.01	0.08	0.08	86	212
99		9.49	9.48	33.257	25.677	232.4	0.276	5.24	81.1	12.3	1.11	12.6	0.01	0.06	0.08	99	211
100	ISL	9.47	9.46	33.268	25.689	231.2	0.278	5.21	80.6	12.6	1.13	12.9	0.01	0.06	0.08	100	
120		9.12	9.11	33.534	25.954	206.5	0.322	4.37	67.2	19.5	1.48	18.7	0.00	0.02	0.05	121	210
125	ISL	9.12	9.11	33.601	26.006	201.6	0.332	4.16	64.0	20.9	1.55	19.9	0.00	0.01	0.04	126	
141		9.14	9.12	33.790	26.151	188.2	0.363	3.60	55.5	24.9	1.72	22.8	0.00	0.00	0.03	142	209
150	ISL	9.01	8.99	33.862	26.228	181.0	0.380	3.52	54.1	26.7	1.75	23.6	0.00	0.00	0.03	151	
168		8.68	8.66	33.964	26.360	168.8	0.412	3.37	51.4	30.3	1.82	25.0	0.00	0.00	0.03	169	208
199		8.39	8.37	34.055	26.476	158.2	0.462	2.23	33.8	38.7	2.24	29.9	0.00	0.00	0.03	200	207
200	ISL	8.38	8.36	34.056	26.479	158.0	0.464	2.23	33.8	38.9	2.25	30.0	0.00			201	
227		7.99	7.97	34.074	26.552	151.4	0.506	2.11	31.7	42.6	2.32	30.8	0.00			228	206
250	ISL	7.66	7.64	34.078	26.603	146.8	0.540	1.94	28.9	46.3	2.41	32.2	0.00			251	
270		7.41	7.38	34.083	26.643	143.2	0.569	1.76	26.1	49.6	2.50	33.4	0.00			272	205
300	ISL	7.23	7.20	34.122	26.699	138.3	0.611	1.43	21.1	54.1	2.64	34.6	0.00			302	
318		7.15	7.12	34.146	26.730	135.7	0.636	1.24	18.3	56.6	2.72	35.2	0.00			320	204
378		6.71	6.68	34.170	26.809	128.8	0.715	0.96	14.0	64.0	2.86	37.0	0.00			380	203
400	ISL	6.50	6.46	34.165	26.833	126.6	0.743	0.91	13.2	66.9	2.90	37.8	0.00			403	
439		6.14	6.10	34.162	26.878	122.6	0.792	0.81	11.7	72.3	2.97	39.1	0.00			442	202
500	ISL	5.83	5.79	34.234	26.974	114.1	0.864	0.49	7.0	81.0	3.12	40.6	0.00			503	
513		5.76	5.72	34.249	26.995	112.2	0.879	0.42	6.0	82.8	3.15	40.9	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 9.2 N	123 13.6 W	21/01/01	0516 UTC	4220 m	150 05 kn			1020.9 mb	13.8 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	13.62	13.62	33.055	24.763	317.3	0.000	6.02	101.7	4.5	0.39	0.5	0.03	0.50	0.12	0	
3		13.62	13.62	33.055	24.763	317.4	0.010	6.02	101.7	4.5	0.39	0.5	0.03	0.50	0.12	3	220
10	ISL	13.58	13.58	33.052	24.769	317.0	0.032	6.03	101.8	4.4	0.39	0.5	0.03	0.51	0.12	10	
15		13.55	13.55	33.049	24.773	316.8	0.048	6.03	101.7	4.3	0.39	0.5	0.03	0.51	0.12	15	219
20	ISL	13.53	13.53	33.048	24.776	316.6	0.063	6.03	101.6	4.4	0.39	0.5	0.03	0.54	0.13	20	
30		13.50	13.50	33.048	24.783	316.3	0.095	6.02	101.4	4.5	0.38	0.5	0.04	0.60	0.16	30	218
45		13.47	13.46	33.044	24.786	316.4	0.143	6.04	101.7	4.4	0.38	0.6	0.04	0.58	0.17	45	217
50	ISL	13.42	13.41	33.039	24.792	315.9	0.158	6.03	101.4	4.4	0.39	0.7	0.05	0.50	0.15	50	
55		13.37	13.36	33.042	24.805	314.8	0.174	6.02	101.1	4.3	0.40	0.7	0.05	0.41	0.14	55	216
66		13.82	13.81	33.249	24.874	308.6	0.208	5.87	99.6	4.1	0.39	0.6	0.10	0.36	0.17	66	215
74		13.97	13.96	33.438	24.989	297.9	0.233	5.77	98.4	3.7	0.40	0.8	0.21	0.26	0.12	74	214
75	ISL	13.90	13.89	33.431	24.998	297.1	0.236	5.77	98.2	3.8	0.41	1.0	0.20	0.25	0.12	75	
86		12.67	12.66	33.285	25.132	284.5	0.268	5.68	94.2	5.7	0.59	3.9	0.08	0.19	0.13	86	213
95		11.72	11.71	33.299	25.323	266.4	0.292	5.41	87.9	7.7	0.79	7.1	0.02	0.10	0.11	95	212
100	ISL	11.07	11.06	33.296	25.439	255.3	0.305	5.33	85.4	9.0	0.89	8.8	0.02	0.09	0.10	100	
111		9.86	9.85	33.305	25.654	234.9	0.332	5.21	81.3	11.8	1.08	12.0	0.01	0.08	0.09	112	211
125		9.47	9.46	33.364	25.765	224.6	0.365	5.03	77.8	14.1	1.19	14.0	0.01	0.04	0.06	126	210
145		9.17	9.15	33.686	26.065	196.4	0.407	3.87	59.6	23.5	1.65	21.6	0.00	0.01	0.04	146	209
150	ISL	9.14	9.12	33.734	26.108	192.5	0.416	3.71	57.1	24.8	1.71	22.6	0.00	0.01	0.04	151	
170		9.01	8.99	33.864	26.230	181.2	0.454	3.37	51.8	28.2	1.82	24.7	0.00	0.00	0.03	171	208
200		8.44	8.42	33.986	26.415	164.1	0.506	3.37	51.2	31.9	1.86	25.6	0.00	0.00	0.03	201	207
227		8.31	8.29	34.065	26.497	156.8	0.549	2.14	32.4	40.3	2.29	30.5	0.00			228	206
250	ISL	8.17	8.14	34.098	26.544	152.7	0.584	1.93	29.1	43.4	2.42	31.4	0.00			251	
269		8.02	7.99	34.112	26.578	149.8	0.613	1.75	26.3	45.0	2.45	32.2	0.00			271	205
300	ISL	7.60	7.57	34.126	26.650	143.2	0.659	1.55	23.1	50.1	2.57	33.6	0.00			302	
318		7.34	7.31	34.131	26.691	139.4	0.684	1.44	21.3	53.3	2.63	34.5	0.00			320	204
377		6.78	6.75	34.158	26.790	130.6	0.764	1.04	15.2	62.3	2.81	37.0	0.00			379	203
400	ISL	6.56	6.52	34.177	26.835	126.5	0.793	0.88	12.8	66.4	2.90	37.9	0.00			403	
436		6.23	6.19	34.208	26.903	120.4	0.838	0.66	9.5	72.8	3.02	39.3	0.00			439	202
500	ISL	5.75	5.71	34.233	26.983	113.1	0.912	0.46	6.6	81.9	3.13	41.0	0.00			503	
517		5.62	5.58	34.240	27.005	111.2	0.931	0.41	5.8	84.3	3.16	41.5	0.00			521	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 49.4 N	123 54.4 W	21/01/01	1057 UTC	4402 m	170 15 kn			1019.2 mb	14.7 C	11.9 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.60	14.60	33.223	24.689	324.4	0.000	5.87	101.3	4.1	0.33	0.1	0.00	0.30	0.10	0	
2		14.60	14.60	33.223	24.689	324.5	0.006	5.87	101.3	4.1	0.33	0.1	0.00	0.30	0.10	2	220
10	ISL	14.60	14.60	33.224	24.690	324.6	0.032	5.87	101.3	4.1	0.33	0.1	0.00	0.30	0.10	10	
16		14.60	14.60	33.224	24.690	324.7	0.052	5.87	101.3	4.1	0.33	0.1	0.00	0.31	0.10	16	219
20	ISL	14.60	14.60	33.222	24.689	325.0	0.065	5.87	101.2	4.2	0.33	0.1	0.00	0.31	0.10	20	
30	ISL	14.59	14.59	33.218	24.688	325.4	0.097	5.86	101.1	4.3	0.32	0.1	0.00	0.33	0.12	30	
31		14.59	14.59	33.217	24.687	325.4	0.101	5.86	101.0	4.3	0.32	0.1	0.00	0.33	0.12	31	218
46		14.46	14.45	33.211	24.711	323.7	0.149	5.85	100.6	4.3	0.33	0.1	0.00	0.40	0.15	46	217
50	ISL	14.38	14.37	33.220	24.735	321.5	0.162	5.87	100.8	4.3	0.33	0.1	0.01	0.41	0.18	50	
56		14.21	14.20	33.231	24.779	317.4	0.181	5.89	100.8	4.4	0.34	0.1	0.02	0.43	0.21	56	216
66		13.76	13.75	33.224	24.867	309.3	0.213	5.85	99.2	4.8	0.41	0.9	0.17	0.29	0.19	66	215
75		12.66	12.65	33.199	25.067	290.4	0.240	5.76	95.4	6.0	0.58	3.6	0.07	0.20	0.17	75	214
86		11.21	11.20	33.201	25.340	264.5	0.270	5.52	88.7	8.3	0.81	7.3	0.01	0.11	0.12	86	213
95		10.31	10.30	33.279	25.558	243.8	0.293	5.24	82.6	9.9	0.99	10.7	0.01	0.07	0.09	95	212
100	ISL	10.06	10.05	33.302	25.619	238.1	0.305	5.17	81.0	10.7	1.05	11.6	0.01	0.06	0.08	100	
109		9.79	9.78	33.329	25.685	231.9	0.326	5.11	79.6	12.0	1.12	12.7	0.00	0.04	0.06	110	211
124		9.29	9.28	33.398	25.820	219.2	0.360	4.93	76.0	14.5	1.24	14.8	0.00	0.02	0.04	125	210
125	ISL	9.29	9.28	33.410	25.830	218.4	0.362	4.88	75.2	14.8	1.26	15.1	0.00	0.02	0.04	126	
145		9.38	9.36	33.652	26.005	202.2	0.404	3.89	60.2	21.7	1.62	20.8	0.00	0.01	0.03	146	209
150	ISL	9.34	9.32	33.697	26.047	198.3	0.414	3.85	59.5	22.6	1.63	21.4	0.00	0.01	0.03	151	
169		9.11	9.09	33.832	26.189	185.1	0.451	3.70	57.0	24.8	1.67	22.4	0.00	0.00	0.02	170	208
200		8.75	8.73	33.959	26.346	170.8	0.506	3.61	55.2	28.8	1.74	24.0	0.00	0.00	0.01	201	207
229		8.12	8.10	33.991	26.467	159.5	0.554	3.18	47.9	35.4	1.95	27.1	0.01			230	206
250	ISL	7.84	7.82	34.021	26.532	153.6	0.587	2.67	40.0	40.1	2.15	29.4	0.01			251	
269		7.62	7.59	34.044	26.583	149.1	0.616	2.24	33.4	44.1	2.31	31.3	0.00			271	205
300	ISL	7.15	7.12	34.049	26.653	142.6	0.661	2.00	29.5	49.8	2.45	33.1	0.00			302	
319		6.86	6.83	34.044	26.689	139.3	0.688	1.96	28.7	53.0	2.50	33.8	0.00			321	204
378		6.04	6.01	34.026	26.782	130.7	0.767	1.78	25.6	63.1	2.65	36.3	0.00			380	203
400	ISL	5.90	5.87	34.049	26.818	127.5	0.796	1.51	21.6	67.2	2.75	37.5	0.00			403	
437		5.73	5.69	34.099	26.879	122.1	0.842	1.01	14.4	73.9	2.93	39.5	0.00			440	202
500	ISL	5.37	5.33	34.161	26.972	113.7	0.916	0.63	8.9	84.0	3.10	41.4	0.00			503	
512		5.30	5.26	34.173	26.990	112.1	0.930	0.56	7.9	85.9	3.13	41.8	0.00			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 16.4 N	120 1.5 W	20/01/01	0039 UTC	574 m	170 04 kn	290 02 09	1	1020.8 mb	13.3 C	12.5 C		7/8	CS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.24	13.24	33.544	25.218	274.1	0.000	6.15	103.4	6.3	0.46	1.9	0.05	3.64	1.26	0	
2	A	13.24	13.24	33.544	25.218	274.1	0.005	6.15	103.4	6.3	0.46	1.9	0.05	3.64	1.26	2	224
10		13.08	13.08	33.542	25.249	271.4	0.027	6.01	100.7	6.5	0.49	2.3	0.04	3.91	1.16	10	223
20		13.04	13.04	33.545	25.259	270.7	0.054	5.97	99.9	6.5	0.49	2.4	0.04	3.68	1.07	20	222
30		12.81	12.81	33.553	25.311	266.0	0.081	5.38	89.6	8.2	0.68	5.4	0.08	1.26	0.73	30	221
40		11.63	11.62	33.647	25.609	237.9	0.106	4.09	66.5	15.4	1.25	14.0	0.05	0.35	0.27	40	220
50		11.14	11.13	33.697	25.737	225.8	0.130	3.66	58.9	18.0	1.43	16.5	0.02	0.15	0.17	50	219
59		10.73	10.72	33.758	25.858	214.6	0.149	3.30	52.6	21.1	1.62	19.3	0.01	0.05	0.12	59	218
69		10.34	10.33	33.817	25.972	203.9	0.170	3.05	48.3	23.7	1.74	21.4	0.01	0.03	0.11	69	217
75	ISL	10.29	10.28	33.843	26.001	201.3	0.183	2.97	46.9	24.4	1.78	22.0	0.01	0.02	0.10	75	
85		10.21	10.20	33.854	26.024	199.4	0.203	2.88	45.4	25.0	1.82	22.5	0.00	0.02	0.09	85	216
99		10.09	10.08	33.881	26.065	195.7	0.230	2.79	43.9	26.1	1.87	23.2	0.00	0.02	0.10	100	215
100	ISL	10.08	10.07	33.882	26.068	195.5	0.232	2.79	43.9	26.1	1.87	23.2	0.00	0.02	0.10	101	
120		9.87	9.86	33.904	26.121	190.8	0.271	2.78	43.6	27.2	1.91	24.1	0.00	0.01	0.08	121	214
125	ISL	9.81	9.80	33.918	26.142	188.9	0.280	2.73	42.7	27.9	1.94	24.5	0.00	0.01	0.08	126	
139		9.64	9.62	33.962	26.205	183.2	0.306	2.54	39.6	30.0	2.02	25.5	0.00	0.01	0.08	140	213
150	ISL	9.53	9.51	33.993	26.247	179.4	0.326	2.43	37.8	31.2	2.07	26.2	0.00	0.01	0.07	151	
169		9.35	9.33	34.044	26.317	173.2	0.360	2.21	34.3	33.3	2.17	27.3	0.00	0.01	0.06	170	212
200		9.05	9.03	34.122	26.426	163.3	0.412	1.69	26.0	38.2	2.36	29.5	0.00	0.01	0.07	201	211
229		8.82	8.80	34.150	26.485	158.2	0.459	1.41	21.6	42.1	2.48	30.8	0.00			230	210
250	ISL	8.61	8.58	34.163	26.528	154.4	0.491	1.19	18.2	45.1	2.57	31.8	0.00			252	
269		8.40	8.37	34.172	26.568	150.9	0.520	1.02	15.5	48.1	2.65	32.7	0.00			271	209
300	ISL	8.01	7.98	34.189	26.640	144.4	0.566	0.93	14.0	53.6	2.79	34.0	0.00			302	
318		7.79	7.76	34.199	26.681	140.8	0.592	0.89	13.3	56.9	2.86	34.7	0.00			320	208
377		7.27	7.23	34.219	26.771	132.8	0.673	0.44	6.5	66.4	3.05	35.7	0.00			379	207
400	ISL	7.06	7.02	34.225	26.805	129.8	0.703	0.36	5.3	70.6	3.12	35.5	0.00			403	
438		6.76	6.72	34.232	26.852	125.7	0.751	0.28	4.1	78.2	3.23	35.1	0.00			441	206
477		6.59	6.55	34.238	26.880	123.5	0.800	0.15	2.2	86.7	3.34	33.4	0.00			480	205
500	ISL	6.52	6.47	34.241	26.892	122.6	0.828	0.12	1.7	92.3	3.43	31.4	0.00			504	
512		6.49	6.44	34.242	26.897	122.3	0.843	0.11	1.6	95.7	3.49	29.9	0.00			516	204
536		6.43	6.38	34.243	26.906	121.8	0.872	0.07	1.0	104.8	3.68	26.0	0.00			540	203
563		6.39	6.34	34.243	26.911	121.6	0.905	0.09	1.3	104.0	3.68	26.8	0.00			567	202
567		6.38	6.33	34.243	26.913	121.5	0.910	0.11	1.6	101.0	3.60	28.1	0.02			571	201

A) SANTA BARBARA BASIN STATION.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 13.5 N	119 24.9 W	19/01/01	2014 UTC	32 m	300 03 kn		1	1023.9 mb	13.9 C	10.8 C	05m	7/8	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	13.88	13.88	33.357	24.943	300.2	0.000	5.68	96.6	5.3	0.57	2.4	0.17	1.55	0.34	0	
2		13.88	13.88	33.357	24.943	300.2	0.006	5.68	96.6	5.3	0.57	2.4	0.17	1.55	0.34	2	205
5		13.83	13.83	33.357	24.953	299.3	0.015	5.66	96.2	5.4	0.57	2.4	0.17	1.37	0.35	5	204
10		13.83	13.83	33.360	24.956	299.2	0.030	5.61	95.3	5.3	0.58	2.4	0.18	1.01	0.32	10	203
20		13.97	13.97	33.443	24.992	296.2	0.060	5.66	96.5	5.0	0.54	1.9	0.19	0.99	0.41	20	202
30		13.96	13.96	33.474	25.018	293.9	0.089	5.68	96.8	4.8	0.55	1.6	0.20	1.18	0.54	30	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 10.4 N	119 30.8 W	19/01/01	1809 UTC	178 m	200 03 kn		2	1023.8 mb	15.0 C	10.5 C	05m	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	13.90	13.90	33.389	24.964	298.2	0.000	5.75	97.9	5.6	0.55	1.9	0.16	2.27	0.45	0	
1	A	13.90	13.90	33.389	24.964	298.2	0.003	5.75	97.9	5.6	0.55	1.9	0.16	2.27	0.45	1	216
3	A	13.89	13.89	33.390	24.967	298.0	0.009	5.75	97.9	5.5	0.55	1.9	0.16	2.14	0.43	3	215
6	A	13.88	13.88	33.389	24.968	298.0	0.018	5.77	98.2	5.4	0.56	1.9	0.16	2.03	0.47	6	214
10	A	13.88	13.88	33.405	24.980	296.9	0.030	5.74	97.7	5.2	0.53	1.8	0.16	1.44	0.39	10	213
13	A	13.88	13.88	33.421	24.993	295.8	0.039	5.73	97.5	4.9	0.51	1.7	0.16	1.26	0.38	13	212
19	A	13.98	13.98	33.498	25.032	292.3	0.056	5.83	99.5	3.5	0.37	0.9	0.11	0.87	0.42	19	211
20	ISL	13.97	13.97	33.499	25.035	292.0	0.059	5.82	99.3	3.5	0.37	1.0	0.11	0.84	0.42	20	
30		13.90	13.90	33.507	25.056	290.3	0.088	5.77	98.3	3.9	0.41	1.5	0.15	0.70	0.38	30	210
40		13.49	13.48	33.502	25.136	282.9	0.117	5.35	90.4	5.8	0.61	4.0	0.30	0.40	0.29	40	209
49		12.62	12.61	33.538	25.337	264.0	0.142	4.73	78.5	9.3	0.91	8.5	0.33	0.21	0.22	49	208
50	ISL	12.57	12.56	33.541	25.349	262.9	0.144	4.69	77.7	9.5	0.93	8.8	0.32	0.20	0.22	50	
60		12.16	12.15	33.572	25.452	253.3	0.170	4.40	72.3	11.5	1.07	11.0	0.14	0.15	0.20	60	207
69		11.57	11.56	33.613	25.594	239.9	0.192	4.10	66.5	13.6	1.22	13.5	0.02	0.12	0.16	69	206
75	ISL	11.36	11.35	33.641	25.655	234.3	0.207	3.92	63.3	15.0	1.32	14.8	0.02	0.10	0.14	75	
85		11.15	11.14	33.695	25.735	226.9	0.230	3.59	57.8	17.4	1.48	16.9	0.02	0.06	0.13	85	205
100		10.81	10.80	33.809	25.885	213.0	0.263	2.97	47.5	21.9	1.72	20.2	0.02	0.03	0.15	101	204
119		10.18	10.17	33.936	26.093	193.5	0.301	2.56	40.4	26.9	1.95	23.7	0.01	0.01	0.08	120	203
125	ISL	9.99	9.98	33.965	26.148	188.4	0.313	2.48	39.0	28.2	2.00	24.5	0.01	0.01	0.08	126	
140		9.59	9.57	34.022	26.260	178.0	0.340	2.32	36.1	31.0	2.09	26.1	0.00	0.01	0.07	141	202
150	ISL	9.46	9.44	34.043	26.298	174.6	0.358	2.25	35.0	32.2	2.13	26.8	0.00	0.01	0.07	151	
160		9.33	9.31	34.064	26.335	171.2	0.375	2.18	33.8	33.3	2.17	27.4	0.01	0.01	0.07	161	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 52.8 N	120 8.1 W	19/01/01	1216 UTC	99 m	00 kn			1021.5 mb	12.5 C	10.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.49	12.49	33.572	25.387	257.9	0.000	5.41	89.5	8.9	0.76	6.5	0.16	2.10	0.56	0	
2		12.49	12.49	33.572	25.387	258.0	0.005	5.41	89.5	8.9	0.76	6.5	0.16	2.10	0.56	2	210
10		12.50	12.50	33.572	25.385	258.4	0.026	5.41	89.5	8.8	0.75	6.5	0.16	1.94	0.57	10	209
20	ISL	12.50	12.50	33.572	25.386	258.6	0.052	5.39	89.2	8.8	0.75	6.6	0.16	1.97	0.50	20	
21		12.50	12.50	33.572	25.386	258.6	0.054	5.39	89.2	8.8	0.75	6.6	0.16	1.97	0.49	21	208
30		12.50	12.50	33.572	25.386	258.8	0.078	5.39	89.2	8.8	0.75	6.6	0.16	1.90	0.48	30	207
41		12.50	12.49	33.572	25.386	259.1	0.106	5.39	89.2	8.7	0.76	6.6	0.15	2.07	0.54	41	206
50	ISL	12.37	12.36	33.577	25.415	256.5	0.129	5.13	84.7	9.7	0.84	7.7	0.16	1.44	0.46	50	
51		12.34	12.33	33.579	25.423	255.9	0.132	5.09	84.0	9.9	0.85	7.9	0.16	1.35	0.45	51	205
60		11.94	11.93	33.616	25.527	246.1	0.154	4.58	74.9	12.8	1.06	11.0	0.14	0.87	0.34	60	204
70		11.69	11.68	33.644	25.596	239.8	0.179	4.37	71.1	14.4	1.16	12.5	0.12	0.68	0.27	70	203
75	ISL	11.53	11.52	33.659	25.637	236.0	0.191	4.20	68.1	15.4	1.23	13.6	0.11	0.54	0.27	75	
80		11.33	11.32	33.678	25.689	231.2	0.202	3.99	64.4	16.6	1.32	14.9	0.09	0.40	0.26	80	202
91		10.75	10.74	33.746	25.846	216.5	0.227	3.42	54.6	20.5	1.57	18.6	0.05	0.13	0.15	91	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 44.9 N	120 24.5 W	19/01/01	0851 UTC	987 m	340 14 kn			1023.2 mb	13.3 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	13.43	13.43	33.505	25.149	280.6	0.000	5.85	98.7	4.2	0.42	1.6	0.07	0.86	0.36	0	
2		13.43	13.43	33.505	25.150	280.6	0.006	5.85	98.7	4.2	0.42	1.6	0.07	0.86	0.36	2	220
10	ISL	13.44	13.44	33.505	25.148	281.0	0.028	5.85	98.7	4.1	0.41	1.6	0.07	0.86	0.35	10	
16		13.44	13.44	33.505	25.148	281.1	0.045	5.85	98.7	4.1	0.41	1.6	0.07	0.86	0.34	16	219
20	ISL	13.44	13.44	33.505	25.148	281.3	0.056	5.85	98.7	4.1	0.41	1.6	0.07	0.85	0.34	20	
30		13.44	13.44	33.505	25.148	281.5	0.084	5.84	98.5	4.1	0.42	1.6	0.07	0.84	0.35	30	218
45		13.44	13.43	33.505	25.149	281.9	0.127	5.84	98.5	4.1	0.41	1.6	0.07	0.85	0.34	45	217
50	ISL	13.36	13.35	33.501	25.162	280.8	0.141	5.79	97.5	4.3	0.44	2.0	0.07	0.81	0.32	50	
56		13.26	13.25	33.497	25.179	279.3	0.157	5.73	96.3	4.6	0.48	2.5	0.07	0.68	0.29	56	216
66		11.27	11.26	33.504	25.564	242.7	0.184	4.60	74.1	11.5	1.09	12.0	0.04	0.18	0.18	66	215
75		10.64	10.63	33.584	25.739	226.2	0.205	4.11	65.4	15.8	1.35	16.4	0.02	0.09	0.11	75	214
85		10.30	10.29	33.639	25.840	216.7	0.227	3.86	61.0	18.1	1.47	18.4	0.01	0.05	0.09	85	213
95		10.04	10.03	33.698	25.931	208.3	0.248	3.64	57.2	20.5	1.58	20.0	0.01	0.03	0.08	95	212
100	ISL	9.91	9.90	33.720	25.970	204.7	0.258	3.55	55.6	21.5	1.63	20.8	0.01	0.02	0.06	101	
110		9.70	9.69	33.773	26.046	197.6	0.278	3.36	52.4	23.4	1.72	22.3	0.01	0.01	0.05	111	211
125		9.52	9.51	33.909	26.183	185.0	0.307	2.89	44.9	27.4	1.89	24.6	0.01	0.01	0.13	126	210
144		9.22	9.20	33.985	26.291	175.0	0.341	2.68	41.4	30.5	2.00	26.1	0.01	0.00	0.04	145	209
150	ISL	9.11	9.09	33.995	26.317	172.7	0.352	2.66	41.0	31.3	2.02	26.4	0.01	0.00	0.04	151	
169		8.78	8.76	34.012	26.382	166.7	0.384	2.63	40.2	33.7	2.06	27.3	0.01	0.01	0.05	170	208
200		8.35	8.33	34.043	26.473	158.5	0.434	2.48	37.6	37.6	2.16	28.8	0.00	0.00	0.03	201	207
229		8.20	8.18	34.113	26.551	151.7	0.479	1.97	29.8	42.0	2.35	30.4	0.00			230	206
250	ISL	7.99	7.96	34.130	26.596	147.7	0.511	1.77	26.6	45.0	2.44	31.4	0.01			252	
269		7.78	7.75	34.136	26.632	144.5	0.539	1.63	24.4	47.7	2.51	32.3	0.01			271	205
300	ISL	7.55	7.52	34.164	26.687	139.7	0.583	1.35	20.1	52.0	2.63	33.7	0.01			302	
319		7.41	7.38	34.182	26.722	136.6	0.609	1.18	17.5	54.8	2.71	34.5	0.01			321	204
380		6.80	6.76	34.234	26.848	125.3	0.689	0.72	10.5	66.0	2.94	37.5	0.00			382	203
400	ISL	6.73	6.69	34.243	26.864	123.9	0.714	0.66	9.6	67.3	2.97	37.8	0.00			403	
437		6.62	6.58	34.251	26.886	122.4	0.759	0.59	8.6	69.3	3.01	38.1	0.00			440	202
500	ISL	5.98	5.94	34.252	26.970	114.7	0.834	0.44	6.3	78.8	3.12	40.3	0.00			503	
513		5.85	5.81	34.253	26.987	113.1	0.849	0.41	5.9	80.8	3.14	40.7	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 34.9 N	120 45.2 W	19/01/01	0458 UTC	1316 m	320 18 kn			1023.7 mb	13.0 C	10.5 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	13.12	13.12	33.412	25.140	281.5	0.000	5.94	99.5	4.5	0.41	1.3	0.05	0.66	0.23	0	
3		13.12	13.12	33.412	25.140	281.6	0.008	5.94	99.5	4.5	0.41	1.3	0.05	0.66	0.23	3	220
10	ISL	13.13	13.13	33.412	25.138	281.9	0.028	5.92	99.2	4.5	0.41	1.3	0.05	0.65	0.23	10	
14		13.13	13.13	33.412	25.138	282.0	0.039	5.91	99.0	4.5	0.41	1.3	0.05	0.65	0.23	14	219
20	ISL	13.12	13.12	33.412	25.140	282.0	0.056	5.91	99.0	4.5	0.41	1.3	0.05	0.64	0.23	20	
30		13.11	13.11	33.412	25.142	282.0	0.085	5.90	98.8	4.4	0.41	1.4	0.05	0.64	0.23	30	218
45		12.98	12.97	33.411	25.168	280.0	0.127	5.92	98.9	4.6	0.43	1.6	0.07	0.66	0.24	45	217
50	ISL	12.89	12.88	33.400	25.177	279.3	0.141	5.89	98.2	4.9	0.44	2.1	0.07	0.58	0.22	50	
56		12.63	12.62	33.383	25.215	275.8	0.157	5.80	96.1	5.2	0.50	2.6	0.07	0.45	0.20	56	216
65		11.71	11.70	33.360	25.372	261.0	0.182	5.44	88.4	7.3	0.73	6.3	0.06	0.22	0.19	65	215
74		10.56	10.55	33.439	25.639	235.6	0.204	4.72	74.9	12.6	1.13	12.9	0.02	0.10	0.12	74	214
75	ISL	10.55	10.54	33.450	25.650	234.7	0.206	4.68	74.2	12.9	1.15	13.2	0.02	0.09	0.12	75	
84		10.44	10.43	33.517	25.721	228.1	0.227	4.37	69.2	15.2	1.30	15.5	0.01	0.07	0.10	84	213
94		10.07	10.06	33.685	25.916	209.8	0.249	3.56	55.9	21.0	1.62	20.6	0.01	0.04	0.09	94	212
100	ISL	9.88	9.87	33.734	25.986	203.2	0.261	3.36	52.6	22.9	1.71	22.1	0.01	0.03	0.08	101	
109		9.64	9.63	33.778	26.060	196.3	0.279	3.22	50.2	24.8	1.79	23.3	0.01	0.01	0.07	110	211
124		9.35	9.34	33.867	26.177	185.4	0.308	2.95	45.7	28.0	1.92	25.2	0.01	0.01	0.05	125	210
125	ISL	9.33	9.32	33.873	26.185	184.7	0.310	2.93	45.3	28.2	1.93	25.3	0.01	0.01	0.05	126	
145		8.85	8.83	33.970	26.338	170.5	0.345	2.65	40.6	32.7	2.06	27.4	0.00	0.00	0.05	146	209
150	ISL	8.72	8.70	33.985	26.370	167.5	0.354	2.60	39.7	33.8	2.09	27.8	0.00	0.00	0.05	151	
169		8.31	8.29	34.023	26.463	158.9	0.385	2.48	37.5	37.3	2.17	29.1	0.00	0.00	0.04	170	208
199		8.02	8.00	34.030	26.512	154.7	0.432	2.44	36.7	39.6	2.21	29.9	0.00	0.00	0.03	200	207
200	ISL	8.00	7.98	34.030	26.515	154.4	0.433	2.44	36.7	39.7	2.21	29.9	0.00			201	
230		7.51	7.49	34.040	26.595	147.2	0.479	2.32	34.5	44.8	2.34	31.4	0.00			231	206
250	ISL	7.24	7.22	34.043	26.635	143.5	0.508	2.17	32.1	48.0	2.41	32.4	0.00			252	
270		7.02	6.99	34.050	26.671	140.3	0.536	1.98	29.1	51.2	2.49	33.5	0.00			272	205
300	ISL	6.86	6.83	34.089	26.724	135.7	0.577	1.58	23.1	55.7	2.64	35.0	0.00			302	
320		6.78	6.75	34.118	26.758	132.7	0.604	1.31	19.2	58.8	2.74	35.9	0.00			322	204
379		6.27	6.24	34.161	26.860	123.6	0.680	0.83	12.0	68.9	2.96	38.6	0.00			381	203
400	ISL	6.13	6.09	34.174	26.888	121.1	0.706	0.73	10.5	71.8	3.01	39.2	0.00			403	
436		5.93	5.89	34.198	26.933	117.2	0.748	0.59	8.5	76.2	3.08	40.1	0.00			439	202
500	ISL	5.70	5.66	34.257	27.008	110.7	0.821	0.38	5.4	82.7	3.18	41.1	0.00			503	
509		5.67	5.63	34.266	27.019	109.8	0.831	0.35	5.0	83.6	3.19	41.2	0.00			513	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 14.7 N	121 26.3 W	18/01/01	2248 UTC	3795 m	320 13 kn	330 03 05	1	1024.9 mb	12.2 C	10.5 C	19m	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	13.23	13.23	33.380	25.093	285.9	0.000	6.01	100.9	4.3	0.41	1.2	0.05	0.68	0.19	0	
2		13.23	13.23	33.380	25.093	286.0	0.006	6.01	100.9	4.3	0.41	1.2	0.05	0.68	0.19	2	220
10		13.24	13.24	33.380	25.091	286.4	0.029	5.98	100.4	4.3	0.41	1.2	0.05	0.67	0.20	10	219
20		13.24	13.24	33.380	25.091	286.6	0.057	5.99	100.6	4.3	0.41	1.2	0.05	0.67	0.20	20	218
30		13.23	13.23	33.380	25.094	286.7	0.086	6.01	100.9	4.1	0.41	1.2	0.05	0.66	0.20	30	217
40		13.20	13.19	33.379	25.099	286.4	0.115	5.96	100.0	4.2	0.41	1.3	0.05	0.68	0.22	40	216
50		13.19	13.18	33.395	25.114	285.3	0.143	5.92	99.3	4.2	0.42	1.5	0.06	0.60	0.22	50	215
60		13.13	13.12	33.394	25.125	284.5	0.172	5.96	99.8	4.2	0.42	1.6	0.06	0.60	0.21	60	214
70		11.31	11.30	33.317	25.411	257.3	0.199	5.34	86.0	8.2	0.83	8.0	0.03	0.15	0.16	70	213
75	ISL	10.81	10.80	33.333	25.513	247.7	0.211	5.14	81.9	9.8	0.97	10.2	0.02	0.12	0.13	75	
85		10.19	10.18	33.403	25.675	232.4	0.235	4.88	76.8	12.5	1.15	13.2	0.01	0.07	0.09	85	212
100		9.46	9.45	33.512	25.881	213.0	0.269	4.68	72.5	15.8	1.28	15.7	0.01	0.03	0.05	100	211
120		9.37	9.36	33.647	26.002	201.9	0.310	4.16	64.4	19.9	1.49	19.1	0.01	0.02	0.04	121	210
125	ISL	9.35	9.34	33.699	26.046	197.9	0.320	3.90	60.3	21.7	1.59	20.6	0.01	0.01	0.04	126	
139		9.27	9.25	33.839	26.169	186.5	0.347	3.18	49.1	26.9	1.85	24.5	0.01	0.00	0.04	140	209
150	ISL	9.15	9.13	33.894	26.231	180.8	0.367	3.06	47.2	29.0	1.93	25.9	0.01	0.00	0.04	151	
170		8.86	8.84	33.949	26.320	172.6	0.403	2.85	43.7	31.5	2.00	27.0	0.01	0.00	0.03	171	208
200		8.32	8.30	34.024	26.463	159.5	0.453	2.54	38.5	37.0	2.15	29.0	0.01	0.00	0.03	201	207
229		8.01	7.99	34.045	26.526	153.9	0.498	2.32	34.9	40.9	2.27	30.4	0.01			230	206
250	ISL	7.64	7.62	34.057	26.590	148.1	0.530	2.13	31.8	45.0	2.37	31.7	0.00			251	
266		7.35	7.32	34.065	26.637	143.7	0.553	1.99	29.5	48.4	2.45	32.7	0.00			268	205
300	ISL	6.89	6.86	34.076	26.710	137.1	0.601	1.71	25.1	54.6	2.60	34.6	0.00			302	
318		6.69	6.66	34.082	26.742	134.2	0.625	1.56	22.8	57.8	2.67	35.5	0.00			320	204
377		6.16	6.13	34.118	26.840	125.4	0.702	1.06	15.3	68.1	2.89	38.5	0.00			379	203
400	ISL	6.05	6.02	34.132	26.865	123.2	0.730	0.94	13.5	70.8	2.95	39.1	0.00			403	
436		5.91	5.87	34.156	26.902	120.1	0.774	0.79	11.3	74.5	3.02	39.7	0.00			439	202
500	ISL	5.60	5.56	34.212	26.985	112.8	0.849	0.50	7.1	82.4	3.14	41.0	0.00			503	
513		5.54	5.50	34.224	27.002	111.3	0.863	0.44	6.2	84.0	3.17	41.3	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 55.2 N	122 7.4 W	18/01/01	1743 UTC	4178 m	360 09 kn	350 01 07	1	1026.7 mb	13.2 C	11.8 C	15m	1/8	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	13.70	13.70	33.332	24.961	298.5	0.000	6.02	102.0	4.0	0.35	0.3	0.02	0.67	0.22	0	
2	A	13.70	13.70	33.332	24.961	298.6	0.006	6.02	102.0	4.0	0.35	0.3	0.02	0.67	0.22	2	221
9	A	13.70	13.70	33.334	24.963	298.6	0.027	5.97	101.2	4.0	0.35	0.3	0.02	0.66	0.19	9	220
10	ISL	13.70	13.70	33.334	24.963	298.6	0.030	5.97	101.2	4.0	0.35	0.3	0.02	0.66	0.19	10	
19	A	13.70	13.70	33.334	24.963	298.8	0.057	6.01	101.8	4.0	0.34	0.3	0.02	0.63	0.19	19	219
20	ISL	13.70	13.70	33.334	24.963	298.9	0.060	6.01	101.8	4.0	0.34	0.3	0.02	0.63	0.19	20	
30	ISL	13.71	13.71	33.334	24.961	299.3	0.090	5.99	101.5	3.9	0.34	0.3	0.02	0.64	0.17	30	
31	A	13.71	13.71	33.334	24.961	299.3	0.093	5.99	101.5	3.9	0.34	0.3	0.02	0.64	0.17	31	218
40	A	13.70	13.69	33.335	24.964	299.3	0.120	6.00	101.7	3.9	0.34	0.4	0.02	0.64	0.19	40	217
48		13.71	13.70	33.337	24.964	299.5	0.144	5.98	101.3	3.9	0.35	0.3	0.02	0.64	0.19	48	216
50	ISL	13.43	13.42	33.356	25.036	292.8	0.149	5.83	98.2	4.5	0.44	1.7	0.03	0.54	0.19	50	
56	A	12.37	12.36	33.399	25.277	269.8	0.166	5.37	88.5	6.7	0.72	6.3	0.05	0.22	0.18	56	215
63		11.30	11.29	33.334	25.426	255.7	0.185	5.25	84.6	8.7	0.87	8.6	0.02	0.14	0.15	63	214
70		10.91	10.90	33.340	25.501	248.7	0.202	5.10	81.5	10.0	0.97	10.1	0.01	0.11	0.13	70	213
75	ISL	10.71	10.70	33.365	25.556	243.6	0.215	4.98	79.2	11.0	1.04	11.3	0.01	0.09	0.12	75	
85		10.29	10.28	33.422	25.673	232.6	0.238	4.81	75.8	13.0	1.16	13.3	0.01	0.06	0.09	85	212
99		9.35	9.34	33.467	25.864	214.6	0.270	4.89	75.5	14.9	1.21	14.5	0.01	0.03	0.06	99	211
100	ISL	9.34	9.33	33.481	25.877	213.4	0.272	4.88	75.4	15.1	1.22	14.6	0.01	0.03	0.06	100	
119		9.09	9.08	33.712	26.098	192.8	0.311	4.45	68.4	19.8	1.39	18.1	0.00	0.01	0.03	120	210
125	ISL	9.06	9.05	33.773	26.150	187.9	0.322	4.14	63.7	22.1	1.50	19.9	0.00	0.01	0.03	126	
139		8.99	8.98	33.886	26.250	178.7	0.348	3.43	52.7	27.5	1.77	23.9	0.00	0.00	0.03	140	209
150	ISL	8.82	8.80	33.938	26.318	172.5	0.367	3.32	50.8	30.3	1.87	25.4	0.00	0.00	0.03	151	
170		8.44	8.42	33.986	26.414	163.6	0.401	3.11	47.2	33.9	1.96	26.8	0.00	0.00	0.03	171	208
199		8.00	7.98	34.000	26.492	156.6	0.447	3.03	45.5	37.5	2.03	28.0	0.00	0.00	0.02	200	207
200	ISL	7.99	7.97	34.002	26.495	156.3	0.449	3.01	45.2	37.7	2.04	28.1	0.00			201	
229		7.80	7.78	34.046	26.558	150.8	0.493	2.32	34.7	43.0	2.29	30.8	0.00			230	206
250	ISL	7.43	7.41	34.047	26.612	145.9	0.524	2.16	32.0	46.9	2.38	32.1	0.00			251	
270		7.03	7.00	34.043	26.664	141.0	0.553	2.08	30.6	50.8	2.45	33.1	0.00			272	205
300	ISL	6.59	6.56	34.056	26.734	134.5	0.594	1.73	25.2	57.6	2.61	35.3	0.00			302	
319		6.38	6.35	34.071	26.774	130.9	0.619	1.48	21.4	61.7	2.72	36.6	0.00			321	204
376		6.23	6.20	34.149	26.855	124.0	0.692	0.91	13.1	69.6	2.94	38.6	0.00			378	203
400	ISL	6.10	6.06	34.167	26.886	121.2	0.722	0.78	11.2	72.5	3.00	39.3	0.00			403	
438		5.87	5.83	34.190	26.934	117.1	0.767	0.63	9.0	77.0	3.08	40.2	0.00			441	202
500	ISL	5.55	5.51	34.246	27.018	109.6	0.837	0.42	6.0	85.2	3.19	41.5	0.00			503	
517		5.46	5.42	34.261	27.041	107.6	0.856	0.36	5.1	87.5	3.22	41.8	0.00			521	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 34.9 N	122 48.6 W	18/01/01	0755 UTC	4268 m	330 12 kn			1027.0 mb	13.0 C	8.9 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	13.19	13.19	33.167	24.936	300.9	0.000	6.01	100.7	4.5	0.39	0.8	0.08	0.57	0.18	0	
2		13.19	13.19	33.167	24.936	300.9	0.006	6.01	100.7	4.5	0.39	0.8	0.08	0.57	0.18	2	220
10	ISL	13.20	13.20	33.167	24.934	301.3	0.030	6.01	100.7	4.5	0.39	0.8	0.08	0.58	0.17	10	
16		13.20	13.20	33.167	24.934	301.4	0.048	6.01	100.7	4.5	0.39	0.8	0.08	0.58	0.17	16	219
20	ISL	13.20	13.20	33.167	24.935	301.5	0.060	6.01	100.7	4.5	0.39	0.8	0.08	0.57	0.17	20	
30		13.20	13.20	33.167	24.935	301.8	0.090	6.01	100.7	4.4	0.39	0.8	0.08	0.56	0.17	30	218
46		13.21	13.20	33.168	24.934	302.3	0.139	6.01	100.7	4.5	0.39	0.8	0.07	0.57	0.19	46	217
50	ISL	13.25	13.24	33.191	24.944	301.5	0.151	5.99	100.5	4.5	0.39	0.9	0.08	0.54	0.19	50	
54		13.29	13.28	33.218	24.957	300.3	0.163	5.96	100.1	4.5	0.39	0.9	0.10	0.50	0.19	54	216
66		13.19	13.18	33.286	25.030	293.7	0.198	5.88	98.5	4.6	0.45	1.7	0.18	0.38	0.17	66	215
75		12.43	12.42	33.403	25.270	271.1	0.224	5.38	88.8	6.6	0.72	6.3	0.04	0.17	0.17	75	214
86		11.15	11.14	33.367	25.480	251.2	0.253	5.03	80.8	9.8	0.96	10.1	0.02	0.11	0.15	86	213
95		9.94	9.93	33.377	25.697	230.5	0.274	5.09	79.6	11.4	1.05	11.8	0.01	0.08	0.10	95	212
100	ISL	9.86	9.85	33.410	25.736	226.9	0.286	5.03	78.5	11.9	1.08	12.2	0.01	0.07	0.10	100	
107		9.75	9.74	33.413	25.757	225.0	0.302	4.95	77.1	12.8	1.13	13.0	0.01	0.06	0.09	108	211
125	ISL	9.90	9.89	33.647	25.915	210.4	0.341	3.81	59.6	20.1	1.55	19.6	0.01	0.02	0.08	126	
126		9.91	9.90	33.662	25.925	209.5	0.343	3.74	58.6	20.6	1.57	20.0	0.01	0.02	0.08	127	210
143		9.43	9.41	33.794	26.108	192.4	0.377	3.32	51.5	25.0	1.75	23.0	0.01	0.01	0.05	144	209
150	ISL	9.31	9.29	33.841	26.164	187.2	0.390	3.13	48.4	26.7	1.83	24.1	0.01	0.01	0.05	151	
170		9.02	9.00	33.946	26.293	175.3	0.427	2.67	41.1	31.3	2.02	26.8	0.00	0.00	0.04	171	208
200		8.45	8.43	34.022	26.442	161.6	0.477	2.41	36.6	36.9	2.17	29.1	0.00	0.00	0.03	201	207
229		7.97	7.95	34.046	26.533	153.3	0.523	2.24	33.7	41.8	2.28	30.7	0.00			230	206
250	ISL	7.73	7.71	34.059	26.578	149.2	0.554	2.13	31.8	44.4	2.35	31.6	0.00			251	
270		7.53	7.50	34.068	26.614	146.0	0.584	2.02	30.0	46.8	2.41	32.4	0.00			272	205
300	ISL	7.21	7.18	34.080	26.669	141.1	0.627	1.78	26.3	51.3	2.52	33.6	0.00			302	
318		7.02	6.99	34.085	26.700	138.4	0.652	1.63	24.0	54.1	2.59	34.4	0.00			320	204
378		6.34	6.31	34.085	26.791	130.2	0.733	1.29	18.7	63.3	2.76	37.4	0.00			380	203
400	ISL	6.13	6.09	34.099	26.829	126.7	0.761	1.11	16.0	67.6	2.85	38.4	0.00			403	
437		5.83	5.79	34.131	26.892	121.0	0.807	0.81	11.6	74.8	2.99	39.9	0.00			440	202
500	ISL	5.50	5.46	34.184	26.975	113.6	0.881	0.54	7.7	83.3	3.11	41.3	0.00			503	
513		5.43	5.39	34.195	26.992	112.1	0.895	0.48	6.8	85.0	3.14	41.6	0.00			517	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0101 | STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 14.6 N	123 29.0 W	18/01/01	0203 UTC	4202 m	360 12 kn	020 06 07	1	1026.5 mb	13.6 C	9.8 C		1/8	AS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.01	15.01	33.264	24.632	329.8	0.000	5.82	101.3	3.4	0.32	0.0	0.00	0.27	0.09	0	
2		15.01	15.01	33.264	24.632	329.8	0.007	5.82	101.3	3.4	0.32	0.0	0.00	0.27	0.09	2	220
10	ISL	15.01	15.01	33.263	24.632	330.1	0.033	5.82	101.3	3.3	0.32	0.0	0.00	0.26	0.10	10	
16		15.01	15.01	33.263	24.632	330.3	0.053	5.82	101.3	3.3	0.32	0.0	0.00	0.26	0.10	16	219
20	ISL	15.00	15.00	33.260	24.632	330.4	0.066	5.82	101.2	3.3	0.32	0.0	0.00	0.26	0.10	20	
30		14.94	14.94	33.245	24.634	330.5	0.099	5.83	101.3	3.3	0.32	0.0	0.00	0.28	0.10	30	218
45		14.80	14.79	33.221	24.646	329.8	0.149	5.84	101.1	3.4	0.32	0.0	0.00	0.33	0.12	45	217
50	ISL	14.77	14.76	33.213	24.646	329.9	0.165	5.85	101.2	3.4	0.32	0.0	0.00	0.33	0.12	50	
56		14.74	14.73	33.206	24.648	330.0	0.185	5.86	101.3	3.3	0.33	0.0	0.01	0.34	0.12	56	216
64		14.71	14.70	33.202	24.651	329.9	0.211	5.85	101.1	3.3	0.33	0.1	0.01	0.36	0.13	64	215
75		14.71	14.70	33.201	24.651	330.2	0.248	5.84	100.9	3.3	0.33	0.0	0.01	0.36	0.14	75	214
86		14.71	14.70	33.203	24.653	330.4	0.284	5.84	100.9	3.3	0.33	0.1	0.01	0.34	0.13	86	213
93		14.71	14.70	33.203	24.653	330.6	0.307	5.83	100.8	3.2	0.33	0.1	0.01	0.34	0.14	93	212
100	ISL	14.28	14.27	33.240	24.773	319.3	0.330	5.87	100.6	3.4	0.36	0.5	0.10	0.30	0.18	100	
107		13.62	13.60	33.288	24.946	302.9	0.352	5.91	99.9	3.6	0.42	0.9	0.19	0.25	0.22	107	211
125		11.57	11.55	33.357	25.396	260.1	0.402	5.34	86.5	6.8	0.78	7.1	0.02	0.10	0.12	126	210
144		10.11	10.09	33.384	25.675	233.7	0.449	5.11	80.2	10.6	1.03	11.4	0.01	0.05	0.06	145	209
150	ISL	9.92	9.90	33.430	25.743	227.3	0.463	4.92	76.9	12.3	1.12	13.0	0.01	0.04	0.05	151	
167		9.65	9.63	33.594	25.916	211.2	0.500	4.31	67.1	17.5	1.39	17.5	0.00	0.01	0.03	168	208
200		9.00	8.98	33.909	26.268	178.3	0.565	3.47	53.3	27.1	1.76	23.9	0.00	0.00	0.02	201	207
229		8.51	8.49	33.991	26.408	165.3	0.614	2.89	43.9	33.4	2.01	27.2	0.00			230	206
250	ISL	8.12	8.09	34.016	26.487	158.0	0.648	2.72	41.0	37.2	2.11	28.7	0.00			251	
267		7.81	7.78	34.024	26.539	153.2	0.675	2.65	39.7	40.2	2.16	29.6	0.00			268	205
300	ISL	7.21	7.18	34.019	26.621	145.7	0.724	2.49	36.7	46.3	2.29	31.4	0.00			302	
318		6.93	6.90	34.015	26.657	142.4	0.750	2.37	34.7	49.6	2.36	32.4	0.00			320	204
374		6.44	6.41	34.060	26.758	133.3	0.827	1.62	23.5	59.2	2.66	35.9	0.00			376	203
400	ISL	6.17	6.13	34.070	26.801	129.4	0.861	1.41	20.3	63.9	2.76	37.3	0.00			402	
436		5.82	5.78	34.086	26.858	124.2	0.907	1.17	16.7	70.5	2.88	38.9	0.00			439	202
500	ISL	5.46	5.42	34.164	26.964	114.6	0.983	0.67	9.5	81.5	3.08	41.1	0.00			503	
522		5.33	5.29	34.191	27.001	111.2	1.008	0.50	7.1	85.3	3.15	41.8	0.00			525	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0101 | STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 53.0 N	124 9.6 W	17/01/01	1959 UTC	4209 m	030 15 kn	010 06 07	1	1027.9 mb	13.1 C	10.5 C	30m	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	15.24	15.24	33.300	24.610	331.9	0.000	5.81	101.6	3.3	0.32	0.0	0.01	0.26	0.10	0	
2	A	15.24	15.24	33.300	24.610	332.0	0.007	5.81	101.6	3.3	0.32	0.0	0.01	0.26	0.10	2	221
10	ISL	15.24	15.24	33.300	24.610	332.2	0.033	5.80	101.4	3.3	0.32	0.0	0.01	0.25	0.10	10	
18	A	15.23	15.23	33.299	24.612	332.3	0.060	5.79	101.2	3.3	0.31	0.0	0.01	0.25	0.09	18	220
20	ISL	15.23	15.23	33.299	24.612	332.3	0.066	5.79	101.2	3.3	0.31	0.0	0.01	0.25	0.09	20	
28		15.22	15.22	33.298	24.614	332.4	0.093	5.79	101.2	3.2	0.31	0.0	0.01	0.26	0.09	28	219
30	ISL	15.22	15.22	33.298	24.614	332.5	0.100	5.79	101.2	3.2	0.31	0.0	0.01	0.26	0.09	30	
38	A	15.22	15.21	33.297	24.613	332.7	0.126	5.81	101.5	3.1	0.32	0.0	0.01	0.26	0.10	38	218
49		15.22	15.21	33.299	24.615	332.9	0.163	5.79	101.2	3.1	0.31	0.0	0.01	0.26	0.10	49	217
50	ISL	15.22	15.21	33.299	24.615	332.9	0.166	5.79	101.2	3.1	0.31	0.0	0.01	0.26	0.10	50	
60	A	15.20	15.19	33.293	24.615	333.2	0.200	5.79	101.1	3.1	0.31	0.1	0.01	0.26	0.10	60	216
70		15.16	15.15	33.284	24.618	333.3	0.233	5.79	101.0	3.1	0.32	0.1	0.01	0.27	0.11	70	215
75	ISL	14.96	14.95	33.255	24.639	331.4	0.249	5.79	100.6	3.2	0.34	0.2	0.07	0.24	0.12	75	
79	A	14.70	14.69	33.238	24.682	327.4	0.263	5.79	100.1	3.4	0.36	0.4	0.12	0.21	0.13	79	214
90		13.52	13.51	33.310	24.983	298.9	0.297	5.90	99.6	3.8	0.45	1.4	0.17	0.21	0.19	90	213
99		12.66	12.65	33.320	25.161	282.0	0.323	5.60	92.8	4.9	0.61	4.0	0.03	0.16	0.17	99	212
100	ISL	12.60	12.59	33.320	25.173	280.9	0.326	5.60	92.7	4.9	0.61	4.0	0.03	0.16	0.17	100	
110	A	12.13	12.12	33.332	25.272	271.6	0.354	5.71	93.6	4.8	0.54	2.8	0.06	0.12	0.13	110	211
124		11.78	11.76	33.428	25.413	258.6	0.391	5.62	91.5	4.7	0.53	3.1	0.02	0.09	0.09	125	210
125	ISL	11.69	11.67	33.422	25.425	257.4	0.393	5.61	91.2	4.8	0.54	3.3	0.02	0.09	0.09	126	
144		10.01	9.99	33.337	25.655	235.5	0.440	5.42	84.9	8.8	0.89	9.1	0.01	0.05	0.07	145	209
150	ISL	9.80	9.78	33.402	25.741	227.5	0.454	5.12	79.8	11.4	1.04	11.7	0.01	0.04	0.06	151	
169		9.51	9.49	33.673	26.000	203.2	0.495	4.04	62.7	20.1	1.51	19.4	0.00	0.01	0.03	170	208
198		8.98	8.96	33.898	26.262	178.8	0.550	3.24	49.8	28.7	1.87	25.1	0.00	0.00	0.02	199	207
200	ISL	8.94	8.92	33.908	26.276	177.4	0.554	3.20	49.1	29.2	1.89	25.3	0.00			201	
230		8.42	8.40	34.003	26.432	163.1	0.605	2.78	42.2	35.0	2.07	27.9	0.00			231	206
250	ISL	8.14	8.11	34.031	26.496	157.2	0.637	2.59	39.1	38.3	2.17	29.2	0.00			251	
270		7.88	7.85	34.043	26.544	152.9	0.668	2.43	36.4	41.3	2.25	30.3	0.00			271	205
300	ISL	7.49	7.46	34.054	26.609	147.0	0.713	2.20	32.7	46.1	2.38	31.8	0.00			302	
317		7.28	7.25	34.058	26.642	144.0	0.738	2.06	30.5	48.8	2.45	32.6	0.00			319	204
378		6.73	6.70	34.101	26.752	134.2	0.823	1.44	21.0	58.7	2.70	35.7	0.00			380	203
400	ISL	6.51	6.47	34.115	26.792	130.5	0.852	1.25	18.2	62.7	2.79	36.9	0.00			402	
439		6.16	6.12	34.139	26.857	124.6	0.901	0.96	13.8	69.6	2.93	38.7	0.00			442	202
500	ISL	5.80	5.76	34.176	26.932	118.0	0.975	0.68	9.7	77.4	3.06	40.3	0.00			503	
517		5.70	5.66	34.186	26.952	116.2	0.995	0.60	8.6	79.6	3.09	40.7	0.00			520	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 53.2 N	118 29.4 W	14/01/01	2351 UTC	54 m	240 06 kn	240 02 05	0	1019.3 mb	16.5 C	12.5 C	06m	0/8

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.41	14.41	33.215	24.723	321.2	0.000	6.06	104.1	4.3	0.43	1.0	0.18	2.65	0.56	0	
2		14.41	14.41	33.215	24.723	321.2	0.006	6.06	104.1	4.3	0.43	1.0	0.18	2.65	0.56	2	207
5		14.35	14.35	33.237	24.753	318.5	0.016	5.98	102.6	4.2	0.43	1.1	0.19	2.19	0.61	5	206
10		14.29	14.29	33.336	24.842	310.1	0.032	5.85	100.3	4.2	0.45	1.2	0.26	1.46	0.46	10	205
20		14.27	14.27	33.395	24.892	305.6	0.063	5.70	97.8	4.6	0.53	1.4	0.32	0.71	0.39	20	204
30		14.29	14.29	33.428	24.913	303.9	0.093	5.62	96.4	4.8	0.55	1.4	0.33	0.53	0.35	30	203
40		14.29	14.28	33.441	24.924	303.2	0.123	5.68	97.5	4.6	0.53	1.5	0.32	0.60	0.37	40	202
50		14.24	14.23	33.469	24.956	300.4	0.154	5.51	94.5	4.8	0.56	1.8	0.34	0.44	0.34	50	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 49.8 N	118 37.5 W	15/01/01	0216 UTC	543 m	280 06 kn			1019.0 mb	14.7 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	14.36	14.36	33.121	24.661	327.1	0.000	6.04	103.6	5.0	0.46	1.2	0.15	2.40	0.42	0	
2		14.36	14.36	33.121	24.661	327.1	0.007	6.04	103.6	5.0	0.46	1.2	0.15	2.40	0.42	2	220
10		14.53	14.53	33.346	24.799	314.2	0.032	5.74	98.9	4.8	0.45	0.7	0.11	0.77	0.36	10	219
19		14.63	14.63	33.439	24.850	309.7	0.060	5.70	98.5	4.5	0.43	0.6	0.09	0.43	0.27	19	218
20	ISL	14.63	14.63	33.442	24.852	309.5	0.063	5.70	98.5	4.5	0.43	0.6	0.09	0.42	0.27	20	
30		14.64	14.64	33.466	24.869	308.2	0.094	5.76	99.6	4.3	0.41	0.6	0.08	0.35	0.25	30	217
40		14.72	14.71	33.526	24.898	305.7	0.125	5.81	100.6	3.5	0.33	0.3	0.04	0.47	0.28	40	216
50		14.56	14.55	33.535	24.940	302.0	0.155	5.73	98.9	4.0	0.38	0.7	0.10	0.36	0.24	50	215
59		14.03	14.02	33.538	25.054	291.4	0.182	5.48	93.6	5.5	0.54	2.3	0.30	0.34	0.28	59	214
70		13.71	13.70	33.544	25.125	284.9	0.214	5.40	91.6	6.0	0.59	3.0	0.38	0.38	0.32	70	213
75	ISL	13.51	13.50	33.538	25.161	281.6	0.228	5.31	89.7	6.3	0.63	3.8	0.35	0.37	0.31	75	
84		13.00	12.99	33.533	25.259	272.4	0.253	5.01	83.8	7.8	0.78	6.3	0.29	0.31	0.30	84	212
99		11.51	11.50	33.605	25.600	240.2	0.291	4.01	65.0	14.4	1.28	14.4	0.03	0.10	0.17	99	211
100	ISL	11.44	11.43	33.620	25.624	237.8	0.294	3.93	63.6	15.0	1.32	14.9	0.03	0.09	0.16	100	
119		10.48	10.47	33.900	26.014	201.1	0.335	2.65	42.1	25.5	1.89	22.7	0.00	0.01	0.06	120	210
125	ISL	10.36	10.35	33.930	26.058	197.0	0.347	2.59	41.0	26.1	1.92	23.2	0.00	0.01	0.06	126	
139		10.21	10.19	33.957	26.105	192.9	0.375	2.45	38.7	27.5	1.98	24.2	0.00	0.01	0.05	140	209
150	ISL	10.10	10.08	33.987	26.147	189.0	0.396	2.40	37.8	28.3	2.02	24.8	0.00	0.01	0.05	151	
168		9.89	9.87	34.033	26.219	182.6	0.429	2.33	36.5	29.9	2.09	25.7	0.01	0.01	0.05	169	208
199		9.20	9.18	34.104	26.388	166.9	0.483	2.12	32.8	34.5	2.20	27.9	0.00	0.00	0.04	200	207
200	ISL	9.19	9.17	34.105	26.391	166.7	0.485	2.12	32.8	34.6	2.20	27.9	0.00			201	
228		8.92	8.90	34.128	26.452	161.4	0.531	2.00	30.7	36.9	2.28	28.9	0.00			229	206
250	ISL	8.56	8.53	34.154	26.529	154.3	0.566	1.77	27.0	40.8	2.39	30.3	0.00			251	
268		8.25	8.22	34.176	26.594	148.4	0.593	1.56	23.6	44.4	2.49	31.5	0.00			270	205
300	ISL	7.85	7.82	34.203	26.675	141.1	0.639	1.24	18.6	50.1	2.65	33.3	0.00			302	
318		7.67	7.64	34.214	26.710	137.9	0.664	1.09	16.3	52.8	2.72	34.1	0.00			320	204
376		7.37	7.33	34.234	26.769	133.1	0.743	0.89	13.2	57.3	2.82	35.4	0.00			378	203
400	ISL	7.24	7.20	34.246	26.797	130.8	0.774	0.78	11.5	59.7	2.88	36.0	0.00			403	
436		7.03	6.99	34.265	26.842	127.0	0.821	0.62	9.1	63.6	2.96	36.8	0.00			439	202
500	ISL	6.65	6.60	34.301	26.922	120.0	0.900	0.42	6.1	71.1	3.08	38.1	0.01			503	
515		6.56	6.51	34.310	26.941	118.3	0.918	0.37	5.4	72.9	3.11	38.4	0.01			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 39.3 N	118 58.3 W	15/01/01	0617 UTC	726 m	230 01 kn			1018.9 mb	13.3 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	13.82	13.82	33.481	25.051	289.9	0.000	5.88	100.0	3.7	0.42	1.5	0.06	0.98	0.34	0	
3		13.82	13.82	33.481	25.051	290.0	0.009	5.88	100.0	3.7	0.42	1.5	0.06	0.98	0.34	3	220
10		13.78	13.78	33.479	25.058	289.5	0.029	5.90	100.2	4.1	0.41	1.5	0.06	0.96	0.29	10	219
20		13.49	13.49	33.477	25.116	284.3	0.058	5.81	98.1	3.9	0.47	2.4	0.08	1.39	0.47	20	218
30		13.20	13.20	33.473	25.172	279.3	0.086	5.60	94.0	5.1	0.56	3.7	0.11	1.10	0.41	30	217
40		13.05	13.04	33.473	25.202	276.6	0.114	5.60	93.7	5.3	0.58	4.0	0.11	0.91	0.39	40	216
50		12.80	12.79	33.470	25.249	272.4	0.141	5.43	90.4	6.4	0.66	5.4	0.11	0.59	0.31	50	215
60		11.81	11.80	33.476	25.443	254.1	0.167	4.98	81.2	9.5	0.91	9.2	0.06	0.26	0.20	60	214
70		11.13	11.12	33.515	25.598	239.6	0.192	4.62	74.2	12.7	1.12	12.5	0.03	0.14	0.16	70	213
75	ISL	10.82	10.81	33.550	25.680	231.8	0.204	4.40	70.2	14.6	1.23	14.2	0.02	0.10	0.14	75	
84		10.35	10.34	33.621	25.818	218.9	0.224	4.02	63.5	17.8	1.41	17.1	0.02	0.06	0.11	84	212
99		9.97	9.96	33.720	25.960	205.7	0.256	3.57	56.0	21.8	1.60	20.1	0.01	0.03	0.08	100	211
100	ISL	9.96	9.95	33.725	25.965	205.1	0.258	3.55	55.7	22.0	1.61	20.2	0.01	0.03	0.08	101	
119		9.73	9.72	33.813	26.073	195.3	0.296	3.19	49.8	25.1	1.77	22.6	0.01	0.03	0.08	120	210
125	ISL	9.62	9.61	33.858	26.126	190.3	0.308	3.01	46.9	26.8	1.85	23.6	0.01	0.02	0.07	126	
139		9.35	9.33	33.961	26.251	178.7	0.334	2.60	40.3	30.9	2.02	25.9	0.01	0.01	0.06	140	209
150	ISL	9.21	9.19	34.004	26.308	173.6	0.353	2.43	37.5	32.7	2.10	26.9	0.01	0.01	0.06	151	
169		9.03	9.01	34.047	26.370	168.0	0.385	2.25	34.6	34.8	2.18	27.9	0.01	0.01	0.05	170	208
199		8.77	8.75	34.095	26.449	161.0	0.435	2.00	30.6	38.2	2.29	29.1	0.01	0.01	0.06	200	207
200	ISL	8.76	8.74	34.097	26.453	160.7	0.436	1.99	30.4	38.3	2.29	29.1	0.01			201	
229		8.56	8.54	34.138	26.516	155.2	0.482	1.77	27.0	40.9	2.38	30.3	0.00			230	206
250	ISL	8.33	8.30	34.157	26.566	150.7	0.514	1.63	24.7	43.5	2.45	31.2	0.00			251	
269		8.11	8.08	34.171	26.611	146.7	0.542	1.51	22.8	46.1	2.52	32.0	0.00			271	205
300	ISL	7.84	7.81	34.195	26.670	141.5	0.587	1.26	18.9	50.2	2.64	33.3	0.00			302	
318		7.70	7.67	34.207	26.700	138.9	0.612	1.12	16.7	52.6	2.70	34.0	0.00			320	204
379		7.22	7.18	34.241	26.796	130.5	0.695	0.78	11.5	60.4	2.88	35.9	0.00			381	203
400	ISL	7.06	7.02	34.255	26.829	127.6	0.722	0.67	9.9	63.2	2.94	36.6	0.00			403	
436		6.80	6.76	34.280	26.885	122.7	0.767	0.51	7.5	67.9	3.02	37.7	0.00			439	202
500	ISL	6.37	6.32	34.313	26.968	115.3	0.843	0.38	5.5	76.0	3.13	39.0	0.00			503	
514		6.28	6.23	34.321	26.986	113.7	0.859	0.35	5.1	77.8	3.16	39.3	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 29.7 N	119 19.0 W	15/01/01	1018 UTC	1648 m	330 13 kn			1018.1 mb	13.6 C	10.0 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	13.83	13.83	33.487	25.054	289.6	0.000	5.86	99.7	3.6	0.39	1.4	0.06	0.78	0.28	0	
2		13.83	13.83	33.487	25.054	289.7	0.006	5.86	99.7	3.6	0.39	1.4	0.06	0.78	0.28	2	220
10		13.82	13.82	33.487	25.056	289.7	0.029	5.86	99.6	3.8	0.39	1.4	0.06	0.80	0.26	10	219
20		13.69	13.69	33.485	25.082	287.6	0.058	5.84	99.0	3.8	0.42	1.7	0.06	1.20	0.40	20	218
30		13.67	13.67	33.485	25.086	287.4	0.087	5.85	99.2	3.8	0.41	1.7	0.06	1.17	0.37	30	217
40		13.50	13.49	33.487	25.122	284.2	0.115	5.79	97.8	3.8	0.44	2.2	0.07	1.11	0.39	40	216
49		12.55	12.54	33.489	25.312	266.3	0.140	5.25	86.9	7.2	0.73	6.4	0.11	0.43	0.25	49	215
50	ISL	12.39	12.38	33.491	25.345	263.2	0.143	5.17	85.3	7.8	0.77	7.1	0.11	0.39	0.24	50	
60		11.00	10.99	33.536	25.637	235.6	0.168	4.49	71.9	13.4	1.17	13.3	0.05	0.16	0.17	60	214
70		10.70	10.69	33.607	25.746	225.4	0.191	4.16	66.3	16.3	1.31	15.6	0.03	0.09	0.12	70	213
75	ISL	10.53	10.52	33.638	25.800	220.4	0.202	4.00	63.5	17.7	1.38	16.8	0.03	0.07	0.12	75	
85		10.20	10.19	33.691	25.898	211.3	0.223	3.72	58.6	20.1	1.52	18.8	0.03	0.06	0.13	85	212
99		9.90	9.89	33.748	25.993	202.4	0.252	3.47	54.3	22.6	1.64	20.7	0.02	0.04	0.10	100	211
100	ISL	9.88	9.87	33.752	26.000	201.9	0.254	3.45	54.0	22.8	1.65	20.8	0.02	0.04	0.10	101	
119		9.60	9.59	33.836	26.112	191.6	0.292	3.12	48.6	26.2	1.80	23.1	0.03	0.02	0.09	120	210
125	ISL	9.55	9.54	33.859	26.139	189.2	0.303	3.02	47.0	27.0	1.84	23.6	0.03	0.02	0.08	126	
139		9.45	9.43	33.912	26.197	183.9	0.329	2.80	43.5	28.8	1.92	24.8	0.02	0.01	0.07	140	209
150	ISL	9.34	9.32	33.962	26.254	178.7	0.349	2.60	40.3	30.5	2.00	25.8	0.02	0.01	0.06	151	
169		9.14	9.12	34.042	26.349	170.0	0.382	2.28	35.2	33.5	2.14	27.5	0.01	0.01	0.06	170	208
199		8.88	8.86	34.108	26.442	161.7	0.432	1.94	29.8	37.5	2.28	29.2	0.01	0.01	0.05	200	207
200	ISL	8.87	8.85	34.110	26.445	161.4	0.434	1.93	29.6	37.6	2.29	29.3	0.01			201	
228		8.58	8.56	34.154	26.526	154.3	0.478	1.66	25.3	41.3	2.42	30.6	0.00			229	206
250	ISL	8.40	8.37	34.178	26.572	150.2	0.511	1.48	22.5	43.9	2.50	31.5	0.00			251	
270		8.24	8.21	34.195	26.610	146.9	0.541	1.33	20.1	46.3	2.57	32.2	0.01			272	205
300	ISL	7.92	7.89	34.219	26.677	140.9	0.584	1.09	16.4	50.9	2.69	33.6	0.00			302	
318		7.72	7.69	34.231	26.716	137.4	0.609	0.97	14.5	53.7	2.75	34.4	0.00			320	204
382		7.22	7.18	34.248	26.801	130.0	0.695	0.74	10.9	60.6	2.89	36.1	0.00			384	203
400	ISL	7.12	7.08	34.259	26.824	128.1	0.718	0.67	9.9	62.6	2.93	36.5	0.00			403	
440		6.93	6.89	34.284	26.870	124.2	0.769	0.52	7.6	66.8	3.01	37.3	0.00			443	202
500	ISL	6.65	6.60	34.301	26.922	120.0	0.842	0.41	6.0	71.7	3.08	38.2	0.00			503	
519		6.56	6.51	34.307	26.939	118.6	0.864	0.37	5.4	73.2	3.10	38.5	0.00			523	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 19.4 N	119 39.7 W	15/01/01	1501 UTC	79 m	290 25 kn	290 06 07	0	1018.0 mb	12.5 C	9.0 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	13.27	13.27	33.508	25.184	277.3	0.000	5.75	96.7	4.5	0.48	2.7	0.08	1.07	0.43	0	
2		13.27	13.27	33.508	25.184	277.3	0.006	5.75	96.7	4.5	0.48	2.7	0.08	1.07	0.43	2	209
5		13.27	13.27	33.508	25.184	277.4	0.014	5.74	96.5	4.5	0.48	2.7	0.08	1.04	0.38	5	208
10		13.28	13.28	33.509	25.183	277.6	0.028	5.74	96.5	4.4	0.48	2.7	0.08	1.07	0.57	10	207
20		13.28	13.28	33.508	25.182	278.0	0.056	5.75	96.7	4.4	0.48	2.7	0.08	1.07	0.49	20	206
30		13.20	13.20	33.506	25.197	276.8	0.083	5.73	96.2	4.5	0.49	2.9	0.08	1.09	0.44	30	205
40		11.74	11.73	33.472	25.453	252.7	0.110	4.98	81.0	9.2	0.91	9.3	0.07	0.26	0.22	40	204
50		11.40	11.39	33.538	25.567	242.1	0.134	4.60	74.4	12.2	1.08	11.8	0.06	0.17	0.17	50	203
60		10.68	10.67	33.604	25.747	225.1	0.158	4.16	66.2	16.2	1.32	15.6	0.05	0.12	0.14	60	202
70		10.47	10.46	33.666	25.832	217.2	0.180	3.89	61.7	18.6	1.43	17.4	0.05	0.08	0.15	70	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 9.1 N	120 0.6 W	15/01/01	1838 UTC	1206 m	010 24 kn	310 05 07	1	1019.1 mb	12.0 C	9.8 C	15m	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	13.90	13.90	33.512	25.059	289.2	0.000	5.80	98.8	4.0	0.42	1.6	0.08	0.60	0.29	0	
2	A	13.90	13.90	33.512	25.059	289.2	0.006	5.80	98.8	4.0	0.42	1.6	0.08	0.60	0.29	2	221
9	A	13.90	13.90	33.513	25.060	289.3	0.026	5.81	99.0	3.9	0.41	1.6	0.08	0.59	0.31	9	220
10	ISL	13.90	13.90	33.513	25.060	289.4	0.029	5.81	99.0	3.9	0.41	1.6	0.08	0.59	0.31	10	
19	A	13.89	13.89	33.512	25.061	289.5	0.055	5.77	98.3	3.8	0.41	1.5	0.08	0.60	0.31	19	219
20	ISL	13.89	13.89	33.512	25.061	289.5	0.058	5.77	98.3	3.8	0.41	1.5	0.08	0.60	0.31	20	
30	ISL	13.90	13.90	33.513	25.060	289.9	0.087	5.79	98.6	3.7	0.41	1.5	0.08	0.59	0.34	30	
32	A	13.90	13.90	33.513	25.060	289.9	0.093	5.79	98.6	3.7	0.41	1.5	0.08	0.59	0.34	32	218
40	A	13.88	13.87	33.511	25.063	289.9	0.116	5.79	98.6	3.8	0.42	1.6	0.08	0.58	0.27	40	217
48		13.82	13.81	33.512	25.077	288.8	0.139	5.74	97.6	4.0	0.44	1.9	0.08	0.51	0.30	48	216
50	ISL	13.73	13.72	33.513	25.096	287.1	0.145	5.69	96.6	4.3	0.47	2.4	0.08	0.49	0.28	50	
56	A	13.30	13.29	33.518	25.187	278.5	0.162	5.44	91.5	5.9	0.60	4.5	0.08	0.39	0.22	56	215
63		12.49	12.48	33.529	25.355	262.6	0.181	5.02	83.0	8.7	0.82	7.9	0.08	0.23	0.20	63	214
70		12.09	12.08	33.537	25.438	254.9	0.199	4.84	79.4	10.2	0.93	9.4	0.06	0.18	0.16	70	213
75	ISL	11.90	11.89	33.538	25.475	251.5	0.211	4.77	77.9	10.8	0.97	10.1	0.05	0.16	0.15	75	
85		11.45	11.44	33.571	25.584	241.3	0.236	4.50	72.8	13.0	1.11	12.3	0.04	0.13	0.14	85	212
99		10.27	10.26	33.763	25.943	207.4	0.267	3.41	53.9	21.6	1.63	20.1	0.01	0.03	0.07	99	211
100	ISL	10.26	10.25	33.768	25.948	206.9	0.270	3.37	53.2	21.9	1.65	20.2	0.01	0.03	0.07	100	
120		10.11	10.10	33.864	26.049	197.7	0.310	2.97	46.8	24.8	1.80	22.4	0.01	0.02	0.08	121	210
125	ISL	10.02	10.01	33.898	26.091	193.8	0.320	2.84	44.6	26.1	1.86	23.2	0.01	0.02	0.08	126	
139		9.72	9.70	33.986	26.210	182.7	0.346	2.52	39.4	29.7	2.02	25.2	0.01	0.01	0.06	140	209
150	ISL	9.42	9.40	34.020	26.286	175.7	0.366	2.47	38.3	31.9	2.09	26.3	0.01	0.01	0.05	151	
170		8.91	8.89	34.052	26.393	165.8	0.400	2.37	36.4	35.2	2.16	27.6	0.00	0.00	0.05	171	208
199		8.51	8.49	34.085	26.482	157.8	0.447	2.16	32.9	39.2	2.27	29.1	0.00	0.00	0.04	200	207
200	ISL	8.50	8.48	34.086	26.484	157.6	0.448	2.15	32.7	39.3	2.27	29.2	0.00			201	
229		8.22	8.20	34.124	26.557	151.1	0.493	1.87	28.3	43.2	2.40	30.6	0.01			230	206
250	ISL	8.02	7.99	34.138	26.598	147.5	0.525	1.74	26.2	45.6	2.46	31.4	0.01			251	
268		7.84	7.81	34.149	26.633	144.4	0.551	1.62	24.3	47.9	2.52	32.1	0.01			270	205
300	ISL	7.47	7.44	34.182	26.713	137.2	0.596	1.27	18.9	53.8	2.68	33.9	0.00			302	
317		7.28	7.25	34.200	26.754	133.5	0.619	1.08	16.0	57.0	2.76	34.8	0.00			319	204
378		6.94	6.90	34.240	26.833	126.7	0.698	0.75	11.0	63.9	2.92	36.6	0.00			380	203
400	ISL	6.77	6.73	34.244	26.860	124.4	0.726	0.68	9.9	66.4	2.97	37.2	0.00			403	
440		6.47	6.43	34.251	26.906	120.4	0.775	0.57	8.3	70.9	3.04	38.3	0.00			443	202
500	ISL	6.12	6.08	34.283	26.977	114.2	0.845	0.41	5.9	77.3	3.14	39.6	0.00			503	
514		6.04	5.99	34.291	26.993	112.7	0.861	0.37	5.3	78.8	3.16	39.9	0.00			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 59.7 N	120 20.9 W	15/01/01	2257 UTC	715 m	310 25 kn	300 06 08	1	1017.5 mb	12.0 C	10.0 C	11m	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	13.94	13.94	33.503	25.043	290.6	0.000	5.87	100.1	4.4	0.37	1.0	0.04	0.82	0.32	0	
2		13.94	13.94	33.503	25.044	290.7	0.006	5.87	100.1	4.4	0.37	1.0	0.04	0.82	0.32	2	220
10		13.94	13.94	33.505	25.045	290.7	0.029	5.88	100.2	3.9	0.37	1.0	0.04	0.78	0.32	10	219
20		13.94	13.94	33.503	25.044	291.2	0.058	5.87	100.1	3.7	0.37	1.0	0.04	0.75	0.29	20	218
30	ISL	13.93	13.93	33.504	25.047	291.1	0.087	5.87	100.0	3.7	0.37	1.1	0.04	0.76	0.30	30	
31		13.93	13.93	33.504	25.047	291.2	0.090	5.87	100.0	3.7	0.37	1.1	0.04	0.76	0.30	31	217
40		13.93	13.92	33.505	25.048	291.3	0.116	5.85	99.7	3.6	0.37	1.1	0.04	0.75	0.29	40	216
50		13.87	13.86	33.502	25.059	290.6	0.146	5.86	99.7	3.7	0.38	1.1	0.05	0.82	0.34	50	215
60		13.81	13.80	33.499	25.069	289.9	0.175	5.90	100.3	3.7	0.39	1.3	0.05	0.68	0.35	60	214
70		12.55	12.54	33.453	25.285	269.5	0.202	5.24	86.7	6.7	0.74	6.5	0.05	0.26	0.23	70	213
75	ISL	12.10	12.09	33.451	25.370	261.5	0.216	5.04	82.6	8.0	0.86	8.3	0.04	0.23	0.20	75	
85		11.37	11.36	33.478	25.526	246.8	0.241	4.72	76.2	10.7	1.05	11.6	0.02	0.17	0.17	85	212
99		10.44	10.43	33.575	25.767	224.1	0.274	4.13	65.4	16.3	1.38	16.9	0.01	0.07	0.09	99	211
100	ISL	10.40	10.39	33.583	25.780	222.8	0.276	4.09	64.7	16.7	1.40	17.2	0.01	0.07	0.09	100	
119		9.85	9.84	33.731	25.989	203.3	0.317	3.45	54.0	22.3	1.68	21.7	0.01	0.02	0.05	120	210
125	ISL	9.72	9.71	33.765	26.037	198.8	0.329	3.33	52.0	23.6	1.74	22.6	0.01	0.02	0.05	126	
140		9.42	9.40	33.836	26.142	189.1	0.358	3.11	48.2	26.2	1.84	24.3	0.00	0.01	0.04	141	209
150	ISL	9.24	9.22	33.882	26.207	183.1	0.377	3.00	46.3	27.8	1.89	25.2	0.00	0.01	0.04	151	
170		8.87	8.85	33.960	26.327	172.0	0.412	2.82	43.2	31.3	1.99	26.8	0.00	0.00	0.03	171	208
200		8.16	8.14	34.027	26.489	156.9	0.461	2.48	37.4	38.0	2.17	29.4	0.00	0.00	0.03	201	207
229		7.59	7.57	34.047	26.589	147.8	0.506	2.30	34.3	44.1	2.31	31.2	0.00			230	206
250	ISL	7.33	7.31	34.060	26.636	143.5	0.536	2.10	31.1	47.7	2.41	32.4	0.00			251	
270		7.14	7.11	34.073	26.673	140.2	0.565	1.88	27.7	50.8	2.50	33.5	0.00			272	205
300	ISL	6.87	6.84	34.098	26.730	135.1	0.606	1.56	22.9	55.6	2.63	35.0	0.00			302	
318		6.73	6.70	34.114	26.762	132.3	0.630	1.38	20.2	58.4	2.71	35.9	0.00			320	204
379		6.35	6.32	34.164	26.852	124.4	0.708	0.89	12.9	67.3	2.92	38.4	0.00			381	203
400	ISL	6.28	6.24	34.186	26.878	122.2	0.734	0.78	11.3	69.4	2.97	38.8	0.00			403	
427		6.20	6.16	34.215	26.912	119.3	0.767	0.63	9.1	72.2	3.03	39.3	0.00			430	202
500	ISL	5.91	5.87	34.284	27.004	111.4	0.851									503	
512		5.86	5.82	34.296 D	27.020	110.0	0.864									516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 39.9 N	121 1.8 W	16/01/01	0617 UTC	3773 m	320 32 kn			1018.6 mb	12.0 C	9.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.11	14.11	33.376	24.910	303.3	0.000	5.94	101.6	3.8	0.32	0.1	0.01	0.52	0.17	0	
4		14.11	14.11	33.376	24.910	303.4	0.012	6.04 U	103.2 U	3.8	0.32	0.1	0.01	0.52	0.17	4	220
10	ISL	14.12	14.12	33.376	24.908	303.8	0.030	5.94	101.6	3.8	0.32	0.1	0.01	0.51	0.17	10	
16		14.13	14.13	33.377	24.907	304.1	0.049	5.94	101.6	3.7	0.32	0.1	0.01	0.51	0.17	16	219
20	ISL	14.13	14.13	33.377	24.907	304.2	0.061	5.94	101.6	3.7	0.32	0.1	0.01	0.52	0.17	20	
28		14.12	14.12	33.376	24.909	304.3	0.085	5.95	101.7	3.6	0.32	0.1	0.01	0.54	0.17	28	218
30	ISL	14.12	14.12	33.376	24.909	304.3	0.091	5.95	101.7	3.6	0.32	0.1	0.01	0.54	0.17	30	
46		14.09	14.08	33.374	24.914	304.3	0.140	5.95	101.7	3.7	0.32	0.1	0.01	0.54	0.17	46	217
50	ISL	14.06	14.05	33.371	24.918	304.0	0.152	5.94	101.4	3.7	0.33	0.2	0.01	0.54	0.18	50	
56		14.01	14.00	33.367	24.926	303.5	0.170	5.92	101.0	3.7	0.34	0.3	0.02	0.53	0.19	56	216
65		12.46	12.45	33.280	25.168	280.5	0.197	5.74	94.7	5.3	0.57	3.5	0.04	0.25	0.19	65	215
75	ISL	11.56	11.55	33.279	25.337	264.6	0.224	5.51	89.2	6.7	0.71	5.8	0.02	0.18	0.17	75	
76		11.50	11.49	33.283	25.351	263.2	0.226	5.49	88.8	6.8	0.72	6.0	0.02	0.17	0.17	76	214
86		10.87	10.86	33.348	25.515	247.8	0.252	5.23	83.5	8.6	0.89	9.0	0.01	0.16	0.16	86	213
95		10.15	10.14	33.366	25.653	234.7	0.274	5.13	80.6	10.7	1.00	11.1	0.01	0.09	0.10	95	212
100	ISL	10.07	10.06	33.436	25.721	228.3	0.285	4.93	77.4	12.3	1.10	12.8	0.01	0.07	0.08	100	
111		9.88	9.87	33.578	25.864	215.0	0.310	4.33	67.7	16.6	1.35	16.8	0.00	0.04	0.05	112	211
125		9.68	9.67	33.766	26.045	198.1	0.339	3.54	55.2	22.5	1.65	21.5	0.00	0.01	0.03	126	210
141		9.49	9.47	33.883	26.167	186.8	0.369	3.09	48.0	26.6	1.83	24.2	0.00	0.00	0.03	142	209
150	ISL	9.30	9.28	33.908	26.218	182.1	0.386	3.07	47.5	27.9	1.87	24.9	0.00	0.00	0.03	151	
170		8.86	8.84	33.936	26.310	173.6	0.422	3.04	46.6	30.4	1.93	26.1	0.00	0.00	0.02	171	208
199		8.51	8.49	34.022	26.432	162.5	0.470	2.41	36.6	36.1	2.16	29.0	0.00	0.00	0.03	200	207
200	ISL	8.49	8.47	34.024	26.437	162.0	0.472	2.39	36.3	36.3	2.17	29.1	0.00			201	
230		8.01	7.99	34.067	26.543	152.3	0.519	2.09	31.4	41.8	2.32	31.0	0.00			231	206
250	ISL	7.75	7.73	34.066	26.581	149.0	0.549	2.10	31.4	43.9	2.35	31.5	0.00			251	
269		7.52	7.49	34.059	26.609	146.5	0.577	2.12	31.5	45.9	2.37	31.9	0.00			271	205
300	ISL	7.06	7.03	34.070	26.682	139.8	0.622	1.82	26.8	51.7	2.51	33.7	0.00			302	
316		6.85	6.82	34.082	26.720	136.3	0.644	1.62	23.7	54.9	2.60	34.8	0.00			318	204
377		6.56	6.53	34.161	26.822	127.4	0.724	0.97	14.1	64.6	2.87	37.5	0.00			379	203
400	ISL	6.46	6.42	34.182	26.852	124.8	0.753	0.83	12.0	67.2	2.93	38.1	0.00			403	
438		6.26	6.22	34.208	26.899	120.8	0.800	0.66	9.5	71.2	3.01	39.0	0.00			441	202
500	ISL	5.78	5.74	34.234	26.980	113.4	0.872	0.48	6.9	80.0	3.12	40.8	0.00			503	
511		5.69	5.65	34.239	26.995	112.0	0.885	0.45	6.4	81.6	3.14	41.1	0.00			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 19.6 N	121 42.7 W	16/01/01	1846 UTC	4051 m	320 28 kn	320 15 07	1	1021.9 mb	13.0 C	10.5 C	18m	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	15.15	15.15	33.488	24.775	316.2	0.000	5.80	101.3	3.3	0.29	0.0	0.00	0.28	0.10	0	
3	A	15.15	15.15	33.488	24.775	316.3	0.009	5.80	101.3	3.3	0.29	0.0	0.00	0.28	0.10	3	221
10	ISL	15.15	15.15	33.488	24.775	316.5	0.032	5.79	101.2	3.2	0.29	0.0	0.00	0.28	0.10	10	
11	A	15.15	15.15	33.488	24.775	316.5	0.035	5.79	101.2	3.2	0.29	0.0	0.00	0.28	0.10	11	220
20	ISL	15.15	15.15	33.489	24.776	316.7	0.063	5.80	101.3	3.2	0.29	0.0	0.00	0.28	0.10	20	
23	A	15.15	15.15	33.489	24.776	316.8	0.073	5.80	101.3	3.2	0.29	0.0	0.00	0.28	0.10	23	219
30	ISL	15.15	15.15	33.489	24.776	317.0	0.095	5.80	101.3	3.2	0.29	0.0	0.00	0.28	0.10	30	
37	A	15.15	15.14	33.489	24.776	317.2	0.117	5.80	101.3	3.2	0.29	0.0	0.00	0.29	0.10	37	218
49	A	13.81	13.80	33.366	24.966	299.4	0.154	5.95	101.1	3.7	0.35	0.3	0.04	0.59	0.25	49	217
50	ISL	13.79	13.78	33.365	24.969	299.1	0.157	5.95	101.0	3.7	0.35	0.3	0.04	0.59	0.25	50	
58		13.67	13.66	33.354	24.985	297.8	0.181	5.93	100.4	3.9	0.37	0.5	0.06	0.58	0.28	58	216
67	A	13.69	13.68	33.364	24.989	297.7	0.208	5.93	100.5	3.8	0.37	0.5	0.06	0.43	0.22	67	215
75	ISL	12.97	12.96	33.285	25.073	289.8	0.231	5.81	96.9	4.8	0.51	2.5	0.09	0.26	0.19	75	
76		12.85	12.84	33.276	25.090	288.3	0.234	5.79	96.3	5.0	0.53	2.8	0.09	0.24	0.19	76	214
85		11.87	11.86	33.314	25.307	267.7	0.259	5.54	90.3	6.2	0.68	5.2	0.03	0.14	0.16	85	213
94		10.70	10.69	33.256	25.473	251.9	0.283	5.52	87.7	7.5	0.78	7.0	0.01	0.13	0.14	94	212
100	ISL	10.30	10.29	33.274	25.556	244.1	0.298	5.50	86.6	8.1	0.83	8.0	0.01	0.11	0.12	100	
109		9.97	9.96	33.326	25.652	235.0	0.319	5.44	85.1	9.1	0.90	9.4	0.01	0.07	0.09	110	211
125		9.42	9.41	33.375	25.781	223.0	0.356	5.23	80.9	11.9	1.07	12.2	0.01	0.04	0.06	126	210
144		9.41	9.39	33.669	26.013	201.4	0.396	4.01	62.1	20.4	1.53	19.6	0.00	0.01	0.03	145	209
150	ISL	9.36	9.34	33.726	26.066	196.5	0.408	3.77	58.3	22.3	1.62	21.1	0.00	0.01	0.03	151	
169		9.11	9.09	33.852	26.205	183.6	0.444	3.26	50.2	27.4	1.84	24.5	0.00	0.00	0.02	170	208
200		8.50	8.48	34.001	26.417	163.9	0.498	2.74	41.7	34.7	2.07	27.9	0.00	0.00	0.02	201	207
230		8.08	8.06	34.042	26.513	155.2	0.546	2.40	36.1	39.9	2.22	29.8	0.00			231	206
250	ISL	7.73	7.71	34.042	26.565	150.5	0.576	2.38	35.6	42.8	2.27	30.6	0.00			251	
273		7.32	7.29	34.036	26.619	145.5	0.610	2.35	34.8	46.3	2.32	31.5	0.00			275	205
300	ISL	6.95	6.92	34.051	26.682	139.7	0.649	2.02	29.6	52.0	2.48	33.4	0.00			302	
318		6.74	6.71	34.065	26.722	136.1	0.674	1.76	25.7	55.9	2.59	34.7	0.00			320	204
383		6.24	6.21	34.109	26.823	127.2	0.759	1.18	17.0	66.3	2.83	37.7	0.00			385	203
400	ISL	6.17	6.13	34.127	26.846	125.1	0.781	1.04	15.0	68.5	2.89	38.3	0.00			403	
433		6.03	5.99	34.163	26.892	121.1	0.821	0.81	11.6	72.8	2.99	39.3	0.00			436	202
500	ISL	5.58	5.54	34.218	26.992	112.1	0.899	0.49	7.0	83.0	3.14	41.1	0.00			503	
512		5.50	5.46	34.228	27.010	110.5	0.913	0.43	6.1	84.8	3.17	41.4	0.00			515	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 59.4 N	122 23.5 W	17/01/01	0138 UTC	4068 m	330 22 kn	320 10 06	1	1021.0 mb	13.4 C	9.9 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	15.02	15.02	33.294	24.653	327.8	0.000	5.83	101.5	3.5	0.30	0.1	0.00	0.30	0.10	0	
3		15.02	15.02	33.294	24.653	327.8	0.010	5.83	101.5	3.5	0.30	0.1	0.00	0.30	0.10	3	220
10	ISL	14.99	14.99	33.290	24.657	327.7	0.033	5.83	101.4	3.4	0.30	0.1	0.00	0.31	0.10	10	
15		14.95	14.95	33.286	24.663	327.3	0.049	5.83	101.3	3.4	0.30	0.1	0.00	0.31	0.10	15	219
20	ISL	14.88	14.88	33.280	24.673	326.5	0.065	5.84	101.3	3.4	0.30	0.1	0.00	0.33	0.11	20	
30		14.73	14.73	33.267	24.696	324.6	0.098	5.86	101.4	3.5	0.31	0.1	0.01	0.36	0.12	30	218
47		14.60	14.59	33.259	24.718	323.0	0.153	5.86	101.1	3.5	0.31	0.1	0.01	0.39	0.12	47	217
50	ISL	14.57	14.56	33.256	24.722	322.7	0.163	5.86	101.0	3.5	0.31	0.1	0.01	0.39	0.12	50	
56		14.53	14.52	33.252	24.728	322.3	0.182	5.87	101.1	3.5	0.31	0.1	0.01	0.40	0.13	56	216
66		14.49	14.48	33.256	24.740	321.5	0.214	5.89	101.4	3.4	0.31	0.1	0.01	0.43	0.13	66	215
75		14.32	14.31	33.261	24.780	317.9	0.243	5.89	101.0	3.6	0.32	0.2	0.02	0.46	0.14	75	214
85		14.23	14.22	33.257	24.796	316.7	0.275	5.91	101.2	3.6	0.33	0.3	0.03	0.45	0.16	85	213
96		13.62	13.61	33.270	24.932	303.9	0.309	5.92	100.1	4.0	0.40	0.9	0.13	0.25	0.22	96	212
100	ISL	12.99	12.98	33.252	25.044	293.2	0.321	5.88	98.1	4.4	0.45	1.5	0.11	0.21	0.21	100	
109		11.55	11.54	33.236	25.306	268.3	0.346	5.74	92.9	5.5	0.57	3.3	0.04	0.15	0.16	109	211
121		10.89	10.88	33.305	25.478	252.1	0.377	5.54	88.4	6.8	0.71	6.2	0.01	0.11	0.12	122	210
125	ISL	10.61	10.60	33.323	25.541	246.1	0.387	5.49	87.1	7.5	0.76	7.2	0.01	0.10	0.11	126	
144		9.49	9.47	33.428	25.812	220.5	0.432	5.18	80.2	11.9	1.02	12.0	0.00	0.04	0.05	145	209
150	ISL	9.43	9.41	33.495	25.874	214.7	0.445	5.00	77.4	13.6	1.11	13.6	0.00	0.03	0.04	151	
169		9.24	9.22	33.663	26.036	199.7	0.484	4.39	67.7	19.0	1.40	18.2	0.00	0.01	0.03	170	208
198		8.95	8.93	33.872	26.246	180.2	0.539	3.60	55.2	26.2	1.70	23.1	0.00	0.00	0.02	199	207
200	ISL	8.91	8.89	33.884	26.262	178.8	0.543	3.54	54.3	26.8	1.73	23.5	0.00			201	
229		8.35	8.33	34.011	26.448	161.4	0.592	2.78	42.1	35.6	2.06	28.2	0.00			230	206
250	ISL	8.01	7.98	34.041	26.523	154.6	0.625	2.50	37.6	39.7	2.20	29.9	0.00			251	
268		7.74	7.71	34.046	26.567	150.6	0.653	2.35	35.1	42.6	2.28	30.8	0.00			269	205
300	ISL	7.27	7.24	34.050	26.637	144.2	0.700	2.13	31.5	47.8	2.40	32.5	0.00			302	
319		7.02	6.99	34.051	26.673	141.0	0.727	2.01	29.5	50.8	2.47	33.4	0.00			321	204
378		6.44	6.41	34.084	26.777	131.6	0.807	1.46	21.2	61.1	2.72	36.5	0.00			380	203
400	ISL	6.24	6.20	34.094	26.811	128.5	0.836	1.29	18.6	64.8	2.80	37.5	0.00			402	
437		5.94	5.90	34.114	26.865	123.6	0.883	1.02	14.6	71.0	2.92	39.1	0.00			440	202
500	ISL	5.57	5.53	34.184	26.966	114.5	0.958	0.59	8.4	81.1	3.10	41.0	0.00			503	
516		5.48	5.44	34.202	26.991	112.2	0.976	0.48	6.8	83.7	3.14	41.5	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 39.7 N	123 4.2 W	17/01/01	0743 UTC	4111 m	340 21 kn			1024.0 mb	12.5 C	9.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.56	15.56	33.365	24.590	333.9	0.000	5.70	100.3	3.5	0.31	0.0	0.00	0.23	0.09	0	
2		15.56	15.56	33.365	24.590	333.9	0.007	5.70	100.3	3.5	0.31	0.0	0.00	0.23	0.09	2	220
10	ISL	15.57	15.57	33.366	24.589	334.3	0.033	5.70	100.3	3.4	0.30	0.0	0.00	0.23	0.09	10	
15		15.57	15.57	33.366	24.589	334.4	0.050	5.70	100.3	3.3	0.30	0.0	0.00	0.23	0.09	15	219
20	ISL	15.57	15.57	33.367	24.590	334.5	0.067	5.70	100.3	3.3	0.30	0.0	0.00	0.23	0.09	20	
30	ISL	15.58	15.58	33.368	24.589	334.9	0.100	5.71	100.5	3.3	0.30	0.0	0.00	0.23	0.09	30	
31		15.58	15.58	33.368	24.589	334.9	0.104	5.71	100.5	3.3	0.30	0.0	0.00	0.23	0.09	31	218
48		15.58	15.57	33.367	24.588	335.5	0.161	5.70	100.4	3.2	0.30	0.0	0.00	0.24	0.09	48	217
50	ISL	15.58	15.57	33.367	24.588	335.5	0.167	5.70	100.4	3.2	0.30	0.0	0.00	0.24	0.09	50	
60		15.58	15.57	33.367	24.589	335.8	0.201	5.70	100.4	3.2	0.30	0.0	0.00	0.23	0.09	60	216
74		15.59	15.58	33.370	24.589	336.2	0.248	5.71	100.5	3.1	0.30	0.0	0.00	0.23	0.09	74	215
75	ISL	15.59	15.58	33.370	24.589	336.2	0.251	5.71	100.5	3.1	0.30	0.0	0.00	0.23	0.09	75	
85		15.58	15.57	33.369	24.591	336.3	0.285	5.70	100.3	3.0	0.30	0.0	0.00	0.24	0.09	85	214
95		15.48	15.47	33.355	24.603	335.5	0.319	5.72	100.5	3.1	0.30	0.0	0.01	0.24	0.10	95	213
100	ISL	15.07	15.05	33.327	24.671	329.1	0.335	5.79	100.9	3.3	0.32	0.2	0.05	0.25	0.15	100	
105		14.38	14.36	33.287	24.788	318.0	0.351	5.85	100.5	3.4	0.35	0.3	0.09	0.25	0.19	105	212
114		12.37	12.36	33.208	25.131	285.2	0.378	5.86	96.5	4.8	0.48	1.8	0.13	0.19	0.20	114	211
125		12.03	12.01	33.259	25.235	275.5	0.409	5.81	95.0	4.6	0.47	1.6	0.15	0.15	0.17	126	210
139		10.71	10.69	33.314	25.517	248.7	0.446	5.56	88.4	6.3	0.67	5.5	0.02	0.09	0.12	140	209
150	ISL	10.08	10.06	33.337	25.643	236.8	0.473	5.34	83.7	8.7	0.87	8.9	0.02	0.06	0.09	151	
165		9.56	9.54	33.402	25.781	223.9	0.507	4.97	77.1	12.9	1.14	13.4	0.01	0.04	0.05	166	208
194		8.99	8.97	33.817	26.197	184.8	0.567	4.02	61.7	23.2	1.54	20.8	0.01	0.00	0.02	195	207
200	ISL	8.89	8.87	33.863	26.249	180.0	0.578	3.88	59.4	25.0	1.61	22.0	0.01			201	
229		8.40	8.38	33.980	26.417	164.5	0.627			32.6	1.91	26.4	0.01			230	206
250	ISL	8.01	7.98	34.006	26.496	157.2	0.661	3.01	45.2	37.0	2.03	28.1	0.00			251	
269		7.66	7.63	34.008	26.548	152.3	0.691	2.82	42.1	40.5	2.10	29.2	0.00			270	205
300	ISL	7.20	7.17	34.015	26.619	145.8	0.737	2.52	37.2	45.9	2.25	31.1	0.00			302	
319		6.97	6.94	34.019	26.654	142.7	0.764	2.34	34.3	49.1	2.34	32.3	0.00			321	204
377		6.44	6.41	34.060	26.758	133.3	0.844	1.57	22.8	59.7	2.65	36.0	0.00			379	203
400	ISL	6.27	6.23	34.075	26.792	130.3	0.875	1.36	19.6	63.2	2.74	37.1	0.00			402	
436		6.04	6.00	34.098	26.840	126.1	0.921	1.10	15.8	68.3	2.85	38.5	0.00			439	202
500	ISL	5.68	5.64	34.148	26.925	118.6	0.999	0.73	10.4	77.6	3.02	40.4	0.00			503	
515		5.59	5.55	34.160	26.945	116.7	1.017	0.64	9.1	79.8	3.06	40.9	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 19.5 N	123 44.3 W	17/01/01	1341 UTC	3913 m	350 23 kn			1024.1 mb	13.5 C	10.0 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	15.58	15.58	33.369	24.588	334.0	0.000	5.70	100.4	3.1	0.30	0.0	0.00	0.20	0.08	0	
2		15.58	15.58	33.369	24.588	334.0	0.007	5.70	100.4	3.1	0.30	0.0	0.00	0.20	0.08	2	220
10	ISL	15.58	15.58	33.369	24.589	334.3	0.033	5.71	100.5	3.1	0.30	0.0	0.00	0.20	0.08	10	
16		15.58	15.58	33.369	24.589	334.4	0.053	5.71	100.5	3.0	0.30	0.0	0.00	0.20	0.08	16	219
20	ISL	15.58	15.58	33.369	24.589	334.5	0.067	5.71	100.5	3.0	0.30	0.0	0.00	0.20	0.08	20	
30		15.59	15.59	33.370	24.588	335.0	0.100	5.70	100.4	2.9	0.30	0.0	0.00	0.20	0.07	30	218
45		15.59	15.58	33.369	24.588	335.5	0.151	5.72	100.7	3.0	0.30	0.0	0.00	0.20	0.08	45	217
50	ISL	15.59	15.58	33.369	24.588	335.6	0.167	5.71	100.6	3.0	0.30	0.0	0.00	0.20	0.08	50	
61		15.59	15.58	33.369	24.588	335.9	0.204	5.70	100.4	2.9	0.30	0.0	0.00	0.20	0.08	61	216
75		15.59	15.58	33.369	24.589	336.3	0.251	5.71	100.5	2.8	0.30	0.0	0.00	0.20	0.08	75	215
85		15.57	15.56	33.368	24.593	336.2	0.285	5.72	100.7	2.8	0.30	0.0	0.00	0.21	0.08	85	214
95		14.82	14.81	33.341	24.736	322.8	0.318	5.81	100.7	3.0	0.32	0.1	0.04	0.23	0.14	95	213
100	ISL	13.82	13.81	33.304	24.917	305.5	0.334	5.82	98.8	3.5	0.39	0.7	0.13	0.25	0.18	100	
104		13.01	13.00	33.285	25.066	291.3	0.346	5.83	97.3	4.0	0.45	1.4	0.19	0.25	0.21	104	212
116		12.11	12.09	33.313	25.262	272.8	0.379	5.59	91.6	5.1	0.60	3.9	0.02	0.15	0.18	116	211
125	ISL	11.78	11.76	33.329	25.336	265.9	0.404	5.47	89.0	5.7	0.68	5.3	0.01	0.13	0.14	126	
126		11.75	11.73	33.331	25.343	265.2	0.406	5.46	88.8	5.8	0.69	5.5	0.01	0.13	0.14	127	210
140		10.97	10.95	33.366	25.512	249.3	0.442	5.23	83.6	7.9	0.86	8.6	0.01	0.09	0.09	141	209
150	ISL	10.47	10.45	33.436	25.654	235.9	0.467	4.88	77.2	11.1	1.05	11.9	0.01	0.06	0.07	151	
165		9.88	9.86	33.566	25.856	216.9	0.501	4.30	67.2	16.4	1.35	16.9	0.00	0.02	0.04	166	208
194		9.38	9.36	33.780	26.106	193.6	0.560	3.56	55.1	23.7	1.69	22.3	0.00	0.00	0.02	195	207
200	ISL	9.28	9.26	33.816	26.150	189.5	0.572	3.45	53.3	25.0	1.74	23.1	0.00			201	
231		8.74	8.72	33.955	26.345	171.5	0.628	2.98	45.5	31.4	1.94	26.4	0.00			232	206
250	ISL	8.42	8.39	34.000	26.430	163.6	0.659	2.76	41.9	35.0	2.05	27.9	0.00			251	
270		8.10	8.07	34.027	26.499	157.3	0.691	2.55	38.4	38.6	2.15	29.2	0.00			271	205
300	ISL	7.68	7.65	34.052	26.581	149.8	0.738	2.23	33.3	44.1	2.30	31.1	0.00			302	
318		7.47	7.44	34.060	26.617	146.5	0.764	2.05	30.4	47.1	2.39	32.1	0.00			320	204
374		7.03	6.99	34.090	26.703	139.0	0.844	1.61	23.7	53.8	2.62	34.4	0.00			376	203
400	ISL	6.84	6.80	34.113	26.747	135.1	0.880	1.35	19.8	57.7	2.72	35.6	0.00			402	
437		6.57	6.53	34.148	26.811	129.3	0.929	1.00	14.5	63.7	2.84	37.3	0.00			440	202
500	ISL	6.08	6.04	34.198	26.915	120.0	1.007	0.64	9.2	73.9	3.02	39.4	0.00			503	
522		5.91	5.86	34.216	26.950	116.7	1.033	0.51	7.3	77.4	3.08	40.2	0.00			525	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 29.2 N	117 46.0 W	14/01/01	1841 UTC	57 m	00 kn	300 01 04	1	1022.8 mb	15.9 C	14.5 C	08m	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	15.04	15.04	33.449	24.768	316.8	0.000	5.84	101.8	3.4	0.36	0.1	0.02	0.40	0.19	0	
2	A	15.04	15.04	33.449	24.769	316.9	0.006	5.84	101.8	3.4	0.36	0.1	0.02	0.40	0.19	2	208
6	A	14.93	14.93	33.448	24.792	314.8	0.019	5.80	100.9	3.3	0.36	0.1	0.02	0.43	0.20	6	207
10	ISL	14.91	14.91	33.449	24.797	314.4	0.032	5.81	101.0	3.3	0.36	0.1	0.02	0.45	0.22	10	
11	A	14.91	14.91	33.449	24.797	314.4	0.035	5.81	101.0	3.3	0.36	0.1	0.02	0.45	0.22	11	206
16	A	14.90	14.90	33.454	24.803	314.0	0.050	5.83	101.3	3.2	0.35	0.1	0.02	0.44	0.23	16	205
20	ISL	14.93	14.93	33.459	24.801	314.4	0.063	5.82	101.2	3.1	0.35	0.1	0.02	0.45	0.23	20	
22	A	14.95	14.95	33.464	24.800	314.5	0.069	5.82	101.3	3.1	0.35	0.1	0.02	0.45	0.22	22	204
30	A	15.04	15.04	33.528	24.830	311.8	0.094	5.79	100.9	3.0	0.31	0.1	0.01	0.33	0.19	30	203
40		14.61	14.60	33.525	24.921	303.5	0.125	5.61	97.0	4.4	0.46	1.3	0.06	0.26	0.23	40	202
50	ISL	14.56	14.55	33.528	24.934	302.5	0.155	5.57	96.2	4.6	0.48	1.6	0.07	0.27	0.23	50	
51		14.56	14.55	33.528	24.934	302.6	0.158	5.57	96.2	4.6	0.48	1.6	0.07	0.27	0.23	51	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 25.2 N	117 54.6 W	14/01/01	1159 UTC	608 m	300 01 kn			1021.8 mb	12.1 C	11.4 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	14.83	14.83	33.515	24.865	307.6	0.000	5.86	101.7	2.8	0.28	0.1	0.00	0.34	0.14	0	
2		14.83	14.83	33.515	24.865	307.7	0.006	5.86	101.7	2.8	0.28	0.1	0.00	0.34	0.14	2	220
10	ISL	14.84	14.84	33.517	24.865	308.0	0.031	5.86	101.8	2.8	0.29	0.1	0.00	0.34	0.14	10	
11		14.84	14.84	33.517	24.865	308.0	0.034	5.86	101.8	2.8	0.29	0.1	0.00	0.34	0.14	11	219
20		14.82	14.82	33.518	24.870	307.8	0.062	5.86	101.7	2.8	0.28	0.1	0.00	0.35	0.17	20	218
30		14.81	14.81	33.525	24.878	307.3	0.092	5.85	101.5	2.8	0.28	0.1	0.00	0.44	0.20	30	217
40		14.11	14.10	33.517	25.020	294.0	0.122	5.73	98.0	4.2	0.42	1.1	0.17	1.14	0.64	40	216
50		13.26	13.25	33.501	25.182	278.8	0.151	5.35	89.9	5.9	0.61	4.1	0.18	0.62	0.48	50	215
60		12.49	12.48	33.452	25.296	268.2	0.178	5.21	86.1	6.9	0.74	6.4	0.07	0.35	0.32	60	214
70		11.50	11.49	33.484	25.507	248.3	0.204	4.87	78.9	9.4	0.94	10.0	0.02	0.18	0.22	70	213
75	ISL	11.13	11.12	33.523	25.604	239.1	0.216	4.63	74.4	11.3	1.06	12.1	0.02	0.12	0.17	75	
85		10.63	10.62	33.613	25.763	224.2	0.240	4.15	66.0	15.3	1.30	15.8	0.01	0.05	0.08	85	212
99		10.40	10.39	33.713	25.881	213.2	0.270	3.65	57.8	19.1	1.52	18.7	0.01	0.03	0.05	99	211
100	ISL	10.39	10.38	33.719	25.888	212.6	0.272	3.62	57.3	19.3	1.53	18.8	0.01	0.03	0.05	100	
119		10.31	10.30	33.823	25.983	204.0	0.312	3.14	49.6	22.7	1.70	21.0	0.01	0.01	0.05	120	210
125	ISL	10.25	10.24	33.860	26.022	200.4	0.324	2.98	47.1	24.0	1.77	21.8	0.01	0.01	0.05	126	
139		10.09	10.07	33.944	26.115	191.8	0.351	2.63	41.4	26.9	1.92	23.7	0.00	0.00	0.04	140	209
150	ISL	9.99	9.97	33.999	26.175	186.4	0.372	2.41	37.9	28.7	2.01	24.8	0.00	0.00	0.04	151	
169		9.79	9.77	34.074	26.268	178.0	0.407	2.14	33.5	31.4	2.13	26.4	0.00	0.00	0.04	170	208
199		9.24	9.22	34.136	26.407	165.2	0.458	1.98	30.6	35.2	2.24	28.0	0.00	0.00	0.04	200	207
200	ISL	9.23	9.21	34.137	26.409	165.0	0.460	1.97	30.5	35.3	2.24	28.1	0.00			201	
229		8.89	8.87	34.164	26.485	158.3	0.507	1.80	27.6	38.5	2.34	29.5	0.00			230	206
250	ISL	8.62	8.59	34.173	26.535	153.8	0.540	1.70	25.9	41.0	2.40	30.4	0.00			251	
268		8.39	8.36	34.178	26.574	150.3	0.567	1.61	24.4	43.3	2.46	31.1	0.00			270	205
300	ISL	7.99	7.96	34.192	26.646	143.9	0.614	1.37	20.6	48.1	2.58	32.5	0.00			302	
318		7.79	7.76	34.200	26.681	140.7	0.640	1.23	18.4	50.8	2.65	33.3	0.00			320	204
377		7.29	7.25	34.232	26.779	132.2	0.720	0.86	12.7	58.5	2.83	35.5	0.00			379	203
400	ISL	7.08	7.04	34.248	26.821	128.4	0.750	0.71	10.5	62.1	2.91	36.4	0.00			403	
438		6.75	6.71	34.275	26.887	122.4	0.798	0.50	7.3	68.0	3.02	37.8	0.00			441	202
500	ISL	6.39	6.34	34.309	26.963	115.9	0.872	0.33	4.8	75.1	3.13	39.0	0.00			503	
512		6.32	6.27	34.316	26.977	114.6	0.885	0.30	4.3	76.5	3.15	39.2	0.00			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 15.2 N	118 14.9 W	14/01/01	0757 UTC	289 m	280 04 kn			1022.9 mb	14.1 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	14.02	14.02	33.478	25.008	294.1	0.000	5.89	100.6	3.4	0.37	0.9	0.06	0.88	0.30	0	
2		14.02	14.02	33.478	25.008	294.1	0.006	5.89	100.6	3.4	0.37	0.9	0.06	0.88	0.30	2	217
10	ISL	13.99	13.99	33.478	25.014	293.7	0.029	5.89	100.5	3.4	0.37	0.9	0.06	0.87	0.28	10	
11		13.99	13.99	33.478	25.014	293.7	0.032	5.89	100.5	3.4	0.37	0.9	0.06	0.87	0.28	11	216
20		13.99	13.99	33.478	25.014	294.0	0.059	5.90	100.7	3.4	0.37	0.9	0.06	0.84	0.31	20	215
30	ISL	13.99	13.99	33.479	25.016	294.2	0.088	5.88	100.3	3.4	0.37	0.9	0.06	0.74	0.25	30	
31		13.99	13.99	33.479	25.016	294.2	0.091	5.88	100.3	3.4	0.37	0.9	0.06	0.73	0.25	31	214
40		13.75	13.74	33.493	25.076	288.7	0.117	5.68	96.4	4.2	0.46	2.1	0.12	0.71	0.31	40	213
50		12.36	12.35	33.501	25.358	262.0	0.145	5.05	83.3	8.1	0.81	7.4	0.21	0.45	0.29	50	212
61		11.51	11.50	33.492	25.511	247.7	0.173	4.71	76.3	10.7	1.02	10.9	0.11	0.28	0.23	61	211
71		11.24	11.23	33.542	25.599	239.5	0.197	4.40	70.9	12.7	1.16	12.8	0.18	0.19	0.19	71	210
75	ISL	11.11	11.10	33.568	25.643	235.4	0.207	4.25	68.3	13.8	1.23	13.8	0.18	0.16	0.17	75	
85		10.77	10.76	33.633	25.754	225.0	0.230	3.88	61.9	16.8	1.40	16.4	0.13	0.11	0.14	85	209
100		10.23	10.22	33.713	25.910	210.4	0.262	3.52	55.5	20.6	1.59	19.7	0.06	0.05	0.11	101	208
120		9.90	9.89	33.960	26.159	187.2	0.302	2.55	40.0	28.1	1.97	24.6	0.02	0.01	0.06	121	207
125	ISL	9.84	9.83	33.982	26.187	184.7	0.312	2.51	39.3	28.8	2.00	25.1	0.02	0.01	0.06	126	
140		9.70	9.68	34.012	26.234	180.5	0.339	2.39	37.3	30.0	2.05	25.7	0.02	0.01	0.08	141	206
150	ISL	9.60	9.58	34.038	26.271	177.2	0.357	2.31	36.0	31.0	2.09	26.2	0.02	0.01	0.08	151	
170		9.38	9.36	34.081	26.341	170.9	0.392	2.18	33.8	33.0	2.17	27.2	0.01	0.01	0.08	171	205
199		9.04	9.02	34.111	26.419	163.9	0.440	2.03	31.3	35.9	2.25	28.4	0.01	0.01	0.05	200	204
200	ISL	9.03	9.01	34.112	26.422	163.7	0.442	2.03	31.3	36.0	2.25	28.4	0.01			201	
230		8.82	8.80	34.129	26.469	159.8	0.490	1.91	29.3	38.1	2.31	29.3	0.01			231	203
250	ISL	8.57	8.54	34.150	26.524	154.8	0.522	1.76	26.8	41.0	2.40	30.2	0.02			251	
270		8.37	8.34	34.168	26.569	150.8	0.552	1.63	24.7	43.3	2.47	31.0	0.02			272	202
292		8.36	8.33	34.169	26.572	151.0	0.586	1.60	24.3	43.3	2.47	31.0	0.02			294	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0101 | STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 11.1 N	118 23.1 W	14/01/01	0515 UTC	1174 m	270 05 kn			1023.0 mb	13.4 C	11.9 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.58	14.58	33.543	24.940	300.5	0.000	5.91	102.1	3.6	0.31	0.1	0.01	0.70	0.26	0	
3		14.58	14.58	33.543	24.940	300.6	0.009	5.96 U	103.0 U	3.6	0.31	0.1	0.01	0.70	0.26	3	220
10		14.58	14.58	33.541	24.939	300.9	0.030	5.91	102.1	3.6	0.31	0.1	0.01	0.70	0.27	10	219
20	ISL	14.49	14.49	33.528	24.948	300.3	0.060	5.91	101.9	3.5	0.32	0.1	0.01	0.79	0.50	20	
21		14.48	14.48	33.527	24.949	300.2	0.063	5.91	101.9	3.5	0.32	0.1	0.01	0.80	0.52	21	218
30		14.49	14.49	33.527	24.948	300.6	0.090	5.90	101.7	3.5	0.32	0.2	0.01	0.79	0.34	30	217
40		13.79	13.78	33.534	25.099	286.4	0.120	5.48	93.1	5.5	0.52	3.1	0.17	0.51	0.31	40	216
50	ISL	12.47	12.46	33.520	25.352	262.6	0.147	4.90	81.0	8.8	0.85	8.0	0.12	0.42	0.32	50	
51		12.33	12.32	33.521	25.380	260.0	0.150	4.84	79.8	9.2	0.89	8.5	0.12	0.41	0.32	51	215
61		11.41	11.40	33.577	25.595	239.6	0.175	4.22	68.2	13.6	1.20	13.4	0.04	0.18	0.19	61	214
71		11.27	11.26	33.651	25.679	232.0	0.198	3.74	60.3	16.1	1.39	15.8	0.03	0.15	0.18	71	213
75	ISL	11.18	11.17	33.684	25.721	228.0	0.207	3.56	57.3	17.5	1.47	16.8	0.03	0.12	0.17	75	
85		10.97	10.96	33.758	25.816	219.2	0.230	3.19	51.2	20.7	1.63	19.1	0.02	0.05	0.13	85	212
100		10.84	10.83	33.810	25.880	213.4	0.262	2.93	46.9	22.7	1.74	20.4	0.02	0.03	0.10	101	211
121		10.32	10.31	33.846	25.999	202.5	0.306	2.99	47.3	24.5	1.78	21.8	0.01	0.02	0.06	122	210
125	ISL	10.24	10.23	33.866	26.029	199.8	0.314	2.91	46.0	25.3	1.82	22.3	0.01	0.02	0.06	126	
140		9.96	9.94	33.949	26.141	189.4	0.343	2.57	40.4	28.4	1.97	24.4	0.01	0.01	0.06	141	209
150	ISL	9.77	9.75	33.989	26.204	183.5	0.362	2.46	38.5	30.1	2.03	25.4	0.01	0.01	0.06	151	
169		9.47	9.45	34.044	26.297	175.1	0.396	2.36	36.7	32.6	2.11	26.7	0.01	0.01	0.07	170	208
200		9.23	9.21	34.080	26.365	169.2	0.449	2.24	34.6	34.4	2.17	27.6	0.01	0.01	0.05	201	207
230		8.67	8.65	34.113	26.479	158.7	0.498	2.04	31.2	39.3	2.29	29.3	0.01			231	206
250	ISL	8.43	8.40	34.126	26.527	154.5	0.530	1.91	29.0	41.6	2.35	30.2	0.01			251	
269		8.24	8.21	34.138	26.565	151.1	0.559	1.77	26.8	43.7	2.41	31.0	0.01			271	205
300	ISL	7.90	7.87	34.170	26.641	144.2	0.604	1.46	21.9	48.8	2.56	32.6	0.01			302	
319		7.71	7.68	34.189	26.684	140.4	0.631	1.27	19.0	52.0	2.65	33.5	0.01			321	204
379		7.24	7.20	34.224	26.780	132.1	0.713	0.87	12.9	59.6	2.83	35.7	0.01			381	203
400	ISL	7.11	7.07	34.242	26.812	129.2	0.741	0.75	11.1	62.4	2.93	36.3	0.01			403	
437		6.91	6.87	34.273	26.864	124.7	0.788	0.57	8.4	66.9	3.08	37.3	0.01			440	202
500	ISL	6.55	6.50	34.293	26.929	119.2	0.864	0.43	6.3	72.5	3.10	38.6	0.00			503	
513		6.48	6.43	34.297	26.942	118.1	0.880	0.40	5.8	73.7	3.10	38.9	0.00			517	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0101 | STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 55.4 N	118 55.9 W	14/01/01	0013 UTC	1698 m	300 11 kn	300 05 06	1	1022.2 mb	15.7 C	13.1 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	14.60	14.60	33.539	24.933	301.2	0.000	5.90	102.0	3.3	0.33	0.3	0.02	0.81	0.27	0	
2		14.60	14.60	33.539	24.933	301.2	0.006	5.90	102.0	3.3	0.33	0.3	0.02	0.81	0.27	2	220
10	ISL	14.60	14.60	33.539	24.933	301.4	0.030	5.90	102.0	3.3	0.32	0.3	0.02	0.69	0.28	10	
11		14.60	14.60	33.539	24.933	301.5	0.033	5.90	102.0	3.3	0.32	0.3	0.02	0.68	0.28	11	219
20		14.54	14.54	33.541	24.948	300.4	0.060	5.90	101.8	3.5	0.32	0.3	0.01	0.76	0.37	20	218
30	ISL	14.51	14.51	33.542	24.955	300.0	0.090	5.89	101.6	3.3	0.32	0.3	0.02	0.75	0.34	30	
31		14.51	14.51	33.542	24.955	300.0	0.093	5.89	101.6	3.3	0.32	0.3	0.02	0.75	0.34	31	217
39		14.40	14.39	33.532	24.971	298.7	0.117	5.81	100.0	3.5	0.35	0.6	0.02	0.67	0.31	39	216
50	ISL	12.88	12.87	33.444	25.213	275.8	0.149	5.43	90.5	5.7	0.62	4.4	0.07	0.55	0.40	50	
51		12.72	12.71	33.438	25.240	273.3	0.152	5.39	89.5	6.0	0.65	4.8	0.07	0.54	0.41	51	215
60		12.03	12.02	33.451	25.382	259.9	0.176	5.11	83.7	7.8	0.81	7.6	0.03	0.36	0.30	60	214
71		11.48	11.47	33.500	25.523	246.8	0.203	4.69	75.9	10.7	1.03	11.1	0.02	0.22	0.24	71	213
75	ISL	11.27	11.26	33.526	25.581	241.3	0.213	4.54	73.2	11.9	1.11	12.4	0.02	0.18	0.21	75	
86		10.81	10.80	33.605	25.725	227.8	0.239	4.12	65.8	15.1	1.30	15.5	0.01	0.09	0.13	86	212
100		10.70	10.69	33.697	25.817	219.4	0.270	3.64	58.0	18.2	1.49	18.0	0.01	0.05	0.09	100	211
121		10.38	10.37	33.903	26.033	199.3	0.314	2.67	42.3	25.6	1.88	22.8	0.01	0.01	0.05	122	210
125	ISL	10.32	10.31	33.919	26.056	197.2	0.322	2.65	41.9	26.2	1.91	23.2	0.01	0.01	0.05	126	
141		10.08	10.06	33.964	26.133	190.2	0.353	2.55	40.1	27.8	1.97	24.3	0.00	0.01	0.05	142	209
150	ISL	10.00	9.98	34.015	26.186	185.3	0.370	2.38	37.4	29.3	2.04	25.2	0.00	0.01	0.05	151	
169		9.77	9.75	34.104	26.295	175.4	0.404	2.06	32.2	32.4	2.18	26.8	0.00	0.00	0.04	170	208
198		9.02	9.00	34.074	26.394	166.4	0.454	2.27	34.9	34.6	2.16	27.8	0.00	0.01	0.04	199	207
200	ISL	9.00	8.98	34.077	26.399	165.8	0.457	2.26	34.8	34.8	2.17	27.9	0.00			201	
220		8.85	8.83	34.120	26.457	160.7	0.490	2.08	31.9	37.3	2.25	28.8	0.00			221	206
250	ISL	8.64	8.61	34.150	26.514	155.9	0.537	1.90	29.0	40.0	2.35	29.8	0.00			251	
267		8.50	8.47	34.158	26.542	153.4	0.564	1.80	27.4	41.7	2.40	30.4	0.00			269	205
300	ISL	8.02	7.99	34.170	26.624	146.0	0.613	1.55	23.3	46.8	2.53	32.2	0.00			302	
319		7.74	7.71	34.177	26.671	141.7	0.640	1.40	20.9	50.1	2.61	33.2	0.00			321	204
379		7.23	7.19	34.226	26.782	131.8	0.722	0.88	13.0	59.2	2.83	35.6	0.01			381	203
400	ISL	7.04	7.00	34.241	26.821	128.3	0.750	0.75	11.0	62.4	2.90	36.5	0.01			403	
439		6.71	6.67	34.267	26.886	122.5	0.799	0.56	8.2	68.2	3.02	37.9	0.00			442	202
500	ISL	6.30	6.25	34.299	26.966	115.4	0.871	0.38	5.5	75.8	3.13	39.4	0.00			503	
506		6.26	6.21	34.302	26.974	114.7	0.878	0.36	5.2	76.5	3.14	39.6	0.00			509	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 39.2 N	119 28.7 W	13/01/01	1839 UTC	1320 m	360 04 kn	290 06 06	1	1024.5 mb	14.0 C	12.8 C	22m	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	14.50	14.50	33.486	24.913	303.1	0.000	5.90	101.7	3.0	0.33	0.3	0.03			0	
2	A	14.50	14.50	33.486	24.913	303.1	0.006	5.90	101.7	3.0	0.33	0.3	0.03			2	222
10	ISL	14.46	14.46	33.485	24.921	302.6	0.030	5.87	101.1	3.0	0.32	0.3	0.03			10	
14	A	14.43	14.43	33.485	24.927	302.1	0.042	5.86	100.9	3.0	0.32	0.3	0.03			14	221
20	ISL	14.42	14.42	33.485	24.930	302.0	0.061	5.87	101.0	2.8	0.32	0.3	0.03			20	
21		14.42	14.42	33.485	24.930	302.1	0.064	5.87	101.0	2.8	0.32	0.3	0.03	0.54	0.19	21	220
28	A	14.41	14.41	33.486	24.933	302.0	0.085	5.86	100.8	2.8	0.33	0.3	0.04	0.55	0.20	28	219
30	ISL	14.41	14.41	33.486	24.933	302.0	0.091	5.86	100.8	2.8	0.33	0.3	0.04	0.55	0.20	30	
37		14.40	14.39	33.486	24.935	302.0	0.112	5.85	100.7	2.9	0.33	0.4	0.04	0.57	0.21	37	218
45	A	13.70	13.69	33.446	25.050	291.3	0.136	5.68	96.3	4.3	0.47	2.3	0.10	0.44	0.27	45	217
50	ISL	12.87	12.86	33.412	25.190	278.0	0.150	5.49	91.5	6.0	0.62	4.4	0.08	0.44	0.34	50	
52		12.57	12.56	33.403	25.242	273.1	0.155	5.42	89.7	6.6	0.67	5.2	0.07	0.44	0.36	52	216
59	A	12.30	12.29	33.403	25.294	268.3	0.174	5.34	87.9	6.9	0.73	6.0	0.07	0.36	0.34	59	215
70		11.32	11.31	33.451	25.514	247.6	0.203	4.91	79.2	10.0	0.98	10.4	0.02	0.19	0.21	70	214
75	ISL	11.04	11.03	33.475	25.583	241.1	0.215	4.75	76.1	11.3	1.07	11.9	0.02	0.15	0.17	75	
83	A	10.69	10.68	33.522	25.682	231.8	0.234	4.49	71.5	13.5	1.20	14.0	0.02	0.10	0.12	83	213
92		10.27	10.26	33.603	25.818	219.1	0.254	4.14	65.3	16.6	1.37	16.7	0.01	0.06	0.08	92	212
100	ISL	10.05	10.04	33.681	25.916	209.9	0.271	3.84	60.3	19.2	1.50	18.9	0.01	0.03	0.05	100	
101		10.03	10.02	33.690	25.926	208.9	0.273	3.80	59.7	19.5	1.52	19.1	0.01	0.03	0.05	101	211
119		9.70	9.69	33.799	26.067	195.9	0.310	3.37	52.6	23.4	1.71	22.1	0.01	0.01	0.03	120	210
125	ISL	9.61	9.60	33.840	26.114	191.5	0.321	3.23	50.3	24.8	1.77	22.9	0.01	0.01	0.03	126	
138		9.42	9.40	33.923	26.210	182.6	0.346	2.96	45.9	27.6	1.87	24.5	0.00	0.00	0.03	139	209
150	ISL	9.23	9.21	33.971	26.279	176.3	0.367	2.81	43.4	29.7	1.94	25.6	0.00	0.00	0.03	151	
170		8.89	8.87	34.024	26.375	167.5	0.402	2.64	40.5	32.9	2.04	27.0	0.01	0.00	0.02	171	208
200		8.35	8.33	34.079	26.501	155.9	0.450	2.32	35.2	38.7	2.22	29.1	0.00	0.00	0.02	201	207
228		8.00	7.98	34.104	26.574	149.4	0.493	2.05	30.8	43.1	2.35	30.6	0.01			229	206
250	ISL	7.68	7.66	34.108	26.624	144.8	0.525	1.90	28.4	46.7	2.44	31.9	0.01			251	
269		7.44	7.41	34.114	26.663	141.3	0.552	1.76	26.1	49.7	2.51	32.9	0.01			271	205
300	ISL	7.31	7.28	34.163	26.721	136.4	0.595	1.33	19.7	54.2	2.66	34.3	0.00			302	
318		7.27	7.24	34.195	26.752	133.7	0.620	1.08	16.0	56.7	2.75	35.0	0.00			320	204
379		6.91	6.87	34.244	26.841	126.0	0.699	0.71	10.4	63.9	2.94	36.9	0.00			381	203
400	ISL	6.77	6.73	34.256	26.869	123.5	0.725	0.62	9.1	66.6	2.99	37.6	0.00			403	
440		6.48	6.44	34.277	26.925	118.6	0.774	0.47	6.8	71.8	3.07	38.8	0.00			443	202
500	ISL	6.03	5.99	34.314	27.013	110.7	0.842	0.32	4.6	80.1	3.18	40.4	0.00			503	
514		5.93	5.89	34.323	27.032	108.9	0.858	0.28	4.0	82.0	3.20	40.8	0.00			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 25.5 N	119 57.6 W	13/01/01	1345 UTC	869 m	030 11 kn			1020.1 mb	14.1 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	14.70	14.70	33.492	24.875	306.7	0.000	5.82	100.8	3.2	0.31	0.1	0.02	0.48	0.17	0	
3		14.70	14.70	33.492	24.875	306.7	0.009	5.82	100.8	3.2	0.31	0.1	0.02	0.48	0.17	3	220
10		14.70	14.70	33.492	24.875	306.9	0.031	5.80	100.4	3.0	0.31	0.1	0.02	0.49	0.17	10	219
20	ISL	14.70	14.70	33.492	24.876	307.2	0.061	5.80	100.4	3.0	0.31	0.1	0.02	0.50	0.17	20	
21		14.70	14.70	33.492	24.876	307.2	0.064	5.80	100.4	3.0	0.31	0.1	0.02	0.50	0.17	21	218
30		14.69	14.69	33.494	24.880	307.1	0.092	5.80	100.4	3.0	0.31	0.1	0.02	0.49	0.18	30	217
41		14.55	14.54	33.502	24.916	304.0	0.126	5.81	100.3	2.9	0.31	0.2	0.03	0.49	0.18	41	216
50	ISL	14.16	14.15	33.488	24.988	297.4	0.153	5.76	98.6	3.2	0.36	0.8	0.12	0.38	0.19	50	
51		14.08	14.07	33.483	25.000	296.2	0.156	5.75	98.3	3.2	0.37	0.9	0.13	0.36	0.19	51	215
61		12.59	12.58	33.365	25.209	276.5	0.184	5.53	91.6	5.5	0.61	4.1	0.10	0.24	0.23	61	214
71		11.62	11.61	33.362	25.390	259.4	0.211	5.27	85.5	7.5	0.81	7.4	0.02	0.18	0.19	71	213
75	ISL	11.34	11.33	33.395	25.467	252.2	0.221	5.08	81.9	8.8	0.91	9.1	0.02	0.15	0.17	75	
86		10.70	10.69	33.522	25.680	232.1	0.248	4.46	71.0	13.2	1.20	14.1	0.01	0.09	0.12	86	212
100		9.89	9.88	33.689	25.949	206.7	0.279	3.70	57.9	20.3	1.57	20.1	0.01	0.03	0.05	100	211
120		9.45	9.44	33.801	26.109	191.8	0.319	3.28	50.9	25.2	1.77	23.4	0.01	0.01	0.03	121	210
125	ISL	9.32	9.31	33.838	26.160	187.1	0.328	3.14	48.6	26.8	1.83	24.4	0.01	0.01	0.03	126	
139		8.97	8.96	33.936	26.292	174.7	0.353	2.75	42.2	31.3	1.99	26.8	0.00	0.00	0.04	140	209
150	ISL	8.76	8.74	33.978	26.358	168.6	0.372	2.56	39.1	33.7	2.07	28.0	0.00	0.00	0.04	151	
170		8.46	8.44	34.018	26.436	161.5	0.405	2.36	35.8	36.8	2.17	29.3	0.00	0.00	0.03	171	208
200		8.16	8.14	34.042	26.501	155.8	0.453	2.24	33.8	39.7	2.25	30.3	0.00	0.00	0.03	201	207
231		7.64	7.62	34.066	26.596	147.1	0.500	1.99	29.7	45.6	2.39	32.1	0.00			232	206
250	ISL	7.42	7.40	34.072	26.633	143.9	0.527	1.88	27.9	48.3	2.45	32.9	0.00			251	
269		7.22	7.19	34.074	26.663	141.2	0.555	1.77	26.1	51.0	2.51	33.6	0.00			271	205
300	ISL	6.79	6.76	34.077	26.724	135.6	0.597	1.58	23.1	56.7	2.62	35.2	0.00			302	
320		6.54	6.51	34.085	26.764	132.0	0.624	1.44	20.9	60.5	2.70	36.3	0.00			322	204
378		6.26	6.23	34.162	26.862	123.4	0.698	0.85	12.3	69.4	2.92	38.6	0.00			380	203
400	ISL	6.18	6.14	34.190	26.894	120.6	0.725	0.70	10.1	72.2	3.00	39.2	0.00			403	
440		6.04	6.00	34.239	26.951	115.7	0.772	0.49	7.0	76.8	3.12	40.1	0.00			443	202
500	ISL	5.78	5.74	34.306	27.037	108.1	0.840	0.30	4.3	83.7	3.19	41.1	0.00			503	
517		5.71	5.67	34.325	27.061	106.0	0.858	0.25	3.6	85.7	3.21	41.4	0.00			521	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0101 | STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 4.9 N	120 38.3 W	13/01/01	0700 UTC	3815 m	320 18 kn			1020.1 mb	17.0 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	15.12	15.12	33.379	24.697	323.6	0.000	5.77	100.7	3.7	0.30	0.0	0.00	0.27	0.10	0	
4		15.12	15.12	33.379	24.697	323.7	0.013	5.77	100.7	3.7	0.30	0.0	0.00	0.27	0.10	4	220
10	ISL	15.12	15.12	33.379	24.698	323.9	0.032	5.79	101.0	3.7	0.30	0.0	0.00	0.27	0.10	10	
15		15.12	15.12	33.379	24.698	324.0	0.049	5.81	101.4	3.7	0.30	0.0	0.00	0.27	0.10	15	219
20	ISL	15.12	15.12	33.379	24.698	324.2	0.065	5.80	101.2	3.7	0.30	0.0	0.00	0.28	0.10	20	
30		15.13	15.13	33.378	24.695	324.7	0.097	5.77	100.7	3.7	0.30	0.0	0.00	0.29	0.11	30	218
47		15.13	15.12	33.378	24.696	325.2	0.152	5.77	100.7	3.5	0.30	0.0	0.00	0.29	0.10	47	217
50	ISL	15.09	15.08	33.381	24.707	324.2	0.162	5.77	100.6	3.5	0.30	0.0	0.00	0.31	0.11	50	
60		14.97	14.96	33.390	24.740	321.3	0.194	5.79	100.7	3.6	0.31	0.1	0.01	0.38	0.17	60	216
75	ISL	12.90	12.89	33.237	25.050	292.0	0.240	5.88	97.9	4.8	0.47	1.5	0.22	0.40	0.36	75	
76		12.74	12.73	33.228	25.074	289.7	0.243	5.88	97.6	4.9	0.48	1.6	0.23	0.40	0.37	76	215
86		11.94	11.93	33.204	25.208	277.1	0.272	5.77	94.1	5.7	0.56	3.1	0.12	0.28	0.28	86	214
93		10.90	10.89	33.254	25.436	255.4	0.290	5.46	87.1	7.8	0.77	6.9	0.02	0.15	0.17	93	213
100	ISL	10.42	10.41	33.304	25.559	243.8	0.308	5.22	82.5	9.6	0.93	9.7	0.01	0.10	0.15	100	
106		10.22	10.21	33.351	25.630	237.2	0.322	5.03	79.1	11.2	1.06	11.8	0.01	0.09	0.14	106	212
114		9.93	9.92	33.439	25.747	226.1	0.341	4.71	73.7	14.1	1.24	14.7	0.01	0.05	0.07	115	211
125	ISL	9.69	9.68	33.508	25.841	217.4	0.365	4.42	68.8	16.6	1.37	16.8	0.00	0.03	0.05	126	
126		9.68	9.67	33.515	25.849	216.7	0.367	4.39	68.3	16.8	1.38	17.0	0.00	0.03	0.05	127	210
140		9.50	9.48	33.726	26.043	198.5	0.396	3.56	55.3	23.3	1.69	22.0	0.00	0.01	0.03	141	209
150	ISL	9.44	9.42	33.832	26.136	189.9	0.416	3.20	49.6	26.0	1.81	23.8	0.00	0.01	0.03	151	
166		9.32	9.30	33.947	26.246	179.8	0.445	2.84	44.0	29.1	1.92	25.4	0.00	0.00	0.03	167	208
195		8.70	8.68	34.042	26.419	163.8	0.495	2.53	38.6	35.2	2.10	27.9	0.00	0.00	0.02	196	207
200	ISL	8.63	8.61	34.048	26.434	162.4	0.503	2.51	38.3	35.8	2.12	28.1	0.00			201	
229		8.23	8.21	34.060	26.505	156.0	0.550	2.42	36.6	39.2	2.20	29.2	0.00			230	206
250	ISL	7.86	7.84	34.064	26.563	150.7	0.582	2.29	34.3	43.0	2.28	30.4	0.00			251	
268		7.55	7.52	34.068	26.611	146.3	0.608	2.15	32.0	46.4	2.36	31.5	0.00			270	205
300	ISL	7.17	7.14	34.080	26.675	140.6	0.654	1.89	27.9	51.5	2.49	33.2	0.00			302	
319		6.99	6.96	34.091	26.708	137.6	0.681	1.71	25.1	54.5	2.57	34.2	0.00			321	204
377		6.54	6.51	34.153	26.818	127.7	0.758	1.04	15.1	64.8	2.85	37.2	0.00			379	203
400	ISL	6.40	6.36	34.170	26.850	124.9	0.787	0.87	12.6	67.9	2.93	38.0	0.00			403	
438		6.22	6.18	34.199	26.897	120.9	0.834	0.67	9.7	72.2	3.03	39.1	0.00			441	202
500	ISL	6.03	5.99	34.273	26.980	113.8	0.906	0.42	6.0	78.4	3.16	40.1	0.00			503	
517		5.98	5.93	34.294	27.003	111.8	0.925	0.35	5.0	80.1	3.19	40.4	0.00			520	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0101 | STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 45.5 N	121 18.4 W	13/01/01	0027 UTC	3640 m	320 25 kn	310 17 07	1	1016.1 mb	16.3 C	13.0 C		7/8 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	16.43	16.43	33.691	24.643	328.7	0.000	5.64	101.2	2.6	0.25	0.0	0.00	0.17	0.05	0	
3		16.43	16.43	33.691	24.644	328.8	0.010	5.64	101.2	2.6	0.25	0.0	0.00	0.17	0.05	3	220
10	ISL	16.43	16.43	33.691	24.644	329.0	0.033	5.63	101.0	2.6	0.25	0.0	0.00	0.16	0.05	10	
16		16.43	16.43	33.692	24.645	329.1	0.053	5.62	100.8	2.6	0.25	0.0	0.00	0.16	0.05	16	219
20	ISL	16.43	16.43	33.694	24.646	329.1	0.066	5.62	100.8	2.6	0.25	0.0	0.00	0.16	0.05	20	
30	ISL	16.44	16.44	33.697	24.647	329.4	0.099	5.62	100.9	2.5	0.25	0.0	0.00	0.17	0.05	30	
31		16.44	16.44	33.697	24.647	329.4	0.102	5.62	100.9	2.5	0.25	0.0	0.00	0.17	0.05	31	218
45		16.44	16.43	33.690	24.642	330.3	0.148	5.64	101.2	2.5	0.25	0.0	0.00	0.17	0.05	45	217
50	ISL	16.44	16.43	33.690	24.642	330.5	0.165	5.63	101.0	2.5	0.25	0.0	0.00	0.17	0.05	50	
63		16.44	16.43	33.691	24.643	330.8	0.208	5.62	100.8	2.5	0.25	0.0	0.00	0.17	0.05	63	216
75	ISL	16.03	16.02	33.700	24.745	321.5	0.247	5.73	102.0	2.6	0.25	0.0	0.00	0.21	0.10	75	
76		15.96	15.95	33.701	24.761	320.0	0.250	5.74	102.0	2.6	0.25	0.0	0.00	0.22	0.11	76	215
87		14.62	14.61	33.710	25.063	291.4	0.284	5.78	100.0	3.1	0.29	0.1	0.04	0.31	0.22	87	214
96		14.34	14.33	33.704	25.118	286.4	0.310	5.73	98.6	3.3	0.31	0.4	0.09	0.28	0.21	96	213
100	ISL	13.89	13.88	33.666	25.183	280.3	0.321	5.69	97.0	3.6	0.35	0.8	0.09	0.26	0.21	100	
105		13.22	13.21	33.608	25.274	271.6	0.335	5.64	94.8	4.0	0.41	1.5	0.09	0.23	0.20	105	212
116		11.94	11.93	33.492	25.433	256.5	0.364	5.57	91.0	5.3	0.56	3.8	0.02	0.16	0.17	117	211
125	ISL	11.52	11.50	33.487	25.507	249.6	0.387	5.48	88.8	6.1	0.64	5.2	0.01	0.13	0.15	126	
127		11.45	11.43	33.489	25.521	248.3	0.392	5.46	88.3	6.3	0.66	5.6	0.01	0.13	0.14	128	210
138		10.60	10.58	33.455	25.646	236.4	0.418	5.29	84.0	8.6	0.85	8.6	0.01	0.08	0.10	139	209
150	ISL	10.04	10.02	33.518	25.791	222.8	0.446	4.83	75.8	12.8	1.11	12.9	0.01	0.05	0.07	151	
166		9.60	9.58	33.665	25.980	205.1	0.480	4.13	64.2	19.0	1.45	18.5	0.00	0.02	0.04	167	208
196		9.02	9.00	33.922	26.275	177.6	0.537	3.33	51.2	28.0	1.80	24.4	0.00	0.00	0.04	197	207
200	ISL	8.94	8.92	33.938	26.300	175.2	0.544	3.29	50.5	28.8	1.82	24.8	0.00			201	
232		8.32	8.30	34.001	26.445	161.8	0.598	3.10	46.9	34.3	1.97	26.8	0.00			233	206
250	ISL	8.04	8.01	34.019	26.501	156.6	0.627	2.85	42.9	37.7	2.09	28.3	0.00			251	
264		7.84	7.81	34.027	26.537	153.4	0.649	2.65	39.7	40.3	2.18	29.5	0.00			265	205
300	ISL	7.39	7.36	34.042	26.614	146.5	0.703	2.32	34.4	46.3	2.34	31.6	0.00			302	
316		7.22	7.19	34.046	26.641	144.0	0.726	2.20	32.5	48.7	2.40	32.4	0.00			318	204
378		6.67	6.64	34.068	26.734	135.8	0.813	1.70	24.8	57.1	2.61	35.1	0.00			380	203
400	ISL	6.48	6.44	34.086	26.774	132.2	0.842	1.46	21.2	61.0	2.71	36.3	0.00			402	
438		6.18	6.14	34.122	26.841	126.1	0.891	1.07	15.4	68.0	2.87	38.2	0.00			441	202
500	ISL	5.78	5.74	34.173	26.932	118.0	0.967	0.69	9.9	77.6	3.05	40.4	0.00			503	
515		5.68	5.64	34.186	26.955	115.9	0.985	0.60	8.5	79.9	3.09	40.9	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 25.4 N	121 59.6 W	12/01/01	1745 UTC	3841 m	010 30 kn	300 16 09	1	1015.8 mb	14.5 C	12.2 C	23m	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	16.77	16.77	33.792	24.642	328.9	0.000	5.59	101.0	2.9	0.25	0.0	0.00	0.14	0.04	0	
3	A	16.77	16.77	33.792	24.642	328.9	0.010	5.59	101.0	2.9	0.25	0.0	0.00	0.14	0.04	3	222
10	ISL	16.77	16.77	33.791	24.642	329.2	0.033	5.60	101.2	2.9	0.24	0.0	0.00	0.13	0.04	10	
14	A	16.77	16.77	33.790	24.641	329.4	0.046	5.61	101.4	2.9	0.24	0.0	0.00	0.13	0.04	14	220
15		16.77	16.77	33.792	24.643	329.3	0.049	5.76 U	104.1 U	2.9	0.27	0.0	0.00	0.14	0.04	15	221
20	ISL	16.77	16.77	33.791	24.642	329.5	0.066	5.60	101.2	2.9	0.26	0.0	0.00	0.14	0.04	20	
30	ISL	16.77	16.77	33.789	24.641	330.0	0.099	5.58	100.8	2.9	0.24	0.0	0.00	0.14	0.04	30	
31	A	16.77	16.76	33.789	24.641	330.0	0.102	5.58	100.8	2.9	0.24	0.0	0.00	0.14	0.04	31	219
38		16.79	16.78	33.797	24.643	330.1	0.125	5.58	100.9	2.8	0.24	0.0	0.00	0.14	0.04	38	218
48	A	16.81	16.80	33.805	24.645	330.2	0.158	5.58	100.9	2.8	0.24	0.0	0.00	0.14	0.04	48	217
50	ISL	16.81	16.80	33.803	24.643	330.4	0.165	5.58	100.9	2.8	0.24	0.0	0.00	0.14	0.04	50	
59	A	16.80	16.79	33.796	24.641	331.0	0.195	5.57	100.7	2.8	0.24	0.0	0.00	0.14	0.04	59	216
74		16.79	16.78	33.811	24.655	330.1	0.244	5.59	101.1	2.8	0.24	0.0	0.00	0.15	0.05	74	215
75	ISL	16.67	16.66	33.809	24.681	327.6	0.247	5.61	101.2	2.8	0.24	0.0	0.00	0.16	0.06	75	
84	A	15.61	15.60	33.811	24.925	304.6	0.276	5.76	101.7	3.3	0.25	0.0	0.01	0.26	0.18	84	214
95		15.26	15.25	33.879	25.055	292.5	0.309	5.65	99.1	3.4	0.27	0.1	0.06	0.25	0.18	95	213
100	ISL	15.02	15.00	33.901	25.124	286.0	0.323	5.58	97.4	3.5	0.29	0.4	0.11	0.24	0.19	100	
104		14.79	14.77	33.908	25.180	280.9	0.335	5.53	96.1	3.7	0.32	0.7	0.14	0.23	0.19	104	212
115		13.98	13.96	33.846	25.304	269.2	0.365	5.41	92.5	4.3	0.41	2.1	0.06	0.19	0.16	116	211
125		13.63	13.61	33.809	25.347	265.3	0.392	5.36	90.9	4.7	0.46	2.9	0.04	0.16	0.14	126	210
142		12.27	12.25	33.718	25.546	246.5	0.435	5.21	85.9	6.5	0.63	5.7	0.01	0.09	0.09	143	209
150	ISL	11.54	11.52	33.644	25.626	239.0	0.454	5.17	83.8	7.8	0.73	7.4	0.01	0.07	0.07	151	
165		10.33	10.31	33.568	25.781	224.1	0.489	4.99	78.8	11.3	0.97	11.2	0.00	0.04	0.05	166	208
193		9.43	9.41	33.884	26.179	186.7	0.547	3.79	58.8	23.3	1.57	21.1	0.00	0.00	0.02	194	207
200	ISL	9.30	9.28	33.920	26.228	182.1	0.560	3.64	56.3	24.9	1.64	22.2	0.00			201	
230		8.84	8.82	33.985	26.353	170.8	0.613	3.25	49.8	30.1	1.84	25.0	0.00			231	206
250	ISL	8.44	8.41	34.012	26.436	163.1	0.646	2.97	45.1	34.5	1.98	27.0	0.00			251	
269		8.05	8.02	34.027	26.507	156.5	0.676	2.73	41.1	38.6	2.11	28.8	0.00			270	205
300	ISL	7.53	7.50	34.041	26.594	148.5	0.724	2.42	36.0	44.3	2.27	30.9	0.00			302	
323		7.21	7.18	34.049	26.645	143.8	0.757	2.20	32.5	48.2	2.38	32.2	0.00			325	204
379		6.72	6.69	34.087	26.742	135.1	0.835	1.56	22.8	57.5	2.64	35.4	0.00			381	203
400	ISL	6.52	6.48	34.103	26.782	131.5	0.863	1.35	19.6	61.5	2.73	36.6	0.00			402	
442		6.16	6.12	34.137	26.856	124.8	0.917	0.98	14.1	69.2	2.89	38.7	0.00			445	202
500	ISL	5.85	5.81	34.192	26.938	117.5	0.987	0.64	9.2	77.1	3.03	40.2	0.00			503	
514		5.77	5.73	34.205	26.959	115.6	1.004	0.56	8.0	79.0	3.07	40.6	0.00			517	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 5.3 N	122 39.7 W	12/01/01	0759 UTC	3993 m	290 18 kn			1015.2 mb	15.5 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	17.00	17.00	33.850	24.633	329.7	0.000	5.54	100.6	2.6	0.23	0.1	0.00	0.13	0.04	0	
2		17.00	17.00	33.850	24.633	329.8	0.007	5.54	100.6	2.6	0.23	0.1	0.00	0.13	0.04	2	221
10	ISL	17.01	17.01	33.849	24.630	330.4	0.033	5.53	100.5	2.6	0.23	0.1	0.00	0.13	0.03	10	
16		17.01	17.01	33.849	24.630	330.5	0.053	5.53	100.5	2.6	0.23	0.1	0.00	0.13	0.03	16	220
20	ISL	17.01	17.01	33.849	24.630	330.7	0.066	5.53	100.5	2.6	0.23	0.1	0.00	0.13	0.03	20	
30	ISL	17.01	17.01	33.849	24.631	331.0	0.099	5.54	100.6	2.6	0.23	0.1	0.00	0.13	0.03	30	
32		17.01	17.00	33.849	24.631	331.0	0.106	5.54	100.6	2.6	0.23	0.1	0.00	0.13	0.03	32	219
47		17.01	17.00	33.850	24.632	331.4	0.155	5.55	100.8	2.4	0.23	0.1	0.00	0.14	0.04	47	218
50	ISL	17.01	17.00	33.850	24.632	331.5	0.165	5.55	100.8	2.4	0.23	0.1	0.00	0.14	0.04	50	
62		17.02	17.01	33.850	24.630	332.1	0.205	5.53	100.5	2.4	0.23	0.1	0.00	0.13	0.03	62	217
75	ISL	17.02	17.01	33.850	24.631	332.5	0.248	5.53	100.5	2.4	0.23	0.1	0.00	0.14	0.04	75	
76		17.02	17.01	33.850	24.631	332.5	0.252	5.53	100.5	2.4	0.23	0.1	0.00	0.14	0.04	76	216
86		17.01	17.00	33.850	24.634	332.6	0.285	5.53	100.4	2.4	0.23	0.1	0.00	0.13	0.03	86	215
94		15.43	15.42	33.689	24.871	310.0	0.311	5.82	102.4	3.0	0.26	0.1	0.00	0.25	0.17	94	214
100	ISL	14.91	14.90	33.706	24.998	298.0	0.329	5.78	100.6	3.1	0.26	0.1	0.01	0.23	0.19	100	
106		14.66	14.64	33.771	25.102	288.3	0.346	5.74	99.4	3.2	0.27	0.1	0.04	0.21	0.20	106	213
116		14.25	14.23	33.863	25.260	273.4	0.375	5.57	95.7	3.4	0.32	0.8	0.11	0.19	0.19	116	212
125		13.73	13.71	33.822	25.337	266.3	0.399	5.47	93.0	4.0	0.41	2.1	0.06	0.17	0.16	126	211
138		12.84	12.82	33.742	25.454	255.3	0.433	5.38	89.7	5.0	0.52	3.8	0.02	0.14	0.14	139	209
150	ISL	11.75	11.73	33.660	25.599	241.5	0.463	5.27	85.9	8.4	0.75	7.6	0.02	0.09	0.10	151	
165		10.47	10.45	33.616	25.795	222.9	0.497	4.96	78.6	5.0 U	0.51 U	3.8 U	0.02 U	0.04	0.04	166	208
194		9.44	9.42	33.814	26.123	192.1	0.558	3.53	54.7	23.8	1.66	22.2	0.00	0.00	0.02	195	207
200	ISL	9.32	9.30	33.849	26.170	187.7	0.569	3.35	51.8	25.3	1.73	23.2	0.00			201	
228		8.92	8.90	33.972	26.330	172.9	0.619	2.83	43.4	31.0	1.96	26.5	0.00			229	206
250	ISL	8.52	8.49	34.014	26.425	164.1	0.657	2.76	42.0	34.2	2.04	27.7	0.00			251	
271		8.12	8.09	34.031	26.499	157.3	0.690	2.69	40.5	37.2	2.10	28.4	0.00			272	205
300	ISL	7.59	7.56	34.045	26.588	149.0	0.735	2.45	36.5	43.2	2.23	30.3	0.00			302	
321		7.22	7.19	34.051	26.645	143.7	0.765	2.22	32.8	48.1	2.35	31.9	0.00			323	204
379		6.38	6.35	34.095	26.793	130.0	0.845	1.37	19.8	62.7	2.73	36.5	0.00			381	203
400	ISL	6.17	6.13	34.112	26.834	126.2	0.872	1.16	16.7	67.3	2.83	37.8	0.00			402	
431		5.93	5.89	34.139	26.886	121.5	0.910	0.90	12.9	73.3	2.94	39.3	0.00			434	202
500	ISL	5.65	5.61	34.208	26.976	113.7	0.991	0.50	7.1	81.4	3.10	41.1	0.00			503	
509		5.61	5.57	34.217	26.988	112.7	1.001	0.45	6.4	82.5	3.12	41.3	0.00			512	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 45.4 N	123 19.9 W	12/01/01	0144 UTC	4019 m	340 19 kn	290 15 10	6	1014.2 mb	15.5 C	12.0 C		8/8	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	16.94	16.94	33.799	24.608	332.1	0.000	5.57	101.0	2.5	0.24	0.1	0.00	0.13	0.04	0	
2		16.94	16.94	33.799	24.608	332.2	0.007	5.57	101.0	2.5	0.24	0.1	0.00	0.13	0.04	2	220
10	ISL	16.94	16.94	33.798	24.607	332.5	0.033	5.57	101.0	2.5	0.24	0.0	0.00	0.13	0.04	10	
16		16.94	16.94	33.797	24.607	332.7	0.053	5.57	101.0	2.5	0.24	0.0	0.00	0.13	0.04	16	219
20	ISL	16.94	16.94	33.796	24.606	333.0	0.067	5.57	101.0	2.5	0.24	0.0	0.00	0.13	0.04	20	
30		16.95	16.95	33.795	24.603	333.5	0.100	5.57	101.0	2.4	0.24	0.1	0.00	0.13	0.04	30	218
46		16.94	16.93	33.794	24.606	333.9	0.153	5.60	101.5	2.4	0.24	0.1	0.00	0.13	0.03	46	217
50	ISL	16.94	16.93	33.794	24.606	334.0	0.167	5.59	101.4	2.4	0.24	0.1	0.00	0.13	0.03	50	
61		16.94	16.93	33.793	24.605	334.4	0.203	5.57	101.0	2.4	0.24	0.1	0.00	0.13	0.04	61	216
75	ISL	15.33	15.32	33.535	24.774	318.6	0.249	5.77	101.2	2.9	0.30	0.1	0.03	0.27	0.15	75	
76		15.17	15.16	33.511	24.790	317.1	0.252	5.79	101.2	3.0	0.31	0.1	0.03	0.28	0.16	76	215
86		13.37	13.36	33.292	24.999	297.2	0.283	5.95	100.1	3.7	0.40	0.5	0.17	0.37	0.27	86	214
98		12.34	12.33	33.346	25.243	274.2	0.317	5.66	93.2	5.2	0.62	3.7	0.09	0.32	0.29	98	213
100	ISL	12.12	12.11	33.351	25.289	269.8	0.323	5.58	91.5	5.7	0.67	4.6	0.07	0.30	0.28	100	
107		11.38	11.37	33.357	25.431	256.3	0.341	5.33	86.0	7.3	0.82	7.5	0.03	0.21	0.23	107	212
116		10.65	10.64	33.336	25.544	245.6	0.364	5.30	84.2	8.8	0.91	9.1	0.02	0.14	0.16	117	211
124		9.63	9.62	33.280	25.673	233.3	0.383	5.51	85.5	9.6	0.93	9.8	0.01	0.07	0.09	125	210
125	ISL	9.63	9.62	33.298	25.687	232.0	0.385	5.47	84.9	9.9	0.95	10.1	0.01	0.07	0.09	126	
140		9.59	9.57	33.539	25.882	213.8	0.419	4.50	69.9	16.3	1.32	16.1	0.01	0.03	0.05	141	209
150	ISL	9.50	9.48	33.665	25.996	203.2	0.439	4.02	62.4	20.1	1.51	19.3	0.01	0.02	0.04	151	
162		9.37	9.35	33.780	26.107	192.9	0.463	3.58	55.4	24.0	1.69	22.3	0.00	0.01	0.03	163	208
194		9.06	9.04	33.896	26.248	180.1	0.523	3.14	48.3	28.6	1.87	25.1	0.00	0.00	0.02	195	207
200	ISL	8.97	8.95	33.917	26.279	177.2	0.534	3.10	47.6	29.5	1.89	25.5	0.00			201	
224		8.56	8.54	33.989	26.399	166.1	0.575	2.98	45.4	33.3	1.97	26.9	0.00			225	206
250	ISL	8.19	8.16	34.026	26.485	158.3	0.617	2.68	40.5	37.7	2.11	28.8	0.00			251	
269		7.95	7.92	34.039	26.531	154.2	0.647	2.44	36.6	41.0	2.22	30.1	0.00			270	205
300	ISL	7.59	7.56	34.063	26.602	147.7	0.693	2.13	31.7	45.7	2.37	31.8	0.00			302	
321		7.34	7.31	34.073	26.646	143.8	0.724	1.93	28.6	49.1	2.46	32.9	0.00			323	204
375		6.55	6.52	34.082	26.761	133.1	0.799	1.44	20.9	60.1	2.70	36.3	0.00			377	203
400	ISL	6.36	6.32	34.102	26.802	129.5	0.832	1.22	17.7	64.0	2.79	37.4	0.00			402	
438		6.15	6.11	34.140	26.859	124.4	0.880	0.92	13.3	69.6	2.92	38.8	0.00			441	202
500	ISL	5.70	5.66	34.199	26.962	115.0	0.954	0.57	8.1	80.4	3.08	40.8	0.00			503	
523		5.53	5.49	34.221	27.001	111.5	0.980	0.44	6.2	84.4	3.14	41.5	0.00			526	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 24.9 N	124 0.2 W	11/01/01	1907 UTC	4210 m	340 17 kn	290 12 10	1	1017.2 mb	14.2 C	11.9 C	34m	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	16.18	16.18	33.522	24.571	335.6	0.000	5.68	101.3	2.9	0.29	0.1	0.00	0.15	0.04	0	
2	A	16.18	16.18	33.522	24.571	335.7	0.007	5.68	101.3	2.9	0.29	0.1	0.00	0.15	0.04	2	222
10	ISL	16.16	16.16	33.517	24.572	335.9	0.034	5.70	101.6	2.7	0.28	0.0	0.00	0.15	0.05	10	
12		16.16	16.16	33.515	24.571	336.1	0.040	5.70	101.6	2.7	0.28	0.0	0.00	0.15	0.05	12	221
20	ISL	16.16	16.16	33.513	24.569	336.4	0.067	5.69	101.4	2.7	0.28	0.0	0.00	0.15	0.04	20	
22	A	16.16	16.16	33.513	24.569	336.5	0.074	5.69	101.4	2.7	0.28	0.0	0.00	0.15	0.04	22	220
30	ISL	16.17	16.17	33.517	24.570	336.7	0.101	5.69	101.5	2.7	0.28	0.0	0.00	0.15	0.05	30	
33		16.17	16.16	33.518	24.571	336.7	0.111	5.69	101.5	2.7	0.28	0.0	0.00	0.15	0.05	33	219
44	A	16.16	16.15	33.524	24.579	336.3	0.148	5.69	101.4	2.7	0.29	0.0	0.00	0.16	0.05	44	218
50	ISL	16.11	16.10	33.527	24.593	335.2	0.168	5.70	101.5	2.6	0.29	0.0	0.00	0.17	0.07	50	
53		16.09	16.08	33.528	24.598	334.8	0.178	5.70	101.5	2.6	0.29	0.0	0.00	0.19	0.08	53	217
63		15.26	15.25	33.444	24.719	323.5	0.211	5.82	101.9	2.9	0.32	0.0	0.01	0.31	0.14	63	216
69	A	14.02	14.01	33.329	24.895	306.8	0.230	5.91	100.8	3.4	0.39	0.4	0.09	0.35	0.21	69	215
75	ISL	13.43	13.42	33.287	24.983	298.5	0.248	5.90	99.4	3.8	0.44	0.9	0.20	0.34	0.23	75	
81		13.05	13.04	33.275	25.050	292.2	0.266	5.89	98.4	4.2	0.48	1.5	0.25	0.34	0.25	81	214
90	A	12.14	12.13	33.265	25.218	276.3	0.291	5.81	95.2	4.8	0.53	2.4	0.10	0.27	0.25	90	213
100	ISL	11.11	11.10	33.335	25.462	253.1	0.318	5.35	85.8	7.8	0.83	7.7	0.02	0.15	0.17	100	
102		10.93	10.92	33.357	25.511	248.5	0.323	5.24	83.7	8.6	0.90	9.0	0.01	0.13	0.15	102	212
113		10.27	10.26	33.490	25.730	227.9	0.349	4.68	73.8	12.8	1.18	13.8	0.01	0.06	0.09	113	211
125	ISL	9.97	9.96	33.539	25.819	219.6	0.376	4.43	69.4	15.6	1.31	16.0	0.01	0.04	0.06	126	
126	A	9.96	9.95	33.542	25.823	219.2	0.378	4.42	69.2	15.8	1.32	16.1	0.01	0.04	0.06	127	210
144		9.60	9.58	33.700	26.006	202.1	0.416	3.81	59.3	21.3	1.59	20.5	0.00	0.01	0.04	145	209
150	ISL	9.51	9.49	33.737	26.050	198.0	0.428	3.73	57.9	22.3	1.63	21.2	0.00	0.01	0.03	151	
169		9.24	9.22	33.830	26.167	187.3	0.465	3.56	55.0	24.9	1.72	22.7	0.00	0.00	0.02	170	208
199		8.73	8.71	33.967	26.355	169.9	0.518	2.97	45.4	31.7	1.96	26.3	0.00	0.00	0.02	200	207
200	ISL	8.72	8.70	33.970	26.359	169.5	0.520	2.95	45.1	31.9	1.97	26.4	0.00			201	
229		8.31	8.29	34.030	26.469	159.4	0.568	2.55	38.6	37.4	2.15	28.8	0.00			230	206
250	ISL	8.04	8.01	34.039	26.517	155.1	0.601	2.47	37.2	39.7	2.20	29.7	0.00			251	
270		7.79	7.76	34.037	26.553	152.0	0.631	2.44	36.5	41.8	2.24	30.3	0.00			271	205
300	ISL	7.36	7.33	34.046	26.621	145.7	0.676	2.20	32.6	47.0	2.37	32.0	0.00			302	
317		7.12	7.09	34.053	26.661	142.1	0.701	2.03	29.9	50.3	2.46	33.1	0.00			319	204
378		6.39	6.36	34.082	26.782	131.1	0.784	1.42	20.6	62.3	2.73	36.6	0.00			380	203
400	ISL	6.27	6.23	34.107	26.817	127.9	0.812	1.21	17.5	65.8	2.82	37.6	0.00			402	
436		6.12	6.08	34.151	26.872	123.2	0.858	0.90	13.0	71.1	2.95	39.0	0.00			439	202
500	ISL	5.74	5.70	34.218	26.973	114.1	0.933	0.55	7.8	80.6	3.11	40.6	0.00			503	
514		5.66	5.62	34.233	26.994	112.2	0.949	0.47	6.7	82.7	3.15	41.0	0.00			517	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 57.3 N	117 18.0 W	07/01/01	1929 UTC	51 m	00 kn	300 01 08	1	1016.1 mb	17.0 C	13.0 C	17m	4/8	CC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.03	15.03	33.585	24.875	306.6	0.000	5.97	104.1	2.9	0.30	0.1	0.00	1.42	0.28	0	
2	A	15.03	15.03	33.585	24.875	306.7	0.006	5.97	104.1	2.9	0.30	0.1	0.00	1.42	0.28	2	207
6		14.88	14.88	33.580	24.904	304.1	0.018	6.01	104.5	3.0	0.30	0.0	0.01	1.09	0.29	6	206
10	A	14.64	14.64	33.577	24.954	299.5	0.030	6.04	104.5	3.3	0.33	0.1	0.02	1.47	0.43	10	205
20	ISL	14.48	14.48	33.578	24.989	296.4	0.060	6.05	104.3	3.1	0.32	0.1	0.01	1.77	0.69	20	
22	A	14.45	14.45	33.578	24.995	295.9	0.066	6.05	104.3	3.1	0.32	0.1	0.01	1.83	0.71	22	204
28		14.41	14.41	33.577	25.003	295.3	0.084	6.01	103.5	3.1	0.33	0.1	0.02	1.49	0.61	28	203
30	ISL	14.40	14.40	33.578	25.006	295.1	0.090	6.01	103.5	3.1	0.34	0.1	0.02	1.42	0.61	30	
35	A	14.36	14.35	33.579	25.015	294.3	0.105	5.99	103.0	3.1	0.36	0.2	0.03	1.25	0.60	35	202
45	A	14.25	14.24	33.579	25.039	292.4	0.134	5.86	100.6	3.3	0.43	0.4	0.05	0.61	0.45	45	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 54.9 N	117 24.2 W	08/01/01	0514 UTC	635 m	00 kn	280 03 08	1	1014.2 mb	17.0 C	13.0 C	31m	1/8	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	15.61	15.61	33.577	24.742	319.4	0.000	5.79	102.1	2.6	0.30	0.0	0.00	0.20	0.05	0	
2		15.61	15.61	33.577	24.742	319.4	0.006	5.79	102.1	2.6	0.30	0.0	0.00	0.20	0.05	2	220
10		15.52	15.52	33.574	24.760	318.0	0.032	5.80	102.1	2.6	0.30	0.0	0.00	0.24	0.08	10	219
20		14.54	14.54	33.565	24.966	298.6	0.063	6.02	103.9	3.6	0.34	0.1	0.02	1.53	0.66	20	218
30		14.00	14.00	33.549	25.068	289.2	0.092	5.73	97.8	4.9	0.47	1.2	0.17	1.38	0.81	30	217
40		13.57	13.56	33.506	25.123	284.2	0.121	5.55	93.9	5.1	0.57	2.7	0.17	1.09	0.70	40	216
50		13.04	13.03	33.492	25.219	275.3	0.149	5.28	88.3	6.3	0.67	4.6	0.20	0.68	0.60	50	215
60		12.65	12.64	33.489	25.293	268.4	0.176	5.12	85.0	7.5	0.77	6.3	0.11	0.41	0.42	60	214
70		11.86	11.85	33.498	25.451	253.6	0.202	5.13	83.7	7.9	0.80	7.5	0.03	0.23	0.26	70	213
75	ISL	11.79	11.78	33.539	25.496	249.4	0.215	4.92	80.2	9.2	0.89	8.8	0.03	0.18	0.23	75	
85		11.64	11.63	33.587	25.561	243.5	0.239	4.44	72.2	12.2	1.09	11.3	0.03	0.13	0.20	85	212
100		11.27	11.26	33.623	25.657	234.7	0.275	4.24	68.4	13.9	1.20	13.0	0.02	0.08	0.14	100	211
120		11.10	11.09	33.657	25.715	229.6	0.322	3.98	64.0	15.6	1.32	14.6	0.02	0.06	0.11	121	210
125	ISL	10.99	10.97	33.668	25.743	227.0	0.333	3.93	63.0	16.1	1.35	15.2	0.02	0.05	0.10	126	
139		10.69	10.67	33.716	25.834	218.7	0.364	3.70	58.9	18.2	1.46	17.1	0.01	0.04	0.08	140	209
150	ISL	10.68	10.66	33.800	25.901	212.5	0.388	3.23	51.5	21.3	1.64	19.1	0.01	0.03	0.07	151	
169		10.66	10.64	33.953	26.025	201.3	0.427	2.42	38.6	26.8	1.96	22.6	0.01	0.01	0.05	170	208
199		9.87	9.85	34.073	26.254	179.9	0.484	2.14	33.6	31.2	2.13	26.1	0.01	0.00	0.04	200	207
200	ISL	9.85	9.83	34.075	26.259	179.5	0.486	2.13	33.4	31.3	2.13	26.2	0.01			201	
229		9.44	9.41	34.120	26.363	170.1	0.537	1.94	30.1	34.3	2.25	27.9	0.00			230	206
250	ISL	9.11	9.08	34.143	26.434	163.6	0.572	1.89	29.2	36.8	2.31	28.7	0.00			251	
268		8.84	8.81	34.157	26.488	158.7	0.601	1.87	28.7	38.9	2.35	29.2	0.00			270	205
300	ISL	8.42	8.39	34.160	26.556	152.7	0.651	1.81	27.5	42.1	2.41	30.2	0.00			302	
318		8.21	8.18	34.161	26.589	149.8	0.678	1.78	26.9	44.1	2.45	30.9	0.00			320	204
377		7.58	7.54	34.211	26.721	137.8	0.763	1.08	16.1	54.0	2.74	34.3	0.00			379	203
400	ISL	7.41	7.37	34.224	26.756	134.8	0.794	0.94	14.0	56.8	2.82	35.1	0.00			403	
437		7.16	7.12	34.241	26.805	130.6	0.843	0.79	11.7	61.1	2.93	36.2	0.00			440	202
500	ISL	6.64	6.59	34.270	26.899	122.1	0.923	0.52	7.6	69.9	3.06	38.2	0.00			503	
516		6.51	6.46	34.278	26.923	120.0	0.942	0.45	6.5	72.1	3.09	38.7	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 51.2 N	117 31.9 W	08/01/01	0712 UTC	835 m	190 05 kn			1014.9 mb	16.0 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	15.81	15.81	33.585	24.703	323.1	0.000	5.76	102.0	2.5	0.29	0.0	0.00	0.22	0.05	0	
2		15.81	15.81	33.585	24.703	323.1	0.006	5.76	102.0	2.5	0.29	0.0	0.00	0.22	0.05	2	220
10		15.81	15.81	33.583	24.702	323.5	0.032	5.76	102.0	2.5	0.29	0.0	0.00	0.21	0.05	10	219
20		15.18	15.18	33.556	24.821	312.4	0.064	5.85	102.3	2.6	0.30	0.0	0.00	0.22	0.08	20	218
30		14.74	14.74	33.555	24.916	303.7	0.095	5.86	101.6	2.9	0.33	0.1	0.01	0.38	0.19	30	217
40		13.73	13.72	33.468	25.061	290.1	0.125	5.69	96.6	3.9	0.47	1.7	0.16	0.67	0.45	40	216
50		12.99	12.98	33.467	25.209	276.2	0.153	5.36	89.6	6.0	0.65	4.8	0.09	0.50	0.40	50	215
59		12.41	12.40	33.547	25.385	259.7	0.177	4.84	79.9	9.1	0.88	8.0	0.06	0.25	0.28	59	214
70		11.90	11.89	33.545	25.480	250.9	0.205	4.97	81.2	8.5	0.84	8.0	0.04	0.17	0.23	70	213
75	ISL	11.69	11.68	33.563	25.533	245.9	0.218	4.77	77.6	9.8	0.93	9.4	0.04	0.14	0.20	75	
85		11.33	11.32	33.614	25.639	236.0	0.242	4.23	68.3	13.4	1.18	12.8	0.03	0.09	0.15	85	212
99		10.97	10.96	33.688	25.762	224.7	0.274	3.78	60.6	16.9	1.39	15.8	0.04	0.06	0.11	99	211
100	ISL	10.96	10.95	33.693	25.768	224.1	0.276	3.76	60.3	17.1	1.40	15.9	0.04	0.06	0.11	100	
120		10.79	10.78	33.799	25.881	213.8	0.320	3.23	51.6	21.0	1.62	18.7	0.01	0.02	0.06	121	210
125	ISL	10.75	10.73	33.836	25.917	210.5	0.331	3.03	48.4	22.4	1.70	19.6	0.01	0.02	0.06	126	
139		10.61	10.59	33.941	26.023	200.7	0.359	2.47	39.3	26.4	1.93	22.3	0.01	0.01	0.05	140	209
150	ISL	10.44	10.42	34.016	26.112	192.5	0.381	2.19	34.8	28.9	2.05	24.0	0.01	0.01	0.04	151	
168		10.14	10.12	34.110	26.237	181.0	0.415	1.91	30.1	31.9	2.19	26.1	0.01	0.01	0.03	169	208
198		9.72	9.70	34.154	26.343	171.5	0.467	1.80	28.1	34.4	2.28	27.6	0.00	0.00	0.03	199	207
200	ISL	9.69	9.67	34.156	26.349	170.9	0.471	1.80	28.1	34.6	2.29	27.7	0.00			201	
228		9.29	9.26	34.181	26.435	163.2	0.518	1.71	26.5	37.5	2.36	28.7	0.01			229	206
250	ISL	9.28	9.25	34.234	26.478	159.5	0.553	1.49	23.1	39.2	2.44	29.3	0.01			251	
268		9.27	9.24	34.269	26.507	157.2	0.582	1.32	20.4	40.6	2.50	29.7	0.00			270	205
300	ISL	8.72	8.69	34.233	26.567	151.8	0.631	1.40	21.4	43.5	2.53	30.6	0.00			302	
318		8.33	8.30	34.202	26.603	148.5	0.658	1.47	22.3	45.5	2.54	31.3	0.00			320	204
378		7.39	7.35	34.203	26.742	135.7	0.743	1.11	16.5	56.0	2.77	34.6	0.00			380	203
400	ISL	7.25	7.21	34.216	26.772	133.1	0.773	0.98	14.5	58.5	2.82	35.3	0.00			403	
438		7.09	7.05	34.241	26.814	129.6	0.823	0.79	11.6	62.2	2.90	36.3	0.00			441	202
500	ISL	6.70	6.65	34.257	26.881	123.9	0.901	0.59	8.6	68.4	3.00	37.9	0.00			503	
516		6.60	6.55	34.261	26.897	122.5	0.921	0.54	7.9	70.0	3.03	38.3	0.00			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 41.0 N	117 52.5 W	08/01/01	1118	UTC	621 m	330	05 kn			1014.8 mb	14.9 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	15.60	15.60	33.597	24.759	317.7	0.000	5.84	103.0	2.5	0.30	0.0	0.00	0.19	0.05	0	
1		15.60	15.60	33.597	24.759	317.7	0.003	5.84	103.0	2.5	0.30	0.0	0.00	0.19	0.05	1	220
10		15.60	15.60	33.597	24.760	318.0	0.032	5.76	101.6	2.5	0.29	0.0	0.00	0.18	0.05	10	219
20		15.21	15.21	33.566	24.822	312.3	0.063	6.21 U	108.7 U	2.5	0.30	0.0	0.00	0.19	0.05	20	218
30		15.13	15.13	33.586	24.855	309.5	0.094	5.84	102.0	2.5	0.30	0.0	0.00	0.25	0.08	30	217
40		15.06	15.05	33.582	24.868	308.6	0.125	6.06	105.7	2.6	0.30	0.0	0.00	0.29	0.11	40	216
50		14.11	14.10	33.470	24.984	297.7	0.156	5.98	102.3	3.4	0.40	0.6	0.09	0.59	0.34	50	215
60		13.27	13.26	33.457	25.146	282.5	0.185	5.79	97.3	5.0	0.60	3.4	0.26	0.52	0.36	60	214
70		11.90	11.89	33.463	25.417	256.9	0.212	5.19	84.7	8.6	0.89	8.7	0.02	0.24	0.27	70	213
75	ISL	11.53	11.52	33.469	25.490	250.0	0.224	4.98	80.7	9.8	0.97	10.2	0.02	0.17	0.23	75	
85		11.14	11.13	33.504	25.588	240.9	0.249	4.59	73.8	11.9	1.10	12.4	0.01	0.11	0.15	85	212
100		10.86	10.85	33.668	25.766	224.3	0.284	3.83	61.2	16.6	1.40	16.2	0.01	0.05	0.10	100	211
120		10.65	10.64	33.869	25.960	206.3	0.327	2.80	44.6	24.1	1.85	21.3	0.00	0.01	0.06	121	210
125	ISL	10.46	10.45	33.890	26.009	201.7	0.337	2.82	44.8	24.9	1.85	22.0	0.00	0.01	0.05	126	
140		9.85	9.83	33.923	26.139	189.5	0.366	2.89	45.3	26.4	1.86	23.4	0.00	0.00	0.04	141	209
150	ISL	9.61	9.59	33.940	26.193	184.6	0.385	2.92	45.5	27.1	1.87	23.9	0.00	0.00	0.03	151	
170		9.27	9.25	33.973	26.274	177.2	0.421	2.97	45.9	28.8	1.88	24.7	0.00	0.00	0.03	171	208
199		8.85	8.83	34.060	26.409	164.8	0.471	2.45	37.6	34.5	2.12	27.6	0.00	0.00	0.03	200	207
200	ISL	8.84	8.82	34.062	26.413	164.5	0.472	2.44	37.4	34.6	2.12	27.6	0.00			201	
229		8.54	8.52	34.086	26.478	158.7	0.519	2.28	34.7	37.1	2.19	28.6	0.00			230	206
250	ISL	8.19	8.16	34.079	26.526	154.4	0.552	2.27	34.3	39.8	2.24	29.5	0.01			251	
268		7.87	7.84	34.071	26.568	150.6	0.580	2.26	33.9	42.5	2.29	30.3	0.01			270	205
300	ISL	7.43	7.40	34.077	26.636	144.4	0.627	2.04	30.3	47.7	2.41	32.0	0.00			302	
318		7.26	7.23	34.090	26.670	141.3	0.653	1.85	27.3	50.6	2.49	32.9	0.00			320	204
378		7.24	7.20	34.208	26.767	133.2	0.735	0.98	14.5	58.0	2.79	35.3	0.00			380	203
400	ISL	7.09	7.05	34.232	26.807	129.7	0.764	0.79	11.6	61.5	2.87	36.2	0.00			403	
438		6.76	6.72	34.260	26.874	123.6	0.812	0.57	8.3	67.6	2.99	37.7	0.00			441	202
500	ISL	6.25	6.21	34.289	26.965	115.5	0.886	0.38	5.5	76.2	3.12	39.6	0.00			503	
515		6.13	6.08	34.297	26.987	113.5	0.903	0.33	4.8	78.3	3.15	40.0	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 30.6 N	118 12.6 W	08/01/01	1736	UTC	1671 m	320	18 kn	210 03 05	2	1016.9 mb	15.2 C	13.8 C	29m	8/8	NS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.71	15.71	33.586	24.726	320.8	0.000	5.75	101.7	2.4	0.29	0.0	0.00	0.20	0.06	0	
2	A	15.71	15.71	33.586	24.726	320.9	0.006	5.75	101.7	2.4	0.29	0.0	0.00	0.20	0.06	2	221
10		15.71	15.71	33.585	24.726	321.2	0.032	5.77	102.0	2.4	0.29	0.0	0.00	0.19	0.05	10	220
19	A	15.71	15.71	33.587	24.728	321.3	0.061	5.76	101.8	2.3	0.29	0.0	0.00	0.19	0.05	19	219
20	ISL	15.71	15.71	33.587	24.728	321.3	0.064	5.76	101.8	2.3	0.29	0.0	0.00	0.19	0.05	20	
28		15.52	15.52	33.571	24.758	318.7	0.090	5.80	102.1	2.4	0.29	0.0	0.00	0.20	0.08	28	218
30	ISL	15.40	15.40	33.561	24.777	316.9	0.096	5.83	102.4	2.4	0.29	0.0	0.00	0.22	0.09	30	
37	A	14.83	14.82	33.515	24.866	308.7	0.118	5.89	102.2	2.6	0.32	0.0	0.00	0.32	0.14	37	217
48		13.48	13.47	33.441	25.091	287.4	0.151	5.69	96.0	3.8	0.47	1.7	0.08	0.52	0.39	48	216
50	ISL	13.19	13.18	33.434	25.144	282.4	0.157	5.62	94.3	4.3	0.52	2.5	0.07	0.49	0.38	50	
58	A	12.17	12.16	33.435	25.344	263.6	0.178	5.28	86.7	6.7	0.74	6.3	0.03	0.31	0.30	58	215
68		11.54	11.53	33.484	25.499	248.9	0.204	4.83	78.3	9.8	0.98	10.3	0.02	0.19	0.21	68	214
75	ISL	11.28	11.27	33.545	25.594	240.1	0.221	4.48	72.2	11.9	1.14	12.9	0.02	0.16	0.21	75	
77	A	11.22	11.21	33.562	25.619	237.8	0.226	4.39	70.7	12.5	1.18	13.5	0.02	0.15	0.21	77	213
93		10.78	10.77	33.636	25.755	225.1	0.263	3.98	63.5	15.8	1.37	16.5	0.01	0.09	0.14	93	212
100	ISL	10.50	10.49	33.676	25.835	217.6	0.278	3.80	60.3	17.9	1.46	18.0	0.01	0.05	0.10	100	
107	A	10.27	10.26	33.714	25.904	211.2	0.293	3.64	57.5	19.8	1.55	19.3	0.01	0.02	0.07	108	211
122		10.24	10.23	33.762	25.947	207.4	0.325	3.40	53.7	21.2	1.64	20.6	0.01	0.03	0.07	123	210
125	ISL	10.15	10.14	33.779	25.976	204.7	0.331	3.36	52.9	21.8	1.66	21.0	0.01	0.03	0.06	126	
141		9.61	9.59	33.876	26.142	189.2	0.363	3.17	49.4	25.6	1.79	23.3	0.00	0.00	0.03	142	209
150	ISL	9.46	9.44	33.910	26.194	184.4	0.379	3.08	47.8	26.9	1.84	24.0	0.00	0.00	0.03	151	
169		9.23	9.21	33.960	26.270	177.5	0.414	2.88	44.5	29.4	1.93	25.3	0.00	0.00	0.03	170	208
198		8.62	8.60	34.031	26.422	163.4	0.463	2.55	38.9	35.4	2.11	28.0	0.00	0.00	0.03	199	207
200	ISL	8.59	8.57	34.036	26.431	162.6	0.466	2.52	38.4	35.8	2.12	28.1	0.00			201	
225		8.31	8.29	34.086	26.513	155.2	0.506	2.19	33.2	39.9	2.27	29.7	0.00			226	206
250	ISL	8.00	7.97	34.110	26.579	149.3	0.544	1.98	29.8	43.6	2.38	31.0	0.01			251	
270		7.76	7.73	34.120	26.622	145.4	0.574	1.84	27.5	46.4	2.45	31.9	0.01			272	205
300	ISL	7.49	7.46	34.137	26.675	140.8	0.617	1.60	23.8	50.7	2.56	33.2	0.00			302	
315		7.37	7.34	34.147	26.700	138.6	0.638	1.47	21.8	52.9	2.62	33.9	0.00			317	204
375		6.96	6.92	34.218	26.813	128.6	0.718	0.87	12.8	62.3	2.88	36.6	0.00			377	203
400	ISL	6.79	6.75	34.236	26.851	125.3	0.749	0.73	10.7	65.6	2.95	37.4	0.00			403	
434		6.58	6.54	34.254	26.893	121.6	0.791	0.59	8.6	69.7	3.02	38.2	0.00			437	202
500	ISL	6.21	6.17	34.290	26.971	114.9	0.869	0.39	5.6	76.7	3.12	39.7	0.00			503	
515		6.13	6.08	34.298	26.987	113.4	0.887	0.35	5.0	78.3	3.14	40.0	0.00			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN | CALCOFI CRUISE 0101 | STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 21.2 N	118 33.2 W	08/01/01	2106 UTC	1320 m	290 11 kn	270 02 05	1	1012.1 mb	15.8 C	13.2 C	23m	6/8	AC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.36	15.36	33.632	24.839	310.1	0.000	5.86	102.9	2.8	0.28	0.0	0.00	0.23	0.08	0	
2		15.36	15.36	33.632	24.839	310.1	0.006	5.86	102.9	2.8	0.28	0.0	0.00	0.23	0.08	2	220
10		15.31	15.31	33.625	24.845	309.8	0.031	5.88	103.1	2.7	0.28	0.0	0.00	0.25	0.08	10	219
20		15.15	15.15	33.608	24.868	308.0	0.062	5.90	103.1	2.9	0.29	0.0	0.00	0.23	0.10	20	218
30		14.68	14.68	33.594	24.959	299.6	0.092	5.88	101.8	3.5	0.34	0.3	0.02	0.69	0.32	30	217
40		12.79	12.78	33.587	25.341	263.4	0.120	5.11	85.1	8.3	0.81	7.2	0.18	0.82	0.46	40	216
50		11.57	11.56	33.608	25.590	239.9	0.146	4.31	69.9	13.1	1.20	13.8	0.09	0.43	0.40	50	215
60		11.22	11.21	33.638	25.677	231.8	0.169	4.02	64.8	15.1	1.33	15.9	0.04	0.31	0.50	60	214
69		10.84	10.83	33.682	25.780	222.3	0.190	3.72	59.5	17.4	1.46	18.0	0.02	0.19	0.31	69	213
75	ISL	10.70	10.69	33.700	25.818	218.7	0.203	3.62	57.7	18.3	1.51	18.8	0.02	0.14	0.24	75	
85		10.52	10.51	33.727	25.871	213.9	0.224	3.52	55.9	19.6	1.57	19.7	0.02	0.09	0.16	85	212
99		10.16	10.15	33.788	25.981	203.7	0.254	3.37	53.1	21.9	1.66	21.1	0.01	0.03	0.08	99	211
100	ISL	10.14	10.13	33.792	25.987	203.1	0.256	3.36	52.9	22.0	1.66	21.2	0.01	0.03	0.08	101	
120		9.87	9.86	33.861	26.087	194.0	0.295	3.14	49.2	24.6	1.77	22.8	0.01	0.01	0.05	121	210
125	ISL	9.81	9.80	33.886	26.117	191.3	0.305	3.03	47.4	25.6	1.81	23.4	0.01	0.01	0.05	126	
140		9.64	9.62	33.957	26.201	183.6	0.333	2.72	42.4	28.5	1.94	24.9	0.01	0.00	0.05	141	209
150	ISL	9.55	9.53	33.977	26.231	180.9	0.351	2.66	41.4	29.3	1.97	25.3	0.01	0.00	0.05	151	
170		9.34	9.32	34.008	26.290	175.7	0.387	2.56	39.7	30.9	2.03	26.0	0.00	0.00	0.05	171	208
199		8.90	8.88	34.118	26.447	161.3	0.436	2.06	31.6	37.1	2.25	28.9	0.00	0.00	0.03	200	207
200	ISL	8.88	8.86	34.117	26.449	161.0	0.438	2.07	31.8	37.2	2.25	28.9	0.00			201	
229		8.31	8.29	34.077	26.506	155.9	0.484	2.26	34.2	39.8	2.25	29.7	0.00			230	206
250	ISL	8.14	8.11	34.126	26.571	150.2	0.516	1.88	28.4	43.7	2.40	31.0	0.00			251	
269		8.02	7.99	34.184	26.634	144.4	0.544	1.43	21.5	47.8	2.56	32.4	0.00			271	205
300	ISL	7.58	7.55	34.215	26.723	136.3	0.587	1.12	16.7	54.4	2.73	34.3	0.00			302	
319		7.29	7.26	34.225	26.772	131.8	0.613	1.00	14.8	58.5	2.82	35.4	0.00			321	204
378		6.59	6.56	34.271	26.905	119.7	0.687	0.53	7.7	70.5	3.05	38.4	0.00			380	203
400	ISL	6.46	6.42	34.282	26.931	117.4	0.713	0.45	6.5	72.9	3.09	39.0	0.00			403	
439		6.31	6.27	34.298	26.964	114.8	0.758	0.38	5.5	75.9	3.13	39.6	0.00			442	202
500	ISL	6.01	5.97	34.318	27.018	110.2	0.827	0.30	4.3	81.0	3.21	40.6	0.00			503	
515		5.94	5.89	34.323	27.031	109.1	0.843	0.28	4.0	82.3	3.23	40.8	0.00			519	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0101 | STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 10.5 N	118 53.6 W	09/01/01	0127 UTC	1506 m	310 17 kn	250 04 05	1	1011.8 mb	15.7 C	13.2 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	15.28	15.28	33.591	24.825	311.4	0.000	5.88	103.1	3.0	0.31	0.0	0.00	0.22	0.06	0	
1		15.28	15.28	33.591	24.825	311.4	0.003	5.88	103.1	3.0	0.31	0.0	0.00	0.22	0.06	1	220
10	ISL	15.29	15.29	33.595	24.827	311.6	0.031	5.87	102.9	2.9	0.30	0.0	0.00	0.22	0.07	10	
15		15.29	15.29	33.597	24.828	311.6	0.047	5.86	102.7	2.9	0.29	0.0	0.00	0.22	0.08	15	219
20	ISL	15.28	15.28	33.598	24.832	311.4	0.062	5.88	103.1	2.9	0.31	0.0	0.00	0.23	0.08	20	
30		15.25	15.25	33.599	24.839	311.0	0.093	5.91	103.5	2.9	0.35	0.0	0.00	0.24	0.08	30	218
45		13.47	13.46	33.523	25.156	281.1	0.138	5.56	93.9	5.6	0.57	3.3	0.21	0.80	0.48	45	217
50	ISL	12.84	12.83	33.494	25.260	271.4	0.152	5.33	88.8	6.9	0.70	5.5	0.18	0.65	0.42	50	
54		12.37	12.36	33.477	25.338	264.0	0.162	5.14	84.8	8.0	0.81	7.3	0.14	0.48	0.34	54	216
66		11.46	11.45	33.493	25.521	246.8	0.193	4.73	76.5	10.8	1.03	11.0	0.03	0.24	0.26	66	215
75	ISL	10.97	10.96	33.579	25.677	232.2	0.215	4.31	69.0	13.9	1.24	14.3	0.01	0.13	0.21	75	
76		10.92	10.91	33.591	25.695	230.5	0.217	4.26	68.2	14.3	1.26	14.7	0.01	0.12	0.20	76	214
85		10.42	10.41	33.693	25.862	214.7	0.237	3.81	60.3	18.4	1.48	18.1	0.01	0.04	0.09	85	213
93		10.33	10.32	33.751	25.923	209.1	0.254	3.53	55.8	20.5	1.60	19.8	0.01	0.03	0.06	93	212
100	ISL	10.14	10.13	33.819	26.008	201.1	0.268	3.24	51.0	23.1	1.72	21.5	0.01	0.02	0.06	100	
109		9.86	9.85	33.901	26.120	190.7	0.286	2.94	46.1	26.2	1.85	23.5	0.01	0.01	0.05	110	211
124		9.48	9.47	33.956	26.226	180.9	0.314	2.87	44.6	28.3	1.91	24.8	0.00	0.00	0.05	125	210
125	ISL	9.46	9.45	33.961	26.233	180.2	0.316	2.86	44.4	28.5	1.92	24.9	0.00	0.00	0.05	126	
145		9.14	9.12	34.047	26.352	169.2	0.350	2.52	38.9	32.6	2.08	26.8	0.00	0.00	0.04	146	209
150	ISL	9.03	9.01	34.061	26.381	166.6	0.359	2.45	37.7	33.7	2.11	27.3	0.00	0.00	0.04	151	
168		8.67	8.65	34.100	26.468	158.5	0.388	2.19	33.4	37.4	2.22	28.8	0.00	0.00	0.04	169	208
199		8.49	8.47	34.165	26.547	151.6	0.436	1.73	26.3	41.9	2.41	30.4	0.00	0.00	0.03	200	207
200	ISL	8.48	8.46	34.166	26.550	151.4	0.438	1.72	26.2	42.0	2.41	30.4	0.00			201	
228		8.21	8.19	34.186	26.607	146.4	0.479	1.62	24.5	45.5	2.51	31.5	0.01			229	206
250	ISL	8.00	7.97	34.196	26.646	142.9	0.511	1.45	21.8	48.2	2.59	32.3	0.01			251	
270		7.82	7.79	34.203	26.679	140.1	0.540	1.28	19.2	50.7	2.66	33.1	0.00			272	205
300	ISL	7.54	7.51	34.215	26.729	135.7	0.581	1.09	16.2	54.9	2.75	34.4	0.00			302	
321		7.36	7.33	34.223	26.761	132.9	0.609	0.98	14.5	57.7	2.81	35.2	0.00			323	204
375		7.03	6.99	34.242	26.823	127.7	0.679	0.76	11.2	62.6	2.92	36.5	0.00			377	203
400	ISL	6.86	6.82	34.252	26.854	125.0	0.711	0.66	9.7	65.4	2.97	37.2	0.00			403	
438		6.61	6.57	34.269	26.901	120.9	0.758	0.53	7.7	69.8	3.03	38.2	0.00			441	202
500	ISL	6.28	6.24	34.296	26.966	115.4	0.831	0.39	5.6	75.8	3.13	39.4	0.00			503	
514		6.21	6.16	34.302	26.980	114.2	0.847	0.36	5.2	77.2	3.15	39.7	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 0.3 N	119 14.4 W	09/01/01	0656 UTC	1657 m	310 30 kn			1013.2 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	14.70	14.70		33.530	24.904	303.9	0.000									0	
2		14.70	14.70		33.530	D 24.904	303.9	0.006									2	1
10		14.70	14.70		33.527	D 24.902	304.4	0.030									10	1
20		14.68	14.68		33.529	D 24.908	304.1	0.061									20	1
30		14.62	14.62		33.528	D 24.920	303.3	0.091									30	1
40		14.54	14.53		33.526	D 24.937	301.9	0.121									40	1
50		13.27	13.27		33.506	D 25.183	278.7	0.150									50	1
60		12.25	12.25		33.503	D 25.380	260.1	0.177									60	1
75		11.54	11.53		33.559	D 25.558	243.6	0.215									75	1
100		10.67	10.66		33.670	D 25.801	220.9	0.273									100	1
125		9.96	9.95		33.879	D 26.086	194.3	0.325									126	1
150		9.55	9.53		33.982	D 26.235	180.5	0.372									151	1
170		8.91	8.89		34.020	26.368	168.1	0.407	2.62	40.2	33.1	2.05	27.0	0.00	0.00	0.03	171	208
196		8.50	8.48		34.076	26.476	158.3	0.449	2.29	34.8	38.0	2.23	29.0	0.00	0.00	0.03	197	207
200	ISL	8.46	8.44		34.082	26.487	157.3	0.456	2.24	34.0	38.5	2.25	29.2	0.00			201	
229		8.21	8.19		34.119	26.554	151.3	0.500	1.94	29.3	42.2	2.37	30.6	0.00			230	206
250	ISL	7.96	7.93		34.138	26.607	146.7	0.532	1.74	26.1	45.7	2.47	31.8	0.00			251	
268		7.76	7.73		34.153	26.648	142.9	0.558	1.58	23.6	48.7	2.56	32.7	0.00			270	205
300	ISL	7.56	7.53		34.192	26.708	137.7	0.603	1.28	19.1	52.9	2.69	33.9	0.00			302	
317		7.47	7.44		34.210	26.735	135.4	0.626	1.13	16.8	55.0	2.75	34.5	0.00			319	204
377		6.84	6.80		34.217	26.829	127.0	0.705	0.83	12.2	63.7	2.94	36.9	0.00			379	203
400	ISL	6.71	6.67		34.237	26.862	124.1	0.733	0.71	10.4	66.5	3.00	37.5	0.00			403	
436		6.56	6.52		34.272	26.910	120.0	0.777	0.53	7.7	70.4	3.08	38.3	0.00			439	202
500	ISL	6.24	6.20		34.298	26.973	114.7	0.852	0.37	5.3	76.2	3.14	39.5	0.00			503	
516		6.16	6.11		34.305	26.989	113.3	0.871	0.33	4.8	77.6	3.16	39.8	0.00			520	201

A) WATER SAMPLES ABOVE 170 METERS MISSING DUE TO ROSETTE FAILURE ON THE UP CAST.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 50.8 N	119 34.8 W	09/01/01	1800 UTC	1858 m	330 25 kn	330 10 06	1	1016.2 mb	14.4 C	11.9 C	14m	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	14.99	14.99		33.515	24.830	310.9	0.000	5.83	101.5	3.0	0.31	0.1	0.01	0.36	0.14	0	
3	A	14.99	14.99		33.515	24.830	311.0	0.009	5.83	101.5	3.0	0.31	0.1	0.01	0.36	0.14	3	223
9	A	14.98	14.98		33.514	24.832	311.1	0.028	5.84	101.7	2.9	0.31	0.1	0.01			9	222
10	ISL	14.98	14.98		33.514	24.832	311.1	0.031	5.84	101.7	2.9	0.31	0.1	0.01	0.35	0.14	10	
19	A	14.98	14.98		33.514	24.832	311.3	0.059	5.83	101.5	2.9	0.31	0.1	0.01	0.35	0.14	19	221
20	ISL	14.98	14.98		33.514	24.832	311.4	0.062	5.83	101.5	2.9	0.31	0.1	0.01	0.35	0.14	20	
30	A	14.97	14.97		33.513	24.834	311.5	0.093	5.85	101.8	2.8	0.31	0.1	0.01	0.36	0.14	30	220
39	A	14.96	14.95		33.513	24.836	311.5	0.121	5.84	101.6	2.8	0.32	0.1	0.01	0.36	0.15	39	219
46		14.92	14.91		33.510	24.843	311.1	0.143	5.83	101.4	2.7	0.32	0.1	0.02	0.35	0.15	46	218
50	ISL	14.89	14.88		33.509	24.849	310.7	0.156	5.84	101.5	2.7	0.32	0.1	0.03	0.37	0.16	50	
52	A	14.87	14.86		33.508	24.852	310.4	0.162	5.84	101.5	2.7	0.32	0.1	0.03	0.38	0.16	52	217
59		14.00	13.99		33.446	24.989	297.5	0.183	5.77	98.4	3.3	0.42	1.0	0.20	0.40	0.18	59	216
65		13.18	13.17		33.393	25.115	285.6	0.201	5.65	94.7	4.5	0.55	2.9	0.15	0.37	0.29	65	215
75		11.75	11.74		33.358	25.363	262.1	0.228	5.35	87.0	7.2	0.79	6.9	0.02	0.15	0.16	75	214
84		11.05	11.04		33.433	25.549	244.6	0.251	4.97	79.7	9.8	1.05	10.4	0.02	0.12	0.13	84	213
94		10.53	10.52		33.473	25.672	233.0	0.275	4.78	75.8	11.9	1.13	12.7	0.01	0.08	0.10	94	212
100	ISL	10.40	10.39		33.498	25.714	229.1	0.289	4.64	73.4	13.0	1.19	13.9	0.01	0.07	0.09	100	
110		10.29	10.28		33.565	25.785	222.6	0.311	4.30	67.8	15.3	1.34	16.1	0.01	0.05	0.07	111	211
125		10.07	10.06		33.767	25.980	204.3	0.343	3.42	53.8	21.7	1.67	21.4	0.01	0.02	0.04	126	210
146		9.48	9.46		33.894	26.178	185.9	0.384	3.07	47.7	26.8	1.84	24.3	0.01	0.00	0.02	147	209
150	ISL	9.40	9.38		33.903	26.198	184.0	0.392	3.05	47.3	27.3	1.86	24.6	0.01	0.00	0.02	151	
170		9.10	9.08		33.937	26.273	177.2	0.428	2.95	45.4	29.6	1.94	25.7	0.00	0.00	0.02	171	208
199		8.78	8.76		34.062	26.422	163.6	0.477	2.31	35.4	36.0	2.19	28.5	0.00	0.00	0.04	200	207
200	ISL	8.76	8.74		34.063	26.426	163.2	0.479	2.31	35.3	36.2	2.19	28.5	0.00			201	
229		8.10	8.08		34.062	26.526	154.0	0.525	2.39	36.0	40.2	2.23	29.7	0.00			230	206
250	ISL	7.85	7.83		34.087	26.583	148.8	0.556	2.14	32.1	43.6	2.34	30.9	0.00			251	
264		7.74	7.71		34.108	26.616	145.9	0.577	1.91	28.6	46.0	2.43	31.8	0.00			266	205
300	ISL	7.43	7.40		34.154	26.697	138.7	0.628	1.44	21.4	52.4	2.63	33.9	0.00			302	
317		7.29	7.26		34.172	26.731	135.7	0.652	1.25	18.5	55.4	2.71	34.8	0.00			319	204
377		6.67	6.64		34.198	26.837	126.1	0.730	0.84	12.3	65.4	2.90	37.5	0.00			379	203
400	ISL	6.52	6.48		34.220	26.874	122.8	0.759	0.70	10.2	68.8	2.97	38.3	0.00			403	
438		6.31	6.27		34.261	26.934	117.5	0.804	0.50	7.2	73.8	3.08	39.3	0.00			441	202
500	ISL	6.00	5.96		34.312	27.015	110.5	0.875	0.32	4.6	80.5	3.18	40.5	0.00			503	
516		5.92	5.87		34.326	27.036	108.6	0.893	0.27	3.9	82.2	3.20	40.8	0.00			520	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 30.7 N	120 14.7 W	10/01/01	0023 UTC	3927 m	310 17 kn	310 06 07	1	1016.1 mb	14.3 C	11.3 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	15.50	15.50	33.548	24.744	319.2	0.000	5.80	102.1	2.9	0.30	0.0	0.00	0.23	0.06	0	
2		15.50	15.50	33.548	24.744	319.2	0.006	5.80	102.1	2.9	0.30	0.0	0.00	0.23	0.06	2	220
10	ISL	15.49	15.49	33.547	24.746	319.3	0.032	5.79	101.9	2.8	0.30	0.0	0.00	0.23	0.07	10	
15		15.49	15.49	33.547	24.746	319.5	0.048	5.79	101.9	2.8	0.30	0.0	0.00	0.23	0.07	15	219
20	ISL	15.47	15.47	33.544	24.748	319.4	0.064	5.80	102.0	2.8	0.30	0.0	0.00	0.24	0.07	20	
30		15.43	15.43	33.539	24.753	319.2	0.096	5.81	102.1	2.8	0.31	0.0	0.00	0.25	0.08	30	218
45		15.41	15.40	33.537	24.757	319.3	0.144	5.80	101.9	2.8	0.30	0.0	0.00	0.26	0.08	45	217
50	ISL	15.14	15.13	33.487	24.778	317.5	0.160	5.84	102.0	3.0	0.31	0.1	0.00	0.35	0.14	50	
55		14.73	14.72	33.438	24.829	312.7	0.175	5.88	101.8	3.2	0.33	0.1	0.01	0.42	0.21	55	216
66		13.24	13.23	33.438	25.138	283.5	0.208	5.84	98.1	4.0	0.41	1.1	0.12	0.35	0.30	66	215
75		12.14	12.13	33.390	25.315	266.7	0.233	5.61	92.0	5.3	0.58	3.6	0.08	0.26	0.27	75	214
84		11.74	11.73	33.358	25.365	262.1	0.257	5.47	89.0	6.3	0.69	5.4	0.05	0.24	0.25	84	213
95		10.72	10.71	33.293	25.498	249.5	0.285	5.30	84.3	8.9	0.91	9.0	0.01	0.12	0.14	95	212
100	ISL	10.43	10.42	33.304	25.557	244.0	0.297	5.21	82.3	9.9	0.99	10.4	0.01	0.09	0.12	100	
109		10.09	10.08	33.360	25.659	234.5	0.319	5.02	78.8	11.8	1.12	12.6	0.01	0.07	0.09	110	211
123		9.82	9.81	33.487	25.803	221.0	0.351	4.56	71.2	15.4	1.32	15.9	0.01	0.04	0.06	124	210
125	ISL	9.81	9.80	33.513	25.825	218.9	0.355	4.46	69.6	16.1	1.36	16.5	0.01	0.04	0.06	126	
143		9.72	9.70	33.738	26.016	201.2	0.393	3.55	55.4	22.3	1.67	21.6	0.00	0.01	0.03	144	209
150	ISL	9.65	9.63	33.797	26.074	195.8	0.407	3.37	52.5	23.8	1.73	22.6	0.00	0.01	0.03	151	
170		9.38	9.36	33.911	26.208	183.5	0.445	3.11	48.2	27.0	1.83	24.4	0.00	0.00	0.02	171	208
197		8.99	8.97	33.987	26.330	172.3	0.493	2.91	44.7	30.8	1.95	26.1	0.00	0.00	0.02	198	207
200	ISL	8.95	8.93	33.994	26.342	171.2	0.498	2.88	44.2	31.3	1.97	26.3	0.00			201	
229		8.50	8.48	34.045	26.452	161.1	0.546	2.60	39.5	35.8	2.11	28.1	0.00			230	206
250	ISL	8.10	8.07	34.044	26.512	155.7	0.579	2.53	38.1	39.0	2.17	29.3	0.00			251	
270		7.73	7.70	34.038	26.562	151.1	0.610	2.44	36.4	42.3	2.24	30.4	0.00			272	205
300	ISL	7.35	7.32	34.068	26.640	144.0	0.654	2.03	30.1	48.2	2.43	32.4	0.00			302	
318		7.16	7.13	34.089	26.683	140.0	0.680	1.77	26.1	51.7	2.54	33.6	0.00			320	204
380		6.53	6.50	34.108	26.784	131.0	0.764	1.33	19.3	61.2	2.74	36.5	0.00			382	203
400	ISL	6.43	6.39	34.135	26.819	128.0	0.790	1.13	16.4	64.4	2.82	37.3	0.00			402	
438		6.28	6.24	34.189	26.881	122.5	0.837	0.78	11.3	70.1	2.96	38.6	0.00			441	202
500	ISL	5.93	5.89	34.229	26.958	115.7	0.911	0.53	7.6	77.7	3.09	40.2	0.00			503	
517		5.83	5.79	34.240	26.979	113.8	0.931	0.46	6.6	79.8	3.12	40.7	0.00			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 11.1 N	120 55.2 W	10/01/01	0633 UTC	3816 m	310 11 kn			1019.0 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	16.67	16.67	33.718	24.609	332.0	0.000	5.59	100.8	2.6	0.27	0.0	0.00	0.16	0.05	0	
3		16.67	16.67	33.718	24.609	332.1	0.010	5.59	100.8	2.6	0.27	0.0	0.00	0.16	0.05	3	220
10	ISL	16.67	16.67	33.718	24.609	332.3	0.033	5.59	100.8	2.5	0.27	0.0	0.00	0.15	0.04	10	
15		16.67	16.67	33.718	24.609	332.5	0.050	5.59	100.8	2.5	0.27	0.0	0.00	0.15	0.04	15	219
20	ISL	16.67	16.67	33.718	24.609	332.6	0.066	5.59	100.8	2.5	0.27	0.0	0.00	0.15	0.04	20	
30		16.68	16.68	33.718	24.607	333.2	0.100	5.59	100.8	2.6	0.28	0.0	0.00	0.16	0.04	30	218
45		16.68	16.67	33.718	24.608	333.6	0.150	5.59	100.8	2.5	0.27	0.1	0.00	0.15	0.05	45	217
50	ISL	16.68	16.67	33.718	24.608	333.8	0.166	5.59	100.8	2.5	0.27	0.1	0.00	0.15	0.05	50	
59		16.69	16.68	33.718	24.606	334.2	0.197	5.59	100.8	2.6	0.28	0.1	0.00	0.15	0.05	59	216
74		16.69	16.68	33.718	24.607	334.7	0.247	5.56	100.3	2.5	0.26	0.0	0.00	0.15	0.05	74	215
75	ISL	16.67	16.66	33.717	24.611	334.3	0.250	5.56	100.2	2.5	0.26	0.0	0.00	0.15	0.05	75	
84		16.52	16.51	33.710	24.640	331.8	0.280	5.62	101.0	2.6	0.26	0.1	0.00	0.17	0.07	84	214
96		13.95	13.94	33.562	25.090	289.0	0.317	5.79	98.7	3.5	0.36	0.4	0.08	0.26	0.17	96	213
100	ISL	13.51	13.50	33.541	25.164	282.0	0.329	5.74	97.0	3.8	0.40	0.8	0.11	0.25	0.19	100	
105		13.12	13.11	33.518	25.225	276.3	0.343	5.65	94.7	4.2	0.45	1.5	0.13	0.23	0.20	105	212
115		12.40	12.38	33.456	25.317	267.6	0.370	5.54	91.4	5.2	0.55	3.2	0.09	0.19	0.18	115	211
124		11.72	11.70	33.468	25.455	254.5	0.393	5.15	83.8	7.9	0.82	7.6	0.02	0.13	0.15	125	210
125	ISL	11.64	11.62	33.472	25.473	252.8	0.396	5.11	83.0	8.2	0.85	8.0	0.02	0.13	0.15	126	
139		10.71	10.69	33.558	25.707	230.7	0.430	4.54	72.3	13.1	1.18	13.4	0.01	0.08	0.09	140	209
150	ISL	10.55	10.53	33.699	25.845	217.8	0.454	3.94	62.6	17.2	1.43	17.1	0.00	0.05	0.06	151	
165		10.34	10.32	33.840	25.992	204.2	0.486	3.16	50.0	22.5	1.71	21.1	0.00	0.02	0.04	166	208
194		9.92	9.90	34.020	26.204	184.5	0.542	2.36	37.0	29.1	2.04	25.4	0.00	0.00	0.03	195	207
200	ISL	9.85	9.83	34.039	26.231	182.1	0.553	2.30	36.0	29.8	2.07	25.8	0.00			201	
228		9.57	9.54	34.100	26.326	173.7	0.603	2.17	33.8	32.3	2.16	27.0	0.00			229	206
250	ISL	9.37	9.34	34.149	26.397	167.3	0.641	1.97	30.6	34.8	2.26	28.0	0.00			251	
269		9.21	9.18	34.186	26.452	162.4	0.672	1.78	27.5	37.0	2.34	28.8	0.00			270	205
300	ISL	8.93	8.90	34.222	26.526	155.9	0.721	1.52	23.4	40.5	2.45	30.0	0.00			302	
318		8.76	8.73	34.238	26.565	152.4	0.749	1.38	21.1	42.6	2.52	30.7	0.00			320	204
379		8.19	8.15	34.293	26.696	140.7	0.838	0.85	12.8	51.0	2.79	33.1	0.00			381	203
400	ISL	7.90	7.86	34.288	26.736	137.2	0.868	0.78	11.7	54.1	2.85	34.0	0.00			402	
439		7.38	7.34	34.276	26.802	131.1	0.920	0.68	10.1	59.8	2.94	35.7	0.00			442	202
500	ISL	6.92	6.87	34.313	26.895	122.8	0.997	0.42	6.2	67.6	3.07	37.6	0.00			503	
515		6.81	6.76	34.323	26.918	120.8	1.016	0.35	5.1	69.5	3.10	38.1	0.00			518	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0101 | STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
30 50.9 N	121 35.4 W	10/01/01	1243 UTC	4097 m	290 08 kn			1016.8 mb	16.9 C	14.2 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	16.69	16.69	33.740	24.621	330.9	0.000	5.58	100.7	2.6	0.26	0.0	0.00	0.11	0.03	0	
2		16.69	16.69	33.740	24.621	330.9	0.007	5.58	100.7	2.6	0.26	0.0	0.00	0.11	0.03	2	220
10	ISL	16.68	16.68	33.737	24.621	331.2	0.033	5.57	100.5	2.5	0.26	0.0	0.00	0.12	0.03	10	
15		16.68	16.68	33.736	24.621	331.4	0.050	5.57	100.5	2.5	0.26	0.0	0.00	0.12	0.03	15	219
20	ISL	16.63	16.63	33.720	24.620	331.6	0.066	5.58	100.5	2.5	0.26	0.0	0.00	0.12	0.03	20	
30		16.47	16.47	33.673	24.621	331.8	0.099	5.61	100.7	2.6	0.26	0.0	0.00	0.12	0.04	30	218
45		16.19	16.18	33.606	24.635	331.0	0.149	5.63	100.5	2.6	0.27	0.0	0.00	0.14	0.04	45	217
50	ISL	16.16	16.15	33.603	24.640	330.7	0.166	5.65	100.8	2.6	0.27	0.0	0.00	0.14	0.05	50	
55		16.10	16.09	33.597	24.649	330.0	0.182	5.68	101.2	2.6	0.27	0.0	0.00	0.14	0.05	55	216
65		15.67	15.66	33.541	24.703	325.1	0.215	5.73	101.2	2.7	0.29	0.0	0.00	0.25	0.13	65	215
75		14.31	14.30	33.478	24.949	301.8	0.246	5.82	99.9	3.3	0.34	0.2	0.04	0.47	0.35	75	214
85		13.59	13.58	33.472	25.094	288.2	0.276	5.69	96.3	3.9	0.42	1.2	0.14	0.34	0.28	85	213
95		12.73	12.72	33.478	25.270	271.6	0.304	5.43	90.2	5.3	0.58	3.9	0.03	0.21	0.22	95	212
100	ISL	12.42	12.41	33.481	25.333	265.7	0.317	5.32	87.8	6.1	0.65	5.1	0.03	0.18	0.20	100	
109		12.00	11.99	33.484	25.415	258.0	0.341	5.16	84.4	7.3	0.76	7.0	0.02	0.15	0.16	109	211
125		11.44	11.42	33.476	25.513	249.0	0.381	5.02	81.2	8.7	0.88	8.9	0.01	0.10	0.12	126	210
144		10.69	10.67	33.564	25.716	230.0	0.427	4.55	72.4	12.9	1.13	13.2	0.01	0.06	0.08	145	209
150	ISL	10.49	10.47	33.584	25.766	225.3	0.441	4.44	70.4	14.1	1.20	14.4	0.01	0.05	0.07	151	
171		9.90	9.88	33.675	25.938	209.3	0.486	4.01	62.8	18.6	1.44	18.3	0.00	0.02	0.04	172	208
200		9.31	9.29	33.933	26.237	181.3	0.543	3.00	46.4	27.8	1.86	24.6	0.00	0.00	0.03	201	207
228		8.78	8.76	33.977	26.356	170.4	0.592	3.05	46.6	31.0	1.90	25.8	0.00			229	206
250	ISL	8.61	8.58	34.050	26.440	162.8	0.629	2.61	39.8	35.0	2.07	27.6	0.00			251	
269		8.50	8.47	34.111	26.505	156.9	0.659	2.14	32.5	38.8	2.25	29.2	0.00			270	205
300	ISL	8.09	8.06	34.145	26.594	148.9	0.706	1.79	27.0	44.1	2.42	31.1	0.00			302	
319		7.81	7.78	34.151	26.640	144.6	0.734	1.64	24.6	47.2	2.50	32.2	0.00			321	204
378		7.05	7.01	34.174	26.766	133.1	0.816	1.17	17.2	57.5	2.73	35.4	0.00			380	203
400	ISL	6.92	6.88	34.199	26.804	129.8	0.845	0.96	14.1	60.8	2.82	36.3	0.00			402	
440		6.77	6.73	34.248	26.864	124.7	0.896	0.61	8.9	66.0	2.96	37.5	0.00			443	202
500	ISL	6.48	6.43	34.293	26.938	118.3	0.969	0.39	5.7	72.0	3.08	38.8	0.00			503	
512		6.42	6.37	34.302	26.953	116.9	0.983	0.35	5.1	73.2	3.10	39.0	0.00			515	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0101 | STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
30 30.9 N	122 15.9 W	10/01/01	1905 UTC	4195 m	320 20 kn	240 05 09	1	1016.9 mb	18.0 C	15.6 C	33m	6/8 SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.99	16.99	33.774	24.577	335.1	0.000	5.57	101.1	2.4	0.25	0.0	0.00	0.12	0.04	0	
2	A	16.99	16.99	33.774	24.577	335.1	0.007	5.57	101.1	2.4	0.25	0.0	0.00	0.12	0.04	2	223
10		16.99	16.99	33.773	24.576	335.5	0.034	5.57	101.1	2.3	0.25	0.0	0.00	0.12	0.03	10	222
20	A	16.99	16.99	33.773	24.577	335.8	0.067	5.57	101.1	2.3	0.25	0.0	0.00	0.13	0.04	20	221
30	ISL	16.98	16.98	33.772	24.579	335.9	0.101	5.58	101.3	2.2	0.25	0.0	0.00	0.12	0.04	30	
31		16.98	16.97	33.772	24.579	335.9	0.104	5.58	101.3	2.2	0.25	0.0	0.00	0.12	0.04	31	220
42	A	16.98	16.97	33.771	24.578	336.3	0.141	5.57	101.1	2.1	0.25	0.0	0.00	0.13	0.04	42	219
50	ISL	16.98	16.97	33.772	24.579	336.5	0.168	5.57	101.1	2.1	0.25	0.0	0.00	0.13	0.04	50	
54		16.98	16.97	33.772	24.580	336.6	0.181	5.57	101.1	2.1	0.25	0.0	0.00	0.13	0.04	54	218
67	A	16.97	16.96	33.769	24.580	337.0	0.225	5.59	101.4	2.0	0.25	0.0	0.00	0.13	0.04	67	217
75	ISL	15.93	15.92	33.583	24.677	327.9	0.252	5.70	101.2	2.2	0.29	0.0	0.00	0.23	0.12	75	
77		15.66	15.65	33.539	24.704	325.4	0.258	5.73	101.1	2.2	0.30	0.0	0.00	0.26	0.14	77	216
87	A	15.20	15.19	33.511	24.784	318.0	0.290	5.76	100.7	2.3	0.33	0.0	0.03	0.31	0.18	87	215
95		14.73	14.72	33.553	24.919	305.4	0.315	5.73	99.3	2.6	0.35	0.2	0.12	0.30	0.20	95	214
100	ISL	14.31	14.30	33.524	24.985	299.1	0.331	5.71	98.1	2.8	0.37	0.4	0.19	0.27	0.19	100	
103		14.10	14.09	33.511	25.020	295.9	0.339	5.70	97.5	2.9	0.39	0.6	0.22	0.25	0.19	103	213
112		14.16	14.14	33.611	25.084	290.0	0.366	5.50	94.2	2.9	0.42	1.2	0.11	0.24	0.19	112	212
122	A	13.65	13.63	33.634	25.208	278.4	0.394	5.34	90.5	3.6	0.51	2.7	0.03	0.18	0.17	123	211
125	ISL	13.51	13.49	33.636	25.238	275.6	0.403	5.30	89.6	4.2	0.53	3.0	0.03	0.17	0.16	126	
131		13.19	13.17	33.629	25.297	270.1	0.419	5.24	88.0	5.4	0.57	3.7	0.02	0.15	0.14	132	210
139		12.55	12.53	33.599	25.400	260.4	0.440	5.20	86.1	6.3	0.65	5.1	0.02	0.11	0.11	140	209
150	ISL	11.79	11.77	33.579	25.529	248.2	0.468	5.06	82.5	8.0	0.78	7.3	0.02	0.08	0.08	151	
164		10.98	10.96	33.592	25.687	233.3	0.502	4.76	76.2	11.1	0.99	10.7	0.01	0.05	0.06	165	208
193		9.65	9.63	33.759	26.045	199.5	0.565	3.85	60.0	21.1	1.53	19.6	0.00	0.01	0.03	194	207
200	ISL	9.48	9.46	33.799	26.104	193.9	0.578	3.72	57.7	22.8	1.60	20.8	0.00			201	
229		8.98	8.96	33.939	26.295	176.3	0.632	3.29	50.5	28.5	1.81	24.1	0.00			230	206
250	ISL	8.60	8.57	34.000	26.402	166.3	0.668	2.96	45.1	32.8	1.96	26.3	0.00			251	
269		8.30	8.27	34.035	26.476	159.6	0.699	2.69	40.7	36.5	2.08	27.9	0.00			270	205
300	ISL	7.97	7.94	34.069	26.552	152.7	0.747	2.33	35.0	41.1	2.24	29.8	0.00			302	
317		7.81	7.78	34.077	26.582	150.1	0.773	2.16	32.3	43.4	2.31	30.7	0.00			319	204
382		6.99	6.95	34.091	26.709	138.5	0.867	1.67	24.5	53.7	2.57	34.2	0.00			384	203
400	ISL	6.85	6.81	34.100	26.735	136.2	0.892	1.52	22.3	56.2	2.63	35.1	0.00			402	
434		6.68	6.64	34.133	26.785	131.9	0.937	1.22	17.8	60.5	2.75	36.4	0.00			437	202
500	ISL	6.71	6.66	34.290	26.905	121.6	1.021	0.55	8.0	68.3	3.00	37.5	0.00			503	
514		6.72	6.67	34.323	26.930	119.5	1.038	0.41	6.0	69.9	3.05	37.7	0.00			517	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
30 10.9 N	122 54.9 W	11/01/01	0358 UTC	3981 m	240 16 kn			1012.9 mb	15.3 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	16.57	16.57	33.620	24.557	337.0	0.000	5.64	101.4	2.9	0.28	0.1	0.00	0.11	0.03	0	
4		16.57	16.57	33.620	24.557	337.1	0.013	5.64	101.4	2.9	0.28	0.1	0.00	0.11	0.03	4	220
10	ISL	16.57	16.57	33.620	24.557	337.3	0.034	5.64	101.4	2.9	0.28	0.1	0.00	0.11	0.03	10	
16		16.57	16.57	33.621	24.558	337.4	0.054	5.63	101.3	2.8	0.28	0.1	0.00	0.11	0.03	16	219
20	ISL	16.58	16.58	33.624	24.558	337.5	0.067	5.62	101.1	2.8	0.28	0.1	0.00	0.11	0.03	20	
30	ISL	16.61	16.61	33.632	24.558	337.9	0.101	5.61	101.0	2.8	0.28	0.1	0.00	0.12	0.03	30	
31		16.61	16.61	33.633	24.558	337.8	0.105	5.61	101.0	2.8	0.28	0.1	0.00	0.12	0.03	31	218
46		16.59	16.58	33.624	24.557	338.5	0.155	5.63	101.3	2.8	0.28	0.1	0.00	0.11	0.03	46	217
50	ISL	16.61	16.60	33.631	24.558	338.5	0.169	5.62	101.1	2.8	0.28	0.1	0.00	0.11	0.03	50	
60		16.65	16.64	33.648	24.562	338.5	0.203	5.61	101.1	2.7	0.27	0.1	0.00	0.12	0.03	60	216
72		16.07	16.06	33.698	24.734	322.4	0.242	5.77	102.8	2.9	0.27	0.1	0.00	0.21	0.12	72	215
75	ISL	16.03	16.02	33.756	24.788	317.4	0.252	5.78	102.9	2.9	0.27	0.1	0.00	0.21	0.14	75	
84		15.65	15.64	33.866	24.958	301.4	0.280	5.81	102.7	2.9	0.25	0.1	0.00	0.21	0.18	84	214
94		14.18	14.17	33.671	25.126	285.5	0.309	5.75	98.6	3.5	0.33	0.3	0.07	0.25	0.19	94	213
100	ISL	13.53	13.52	33.629	25.228	275.9	0.326	5.66	95.7	4.0	0.41	1.3	0.08	0.23	0.20	100	
103		13.21	13.20	33.607	25.275	271.4	0.334	5.62	94.4	4.3	0.46	2.0	0.08	0.21	0.20	103	212
112		12.01	12.00	33.429	25.370	262.4	0.358	5.54	90.6	5.6	0.63	4.4	0.03	0.17	0.18	112	211
124		11.34	11.32	33.440	25.503	249.9	0.389	5.38	86.8	6.8	0.73	6.5	0.01	0.11	0.12	125	210
125	ISL	11.29	11.27	33.439	25.511	249.1	0.391	5.37	86.5	6.9	0.74	6.7	0.01	0.11	0.12	126	
139		10.72	10.70	33.437	25.611	239.8	0.426	5.16	82.1	9.1	0.91	9.5	0.01	0.07	0.09	140	209
150	ISL	10.46	10.44	33.512	25.715	230.1	0.452	4.97	78.7	10.8	1.00	11.3	0.01	0.05	0.07	151	
164		10.24	10.22	33.644	25.856	217.0	0.483	4.65	73.3	13.6	1.13	13.7	0.00	0.03	0.05	165	208
195		9.71	9.69	33.909	26.153	189.4	0.546	3.52	54.9	23.8	1.66	21.7	0.00	0.00	0.02	196	207
200	ISL	9.56	9.54	33.927	26.192	185.8	0.555	3.50	54.5	24.8	1.69	22.3	0.00			201	
231		8.64	8.62	33.990	26.388	167.4	0.610	3.41	52.0	30.4	1.81	24.9	0.00			232	206
250	ISL	8.32	8.29	34.040	26.476	159.2	0.641	3.04	46.0	34.9	1.98	26.9	0.00			251	
271		8.02	7.99	34.081 D	26.553	152.1	0.674	2.57	38.7	40.1	2.18	29.1	0.00			272	205
300	ISL	7.43	7.40	34.069	26.630	145.0	0.717	2.18	32.3	46.5	2.36	31.8	0.00			302	
318		7.09	7.06	34.054	26.666	141.7	0.743	2.00	29.4	50.2	2.45	33.2	0.00			320	204
378		6.53	6.50	34.090	26.770	132.3	0.825	1.44	20.9	60.2	2.69	36.2	0.00			380	203
400	ISL	6.34	6.30	34.112	26.812	128.5	0.853	1.21	17.5	64.5	2.79	37.4	0.00			402	
441		6.01	5.97	34.156	26.889	121.4	0.905	0.82	11.8	72.3	2.96	39.3	0.00			444	202
500	ISL	5.66	5.62	34.210	26.976	113.7	0.974	0.54	7.7	81.0	3.10	41.0	0.00			503	
503		5.64	5.60	34.213	26.981	113.3	0.977	0.53	7.5	81.4	3.11	41.1	0.00			506	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0101 STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
29 50.9 N	123 34.9 W	11/01/01	1149 UTC	4162 m	350 22 kn			1014.2 mb	13.2 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	15.96	15.96	33.383	24.514	341.1	0.000	5.68	100.8	3.0	0.30	0.0	0.00	0.17	0.06	0	
2		15.96	15.96	33.383	24.514	341.1	0.007	5.68	100.8	3.0	0.30	0.0	0.00	0.17	0.06	2	220
10	ISL	15.97	15.97	33.385	24.514	341.4	0.034	5.69	101.0	3.0	0.30	0.0	0.00	0.16	0.06	10	
17		15.97	15.97	33.386	24.515	341.5	0.058	5.69	101.0	3.0	0.30	0.0	0.00	0.16	0.05	17	219
20	ISL	15.97	15.97	33.385	24.514	341.7	0.068	5.69	101.0	3.0	0.30	0.0	0.00	0.14	0.04	20	
30	ISL	15.96	15.96	33.382	24.514	342.0	0.102	5.68	100.8	2.9	0.31	0.0	0.00	0.08	0.03	30	
31		15.96	15.96	33.382	24.514	342.0	0.106	5.68	100.8	2.9	0.31	0.0	0.00	0.08	0.03	31	218
46		15.97	15.96	33.382	24.513	342.7	0.157	5.68	100.8	2.9	0.31	0.0	0.00	0.17	0.05	46	217
50	ISL	15.98	15.97	33.384	24.512	342.8	0.171	5.68	100.8	2.9	0.31	0.0	0.00	0.17	0.05	50	
61		16.01	16.00	33.391	24.511	343.3	0.209	5.67	100.7	2.9	0.30	0.0	0.00	0.17	0.05	61	216
74		15.81	15.80	33.449	24.601	335.1	0.253	5.72	101.2	3.0	0.34	0.1	0.01	0.26	0.17	74	215
75	ISL	15.67	15.66	33.447	24.631	332.3	0.256	5.74	101.3	3.0	0.34	0.1	0.02	0.26	0.17	75	
86		13.89	13.88	33.401	24.978	299.4	0.291	5.89	100.2	3.6	0.38	0.4	0.14	0.22	0.17	86	214
99		12.44	12.43	33.284	25.176	280.6	0.329	5.84	96.3	4.3	0.47	1.5	0.16	0.17	0.17	99	213
100	ISL	12.37	12.36	33.283	25.189	279.4	0.331	5.83	96.0	4.4	0.48	1.6	0.15	0.17	0.16	100	
108		11.95	11.94	33.295	25.278	271.1	0.353	5.70	93.1	4.9	0.55	2.8	0.05	0.14	0.14	108	212
112		11.80	11.79	33.312	25.319	267.2	0.364	5.65	92.0	5.2	0.58	3.4	0.03	0.13	0.17	112	211
125		11.00	10.98	33.290	25.447	255.1	0.398	5.53	88.5	6.3	0.70	5.6	0.01	0.09	0.11	126	210
143		10.84	10.82	33.473	25.618	239.3	0.443	5.35	85.4	7.5	0.78	7.5	0.01	0.07	0.09	144	209
150	ISL	10.50	10.48	33.518	25.713	230.3	0.459	5.09	80.7	9.9	0.93	10.0	0.01	0.05	0.07	151	
163		9.83	9.81	33.596	25.888	213.8	0.488	4.56	71.2	14.9	1.24	15.1	0.00	0.02	0.04	164	208
194		9.56	9.54	33.837	26.121	192.3	0.551	4.01	62.4	20.7	1.54	19.3	0.00	0.01	0.01	195	207
200	ISL	9.49	9.47	33.874	26.161	188.5	0.562	4.01	62.3	21.4	1.54	19.7	0.00			201	
231		9.04	9.01	34.007	26.339	172.2	0.618	4.00	61.5	25.2	1.54	21.2	0.00			232	206
250	ISL	8.66	8.63	34.023	26.411	165.6	0.650	3.77	57.5	28.9	1.66	23.2	0.00			251	
275		8.13	8.10	34.013	26.484	158.8	0.691	3.38	50.9	34.3	1.87	26.0	0.00			276	205
300	ISL	7.67	7.64	34.012	26.551	152.6	0.730	3.04	45.3	39.6	2.04	28.2	0.00			302	
317		7.38	7.35	34.011	26.591	148.9	0.755	2.82	41.8	43.2	2.15	29.6	0.00			319	204
374		6.47	6.44	34.017	26.720	136.9	0.837	2.09	30.3	56.2	2.50	34.3	0.00			376	203
400	ISL	6.17	6.13	34.046	26.782	131.1	0.872	1.67	24.1	62.6	2.66	36.3	0.00			402	
434		5.87	5.83	34.096	26.859	124.0	0.915	1.14	16.3	70.3	2.86	38.6	0.00			437	202
500	ISL	5.69	5.65	34.204	26.968	114.5	0.994	0.57	8.1	79.7	3.07	40.6	0.00			503	
520		5.63	5.59	34.237	27.001	111.5	1.016	0.40	5.7	82.5	3.14	41.2	0.00			523	201

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 43.3 N	121 33.3 W	22/01/01	1757 UTC	15 m		1218 - 1750 PST	1218 PST	1750 PST	277.6 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	13.26	33.503	25.182	6.01	101.0	4.5	0.40	1.2	0.07	0.89	0.30	90. A	7.5	6.5	7.0	0.09
9	13.22	33.503	25.190	6.00	100.8	4.4	0.39	1.2	0.07	0.96	0.29	40.	11.7	11.7	11.7	0.09
19	13.21	33.504	25.193	6.00	100.8	4.3	0.39	1.2	0.07	0.90	0.31	14.	7.4	7.2	7.3	0.10
31	13.21	33.503	25.193	5.99	100.6	4.2	0.40	1.2	0.07	0.87	0.31	4.2	4.1	4.5	4.3	0.07
40	13.21	33.503	25.193	5.99	100.6	4.0	0.40	1.3	0.07	0.87	0.31	1.7	0.91	0.87	0.89	0.05
47	13.20	33.503	25.195	5.97	100.2	3.9	0.40	1.3	0.07	0.73	0.29					
55	11.88	33.399	25.370	5.45	88.9	6.6	0.71	5.9	0.10	0.31	0.23	0.36	0.13	0.17	0.15	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 23.2 N	124 19.8 W	21/01/01	1753 UTC	20 m		1228 - 1758 PST	1228 PST	1758 PST	171.5 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	13.84	33.225	24.849	5.99	101.7	4.0	0.36	0.3	0.02	0.52	0.26	86. A	4.9	4.7	4.8	0.09
12	13.83	33.225	24.852	5.98	101.5	3.9	0.36	0.3	0.02	0.52	0.23	40.	5.9	5.7	5.8	0.07
19	13.83	33.226	24.853	5.98	101.5	3.9	0.36	0.3	0.02	0.50	0.15					
25	13.82	33.227	24.856	5.95	101.0	3.8	0.35	0.3	0.02	0.50	0.19	15.	3.3	3.4	3.3	0.05
33	13.75	33.241	24.881	5.97	101.2	3.9	0.37	0.5	0.03	0.50	0.21					
41	13.55	33.273	24.947	5.93	100.1	4.0	0.40	0.8	0.05	0.41	0.12	4.3	1.2	1.3	1.2	0.06
53	13.43	33.294	24.988	5.92	99.7	4.0	0.41	1.1	0.07	0.47	0.16	1.7	0.39	0.34	0.37	0.02
64	13.39	33.315	25.012	5.92	99.6	4.0	0.42	1.2	0.08	0.38	0.13					
73	13.34	33.324	25.030	5.89	99.0	4.0	0.43	1.4	0.09	0.37	0.13	0.37	0.05	0.07	0.06	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 49.0 N	121 50.6 W	20/01/01	1747 UTC	14 m		1218 - 1800 PST	1218 PST	1800 PST	495.3 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	12.43	33.531	25.367	6.08	100.5	5.6	0.50	3.1	0.13	1.34	0.40	80. A	16.9	13.9	15.4	0.11
8	12.37	33.540	25.386	6.06	100.0	5.7	0.53	3.4	0.13	1.65	0.48	42.	25.4	24.8	25.1	0.17
18	12.24	33.561	25.427	5.94	97.8	6.2	0.58	4.3	0.14	1.42	0.52	14.	14.4	14.5	14.4	0.08
29	12.15	33.567	25.449	5.89	96.8	6.4	0.61	4.8	0.15	1.00	0.46	4.2	6.1	6.8	6.4	0.13
37	11.27	33.562	25.609	4.69	75.6	12.3	1.08	12.1	0.13	0.28	0.24	1.7	0.49	0.47	0.48	0.05
44	10.55	33.591	25.759	4.07	64.6	16.6	1.37	16.8	0.04	0.13	0.18					
52	10.44	33.697	25.861	3.54	56.1	19.8	1.56	19.4	0.03	0.07	0.17	0.33	0.00	0.01	0.00	0.04

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 10.4 N	119 30.8 W	19/01/01	1809 UTC	5 m		1211 - 1737 PST	1211 PST	1735 PST	201.0 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	13.90	33.389	24.964	5.75	97.9	5.6	0.55	1.9	0.16	2.27	0.45	74. A	32.8	35.4	34.1	0.34
3	13.89	33.390	24.967	5.75	97.9	5.5	0.55	1.9	0.16	2.14	0.43	40.	30.2	29.6	29.9	0.14
6	13.88	33.389	24.968	5.77	98.2	5.4	0.56	1.9	0.16	2.03	0.47	16.	12.0	12.1	12.1	0.16
10	13.88	33.405	24.980	5.74	97.7	5.2	0.53	1.8	0.16	1.44	0.39	4.6	3.5	3.9	3.7	0.09
13	13.88	33.421	24.993	5.73	97.5	4.9	0.51	1.7	0.16	1.26	0.38	1.8	0.56	0.53	0.55	0.07
19	13.98	33.498	25.032	5.83	99.5	3.5	0.37	0.9	0.11	0.87	0.42	0.29	0.07	0.10	0.09	0.05

A) INCUBATION LIGHT INTENSITIES WERE 96, 40, 14, 4.4, 1.7, 0.34 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 55.2 N	122 7.4 W	18/01/01	1743 UTC	15 m		1218 - 1749 PST	1219 PST	1747 PST	159.2 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	13.70	33.332	24.961	6.02	102.0	4.0	0.35	0.3	0.02	0.67	0.22	81. A	0.72	0.62	0.67	0.06
9	13.70	33.334	24.963	5.97	101.2	4.0	0.35	0.3	0.02	0.66	0.19	40.	6.4	6.6	6.5	0.07
19	13.70	33.334	24.963	6.01	101.8	4.0	0.34	0.3	0.02	0.63	0.19	14.	5.2	5.1	5.2	0.05
31	13.71	33.334	24.961	5.99	101.5	3.9	0.34	0.3	0.02	0.64	0.17	4.2	2.9	3.1	3.0	0.06
40	13.70	33.335	24.964	6.00	101.7	3.9	0.34	0.4	0.02	0.64	0.19	1.7	0.88	0.89	0.88	0.04
48	13.71	33.337	24.964	5.98	101.3	3.9	0.35	0.3	0.02	0.64	0.19					
56	12.37	33.399	25.277	5.37	88.5	6.7	0.72	6.3	0.05	0.22	0.18	0.32	0.08	0.06	0.07	0.04

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 53.0 N	124 9.6 W	17/01/01	1959 UTC	30 m		1252 - 1800 PST	1227 PST	1800 PST	141.4 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
2	15.24	33.300	24.610	5.81	101.6	3.3	0.32	0.0	0.01	0.26	0.10	90. A	0.47	0.43	0.45	0.03
18	15.23	33.299	24.612	5.79	101.2	3.3	0.31	0.0	0.01	0.25	0.09	40.	2.6	2.6	2.6	0.04
28	15.22	33.298	24.614	5.79	101.2	3.2	0.31	0.0	0.01	0.26	0.09					
38	15.22	33.297	24.613	5.81	101.5	3.1	0.32	0.0	0.01	0.26	0.10	14.	2.3	2.3	2.3	0.05
49	15.22	33.299	24.615	5.79	101.2	3.1	0.31	0.0	0.01	0.26	0.10					
60	15.20	33.293	24.615	5.79	101.1	3.1	0.31	0.1	0.01	0.26	0.10	4.6	1.4	1.4	1.4	0.04
70	15.16	33.284	24.618	5.79	101.0	3.1	0.32	0.1	0.01	0.27	0.11					
79	14.70	33.238	24.682	5.79	100.1	3.4	0.36	0.4	0.12	0.21	0.13	1.8	0.50	0.47	0.48	0.02
90	13.52	33.310	24.983	5.90	99.6	3.8	0.45	1.4	0.17	0.21	0.19					
99	12.66	33.320	25.161	5.60	92.8	4.9	0.61	4.0	0.03	0.16	0.17					
110	12.13	33.332	25.272	5.71	93.6	4.8	0.54	2.8	0.06	0.12	0.13	0.36	0.07	0.07	0.07	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 9.1 N	120 0.6 W	15/01/01	1838 UTC	15 m		1208 - 1745 PST	1209 PST	1743 PST	226.4 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
2	13.90	33.512	25.059	5.80	98.8	4.0	0.42	1.6	0.08	0.60	0.29	81. A	4.7	6.0	5.3	0.07
9	13.90	33.513	25.060	5.81	99.0	3.9	0.41	1.6	0.08	0.59	0.31	40.	9.1	9.4	9.3	0.06
19	13.89	33.512	25.061	5.77	98.3	3.8	0.41	1.5	0.08	0.60	0.31	14.	6.1	6.2	6.2	0.06
32	13.90	33.513	25.060	5.79	98.6	3.7	0.41	1.5	0.08	0.59	0.34	3.8	3.0	3.4	3.2	0.06
40	13.88	33.511	25.063	5.79	98.6	3.8	0.42	1.6	0.08	0.58	0.27	1.7	0.96	1.0	1.0	0.06
48	13.82	33.512	25.077	5.74	97.6	4.0	0.44	1.9	0.08	0.51	0.30					
56	13.30	33.518	25.187	5.44	91.5	5.9	0.60	4.5	0.08	0.39	0.22	0.32	0.18	0.15	0.16	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 19.6 N	121 42.7 W	16/01/01	1846 UTC	18 m		1212 - 1755 PST	1217 PST	1756 PST	96.1 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
3	15.15	33.488	24.775	5.80	101.3	3.3	0.29	0.0	0.00	0.28	0.10	77. A	1.1	0.88	1.0	0.04
11	15.15	33.488	24.775	5.79	101.2	3.2	0.29	0.0	0.00	0.28	0.10	39.	2.7	2.8	2.8	0.03
23	15.15	33.489	24.776	5.80	101.3	3.2	0.29	0.0	0.00	0.28	0.10	14.	2.2	2.3	2.2	0.04
37	15.15	33.489	24.776	5.80	101.3	3.2	0.29	0.0	0.00	0.29	0.10	4.3	1.1	1.1	1.1	0.04
49	13.81	33.366	24.966	5.95	101.1	3.7	0.35	0.3	0.04	0.59	0.25	1.5	1.2	1.1	1.1	0.05
58	13.67	33.354	24.985	5.93	100.4	3.9	0.37	0.5	0.06	0.58	0.28					
67	13.69	33.364	24.989	5.93	100.5	3.8	0.37	0.5	0.06	0.43	0.22	0.33	0.23	0.16	0.19	0.03

A) INCUBATION LIGHT INTENSITIES WERE 96, 40, 14, 4.4, 1.7, 0.34 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 29.2 N	117 46.0 W	14/01/01	1841 UTC	8 m		1200 - 1735 PST	1200 PST	1735 PST	101.9 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	15.04	33.449	24.769	5.84	101.8	3.4	0.36	0.1	0.02	0.40	0.19	68. A	7.2	7.2	7.2	0.09
6	14.93	33.448	24.792	5.80	100.9	3.3	0.36	0.1	0.02	0.43	0.20	32.	8.4	8.6	8.5	0.07
11	14.91	33.449	24.797	5.81	101.0	3.3	0.36	0.1	0.02	0.45	0.22	12.	4.3	4.5	4.4	0.07
16	14.90	33.454	24.803	5.83	101.3	3.2	0.35	0.1	0.02	0.44	0.23	4.6	1.8	2.0	1.9	0.06
22	14.95	33.464	24.800	5.82	101.3	3.1	0.35	0.1	0.02	0.45	0.22	1.5	0.34	0.31	0.32	0.05
30	15.04	33.528	24.830	5.79	100.9	3.0	0.31	0.1	0.01	0.33	0.19	0.32	0.04	0.05	0.04	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 39.2 N	119 28.7 W	13/01/01	1839 UTC	22 m		1207 - 1736 PST	1207 PST	1736 PST	270.5 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	14.50	33.486	24.913	5.90	101.7	3.0	0.33	0.3	0.03			87. A	4.3	3.9	4.1	0.04
14	14.43	33.485	24.927	5.86	100.9	3.0	0.32	0.3	0.03			38.	7.1	7.1	7.1	0.07
21	14.42	33.485	24.930	5.87	101.0	2.8	0.32	0.3	0.03	0.54	0.19					
28	14.41	33.486	24.933	5.86	100.8	2.8	0.33	0.3	0.04	0.55	0.20	14.	5.8	5.7	5.8	0.06
37	14.40	33.486	24.935	5.85	100.7	2.9	0.33	0.4	0.04	0.57	0.21					
45	13.70	33.446	25.050	5.68	96.3	4.3	0.47	2.3	0.10	0.44	0.27	4.3	2.5	2.7	2.6	0.04
52	12.57	33.403	25.242	5.42	89.7	6.6	0.67	5.2	0.07	0.44	0.36					
59	12.30	33.403	25.294	5.34	87.9	6.9	0.73	6.0	0.07	0.36	0.34	1.6	0.79	0.75	0.77	0.03
70	11.32	33.451	25.514	4.91	79.2	10.0	0.98	10.4	0.02	0.19	0.21					
83	10.69	33.522	25.682	4.49	71.5	13.5	1.20	14.0	0.02	0.10	0.12	0.31	0.04	0.06	0.05	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 25.4 N	121 59.6 W	12/01/01	1745 UTC	23 m		1214 - 1740 PST	1214 PST	1742 PST	46.6 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
3	16.77	33.792	24.642	5.59	101.0	2.9	0.25	0.0	0.00	0.14	0.04	82. A	0.18	0.27	0.23	0.04
14	16.77	33.790	24.641	5.61	101.4	2.9	0.24	0.0	0.00	0.13	0.04	39.	1.3	1.4	1.4	0.03
15	16.77	33.792	24.643	5.76U	104.1	2.9	0.27	0.0	0.00	0.14	0.04					
31	16.77	33.789	24.641	5.58	100.8	2.9	0.24	0.0	0.00	0.14	0.04	13.	0.92	0.93	0.92	0.03
38	16.79	33.797	24.643	5.58	100.9	2.8	0.24	0.0	0.00	0.14	0.04					
48	16.81	33.805	24.645	5.58	100.9	2.8	0.24	0.0	0.00	0.14	0.04	4.1	0.42	0.40	0.41	0.03
59	16.80	33.796	24.641	5.57	100.7	2.8	0.24	0.0	0.00	0.14	0.04	1.9	0.15	0.16	0.15	0.04
74	16.79	33.811	24.655	5.59	101.1	2.8	0.24	0.0	0.00	0.15	0.05					
84	15.61	33.811	24.925	5.76	101.7	3.3	0.25	0.0	0.01	0.26	0.18	0.37	0.07	0.10	0.08	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 24.9 N	124 0.2 W	11/01/01	1907 UTC	34 m		1223 - 1755 PST	1223 PST	1755 PST	140.1 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	16.18	33.522	24.571	5.68	101.3	2.9	0.29	0.1	0.00	0.15	0.04	91. A	0.66	0.35	0.51	0.04
12	16.16	33.515	24.571	5.70	101.6	2.7	0.28	0.0	0.00	0.15	0.05					
22	16.16	33.513	24.569	5.69	101.4	2.7	0.28	0.0	0.00	0.15	0.04	37.	1.8	1.6	1.7	0.04
33	16.17	33.518	24.571	5.69	101.5	2.7	0.28	0.0	0.00	0.15	0.05					
44	16.16	33.524	24.579	5.69	101.4	2.7	0.29	0.0	0.00	0.16	0.05	14.	1.5	1.4	1.5	0.05
53	16.09	33.528	24.598	5.70	101.5	2.6	0.29	0.0	0.00	0.19	0.08					
63	15.26	33.444	24.719	5.82	101.9	2.9	0.32	0.0	0.01	0.31	0.14					
69	14.02	33.329	24.895	5.91	100.8	3.4	0.39	0.4	0.09	0.35	0.21	4.4	1.8	1.9	1.9	0.02
81	13.05	33.275	25.050	5.89	98.4	4.2	0.48	1.5	0.25	0.34	0.25					
90	12.14	33.265	25.218	5.81	95.2	4.8	0.53	2.4	0.10	0.27	0.25	1.7	0.66	0.66	0.66	0.02
102	10.93	33.357	25.511	5.24	83.7	8.6	0.90	9.0	0.01	0.13	0.15					
113	10.27	33.490	25.730	4.68	73.8	12.8	1.18	13.8	0.01	0.06	0.09					
126	9.96	33.542	25.823	4.42	69.2	15.8	1.32	16.1	0.01	0.04	0.06	0.34	0.03	0.04	0.03	0.01

A) INCUBATION LIGHT INTENSITIES WERE 96, 40, 14, 4.4, 1.7, 0.34 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 57.3 N	117 18.0 W	07/01/01	1929 UTC	17 m		1203 - 1730 PST	1155 PST	1728 PST	458.4 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
2	15.03	33.585	24.875	5.97	104.1	2.9	0.30	0.1	0.00	1.42	0.28	83. A	13.6	14.4	14.0	0.14
6	14.88	33.580	24.904	6.01	104.5	3.0	0.30	0.0	0.01	1.09	0.29	58.				
10	14.64	33.577	24.954	6.04	104.5	3.3	0.33	0.1	0.02	1.47	0.43	41.	12.7	17.7	15.2	0.18
22	14.45	33.578	24.995	6.05	104.3	3.1	0.32	0.1	0.01	1.83	0.71	14.	12.9	13.2	13.0	0.12
28	14.41	33.577	25.003	6.01	103.5	3.1	0.33	0.1	0.02	1.49	0.61	8.0				
35	14.36	33.579	25.015	5.99	103.0	3.1	0.36	0.2	0.03	1.25	0.60	4.2	5.3	4.6	4.9	0.10
45	14.25	33.579	25.039	5.86	100.6	3.3	0.43	0.4	0.05	0.61	0.45	1.7	0.71	0.71	0.71	0.07

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 30.6 N	118 12.6 W	08/01/01	1736 UTC	29 m		1201 - 1740 PST	1200 PST	1739 PST	140.0 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	15.71	33.586	24.726	5.75	101.7	2.4	0.29	0.0	0.00	0.20	0.06	90. A	1.6	1.3	1.5	0.06
10	15.71	33.585	24.726	5.77	102.0	2.4	0.29	0.0	0.00	0.19	0.05					
19	15.71	33.587	24.728	5.76	101.8	2.3	0.29	0.0	0.00	0.19	0.05	37.	2.7	2.7	2.7	0.05
28	15.52	33.571	24.758	5.80	102.1	2.4	0.29	0.0	0.00	0.20	0.08					
37	14.83	33.515	24.866	5.89	102.2	2.6	0.32	0.0	0.00	0.32	0.14	14.	2.4	2.5	2.4	0.04
48	13.48	33.441	25.091	5.69	96.0	3.8	0.47	1.7	0.08	0.52	0.39					
58	12.17	33.435	25.344	5.28	86.7	6.7	0.74	6.3	0.03	0.31	0.30	4.6	1.1	1.1	1.1	0.08
68	11.54	33.484	25.499	4.83	78.3	9.8	0.98	10.3	0.02	0.19	0.21					
77	11.22	33.562	25.619	4.39	70.7	12.5	1.18	13.5	0.02	0.15	0.21	1.7	0.40	0.26	0.33	0.02
93	10.78	33.636	25.755	3.98	63.5	15.8	1.37	16.5	0.01	0.09	0.14					
107	10.27	33.714	25.904	3.64	57.5	19.8	1.55	19.3	0.01	0.02	0.07	0.35	0.01	0.01	0.01	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 50.8 N	119 34.8 W	09/01/01	1800 UTC	14 m		1206 - 1741 PST	1205 PST	1741 PST	85.9 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
3	14.99	33.515	24.830	5.83	101.5	3.0	0.31	0.1	0.01	0.36	0.14	72. A	1.3	1.7	1.5	0.05
9	14.98	33.514	24.832	5.84	101.7	2.9	0.31	0.1	0.01			37.	3.7	3.5	3.6	0.07
19	14.98	33.514	24.832	5.83	101.5	2.9	0.31	0.1	0.01	0.35	0.14	12.	2.7	2.7	2.7	0.05
30	14.97	33.513	24.834	5.85	101.8	2.8	0.31	0.1	0.01	0.36	0.14	3.7	1.3	1.5	1.4	0.04
39	14.96	33.513	24.836	5.84	101.6	2.8	0.32	0.1	0.01	0.36	0.15	1.4	0.45	0.47	0.46	0.06
46	14.92	33.510	24.843	5.83	101.4	2.7	0.32	0.1	0.02	0.35	0.15					
52	14.87	33.508	24.852	5.84	101.5	2.7	0.32	0.1	0.03	0.38	0.16	0.33	0.08	0.12	0.10	0.04

RV DAVID STARR JORDAN — CALCOFI CRUISE 0101 — STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 30.9 N	122 15.9 W	10/01/01	1905 UTC	33 m		1216 - 1744 PST	1217 PST	1745 PST	72.6 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	16.99	33.774	24.577	5.57	101.1	2.4	0.25	0.0	0.00	0.12	0.04	91. A	0.97	1.1	1.1	0.05
10	16.99	33.773	24.576	5.57	101.1	2.3	0.25	0.0	0.00	0.12	0.03					
20	16.99	33.773	24.577	5.57	101.1	2.3	0.25	0.0	0.00	0.13	0.04	39.	1.1	1.2	1.2	0.05
31	16.98	33.772	24.579	5.58	101.3	2.2	0.25	0.0	0.00	0.12	0.04					
42	16.98	33.771	24.578	5.57	101.1	2.1	0.25	0.0	0.00	0.13	0.04	14.	0.75	0.78	0.76	0.05
54	16.98	33.772	24.580	5.57	101.1	2.1	0.25	0.0	0.00	0.13	0.04					
67	16.97	33.769	24.580	5.59	101.4	2.0	0.25	0.0	0.00	0.13	0.04	4.4	0.31	0.38	0.35	0.04
77	15.66	33.539	24.704	5.73	101.1	2.2	0.30	0.0	0.00	0.26	0.14					
87	15.20	33.511	24.784	5.76	100.7	2.3	0.33	0.0	0.03	0.31	0.18	1.7	0.38	0.35	0.36	0.02
95	14.73	33.553	24.919	5.73	99.3	2.6	0.35	0.2	0.12	0.30	0.20					
103	14.10	33.511	25.020	5.70	97.5	2.9	0.39	0.6	0.22	0.25	0.19					
112	14.16	33.611	25.084	5.50	94.2	2.9	0.42	1.2	0.11	0.24	0.19					
122	13.65	33.634	25.208	5.34	90.5	3.6	0.51	2.7	0.03	0.18	0.17	0.34	0.06	0.04	0.05	0.02

A) INCUBATION LIGHT INTENSITIES WERE 96, 40, 14, 4.4, 1.7, 0.34 PERCENT RESPECTIVELY.

CalCOFI Cruise 0101

MACROZOOPLANKTON BIOMASS
Net Mesh Size: 0.505mm

Line	Sta.	Latitude N	Longitude W	Date Mo/Day	Time (PST) Start	Time (PST) End	Water Volume Strained (m^3)	Max. Tow Depth (m)	Volume per 1000 m^3 Strained Total (cm^3)	Volume per 1000 m^3 Strained Small (cm^3)
77	49	35 05.4	120 47.0	01/22	2024	2030	123	57	146	146
77	51	35 00.8	120 55.0	01/22	1809	1831	429	214	187	168
77	55	34 53.0	121 12.2	01/22	1423	1445	412	211	49	49
77	60	34 43.3	121 33.1	01/22	0846	0908	440	213	41	41
77	70	34 23.4	122 14.6	01/22	0349	0411	439	215	303	219
77	80	34 02.8	122 55.9	01/21	2153	2215	444	220	74	74
77	90	33 44.2	123 37.9	01/21	1615	1636	442	216	32	32
77	100	33 23.2	124 18.7	01/21	0838	0859	454	212	29	29
80	51	34 27.1	120 30.8	01/19	2142	2147	117	46	119	119
80	55	34 18.9	120 48.8	01/20	0056	0118	440	213	73	73
80	60	34 09.7	121 08.9	01/20	0441	0502	431	214	90	90
80	70	33 49.5	121 51.7	01/20	1114	1136	460	201	219	219
80	80	33 28.6	122 32.7	01/20	1653	1715	443	212	38	38
80	90	33 09.2	123 13.4	01/20	2208	2229	445	211	85	85
80	100	32 49.8	123 54.4	01/21	0352	0414	421	214	64	64
82	47	34 16.1	120 01.9	01/19	1744	1805	433	211	76	76
83	40.6	34 13.4	119 25.2	01/19	1249	1252	59	20	85	85
83	42	34 10.9	119 30.7	01/19	1105	1114	200	77	20	20
83	51	33 52.7	120 08.3	01/19	0456	0505	181	81	83	83
83	55	33 45.2	120 24.7	01/19	0158	0220	434	213	122	122
83	60	33 35.4	120 45.1	01/18	2158	2220	444	209	106	106
83	70	33 14.8	121 26.2	01/18	1600	1621	409	220	34	34
83	80	32 55.1	122 07.7	01/18	0828	0850	470	200	30	30
83	90	32 35.2	122 48.5	01/18	0052	0114	430	214	100	100
83	100	32 14.6	123 28.5	01/17	1857	1919	429	214	28	28
83	110	31 53.4	124 09.9	01/17	1259	1321	432	213	25	25
87	33	33 52.8	118 29.4	01/14	1633	1638	109	50	37	37
87	35	33 49.6	118 37.7	01/14	1914	1936	418	212	60	60
87	40	33 39.2	118 58.5	01/14	2320	2342	395	219	78	78
87	45	33 30.3	119 19.5	01/15	0323	0344	428	216	58	58
87	50	33 19.0	119 39.9	01/15	0740	0746	122	44	82	82
87	55	33 09.2	120 01.7	01/15	1159	1220	460	211	28	28
87	60	32 59.9	120 21.7	01/15	1616	1638	456	218	24	24
87	80	32 20.2	121 42.8	01/16	1200	1222	473	210	17	17
87	90	31 59.0	122 23.7	01/16	1835	1857	434	214	21	21
87	100	31 39.8	123 04.6	01/17	0047	0109	484	210	41	41
87	110	31 20.0	123 44.3	01/17	0636	0658	431	214	28	28
90	28	33 29.2	117 46.4	01/14	0642	0648	123	56	49	49
90	30	33 25.4	117 54.8	01/14	0456	0517	406	213	59	59
90	35	33 15.3	118 15.2	01/14	0051	0112	382	212	191	191
90	37	33 10.7	118 22.9	01/13	2218	2240	424	208	113	113
90	45	32 55.8	118 56.0	01/13	1718	1740	424	212	59	59
90	53	32 39.6	119 28.8	01/13	1158	1219	428	213	37	37
90	60	32 25.9	119 57.6	01/13	0650	0712	447	217	49	49
90	70	32 04.2	120 38.6	01/13	0011	0032	434	217	35	35
90	80	31 45.3	121 18.3	01/12	1737	1759	458	216	15	15
90	90	31 25.2	121 59.6	01/12	0827	0849	436	204	18	18
90	100	31 05.3	122 39.5	01/12	1110	0132	483	212	27	27
90	110	30 45.1	123 19.9	01/11	1849	1911	466	218	28	28
90	120	30 24.4	124 00.6	01/11	1221	1243	474	221	21	21
93	26.7	32 57.1	117 18.8	01/07	1220	1234	276	131	36	36
93	28	32 54.5	117 24.5	01/07	1448	1510	438	217	16	16
93	30	32 51.1	117 32.6	01/08	0024	0045	429	214	35	35
93	35	32 41.4	117 51.8	01/08	0426	0448	431	214	58	58
93	40	32 30.9	118 12.4	01/08	0828	0850	428	218	35	35
93	45	32 20.7	118 33.6	01/08	1430	1451	428	214	51	51
93	50	32 08.8	118 53.7	01/08	1850	1912	572	165	61	61
93	70	31 29.7	120 14.8	01/09	1729	1751	488	217	25	25
93	80	31 11.1	120 55.6	01/09	2337	2359	447	219	29	29
93	90	30 50.6	121 35.1	01/10	0543	0604	444	212	32	32
93	100	30 30.7	122 16.0	01/10	1221	1243	446	210	11	11
93	110	30 10.3	122 53.9	01/10	2109	2131	481	209	21	21
93	120	29 50.6	123 34.7	01/11	0503	0525	445	221	25	25

FIGURES

Cruise 0104

1. CalCOFI Cruise 0104 track and station positions.

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

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

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

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

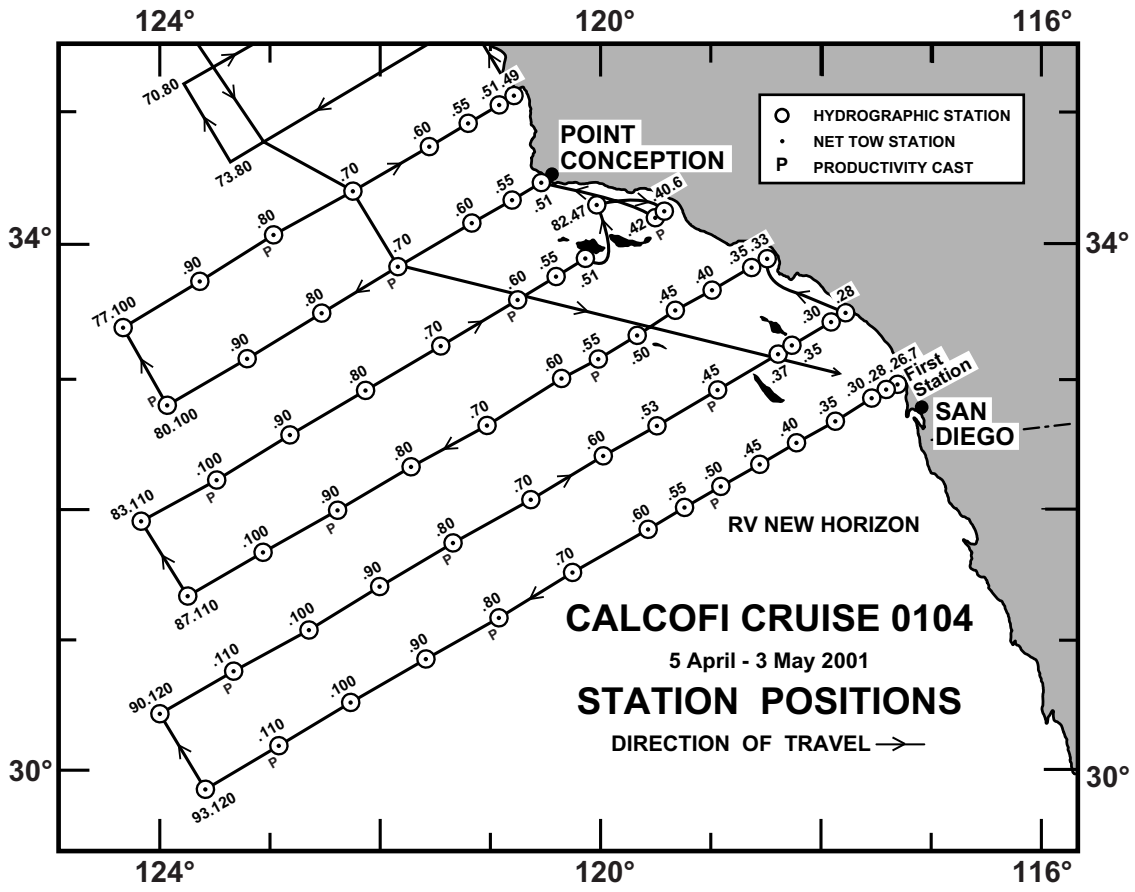

FIGURE 1

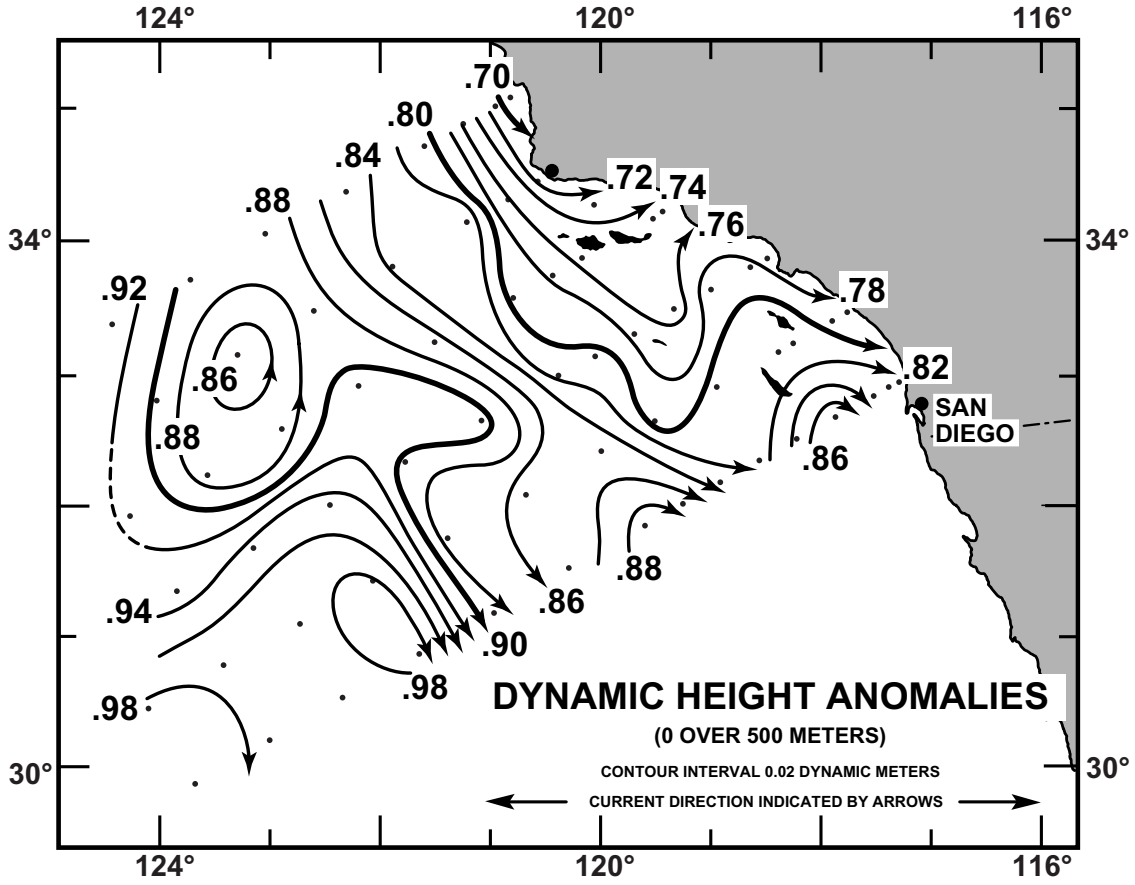

FIGURE 2

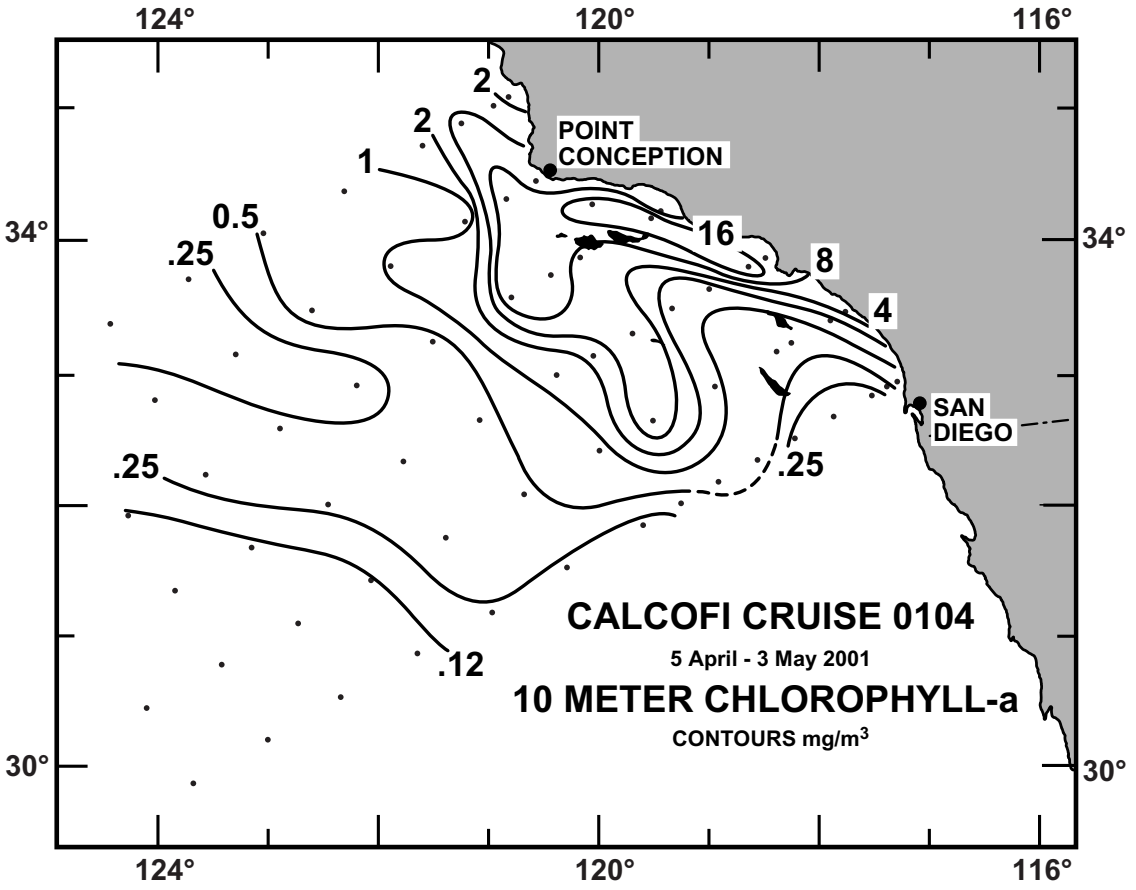

FIGURE 3A

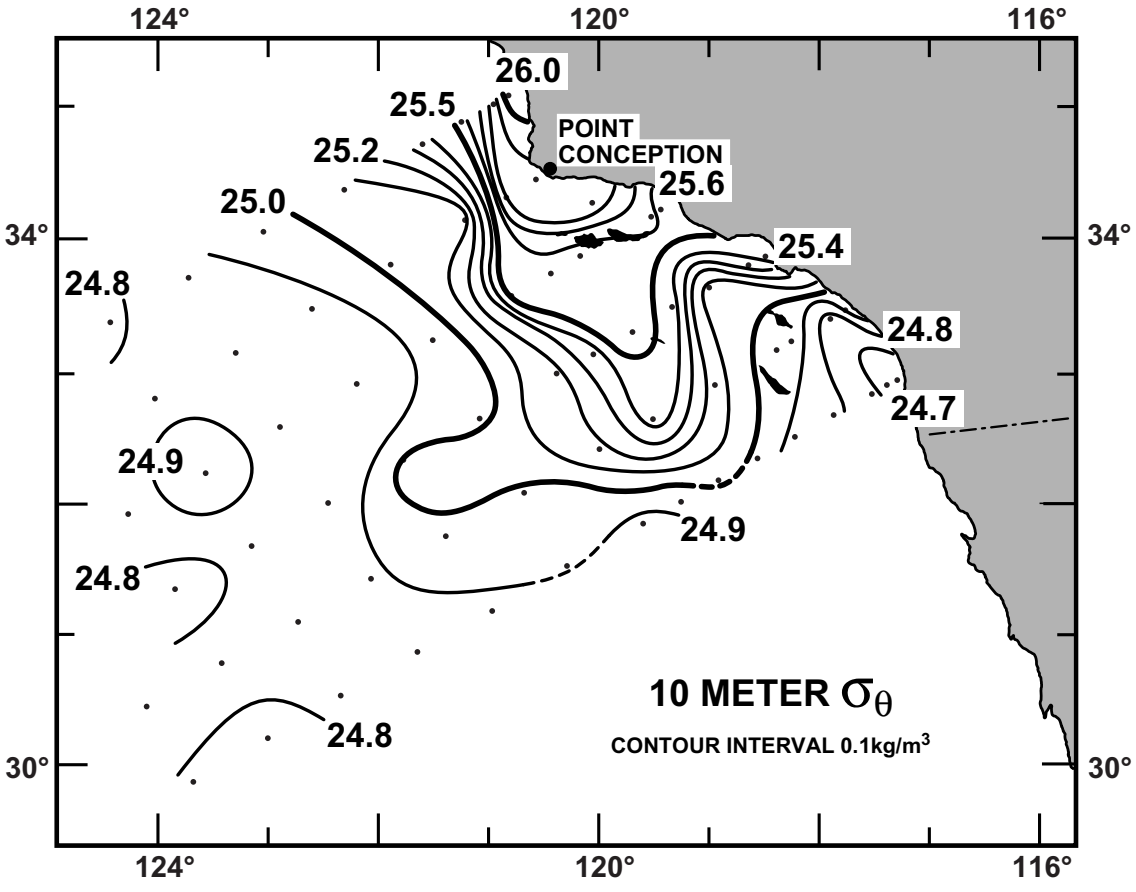

FIGURE 3B

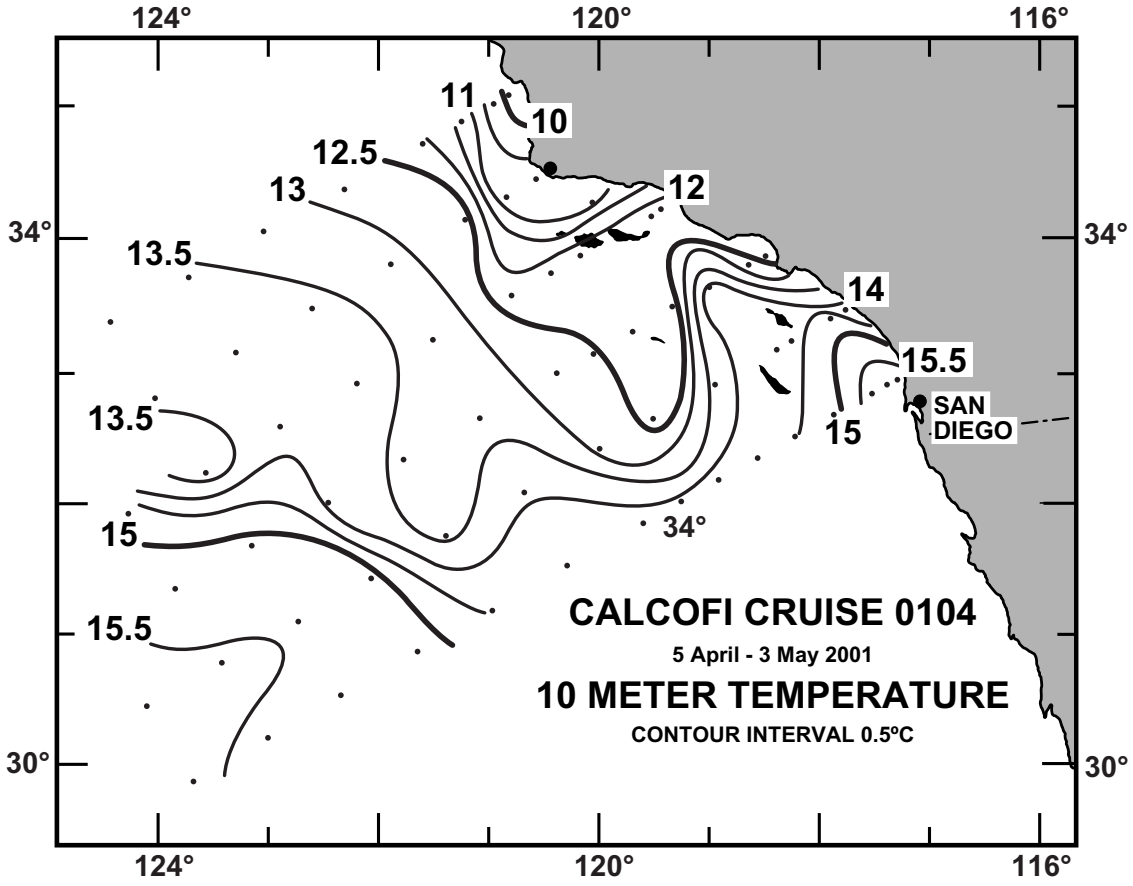

FIGURE 3C

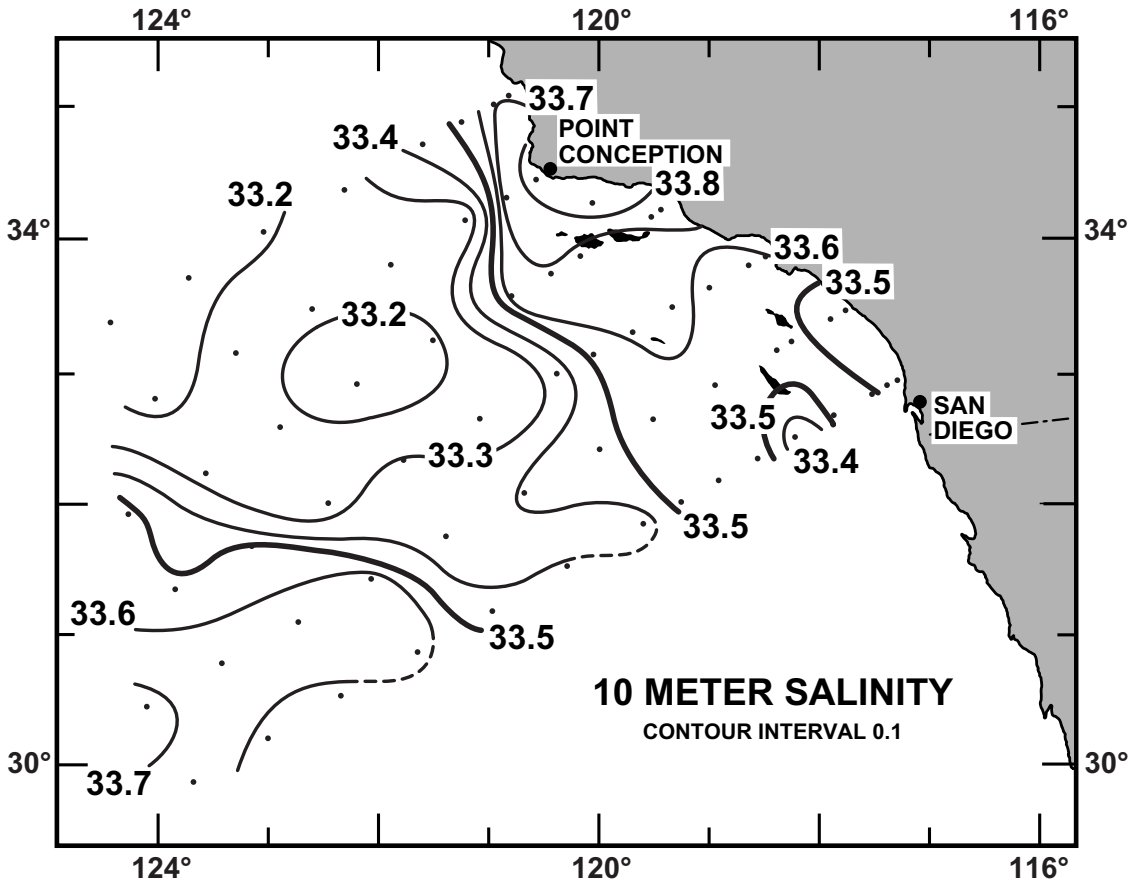

FIGURE 3D

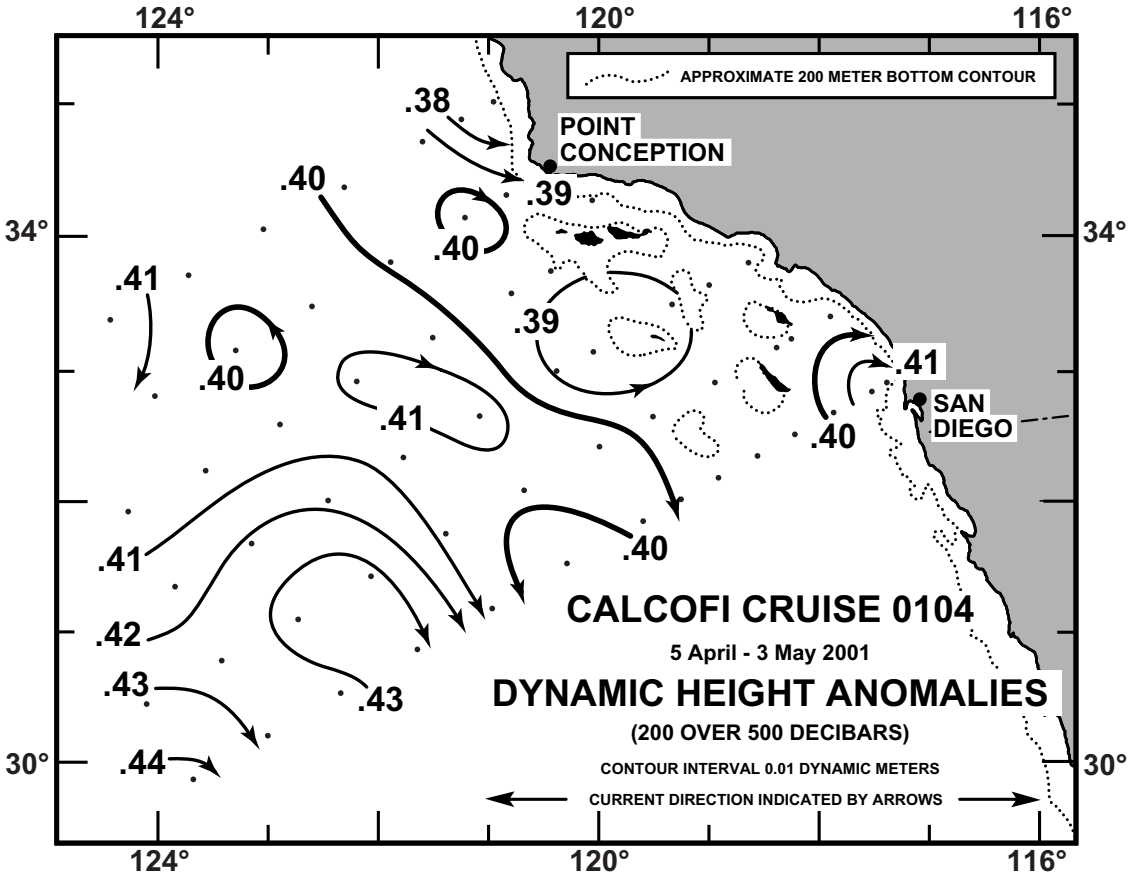

FIGURE 4A

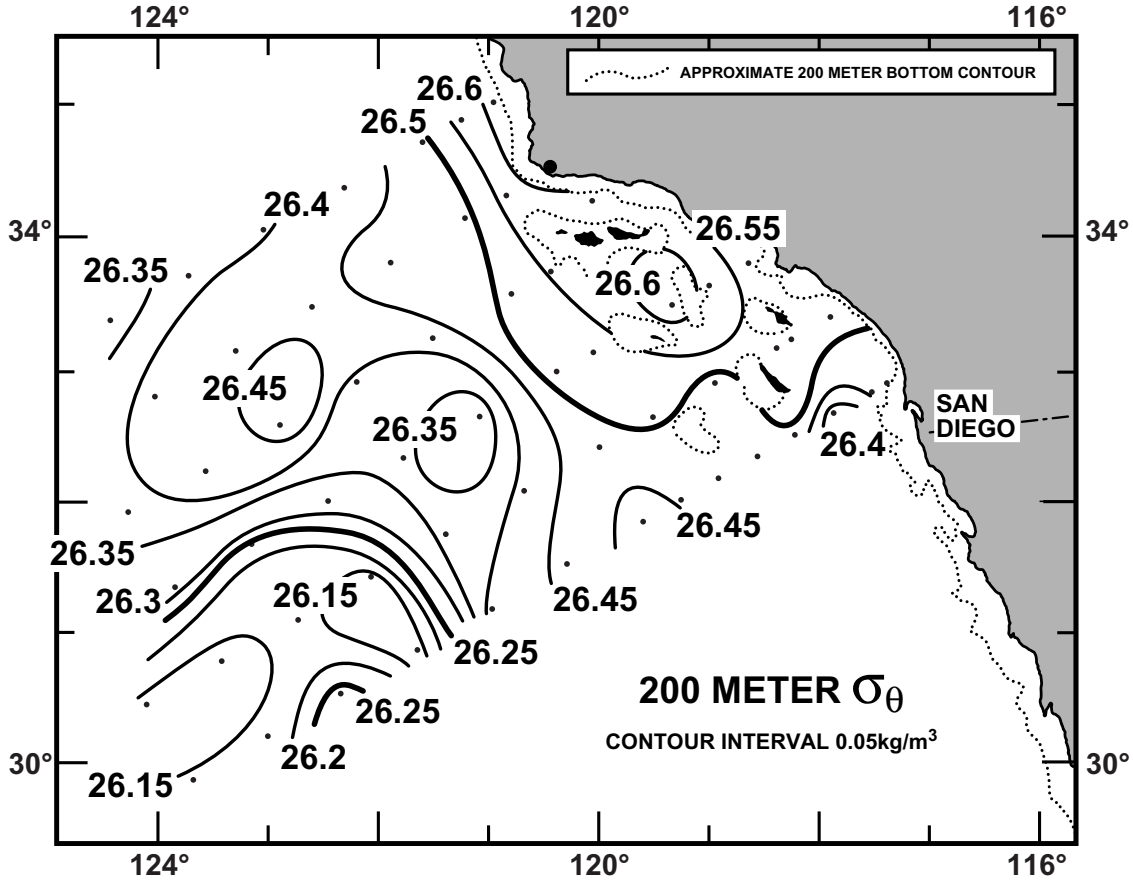

FIGURE 4B

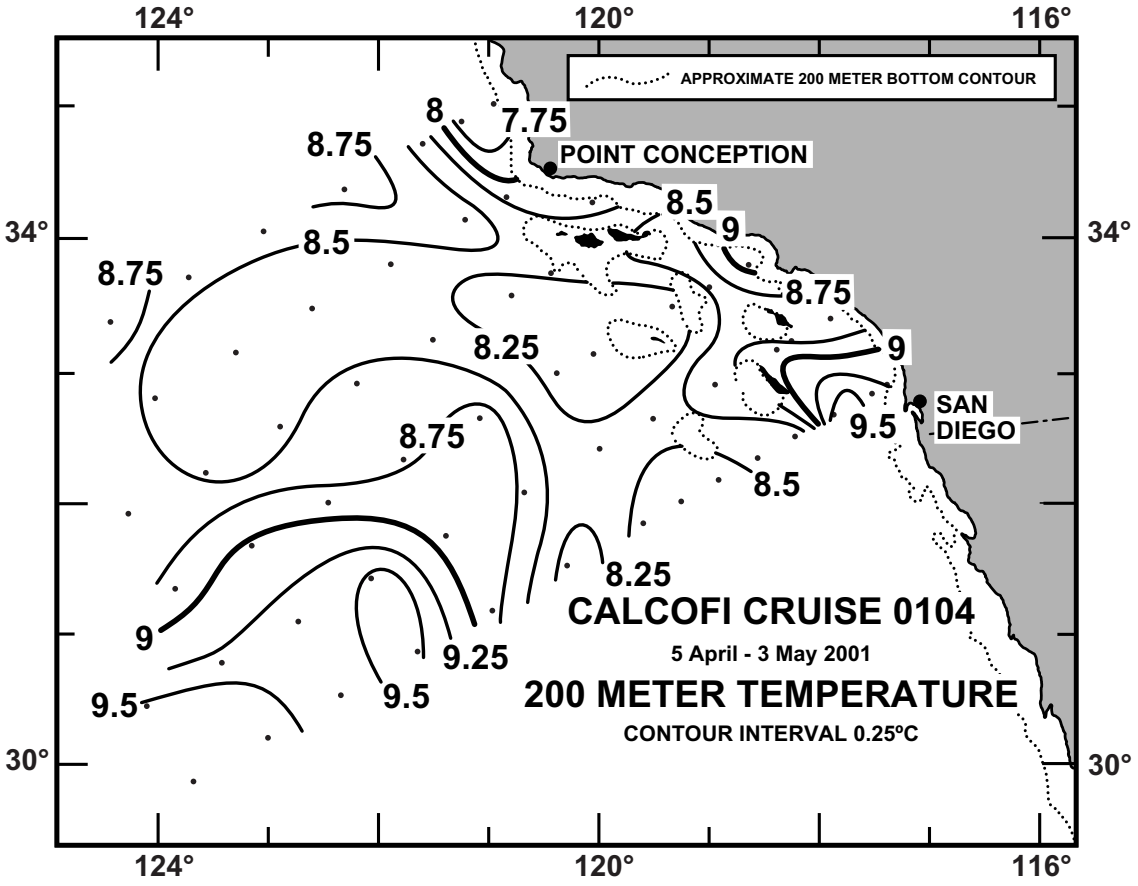

FIGURE 4C

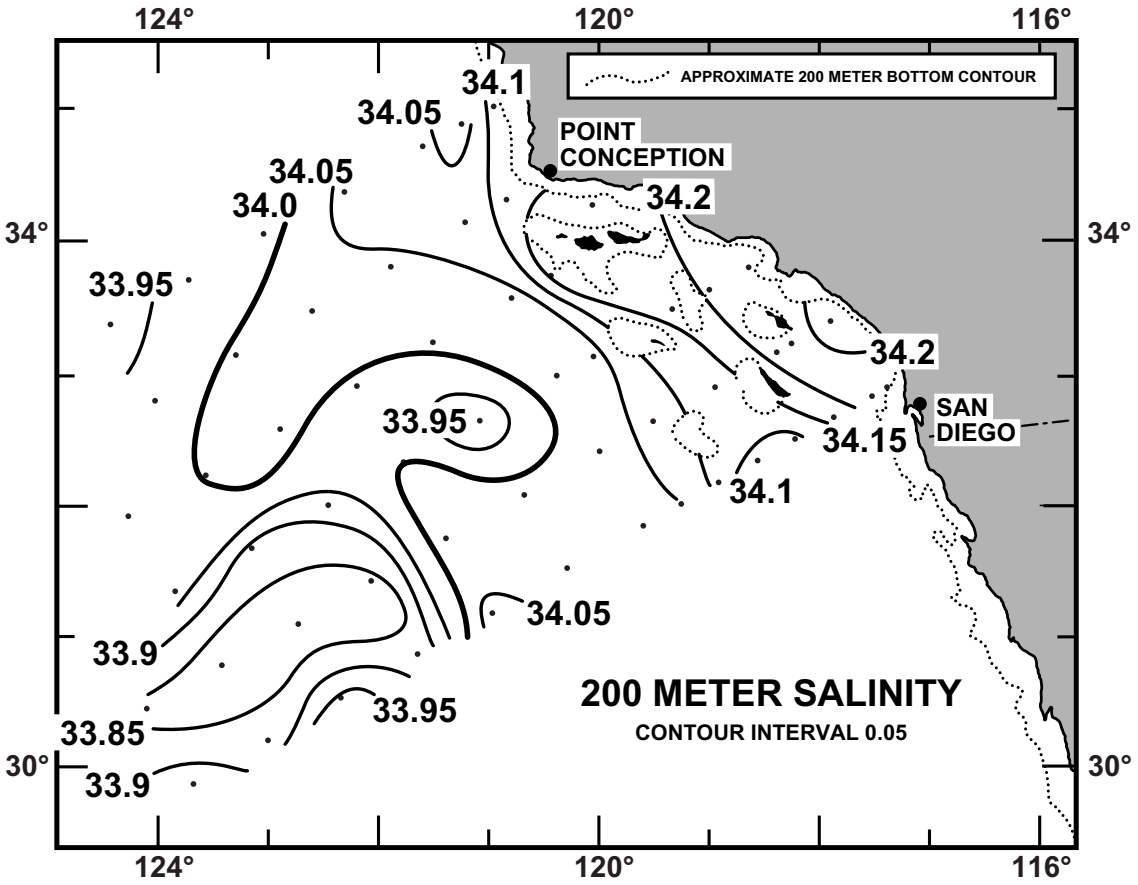

FIGURE 4D

CALCOFI CRUISE 0104

9 - 12 APRIL 2001

POTENTIAL DENSITY(σ_θ) ALONG CALCOFI LINE 90

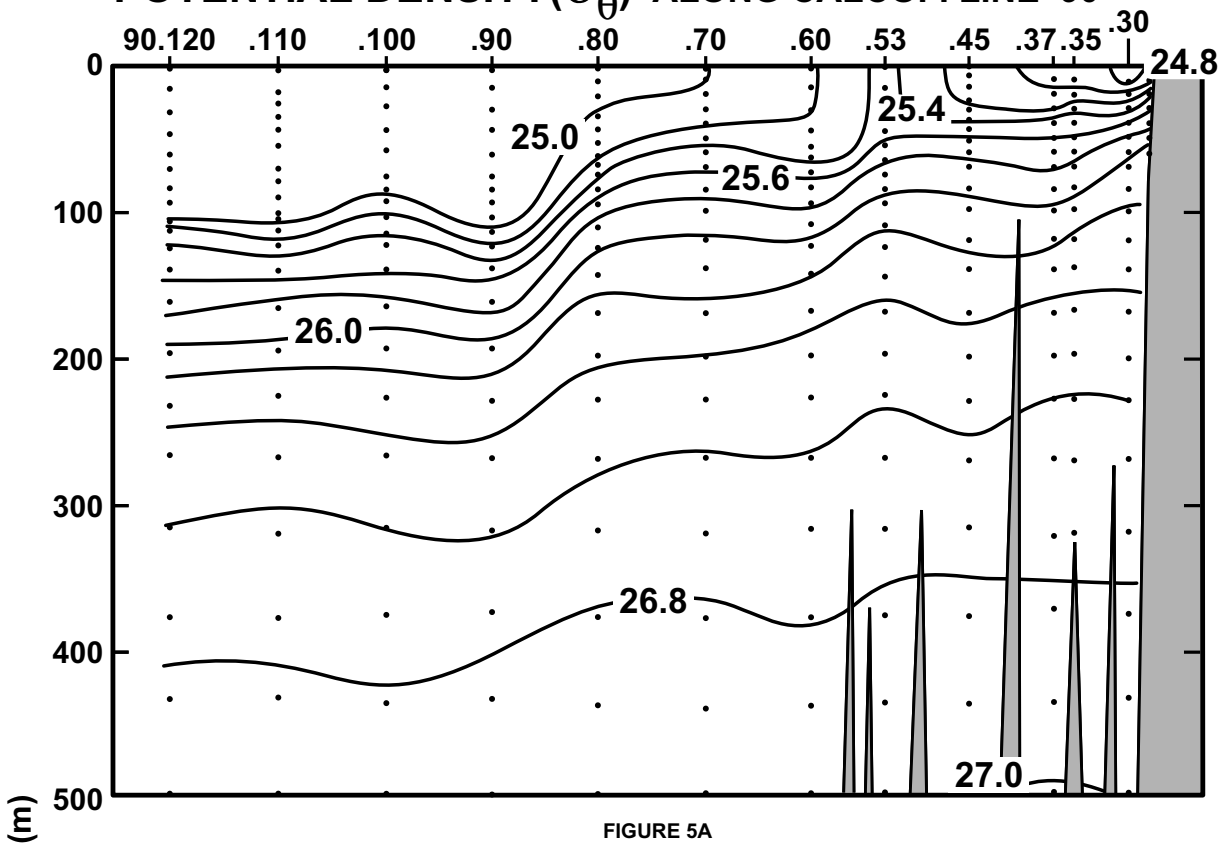

FIGURE 5A

TEMPERATURE (ºC) ALONG CALCOFI LINE 90

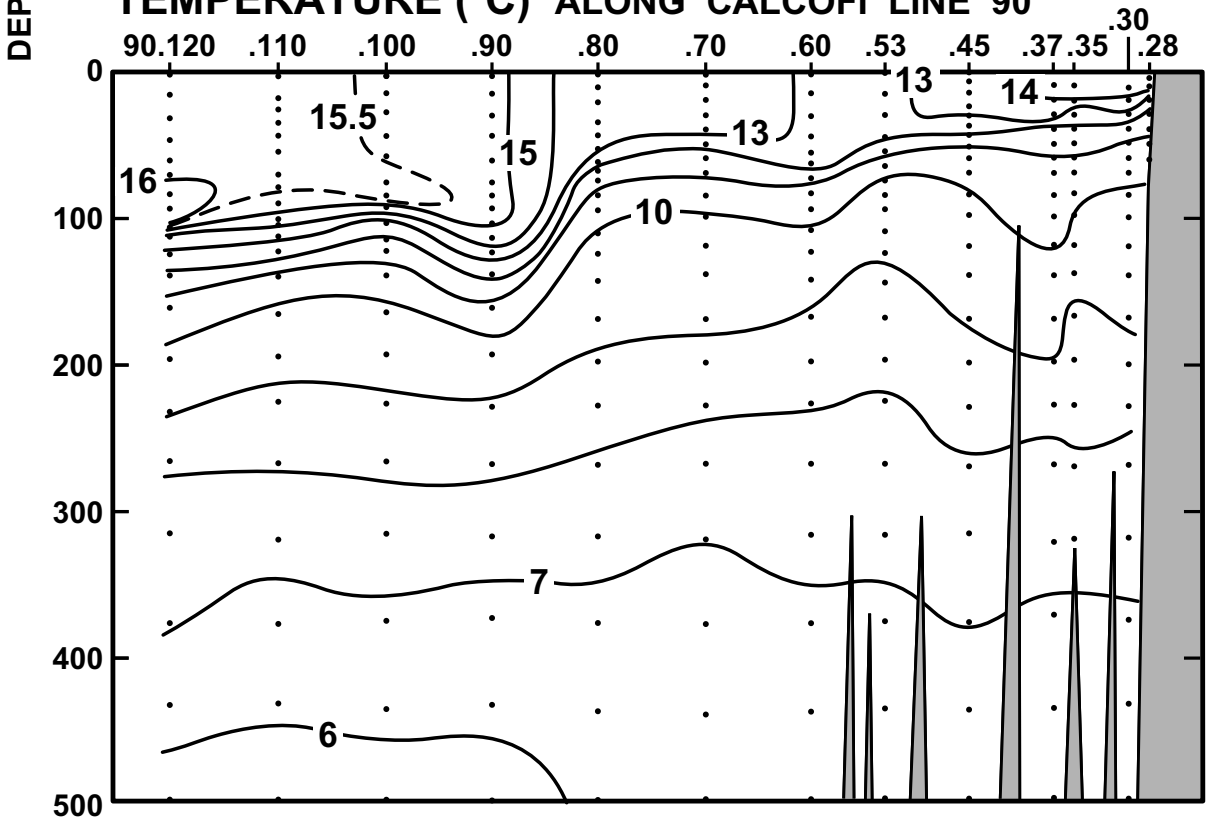

FIGURE 5B

CALCOFI CRUISE 0104

9 - 12 APRIL 2001

SALINITY ALONG CALCOFI LINE 90

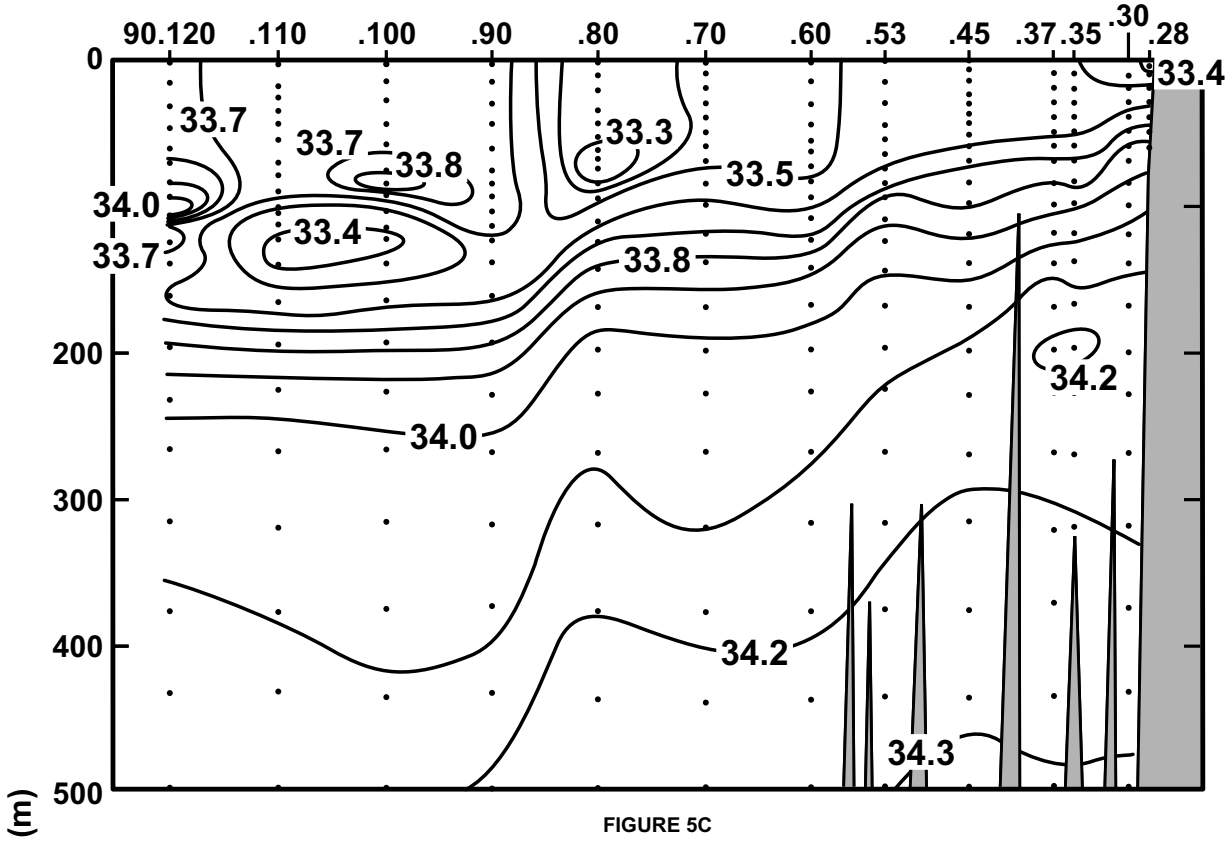

FIGURE 5C

SILICATE (μM/l) ALONG CALCOFI LINE 90

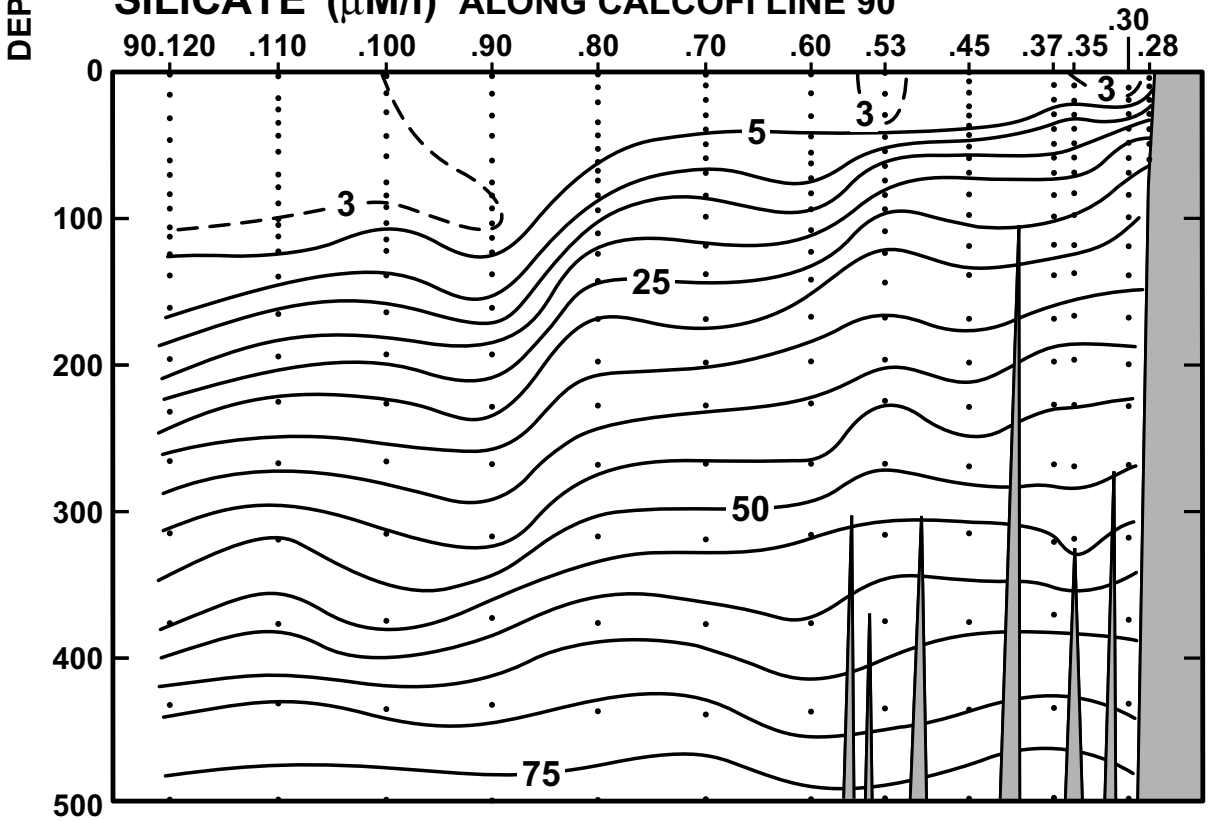

FIGURE 5D

CALCOFI CRUISE 0104

9 - 12 APRIL 2001

NITRATE (μM/l) ALONG CALCOFI LINE 90

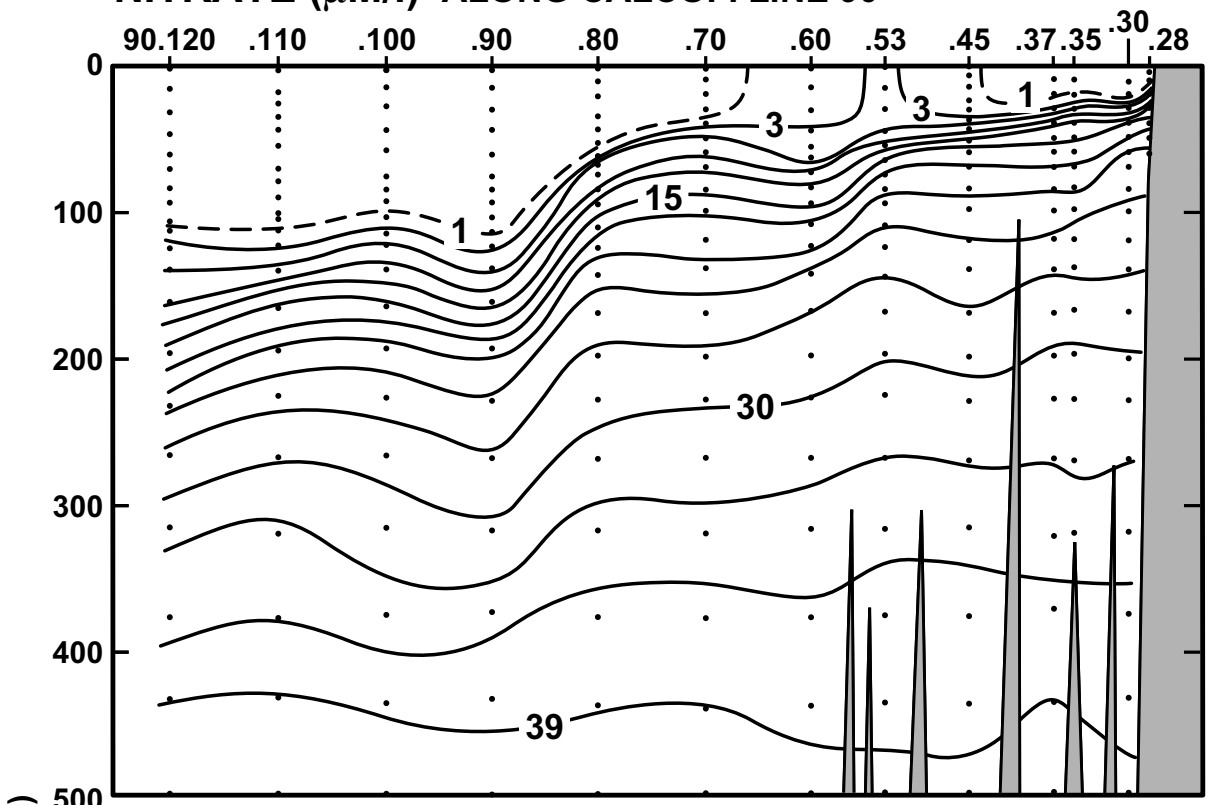

FIGURE 5E

PHOSPHATE (μM/l) ALONG CALCOFI LINE 90

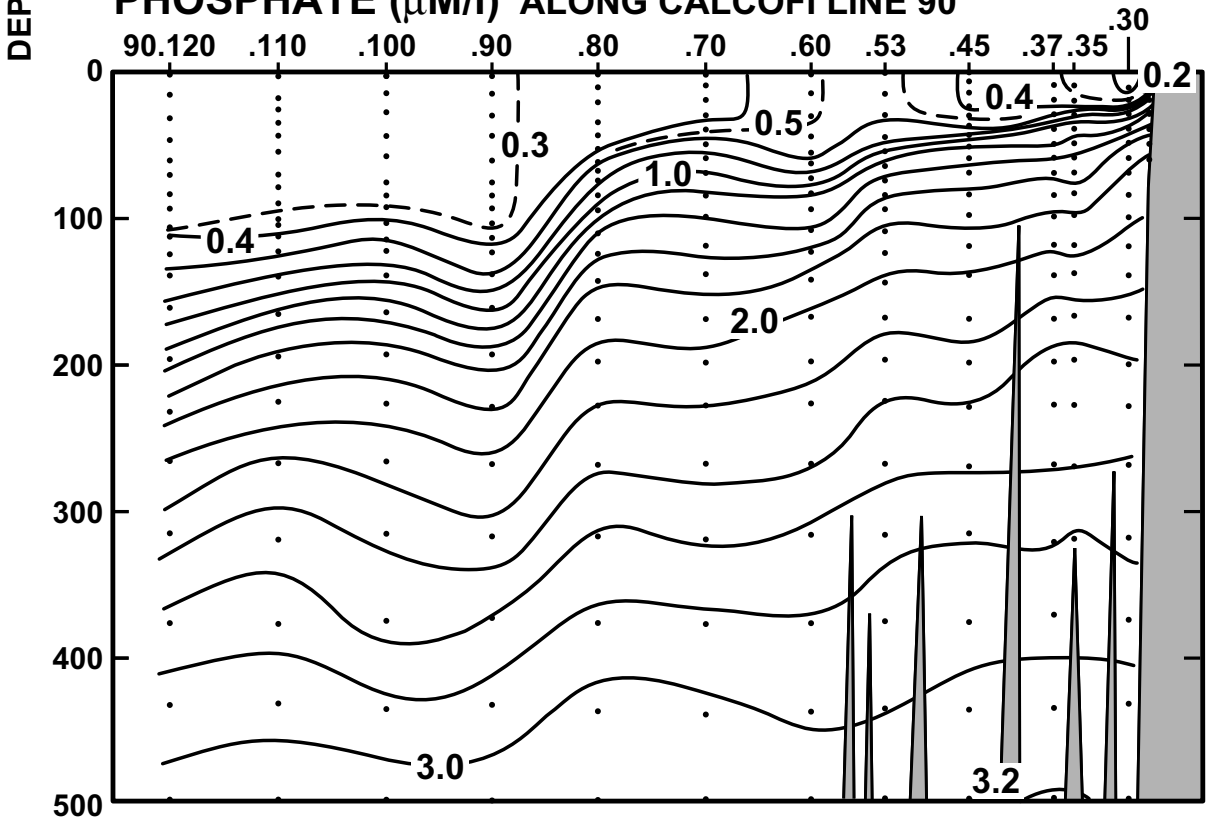

FIGURE 5F

CALCOFI CRUISE 0104

9 - 12 APRIL 2001

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

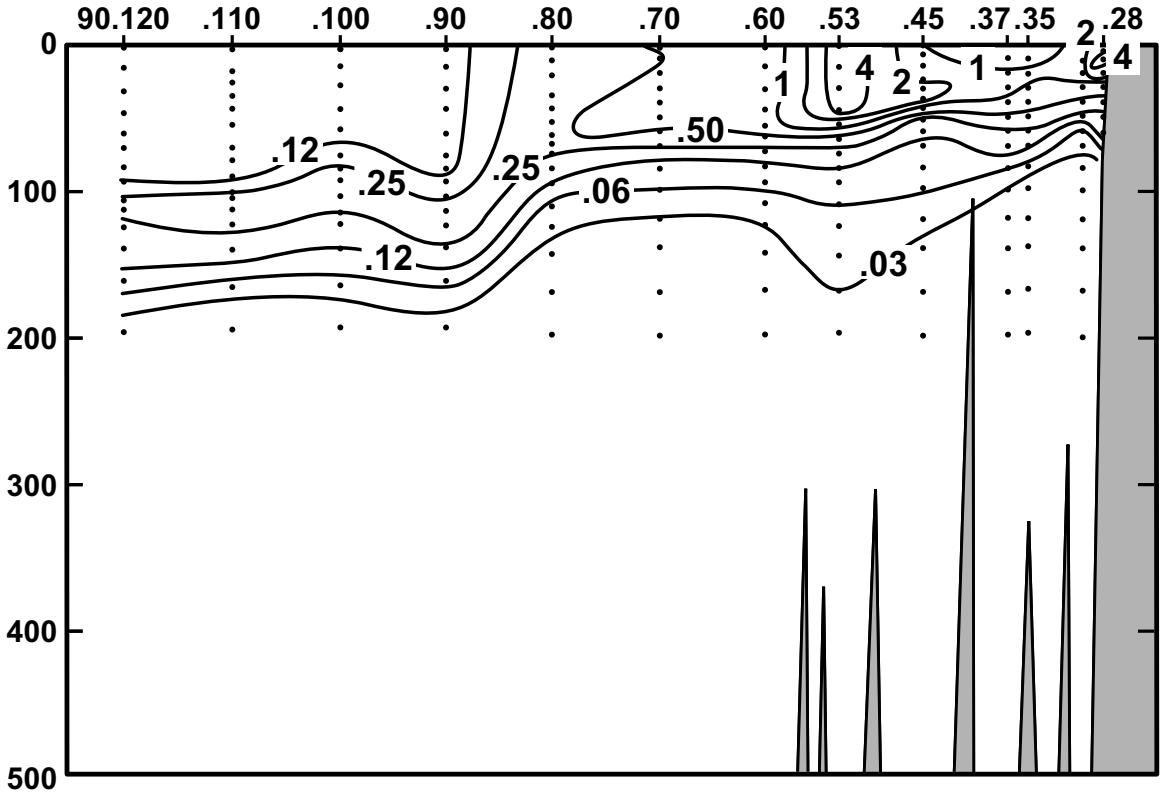

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

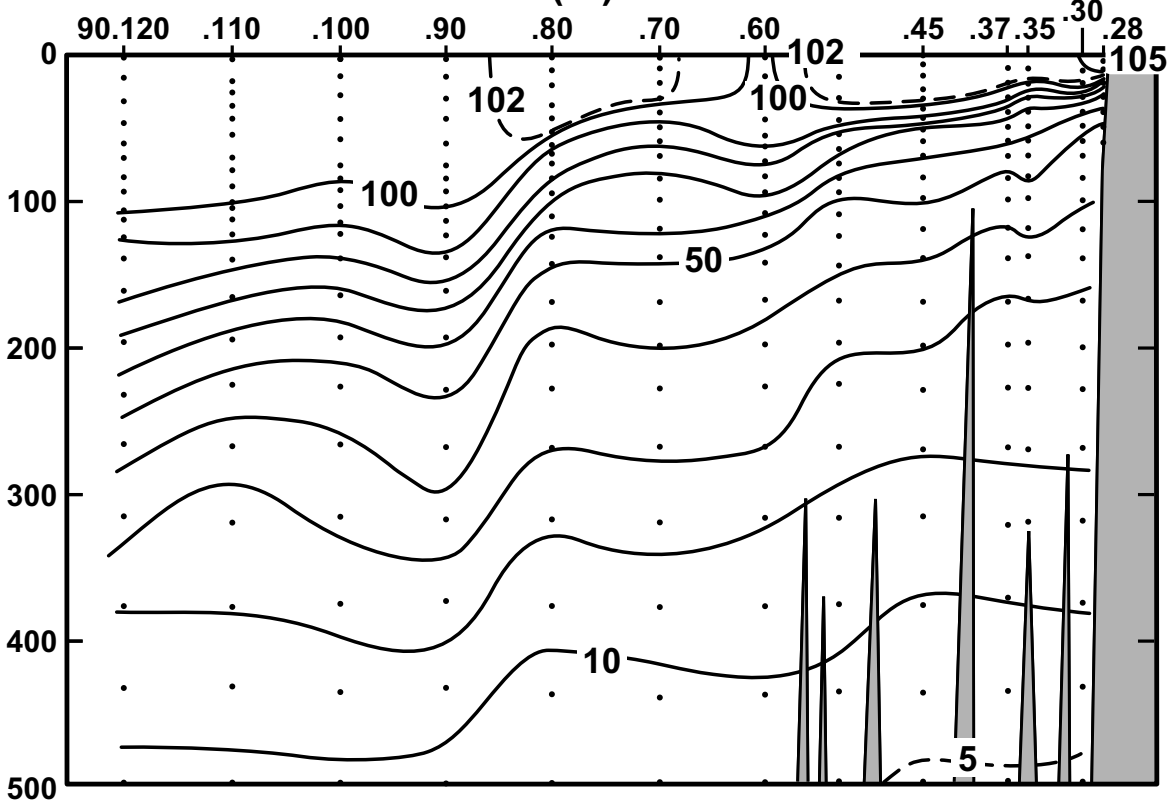

FIGURE 5H

CALCOFI CRUISE 0104

9 - 12 APRIL 2001

OXYGEN (ml/l) ALONG CALCOFI LINE 90

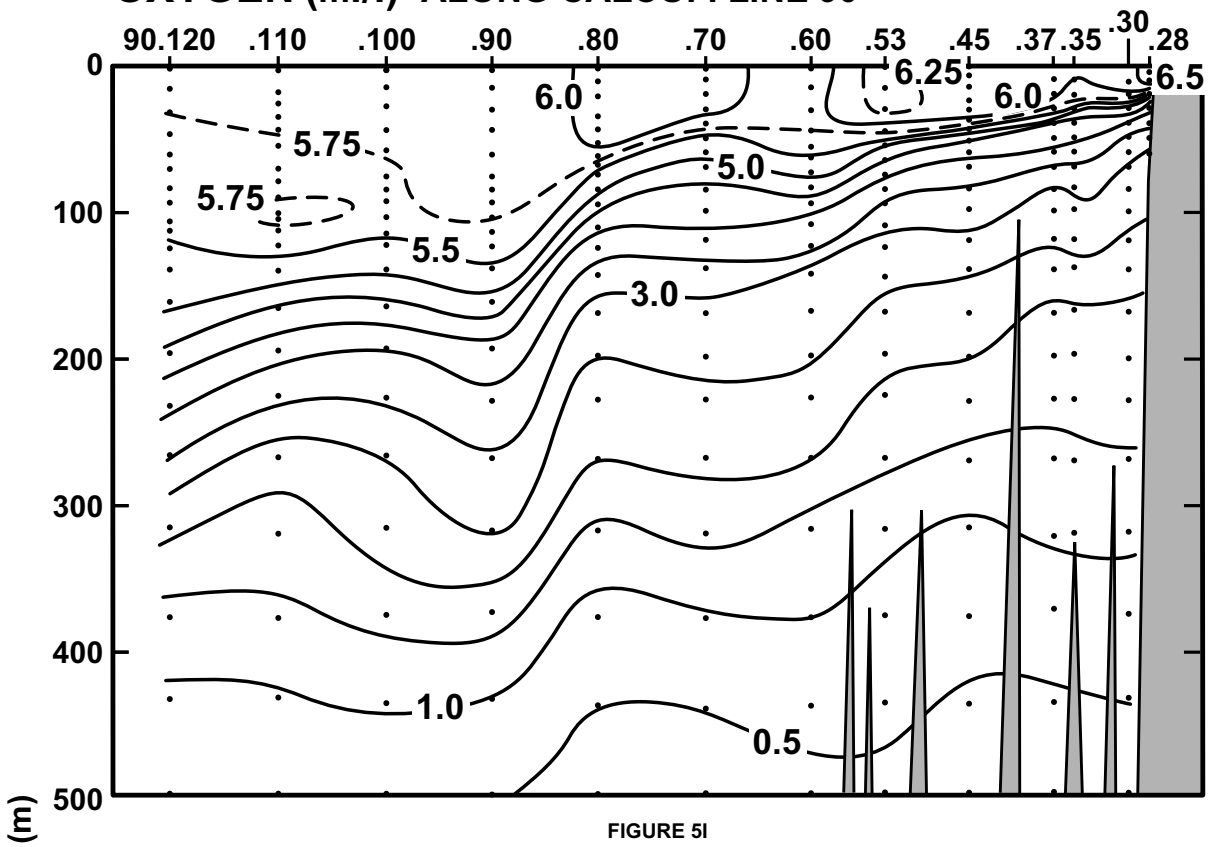

FIGURE 5I

NITRITE (μM/l) ALONG CALCOFI LINE 90

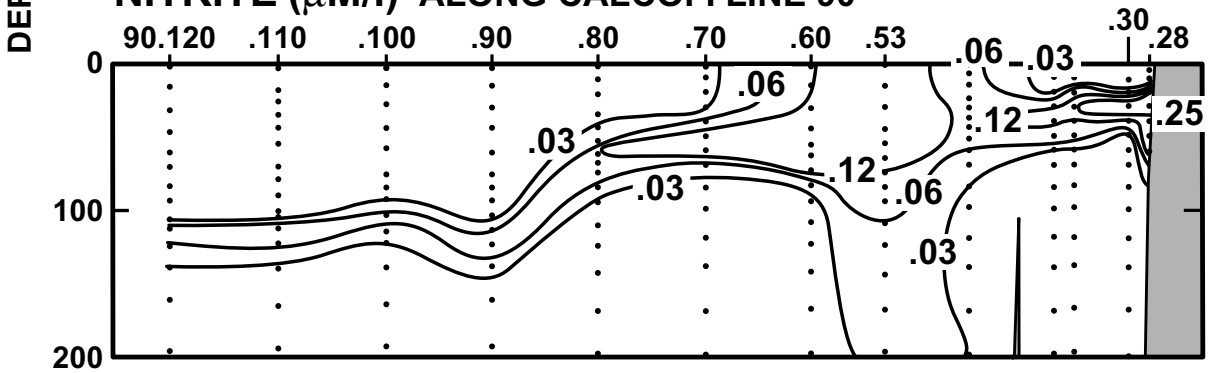

FIGURE 5J

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

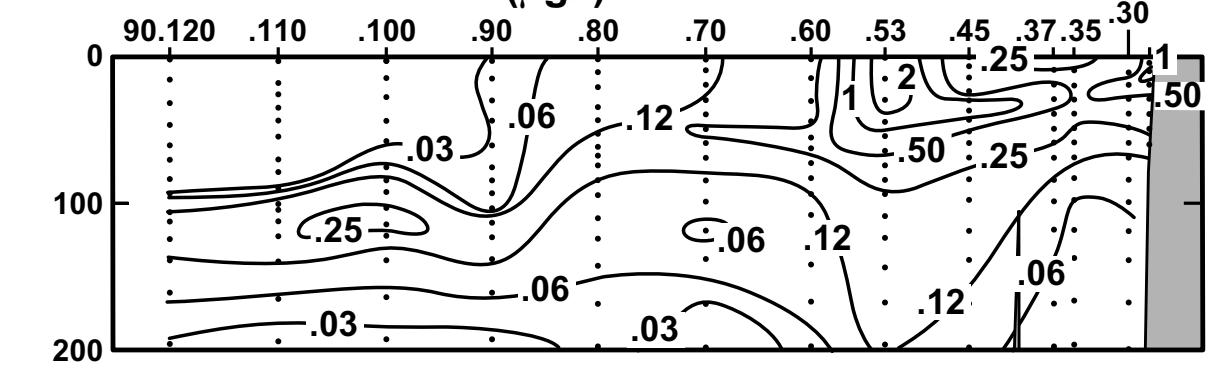

FIGURE 5K

PERSONNEL

CalCOFI Cruise 0104

SHIP'S CAPTAIN

P. Scott Hill, D.S *Jordan*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participating (Legs)
Wilkinson, James R. (Chief Scientist)	Programmer Analyst, SIO	1,2,3
Acuna, Elaine M.	Fishery Biologist, NMFS	5
Becker, Susan M.	Staff Research Associate, SIO	2,3
Curtis, Kathryn A.	Graduate Student, SIO	2,3,4,5
Dotson, Ronald C.	Fishery Biologist, NMFS	1,2,3,4,5
Griffith, David A.	Fishery Biologist, NMFS	1,2,3,4,5
Gruber, Dennis W.	Staff Research Associate, SIO	1,2,3
Hays, Amy E.	Fishery Biologist, NMFS	1,2,3,4,5
Kelly, Ciarán J.	Fisheries Scientist, Irish Marine Institute	1
Lim, Younghwa	Student, Seoul National University, Korea	1,2
Masten, Douglas M.	Staff Research Associate, SIO	1
Macewicz, Beverly J.	Fishery Biologist, NMFS	5
Oedekoven, Cornelia	Seabird Biologist, Pt. Reyes Bird Observatory	1,2,3,4,5
Poteau, Antoine	Marine Technician, SIO	1,2,3
Ramirez, Fernando	Staff Research Associate, SIO	1,2,3
Wolgast, David M.	Staff Research Associate, SIO	1,2,3

Leg 1: San Diego to Dana Point, California, 6-13 April, 2001
Leg 2: Dana Point to Pt. Hueneme, California, 13-18 April, 2001
Leg 3: Pt. Hueneme to Monterey, California, 18-25 April, 2001
Leg 4: Monterey to San Francisco, California, 25-27 April, 2001
Leg 5: San Francisco to San Diego, California, 27 April- 3 May, 2001

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
35 5.1 N	120 47.4 W	22/04/01	1847 UTC	79 m	310 20 kn	290 04 04	0	1022.0 mb	12.9 C	11.2 C	13m	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	9.61	9.61	33.698	26.001	199.6	0.000	4.47	69.6	22.7	1.43	19.4	0.14	2.12	0.44	0	
2		9.61	9.61	33.698	26.001	199.7	0.004	4.47	69.6	22.7	1.43	19.4	0.14	2.12	0.44	2	210
8		9.60	9.60	33.697	26.002	199.7	0.016	4.47	69.5	22.7	1.43	19.5	0.14	1.95	0.54	8	209
10	ISL	9.56	9.56	33.699	26.010	199.0	0.020	4.42	68.7	22.9	1.44	19.6	0.13	1.94	0.53	10	
17		9.40	9.40	33.708	26.043	195.9	0.034	4.19	64.9	23.6	1.48	20.3	0.11	1.91	0.49	17	208
20	ISL	9.33	9.33	33.707	26.054	195.0	0.040	4.12	63.7	23.8	1.49	20.6	0.10	1.67	0.47	20	
26		9.21	9.21	33.707	26.073	193.3	0.051	3.97	61.2	24.4	1.53	21.3	0.09	1.05	0.42	26	207
30	ISL	9.14	9.14	33.711	26.087	192.0	0.059	3.81	58.7	25.1	1.57	22.0	0.07	0.61	0.34	30	
34		9.07	9.07	33.722	26.107	190.2	0.067	3.65	56.1	25.9	1.61	22.7	0.06	0.26	0.28	34	206
41		8.96	8.96	33.770	26.162	185.1	0.080	3.48	53.4	27.5	1.68	23.7	0.05	0.15	0.39	41	205
48		9.00	8.99	33.824	26.198	181.8	0.093	3.29	50.5	29.5	1.75	24.3	0.08	0.20	0.36	48	204
50	ISL	9.00	8.99	33.835	26.207	181.0	0.096	3.23	49.6	30.0	1.76	24.5	0.08	0.23	0.39	50	
54		8.99	8.98	33.855	26.224	179.5	0.103	3.13	48.1	30.8	1.79	24.8	0.09	0.28	0.44	54	203
62		8.98	8.97	33.888	26.252	177.0	0.118	2.96	45.5					0.27	1.06	62	202
70		8.96	8.95	33.887	26.254	176.9	0.132	2.95	45.3	32.5	1.87	25.4	0.10	0.27	0.52	70	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
35 1.4 N	120 55.0 W	22/04/01	1527 UTC	236 m	320 16 kn	310 07 06	0	1022.6 mb	12.5 C	11.3 C	12m	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	10.36	10.36	33.701	25.877	211.4	0.000	5.57	88.1	16.9	1.14	14.1	0.20	2.52	0.57	0	
2		10.36	10.36	33.701	25.877	211.4	0.004	5.57	88.1	16.9	1.14	14.1	0.20	2.52	0.57	2	215
10		10.36	10.36	33.700	25.876	211.7	0.021	5.55	87.8	16.9	1.14	14.0	0.20	2.35	0.67	10	214
20		10.10	10.10	33.712	25.930	206.8	0.042	5.18	81.5	18.6	1.21	15.6	0.19	3.05	0.66	20	213
30		9.26	9.26	33.746	26.096	191.2	0.062	3.78	58.4	25.3	1.58	21.6	0.13	0.95	0.58	30	212
40		9.24	9.24	33.760	26.110	190.1	0.081	3.57	55.1	26.3	1.64	22.5	0.11	0.34	0.47	40	211
50		9.16	9.15	33.800	26.154	186.0	0.100	3.36	51.8	27.7	1.69	23.5	0.10	0.20	0.40	50	210
60		8.85	8.84	33.810	26.211	180.8	0.118	3.31	50.7	29.1	1.76	24.6	0.04	0.09	0.29	60	209
69		8.80	8.79	33.843	26.245	177.8	0.134	3.26	49.9	29.7	1.76	25.1	0.03	0.08	0.26	69	208
75	ISL	8.73	8.72	33.874	26.280	174.5	0.145	3.18	48.6	30.7	1.78	25.6	0.03	0.07	0.21	75	
85		8.58	8.57	33.926	26.344	168.6	0.162	3.05	46.4	32.8	1.83	26.4	0.02	0.07	0.14	86	207
99		8.40	8.39	33.970	26.407	162.9	0.185	3.01	45.7	35.0	1.89	27.3	0.02	0.08	0.19	100	206
100	ISL	8.39	8.38	33.972	26.410	162.7	0.187	3.00	45.5	35.1	1.89	27.4	0.02	0.08	0.19	101	
120		8.21	8.20	34.007	26.465	157.8	0.219	2.79	42.1	37.6	1.97	28.5	0.02	0.07	0.12	121	205
125	ISL	8.17	8.16	34.015	26.477	156.7	0.227	2.68	40.4	38.3	2.00	28.9	0.02	0.08	0.11	126	
140		8.06	8.05	34.039	26.513	153.6	0.250	2.34	35.2	40.5	2.11	30.1	0.02	0.09	0.09	141	204
150	ISL	7.96	7.95	34.053	26.539	151.3	0.265	2.20	33.1	42.2	2.17	30.6	0.02	0.07	0.09	151	
170		7.79	7.77	34.079	26.584	147.3	0.295	1.98	29.6	45.7	2.29	31.5	0.01	0.03	0.12	171	203
199		7.71	7.69	34.121	26.629	143.5	0.337	1.56	23.3	50.5	2.42	32.7	0.04	0.04	0.17	200	202
200	ISL	7.71	7.69	34.121	26.629	143.5	0.339	1.56	23.3	50.6	2.42	32.7	0.04			201	
228		7.61	7.59	34.123	26.646	142.4	0.379	1.51	22.5	52.5	2.46	33.0	0.04			229	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 53.4 N	121 11.9 W	22/04/01	1148 UTC	560 m	330 20 kn			1022.9 mb	11.2 C	10.3 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	11.39	11.39	33.542	25.570	240.5	0.000	6.37	103.0	4.7	0.60	6.5	0.17	4.83	0.69	0	
2		11.39	11.39	33.542	25.570	240.6	0.005	6.37	103.0	4.7	0.60	6.5	0.17	4.83	0.69	2	220
10		11.39	11.39	33.542	25.571	240.7	0.024	6.24	100.9	4.7	0.60	6.5	0.16	5.20	0.54	10	219
20		11.27	11.27	33.560	25.607	237.5	0.048	6.18	99.6	6.2	0.70	7.6	0.18	4.50	0.85	20	218
29		11.14	11.14	33.569	25.637	234.8	0.069	5.97	96.0	7.3	0.76	8.5	0.18	4.41	0.54	29	217
30	ISL	11.08	11.08	33.577	25.654	233.2	0.072	5.92	95.1	7.8	0.79	8.9	0.18	4.22	0.55	30	
39		10.49	10.49	33.665	25.827	217.0	0.092	5.33	84.5	14.0	1.13	13.3	0.22	2.18	0.69	39	216
50		10.02	10.01	33.743	25.968	203.8	0.115	4.26	66.9	21.4	1.46	18.9	0.25	0.87	0.74	50	215
60		9.81	9.80	33.786	26.037	197.4	0.135	3.79	59.3	25.4	1.62	21.6	0.25	0.78	0.82	60	214
70		9.66	9.65	33.837	26.102	191.5	0.154	3.45	53.8	27.7	1.72	23.3	0.22	0.67	0.71	70	213
75	ISL	9.64	9.63	33.841	26.109	190.9	0.164	3.37	52.5	28.1	1.74	23.6	0.22	0.61	0.70	75	
85		9.61	9.60	33.849	26.120	190.1	0.183	3.29	51.2	28.5	1.76	23.9	0.21	0.50	0.69	85	212
100		9.56	9.55	33.866	26.142	188.3	0.211	3.16	49.2	29.4	1.79	24.6	0.20	0.40	0.68	101	211
120		9.31	9.30	33.910	26.217	181.5	0.248	2.85	44.1	31.4	1.87	25.8	0.12	0.31	0.63	121	210
125	ISL	9.12	9.11	33.926	26.260	177.5	0.257	2.84	43.8	32.3	1.88	26.3	0.10	0.25	0.58	126	
140		8.51	8.50	33.975	26.395	164.9	0.283	2.83	43.0	35.3	1.92	27.7	0.03	0.08	0.42	141	209
150	ISL	8.26	8.24	33.995	26.448	159.9	0.299	2.75	41.6	37.4	1.97	28.6	0.02	0.07	0.38	151	
170		7.94	7.92	34.018	26.514	153.9	0.331	2.55	38.3	41.2	2.07	30.2	0.01	0.06	0.33	171	208
200		7.64	7.62	34.031	26.568	149.2	0.376	2.40	35.8	44.8	2.15	31.3	0.01	0.03	0.19	201	207
227		7.41	7.39	34.099	26.655	141.3	0.415	1.71	25.4	50.8	2.41	33.5	0.01			228	206
250	ISL	7.28	7.26	34.130	26.698	137.6	0.448	1.40	20.7	54.2	2.52	34.7	0.00			252	
269		7.16	7.13	34.141	26.724	135.4	0.473	1.26	18.6	56.5	2.58	35.5	0.00			271	205
300	ISL	6.75	6.72	34.129	26.771	131.2	0.515	1.17	17.1	61.2	2.66	36.7	0.00			302	
315		6.55	6.52	34.123	26.793	129.3	0.534	1.15	16.7	63.5	2.69	37.2	0.00			317	204
377		6.19	6.16	34.188	26.891	120.6	0.612	0.71	10.2	72.6	2.88	39.3	0.00			380	203
400	ISL	6.13	6.09	34.201	26.909	119.1	0.639	0.65	9.4	74.2	2.91	39.6	0.00			403	
437		6.05	6.01	34.218	26.933	117.3	0.683	0.58	8.3	76.8	2.95	39.8	0.01			440	202
500	ISL	5.70	5.66	34.271	27.019	109.7	0.755	0.36	5.1	86.7	3.07	40.4	0.02			504	
512		5.63	5.59	34.281	27.036	108.2	0.768	0.32	4.6	88.6	3.09	40.5	0.02			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 43.2 N	121 33.4 W	22/04/01	0706 UTC	967 m	330 20 kn			1024.2 mb	12.0 C	10.5 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	12.11	12.11	33.451	25.366	260.0	0.000	6.22	102.0	4.6	0.48	4.2	0.15	1.31	0.47	0	
2		12.11	12.11	33.451	25.366	260.0	0.005	6.22	102.0	4.6	0.48	4.2	0.15	1.31	0.47	2	220
10		12.11	12.11	33.452	25.367	260.1	0.026	6.23	102.2	4.6	0.48	4.2	0.15	1.28	0.41	10	219
20		12.09	12.09	33.452	25.371	260.0	0.052	6.22	102.0	4.6	0.49	4.3	0.15	1.27	0.41	20	218
30		11.99	11.99	33.457	25.394	258.0	0.078	6.11	100.0	5.1	0.53	4.6	0.16	1.13	0.47	30	217
40		11.64	11.63	33.498	25.491	249.0	0.103	6.12	99.4	5.2	0.59	5.7	0.16	2.25	0.76	40	216
50		11.23	11.22	33.506	25.573	241.5	0.128	5.83	93.9	7.4	0.76	7.5	0.18	1.00	0.61	50	215
60		10.52	10.51	33.554	25.736	226.2	0.151	5.01	79.5	13.7	1.10	13.0	0.20	0.79	0.85	60	214
70		10.37	10.36	33.612	25.807	219.6	0.173	4.43	70.1	18.4	1.31	16.8	0.22	0.38	0.70	70	213
75	ISL	10.33	10.32	33.644	25.839	216.7	0.184	4.64	73.3	17.6	1.30	16.3	0.21	0.49	0.64	75	
85		10.22	10.21	33.704	25.905	210.6	0.206	5.07	80.0	15.9	1.26	15.1	0.19	0.81	0.58	85	212
100		9.81	9.80	33.761	26.019	200.1	0.237	3.94	61.6	23.6	1.57	20.7	0.23	0.65	0.72	101	211
120		9.37	9.36	33.908	26.206	182.6	0.275	2.84	44.0	31.0	1.89	25.8	0.18	0.27	0.74	121	210
125	ISL	9.32	9.31	33.928	26.230	180.4	0.284	2.68	41.5	31.9	1.92	26.4	0.14	0.22	0.71	126	
139		9.18	9.16	33.968	26.284	175.6	0.309	2.40	37.0	33.5	1.98	27.4	0.03	0.15	0.60	140	209
150	ISL	8.97	8.95	33.993	26.337	170.7	0.328	2.35	36.1	34.8	2.02	28.1	0.03	0.12	0.51	151	
170		8.61	8.59	34.029	26.422	162.9	0.361	2.25	34.3	37.2	2.08	29.1	0.02	0.09	0.37	171	208
199		8.43	8.41	34.067	26.480	157.9	0.408	2.02	30.7	40.5	2.19	30.3	0.01	0.06	0.33	200	207
200	ISL	8.42	8.40	34.068	26.482	157.7	0.409	2.02	30.7	40.6	2.19	30.4	0.01			201	
219		8.14	8.12	34.080	26.534	153.1	0.439	1.96	29.6	43.0	2.26	31.3	0.00			220	206
250	ISL	7.62	7.60	34.077	26.608	146.3	0.485	1.92	28.6	47.1	2.33	32.5	0.00			252	
267		7.36	7.33	34.075	26.644	143.1	0.510	1.87	27.7	49.5	2.37	33.1	0.01			269	205
300	ISL	7.03	7.00	34.098	26.708	137.3	0.556	1.56	22.9	54.6	2.50	34.7	0.01			302	
318		6.90	6.87	34.114	26.739	134.6	0.581	1.36	19.9	57.3	2.58	35.5	0.01			320	204
378		6.56	6.53	34.158	26.820	127.7	0.659	0.93	13.5	64.9	2.77	37.6	0.01			381	203
400	ISL	6.34	6.30	34.170	26.858	124.2	0.687	0.79	11.4	68.8	2.83	38.5	0.01			403	
440		5.96	5.92	34.194	26.926	118.0	0.735	0.58	8.3	75.6	2.94	40.1	0.00			443	202
500	ISL	5.71	5.67	34.238	26.992	112.2	0.804	0.42	6.0	81.5	3.05	41.2	0.00			504	
513		5.65	5.61	34.248	27.007	110.9	0.819	0.38	5.4	82.8	3.07	41.4	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 23.3 N	122 14.7 W	21/04/01	2337 UTC	4013 m	330 19 kn	320 06 08	1	1025.4 mb	12.9 C	11.1 C	12m	7/8 ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.96	12.96	33.283	25.071	288.0	0.000	6.25	104.3	3.5	0.28	1.1	0.06	0.84	0.16	0	
2		12.96	12.96	33.283	25.071	288.0	0.006	6.25	104.3	3.5	0.28	1.1	0.06	0.84	0.16	2	220
10	ISL	12.96	12.96	33.286	25.074	288.0	0.029	6.25	104.3	3.4	0.28	1.1	0.06	0.84	0.19	10	
11		12.96	12.96	33.287	25.075	287.9	0.032	6.25	104.3	3.4	0.28	1.1	0.06	0.84	0.19	11	219
20	ISL	12.93	12.93	33.282	25.077	288.0	0.058	6.26	104.4	3.3	0.28	1.1	0.06	0.86	0.22	20	
21		12.93	12.93	33.281	25.076	288.1	0.060	6.26	104.4	3.3	0.28	1.1	0.06	0.86	0.22	21	218
30	ISL	12.89	12.89	33.282	25.085	287.5	0.086	6.25	104.1	3.2	0.28	1.1	0.06	0.89	0.19	30	
31		12.89	12.89	33.282	25.085	287.5	0.089	6.25	104.1	3.2	0.28	1.1	0.06	0.89	0.19	31	217
40		12.43	12.42	33.322	25.206	276.2	0.115	6.04	99.7	4.9	0.47	3.3	0.15	0.53	0.21	40	216
50	ISL	11.72	11.71	33.386	25.390	258.9	0.141	5.83	94.8	6.9	0.66	6.0	0.22	0.44	0.27	50	
51		11.66	11.65	33.393	25.406	257.4	0.144	5.81	94.3	7.1	0.68	6.3	0.22	0.44	0.28	51	215
61		11.43	11.42	33.439	25.484	250.2	0.169	5.65	91.3	8.9	0.80	7.9	0.25	0.31	0.26	61	214
71		11.26	11.25	33.490	25.555	243.7	0.194	5.66	91.2	9.4	0.87	8.9	0.21	0.22	0.22	71	213
75	ISL	11.18	11.17	33.511	25.586	240.8	0.204	5.62	90.4	10.1	0.91	9.4	0.22	0.22	0.23	75	
84		11.02	11.01	33.561	25.654	234.6	0.225	5.43	87.1	12.5	1.01	11.1	0.23	0.21	0.25	84	212
100		10.81	10.80	33.659	25.768	224.1	0.262	4.75	75.9	18.2	1.26	15.7	0.43	0.22	0.26	101	211
120		10.42	10.41	33.727	25.889	212.9	0.306	4.09	64.8	22.1	1.46	19.2	0.21	0.17	0.27	121	210
125	ISL	10.30	10.29	33.753	25.930	209.1	0.316	3.82	60.4	23.1	1.52	20.2	0.15	0.15	0.25	126	
140		9.93	9.91	33.838	26.059	197.1	0.347	3.02	47.4	26.3	1.71	23.0	0.01	0.10	0.17	141	209
150	ISL	9.72	9.70	33.891	26.136	190.0	0.366	2.71	42.3	28.5	1.81	24.5	0.01	0.08	0.18	151	
169		9.34	9.32	33.978	26.267	177.9	0.401	2.36	36.6	32.4	1.97	26.7	0.01	0.06	0.21	170	208
199		8.77	8.75	34.063	26.424	163.3	0.452	2.08	31.8	37.6	2.13	29.0	0.00	0.07	0.14	200	207
200	ISL	8.76	8.74	34.065	26.427	163.1	0.454	2.07	31.7	37.7	2.13	29.1	0.00			201	
229		8.31	8.29	34.106	26.529	153.8	0.500	1.84	27.9	41.7	2.25	30.7	0.00			230	206
250	ISL	7.82	7.80	34.086	26.586	148.5	0.531	1.93	28.9	44.7	2.28	31.7	0.00			251	
269		7.40	7.37	34.064	26.630	144.5	0.559	2.02	30.0	47.5	2.30	32.5	0.00			271	205
300	ISL	7.05	7.02	34.080	26.691	138.9	0.603	1.72	25.3	52.7	2.44	34.1	0.00			302	
317		6.92	6.89	34.099	26.724	136.0	0.626	1.48	21.7	55.7	2.53	35.0	0.00			319	204
378		6.46	6.43	34.179	26.849	124.8	0.706	0.82	11.9	67.0	2.82	38.0	0.00			380	203
400	ISL	6.29	6.25	34.193	26.883	121.8	0.733	0.69	10.0	70.3	2.88	38.8	0.00			403	
438		6.01	5.97	34.210	26.932	117.4	0.779	0.55	7.9	75.3	2.94	39.9	0.00			441	202
500	ISL	5.69	5.65	34.234	26.991	112.3	0.850	0.41	5.8	81.5	3.03	41.2	0.00			503	
516		5.61	5.57	34.241	27.007	110.9	0.868	0.38	5.4	83.1	3.05	41.5	0.00			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 4.0 N	122 58.4 W	21/04/01	1723 UTC	4234 m	340 19 kn	310 07 07	2	1026.1 mb	13.2 C	11.1 C	15m	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	13.05	13.05	33.197	24.987	296.0	0.000	6.24	104.2	3.1	0.24	0.4	0.03	0.59	0.12	0	
2	A	13.05	13.05	33.197	24.987	296.1	0.006	6.24	104.2	3.1	0.24	0.4	0.03	0.59	0.12	2	221
10	A	13.05	13.05	33.197	24.987	296.2	0.030	6.22	103.9	3.0	0.24	0.4	0.03	0.58	0.11	10	220
20	A	13.05	13.05	33.197	24.988	296.5	0.059	6.23	104.1	3.0	0.24	0.4	0.03	0.58	0.11	20	219
30	A	13.05	13.05	33.197	24.988	296.7	0.089	6.22	103.9	3.0	0.24	0.4	0.03	0.59	0.13	30	218
39	A	13.05	13.04	33.197	24.988	297.0	0.116	6.21	103.7	3.0	0.24	0.4	0.03	0.58	0.11	39	217
47		13.05	13.04	33.197	24.988	297.1	0.139	6.21	103.7	3.0	0.25	0.4	0.03	0.59	0.12	47	216
50	ISL	13.05	13.04	33.197	24.988	297.2	0.148	6.21	103.7	3.0	0.25	0.4	0.03	0.59	0.12	50	
55	A	13.05	13.04	33.197	24.989	297.3	0.163	6.22	103.9	3.0	0.25	0.5	0.03	0.58	0.12	55	215
62		13.04	13.03	33.203	24.995	296.9	0.184	6.21	103.7	2.9	0.25	0.5	0.03	0.56	0.13	62	214
71		13.02	13.01	33.214	25.008	295.9	0.211	6.19	103.3	2.7	0.25	0.5	0.04	0.56	0.11	71	213
75	ISL	12.93	12.92	33.224	25.034	293.6	0.222	6.15	102.5	2.8	0.28	0.6	0.07	0.54	0.14	75	
85		12.54	12.53	33.265	25.142	283.5	0.251	6.04	99.8	3.9	0.40	1.9	0.13	0.46	0.22	85	212
100		11.58	11.57	33.374	25.407	258.5	0.292	5.33	86.4	8.3	0.70	7.7	0.06	0.20	0.14	100	211
120		10.07	10.06	33.439	25.724	228.5	0.341	4.70	73.7	13.7	1.08	13.8	0.02	0.08	0.11	121	210
125	ISL	9.87	9.86	33.506	25.810	220.4	0.352	4.42	69.1	16.0	1.20	15.8	0.02	0.07	0.11	126	
140		9.48	9.46	33.722	26.043	198.5	0.383	3.58	55.5	23.1	1.55	21.5	0.01	0.04	0.10	141	209
150	ISL	9.31	9.29	33.807	26.137	189.7	0.403	3.25	50.3	26.0	1.68	23.6	0.01	0.03	0.09	151	
170		9.05	9.03	33.911	26.261	178.4	0.439	2.90	44.6	30.0	1.83	26.0	0.01	0.02	0.07	171	208
199		8.59	8.57	33.988	26.393	166.2	0.489	2.81	42.8	34.0	1.91	27.5	0.00	0.01	0.08	200	207
200	ISL	8.57	8.55	33.990	26.398	165.8	0.491	2.80	42.6	34.2	1.91	27.6	0.00			201	
229		8.12	8.10	34.032	26.500	156.5	0.538	2.51	37.8	39.4	2.06	29.5	0.00			230	206
250	ISL	7.77	7.75	34.042	26.559	151.0	0.570	2.35	35.1	42.9	2.15	30.7	0.00			251	
270		7.45	7.42	34.044	26.607	146.7	0.600	2.22	33.0	46.1	2.23	31.7	0.00			272	205
300	ISL	7.06	7.03	34.043	26.661	141.8	0.643	2.01	29.6	50.8	2.35	33.3	0.00			302	
319		6.84	6.81	34.044	26.692	139.0	0.670	1.87	27.4	53.8	2.42	34.3	0.00			321	204
378		6.28	6.25	34.088	26.801	129.2	0.749	1.25	18.1	64.3	2.68	37.5	0.00			380	203
400	ISL	6.10	6.06	34.101	26.834	126.2	0.777	1.09	15.7	67.9	2.76	38.4	0.00			403	
439		5.83	5.79	34.125	26.887	121.4	0.825	0.85	12.1	73.8	2.87	39.8	0.00			442	202
500	ISL	5.55	5.51	34.181	26.966	114.5	0.897	0.56	8.0	81.7	3.00	41.2	0.00			503	
518		5.47	5.43	34.198	26.990	112.4	0.918	0.47	6.7	84.0	3.04	41.6	0.00			522	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 43.3 N	123 38.3 W	21/04/01	0746 UTC	4244 m	340 18 kn			1025.0 mb	12.5 C	10.0 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	13.56	13.56	33.157	24.854	308.7	0.000			4.0	0.21	0.0	0.00	0.22	0.04	0	
2		13.56	13.56	33.157	24.854	308.7	0.006	6.23 U	105.2 U	4.0	0.21	0.0	0.00	0.22	0.04	2	220
10	ISL	13.57	13.57	33.157	24.852	309.1	0.031			4.0	0.21	0.0	0.00	0.22	0.04	10	
16		13.57	13.57	33.157	24.852	309.3	0.049	6.15	103.8	4.0	0.21	0.0	0.00	0.22	0.04	16	219
20	ISL	13.57	13.57	33.158	24.853	309.3	0.062	6.14	103.7	3.9	0.21	0.0	0.00	0.22	0.04	20	
30	ISL	13.56	13.56	33.159	24.856	309.3	0.093	6.13	103.5	3.7	0.21	0.0	0.00	0.22	0.05	30	
31		13.56	13.56	33.159	24.856	309.3	0.096	6.13	103.5	3.7	0.21	0.0	0.00	0.22	0.05	31	218
46		13.19	13.18	33.162	24.933	302.4	0.142	6.14	102.8	3.9	0.22	0.1	0.01	0.31	0.09	46	217
50	ISL	13.00	12.99	33.174	24.980	298.0	0.154	6.07	101.3	4.4	0.27	0.8	0.08	0.41	0.12	50	
54		12.79	12.78	33.189	25.033	293.0	0.166	5.99	99.5	4.9	0.33	1.6	0.15	0.51	0.16	54	216
66		12.20	12.19	33.236	25.184	279.0	0.200	5.95	97.6	5.5	0.43	3.0	0.27	0.56	0.29	66	215
75	ISL	11.66	11.65	33.244	25.291	268.9	0.225	5.71	92.6	7.2	0.59	5.7	0.17	0.49	0.21	75	
76		11.60	11.59	33.246	25.304	267.7	0.227	5.68	92.0	7.4	0.61	6.0	0.15	0.48	0.20	76	214
86		11.00	10.99	33.326	25.474	251.6	0.253	5.29	84.6	10.0	0.80	9.4	0.07	0.38	0.21	86	213
95		10.26	10.25	33.354	25.625	237.4	0.275	4.98	78.4	12.7	1.00	12.6	0.04	0.18	0.15	95	212
100	ISL	10.02	10.01	33.393	25.696	230.7	0.287	4.80	75.2	14.1	1.09	14.0	0.04	0.15	0.15	100	
110		9.74	9.73	33.494	25.822	218.9	0.309	4.45	69.3	16.9	1.23	16.4	0.03	0.10	0.14	111	211
125		9.51	9.50	33.654	25.985	203.7	0.341	3.95	61.3	20.8	1.41	19.6	0.02	0.06	0.14	126	210
145		9.30	9.28	33.809	26.141	189.3	0.380	3.26	50.4	26.6	1.69	23.8	0.01	0.04	0.12	146	209
150	ISL	9.27	9.25	33.827	26.159	187.6	0.390	3.24	50.1	27.2	1.70	24.2	0.01	0.04	0.12	151	
170		9.10	9.08	33.875	26.225	181.8	0.427	3.16	48.7	28.7	1.76	24.9	0.01	0.02	0.10	171	208
198		8.58	8.56	33.979	26.388	166.7	0.476	3.04	46.3	33.0	1.85	26.5	0.01	0.02	0.07	199	207
200	ISL	8.55	8.53	33.983	26.396	166.0	0.479	3.03	46.1	33.3	1.85	26.6	0.01			201	
230		8.06	8.04	34.015	26.495	156.9	0.527	2.87	43.2	38.0	1.95	28.4	0.01			231	206
250	ISL	7.76	7.74	34.032	26.553	151.6	0.558	2.56	38.3	42.0	2.09	30.2	0.00			251	
271		7.47	7.44	34.046	26.606	146.8	0.589	2.21	32.8	46.4	2.24	32.0	0.00			273	205
300	ISL	7.08	7.05	34.063	26.674	140.6	0.631	1.90	28.0	51.5	2.38	33.6	0.01			302	
320		6.84	6.81	34.074	26.715	136.8	0.659	1.72	25.2	54.9	2.47	34.6	0.01			322	204
375		6.35	6.32	34.103	26.804	128.9	0.732	1.20	17.4	64.5	2.73	37.6	0.00			377	203
400	ISL	6.16	6.12	34.116	26.839	125.8	0.764	1.05	15.1	68.2	2.79	38.6	0.00			403	
437		5.90	5.86	34.139	26.890	121.2	0.809	0.87	12.5	73.4	2.86	39.8	0.00			440	202
500	ISL	5.56	5.52	34.203	26.983	113.0	0.883	0.54	7.7	82.4	3.00	41.3	0.00			503	
516		5.47	5.43	34.220	27.007	110.8	0.901	0.46	6.5	84.7	3.04	41.7	0.00			520	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 23.3 N	124 19.6 W	21/04/01	0052	UTC	340 23 kn	320 11 07	1	1023.2 mb	12.9 C	11.9 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	13.77	13.77	33.144	24.801	313.7	0.000	6.09	103.2	3.4	0.34	0.0	0.00	0.18	0.03	0	
2		13.77	13.77	33.144	24.801	313.8	0.006	6.09	103.2	3.4	0.34	0.0	0.00	0.18	0.03	2	220
10	ISL	13.78	13.78	33.143	24.799	314.2	0.031	6.09	103.2	3.4	0.35	0.0	0.00	0.19	0.03	10	
16		13.78	13.78	33.142	24.798	314.5	0.050	6.08	103.1	3.4	0.35	0.0	0.00	0.19	0.02	16	219
20	ISL	13.78	13.78	33.143	24.799	314.5	0.063	6.08	103.1	3.4	0.35	0.0	0.00	0.20	0.01	20	
29		13.77	13.77	33.144	24.802	314.4	0.091	6.07	102.9	3.3	0.34	0.0	0.00	0.23	0.00	29	218
30	ISL	13.77	13.77	33.145	24.803	314.4	0.094	6.07	102.9	3.3	0.34	0.0	0.00	0.23	0.00	30	
46		13.70	13.69	33.156	24.826	312.6	0.144	6.08	102.9	3.4	0.34	0.0	0.00	0.25	0.02	46	217
50	ISL	13.66	13.65	33.153	24.832	312.1	0.157	6.08	102.8	3.3	0.34	0.0	0.00	0.26	0.05	50	
55		13.60	13.59	33.150	24.842	311.3	0.173	6.07	102.5	3.3	0.34	0.0	0.00	0.28	0.09	55	216
66		13.51	13.50	33.154	24.864	309.6	0.207			3.5	0.34	0.0	0.00	0.46	0.14	66	215
75	ISL	13.54	13.53	33.165	24.866	309.6	0.235	6.01	101.4	3.5	0.36	0.1	0.00	0.53	0.17	75	
76		13.54	13.53	33.166	24.867	309.5	0.238	6.01	101.4	3.5	0.36	0.1	0.00	0.53	0.17	76	214
85		12.98	12.97	33.209	25.012	295.9	0.265	5.79	96.6	4.4	0.49	1.9	0.11	0.48	0.23	85	213
94		11.49	11.48	33.288	25.357	263.1	0.290	5.38	87.0	7.2	0.78	6.9	0.10	0.30	0.23	94	212
100	ISL	11.02	11.01	33.322	25.468	252.6	0.305	5.32	85.2	8.1	0.83	8.4	0.07	0.24	0.21	100	
110		10.66	10.65	33.358	25.560	244.0	0.330	5.22	82.9	8.9	0.91	9.4	0.03	0.18	0.16	111	211
125		10.17	10.16	33.422	25.694	231.5	0.366	5.10	80.2	10.6	1.00	11.0	0.01	0.10	0.09	126	210
145		9.71	9.69	33.502	25.834	218.5	0.411	4.80	74.7	13.7	1.18	14.1	0.01	0.07	0.02	146	209
150	ISL	9.63	9.61	33.540	25.877	214.5	0.422	4.67	72.6	14.9	1.24	15.1	0.01	0.07	0.01	151	
171		9.34	9.32	33.719	26.064	197.1	0.465	4.10	63.4	20.3	1.49	19.3	0.01	0.05	-0.01	172	208
200		8.89	8.87	33.936	26.306	174.6	0.519	3.61	55.3	27.4	1.72	23.4	0.01	0.00	0.02	201	207
229		8.45	8.43	33.996	26.422	164.0	0.568	3.48	52.8	31.4	1.81	25.0	0.01			230	206
250	ISL	8.12	8.09	34.010	26.483	158.5	0.602	3.25	49.0	35.0	1.92	26.7	0.01			251	
269		7.84	7.81	34.016	26.529	154.3	0.632	2.96	44.3	38.6	2.05	28.4	0.01			271	205
300	ISL	7.42	7.39	34.044	26.611	146.7	0.678	2.33	34.6	45.5	2.31	31.4	0.00			302	
320		7.18	7.15	34.065	26.662	142.1	0.707	1.92	28.3	50.1	2.47	33.3	0.00			322	204
375		6.61	6.58	34.117	26.781	131.3	0.782	1.24	18.1	60.6	2.76	36.7	0.00			377	203
400	ISL	6.43	6.39	34.136	26.820	127.9	0.815	1.04	15.1	64.1	2.84	37.6	0.00			403	
440		6.20	6.16	34.165	26.873	123.2	0.865	0.80	11.5	69.1	2.94	38.8	0.00			443	202
500	ISL	5.84	5.80	34.221	26.963	115.2	0.936	0.51	7.3	78.1	3.08	40.4	0.00			503	
514		5.75	5.71	34.234	26.984	113.2	0.952	0.44	6.3	80.2	3.11	40.8	0.00			517	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 27.1 N	120 31.6 W	19/04/01	0247	UTC	75 m 310 15 kn			1015.8 mb	12.0 C	10.0 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	11.21	11.21	33.831	25.828	216.0	0.000	5.17	83.4	16.0	1.22	11.8	0.18	6.18	0.99	0	
2		11.21	11.21	33.831	25.828	216.1	0.004	5.17	83.4	16.0	1.22	11.8	0.18	6.18	0.99	2	208
7		11.17	11.17	33.830	25.834	215.6	0.015	5.07	81.7	15.9	1.23	12.0	0.18	6.22	1.08	7	207
10	ISL	10.97	10.97	33.836	25.875	211.8	0.022	4.58	73.5	17.6	1.36	14.0	0.22	5.05	1.01	10	
14		10.65	10.65	33.847	25.940	205.7	0.030	3.84	61.2	20.3	1.56	17.1	0.28	3.21	0.91	14	206
20	ISL	10.44	10.44	33.852	25.981	201.9	0.042	3.38	53.6	22.3	1.70	19.1	0.33	2.00	1.09	20	
24		10.34	10.34	33.857	26.002	200.0	0.050	3.22	51.0	23.5	1.75	19.9	0.34	1.61	1.22	24	205
30	ISL	10.08	10.08	33.884	26.068	193.9	0.062	2.87	45.2	26.8	1.84	22.1	0.33	1.17	1.06	30	
34		9.94	9.94	33.901	26.105	190.5	0.070	2.70	42.4	28.6	2.46 U	23.3	0.31	1.03	0.93	34	204
44		9.93	9.92	33.906	26.111	190.1	0.089	2.68	42.1	28.0	1.95	23.4	0.30	0.97	0.94	44	203
50	ISL	9.91	9.90	33.911	26.118	189.5	0.100	2.66	41.7	28.2	1.96	23.5	0.29	0.96	1.07	50	
54		9.90	9.89	33.914	26.122	189.3	0.108	2.65	41.6	28.4	1.96	23.6	0.29	0.96	1.13	54	202
64		9.59	9.58	33.998	26.240	178.3	0.126	2.17	33.8	33.3	2.14	26.0	0.20	0.30	0.80	64	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 19.1 N	120 48.0 W	19/04/01	0543 UTC	750 m	340 14 kn			1016.7 mb	11.9 C	10.0 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	10.90	10.90	33.642	25.736	224.7	0.000	6.59	105.5	8.9	0.81	8.0	0.19	10.73	2.04	0	
2		10.90	10.90	33.642	25.736	224.8	0.004	6.59	105.5	8.9	0.81	8.0	0.19	10.73	2.04	2	220
10		10.84	10.84	33.741	25.824	216.6	0.022	6.55	104.7	11.8	0.89	9.4	0.21	13.02	2.32	10	219
20		10.66	10.66	33.832	25.927	207.1	0.043	6.08	96.9	17.0	1.20	12.9	0.24	11.83	2.34	20	218
30		10.49	10.49	33.835	25.959	204.2	0.064	5.74	91.1	19.1	1.31	14.9	0.26	9.33	2.26	30	217
40		10.36	10.36	33.861	26.002	200.4	0.084	5.12	81.1	23.0	1.56	18.0	0.28	5.01	1.07	40	216
50		10.21	10.20	33.873	26.038	197.2	0.104	4.60	72.6	25.4	1.73	20.1	0.29	2.74	0.86	50	215
60		9.97	9.96	33.874	26.079	193.5	0.124	4.01	63.0	27.3	1.84	21.9	0.30	1.14	0.61	60	214
70		9.77	9.76	33.930	26.157	186.3	0.143	3.18	49.7	30.0	2.00	24.7	0.22	0.63	0.52	70	213
75	ISL	9.60	9.59	33.955	26.205	181.9	0.152	2.79	43.5	31.2	2.07	25.8	0.14	0.39	0.48	75	
84		9.30	9.29	33.992	26.283	174.6	0.168	2.28	35.3	32.9	2.15	27.3	0.02	0.08	0.43	84	212
98		9.09	9.08	34.015	26.334	169.9	0.192	2.26	34.8	34.0	2.17	27.9	0.02	0.06	0.41	99	211
100	ISL	9.07	9.06	34.016	26.339	169.6	0.195	2.26	34.8	34.1	2.17	28.0	0.02	0.06	0.41	101	
119		8.92	8.91	34.030	26.374	166.6	0.227	2.25	34.5	34.8	2.19	28.5	0.02	0.05	0.44	120	210
125	ISL	8.89	8.88	34.041	26.387	165.5	0.237	2.19	33.6	35.3	2.21	28.7	0.02	0.04	0.41	126	
139		8.80	8.79	34.066	26.421	162.5	0.260	2.07	31.7	36.6	2.26	29.1	0.01	0.03	0.33	140	209
150	ISL	8.70	8.68	34.075	26.444	160.5	0.278	2.11	32.2	37.4	2.28	29.4	0.01	0.03	0.32	151	
169		8.49	8.47	34.085	26.484	157.0	0.308	2.16	32.8	39.0	2.31	30.1	0.01	0.03	0.31	170	208
198		8.16	8.14	34.112	26.556	150.6	0.353	1.79	27.0	42.3	2.41	31.3	0.01	0.04	0.19	199	207
200	ISL	8.15	8.13	34.114	26.559	150.3	0.356	1.78	26.9	42.5	2.42	31.4	0.01			201	
227		7.98	7.96	34.130	26.597	147.1	0.396	1.68	25.3	44.7	2.48	32.1	0.01			228	206
250	ISL	7.82	7.80	34.133	26.623	145.0	0.429	1.61	24.1	46.3	2.52	32.6	0.01			252	
268		7.68	7.65	34.136	26.646	143.1	0.455	1.54	23.0	47.8	2.55	33.1	0.01			270	205
300	ISL	7.39	7.36	34.160	26.707	137.7	0.500	1.26	18.7	52.7	2.68	34.6	0.02			302	
317		7.24	7.21	34.175	26.740	134.8	0.523	1.10	16.3	55.6	2.75	35.4	0.02			319	204
377		6.80	6.76	34.217	26.834	126.5	0.602	0.76	11.1	63.2	2.92	37.2	0.01			380	203
400	ISL	6.68	6.64	34.228	26.859	124.4	0.631	0.68	9.9	65.2	2.96	37.7	0.01			403	
437		6.49	6.45	34.244	26.897	121.2	0.676	0.57	8.3	68.5	3.01	38.4	0.01			440	202
500	ISL	6.02	5.98	34.277	26.984	113.3	0.750	0.39	5.6	76.8	3.13	40.1	0.00			504	
516		5.90	5.86	34.286	27.007	111.3	0.768	0.35	5.0	78.9	3.16	40.5	0.00			520	201

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LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 8.7 N	121 9.7 W	19/04/01	0933 UTC	2265 m	300 10 kn			1016.8 mb	12.9 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	12.81	12.81	33.256	25.080	287.2	0.000	6.28	104.4	2.9	0.41	1.1	0.06	0.60	0.10	0	
2		12.81	12.81	33.256	25.080	287.2	0.006	6.28	104.4	2.9	0.41	1.1	0.06	0.60	0.10	2	220
10	ISL	12.79	12.79	33.257	25.085	286.9	0.029	6.29	104.5	2.8	0.41	1.2	0.06	0.61	0.11	10	
15		12.78	12.78	33.257	25.087	286.9	0.043	6.29	104.5	2.8	0.41	1.2	0.07	0.62	0.11	15	219
20	ISL	12.74	12.74	33.263	25.100	285.8	0.057	6.29	104.4	2.8	0.42	1.3	0.08	0.68	0.13	20	
30	ISL	12.57	12.57	33.284	25.149	281.4	0.086	6.30	104.2	2.9	0.46	1.8	0.10	0.87	0.21	30	
31		12.55	12.55	33.287	25.155	280.8	0.089	6.30	104.2	2.9	0.46	1.9	0.10	0.89	0.22	31	218
46		12.05	12.04	33.338	25.291	268.3	0.130	6.31	103.3	2.8	0.56	3.3	0.15	1.24	0.40	46	217
50	ISL	11.56	11.55	33.328	25.374	260.4	0.140	5.85	94.8	5.9	0.73	6.0	0.14	0.92	0.36	50	
54		11.06	11.05	33.325	25.462	252.1	0.151	5.41	86.7	9.0	0.90	8.7	0.12	0.63	0.31	54	216
64		10.50	10.49	33.390	25.611	238.0	0.175	5.38	85.2	10.1	1.02	10.3	0.09	0.90	0.37	64	215
75		9.97	9.96	33.383	25.696	230.1	0.201	4.93	77.2	14.1	1.21	13.6	0.09	0.50	0.35	75	214
84		9.64	9.63	33.489	25.834	217.2	0.221	4.48	69.7	17.7	1.39	16.7	0.10	0.42	0.28	84	213
94		9.77	9.76	33.632	25.924	208.9	0.242	4.05	63.2	20.6	1.55	19.2	0.10	0.20	0.29	94	212
100	ISL	9.77	9.76	33.693	25.972	204.5	0.255	3.81	59.5	22.3	1.64	20.3	0.10	0.19	0.30	101	
109		9.76	9.75	33.788	26.048	197.5	0.273	3.42	53.4	25.1	1.77	22.0	0.08	0.17	0.31	110	211
124		9.49	9.48	33.936	26.209	182.5	0.301	2.54	39.5	30.4	2.02	25.6	0.02	0.09	0.35	125	210
125	ISL	9.47	9.46	33.938	26.214	182.1	0.303	2.55	39.6	30.5	2.02	25.6	0.02	0.09	0.35	126	
144		9.09	9.07	33.952	26.286	175.5	0.337	2.73	42.0	31.4	2.01	26.2	0.02	0.07	0.34	145	209
150	ISL	9.09	9.07	33.983	26.310	173.3	0.347	2.54	39.1	32.7	2.07	26.8	0.02	0.06	0.33	151	
169		9.10	9.08	34.076	26.382	166.9	0.380	1.86	28.7	37.1	2.28	28.9	0.01	0.05	0.30	170	208
200		8.66	8.64	34.089	26.462	159.8	0.430	2.00	30.5	39.1	2.30	29.7	0.00	0.03	0.37	201	207
228		8.06	8.04	34.061	26.531	153.4	0.474	2.21	33.3	41.2	2.29	30.5	0.00			229	206
250	ISL	7.65	7.63	34.045	26.579	149.1	0.508	2.22	33.1	43.8	2.32	31.2	0.00			252	
269		7.37	7.34	34.043	26.617	145.6	0.536	2.22	32.9	46.6	2.35	31.9	0.00			271	205
300	ISL	7.14	7.11	34.091	26.688	139.3	0.580	1.77	26.1	52.1	2.54	33.8	0.00			302	
319		7.05	7.02	34.126	26.728	135.8	0.606	1.44	21.2	55.5	2.66	35.0	0.00			321	204
379		6.68	6.65	34.165	26.809	128.8	0.685	0.98	14.3	63.1	2.84	37.0	0.00			381	203
400	ISL	6.58	6.54	34.190	26.843	125.9	0.712	0.83	12.1	66.0	2.90	37.7	0.00			403	
442		6.36	6.32	34.241	26.912	119.7	0.764	0.59	8.5	71.8	3.02	38.9	0.00			445	202
500	ISL	5.92	5.88	34.276	26.996	112.1	0.831	0.43	6.2	79.9	3.13	40.4	0.00			504	
513		5.82	5.78	34.284	27.015	110.4	0.845	0.39	5.6	81.7	3.16	40.7	0.00			517	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 49.0 N	121 50.4 W	19/04/01	1812 UTC	3627 m	200 10 kn	240 03 06	1	1016.2 mb	13.9 C	12.1 C	13m	7/8	NS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.15	13.15	33.287	25.037	291.3	0.000	6.39	107.0	1.7	0.43	1.2	0.07	1.15	0.22	0	
2	B	13.15	13.15	33.287	25.037	291.3	0.006	6.39	107.0	1.7	0.43	1.2	0.07	1.15	0.22	2	222
7	B	13.13	13.13	33.285	25.039	291.2	0.020	6.42	107.5	1.7	0.42	1.1	0.07	1.06	0.28	7	221
10	ISL	13.08	13.08	33.280	25.046	290.7	0.029	6.40	107.0	1.8	0.42	1.1	0.07	1.03	0.26	10	
16	B	12.92	12.92	33.268	25.068	288.7	0.046	6.37	106.2	2.1	0.42	1.2	0.07	0.99	0.21	16	220
20	ISL	12.74	12.74	33.260	25.097	286.0	0.058	6.30	104.6	2.4	0.45	1.4	0.08	0.93	0.22	20	
27	B	12.48	12.48	33.260	25.148	281.4	0.078	6.18	102.0	2.9	0.49	1.8	0.11	0.82	0.24	27	219
30	ISL	12.49	12.49	33.279	25.161	280.3	0.086	6.17	101.9	2.9	0.49	1.8	0.12	0.80	0.26	30	
35	B	12.50	12.50	33.303	25.177	278.8	0.100	6.15	101.6	3.0	0.49	1.9	0.14	0.76	0.29	35	218
42		12.56	12.55	33.343	25.197	277.1	0.120	6.18	102.3	2.7	0.48	1.7	0.13	0.62	0.27	42	217
49	B	12.31	12.30	33.376	25.271	270.3	0.139	6.02	99.1	4.2	0.62	3.3	0.18	0.66	0.29	49	216
50	ISL	12.29	12.28	33.381	25.279	269.5	0.142	6.00	98.7	4.4	0.64	3.5	0.19	0.67	0.31	50	
55		12.18	12.17	33.408	25.321	265.7	0.155	5.90	96.9	5.5	0.71	4.4	0.22	0.73	0.44	55	215
60		12.03	12.02	33.437	25.372	260.9	0.168	5.70	93.3	7.0	0.80	5.7	0.27	0.69	0.53	60	214
71		11.41	11.40	33.491	25.529	246.2	0.196	5.27	85.2	11.2	1.03	9.7	0.25	0.39	0.37	71	213
75	ISL	10.99	10.98	33.475	25.592	240.2	0.206	5.09	81.5	12.4	1.10	11.2	0.19	0.30	0.32	75	
86		9.93	9.92	33.446	25.752	225.1	0.231	4.63	72.4	14.9	1.27	14.9	0.03	0.14	0.22	86	212
100		9.67	9.66	33.555	25.881	213.1	0.262	4.25	66.1	17.3	1.41	17.2	0.02	0.12 A	0.22 A	101	211
120		9.72	9.71	33.789	26.056	196.9	0.303	3.17	49.5	24.3	1.78	22.6	0.01	0.13 A	0.22 A	121	210
125	ISL	9.62	9.61	33.826	26.101	192.7	0.313	3.03	47.2	25.7	1.84	23.6	0.01	0.12	0.21	126	
140		9.24	9.22	33.906	26.226	181.1	0.341	2.78	42.9	29.3	1.97	25.8	0.01	0.08	0.16	141	209
150	ISL	9.06	9.04	33.943	26.284	175.8	0.359	2.68	41.2	30.9	2.02	26.7	0.01	0.06	0.13	151	
170		8.74	8.72	33.991	26.372	167.7	0.393	2.58	39.4	33.5	2.07	27.7	0.00	0.04	0.10	171	208
200		8.27	8.25	34.029	26.474	158.4	0.442	2.45	37.1	37.9	2.17	29.1	0.00	0.03	0.10	201	207
230		7.84	7.82	34.047	26.553	151.3	0.488	2.27	34.0	42.3	2.28	30.8	0.01			231	206
250	ISL	7.63	7.61	34.066	26.598	147.3	0.518	2.05	30.6	45.4	2.38	31.8	0.01			251	
269		7.44	7.41	34.082	26.638	143.7	0.546	1.83	27.2	48.4	2.48	32.8	0.00			271	205
300	ISL	7.04	7.01	34.086	26.697	138.3	0.590	1.64	24.1	53.4	2.59	34.3	0.00			302	
320		6.77	6.74	34.086	26.734	135.0	0.617	1.53	22.4	56.8	2.65	35.3	0.00			322	204
377		6.15	6.12	34.107	26.832	126.1	0.691	1.07	15.4	67.2	2.86	38.3	0.00			379	203
400	ISL	5.96	5.93	34.117	26.864	123.2	0.720	0.93	13.3	70.9	2.92	39.1	0.00			403	
438		5.73	5.69	34.144	26.915	118.7	0.766	0.73	10.4	76.1	3.01	40.1	0.00			441	202
500	ISL	5.70	5.66	34.242	26.996	111.8	0.837	0.41	5.8	81.4	3.14	40.9	0.00			503	
511		5.69	5.65	34.259	27.011	110.6	0.850	0.35	5.0	82.3	3.16	41.0	0.00			515	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 0104 | STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 29.1 N	122 31.8 W	19/04/01	2355 UTC	3979 m	280 17 kn	240 03 05	1	1014.2 mb	14.0 C	12.3 C	19m	7/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.68	13.68	33.228	24.884	305.8	0.000	6.23	105.5	2.1	0.36	0.4	0.03	0.63	0.06	0	
1		13.68	13.68	33.228	24.885	305.8	0.003	6.23	105.5	2.1	0.36	0.4	0.03	0.63	0.06	1	220
10	ISL	13.65	13.65	33.226	24.889	305.6	0.031	6.23	105.4	2.1	0.35	0.4	0.03	0.60	0.06	10	
16		13.63	13.63	33.225	24.893	305.4	0.049	6.23	105.3	2.1	0.35	0.4	0.03	0.58	0.06	16	219
20	ISL	13.48	13.48	33.215	24.916	303.4	0.061	6.22	104.8	2.3	0.35	0.3	0.03	0.51	0.07	20	
30		13.07	13.07	33.197	24.984	297.1	0.091	6.21	103.8	3.0	0.35	0.2	0.02	0.38	0.10	30	218
45		12.86	12.85	33.225	25.047	291.5	0.135	6.12	101.8	3.4	0.41	0.9	0.07	0.59	0.16	45	217
50	ISL	12.78	12.77	33.263	25.093	287.3	0.150	6.29	104.5	2.2	0.38	0.7	0.07	0.78	0.20	50	
55		12.70	12.69	33.302	25.139	283.0	0.164	6.46	107.2	1.0	0.35	0.5	0.07	1.01	0.29	55	216
66		12.57	12.56	33.347	25.199	277.6	0.195	6.41	106.1	1.0	0.40	1.0	0.10	1.67	0.74	66	215
75		12.47	12.46	33.373	25.239	274.0	0.220	6.16	101.7	2.5	0.51	2.1	0.14	1.52	0.89	75	214
85		12.45	12.44	33.376	25.245	273.7	0.247	6.10	100.7	2.9	0.52	2.3	0.15	1.26	0.73	85	213
94		11.90	11.89	33.322	25.307	267.9	0.271	5.79	94.5	5.7	0.67	4.5	0.16	1.14	0.60	94	212
100	ISL	11.26	11.25	33.289	25.399	259.1	0.287	5.57	89.6	7.7	0.80	6.8	0.11	0.77	0.49	100	
109		10.28	10.27	33.288	25.571	242.9	0.310	5.22	82.2	10.8	1.01	10.5	0.03	0.20	0.33	110	211
125		9.40	9.39	33.486	25.871	214.5	0.346	4.59	71.0	16.4	1.33	16.1	0.01	0.06	0.12	126	210
144		9.18	9.16	33.767	26.127	190.6	0.385	3.62	55.8	24.2	1.69	22.1	0.00	0.03	0.06	145	209
150	ISL	9.11	9.09	33.813	26.174	186.2	0.396	3.60	55.4	25.2	1.70	22.7	0.00	0.02	0.06	151	
169		8.88	8.86	33.901	26.280	176.5	0.431	3.53	54.1	27.3	1.74	23.5	0.00	0.01	0.07	170	208
199		8.39	8.37	34.008	26.440	161.7	0.481	2.83	42.9	35.0	2.03	27.6	0.01	0.01	0.06	200	207
200	ISL	8.38	8.36	34.010	26.443	161.4	0.483	2.81	42.6	35.2	2.04	27.7	0.01			201	
229		8.05	8.03	34.042	26.518	154.7	0.529	2.39	36.0	40.0	2.21	29.8	0.00			230	206
250	ISL	7.80	7.78	34.058	26.567	150.3	0.561	2.12	31.7	43.5	2.33	31.2	0.00			251	
269		7.57	7.54	34.069	26.609	146.5	0.589	1.91	28.4	46.5	2.42	32.4	0.00			271	205
300	ISL	7.24	7.21	34.079	26.664	141.6	0.634	1.70	25.1	50.8	2.53	33.7	0.00			302	
318		7.05	7.02	34.082	26.693	139.0	0.659	1.61	23.7	53.3	2.58	34.3	0.00			320	204
377		6.32	6.29	34.093	26.800	129.3	0.738	1.21	17.5	63.7	2.78	37.3	0.00			379	203
400	ISL	6.13	6.09	34.111	26.838	125.8	0.767	1.03	14.8	67.7	2.86	38.3	0.00			403	
437		5.90	5.86	34.146	26.895	120.7	0.813	0.76	10.9	73.8	2.98	39.6	0.00			440	202
500	ISL	5.60	5.56	34.202	26.977	113.5	0.887	0.50	7.1	81.6	3.09	41.0	0.00			503	
514		5.53	5.49	34.214	26.995	111.9	0.903	0.44	6.2	83.3	3.12	41.3	0.00			518	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 9.4 N	123 13.0 W	20/04/01	0646 UTC	4224 m	310 24 kn			1016.6 mb	12.5 C	10.0 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	13.88	13.88	33.240	24.853	308.8	0.000	6.16	104.7	3.1	0.33	0.0	0.00	0.21	0.04	0	
3		13.88	13.88	33.240	24.853	308.9	0.009	6.16	104.7	3.1	0.33	0.0	0.00	0.21	0.04	3	220
10	ISL	13.88	13.88	33.240	24.853	309.0	0.031	6.16	104.7	3.1	0.34	0.0	0.00	0.22	0.04	10	
16		13.88	13.88	33.241	24.854	309.1	0.049	6.16	104.7	3.1	0.34	0.0	0.00	0.22	0.04	16	219
20	ISL	13.73	13.73	33.249	24.891	305.7	0.062	6.20	105.1	3.1	0.34	0.0	0.00	0.24	0.04	20	
29		13.35	13.35	33.267	24.982	297.3	0.089	6.28	105.6	3.0	0.33	0.0	0.00	0.32	0.05	29	218
30	ISL	13.35	13.35	33.267	24.982	297.3	0.092	6.28	105.6	3.0	0.33	0.0	0.00	0.34	0.05	30	
44		13.19	13.18	33.264	25.012	294.8	0.133	6.13	102.7	3.3	0.37	0.3	0.03	0.69	0.15	44	217
50	ISL	12.91	12.90	33.272	25.074	289.1	0.151	6.02	100.3	3.9	0.45	1.3	0.12	0.86	0.25	50	
56		12.45	12.44	33.288	25.176	279.5	0.168	5.83	96.2	5.2	0.57	3.1	0.19	0.93	0.32	56	216
66		11.17	11.16	33.346	25.459	252.6	0.194	5.27	84.7	9.4	0.91	8.9	0.08	0.60	0.26	66	215
75		10.49	10.48	33.417	25.634	236.1	0.216	4.75	75.2	13.3	1.17	13.3	0.03	0.32	0.20	75	214
86		9.88	9.87	33.491	25.796	220.9	0.242	4.33	67.7	17.1	1.38	16.7	0.02	0.24	0.15	86	213
96		9.42	9.41	33.529	25.901	211.0	0.263	4.23	65.5	19.4	1.49	18.4	0.01	0.13	0.11	96	212
100	ISL	9.41	9.40	33.567	25.933	208.1	0.272	4.12	63.8	20.3	1.53	19.1	0.01	0.11	0.10	100	
110		9.39	9.38	33.653	26.003	201.6	0.292	3.79	58.7	22.4	1.64	20.9	0.01	0.07	0.08	111	211
125	ISL	9.28	9.27	33.781	26.121	190.7	0.321	3.36	51.9	25.7	1.78	23.2	0.01	0.03	0.06	126	
126		9.27	9.26	33.788	26.129	190.1	0.323	3.34	51.6	25.9	1.79	23.3	0.01	0.03	0.06	127	210
144		9.06	9.04	33.872	26.228	180.9	0.357	3.12	48.0	28.8	1.89	25.0	0.00	0.02	0.06	145	209
150	ISL	8.99	8.97	33.897	26.259	178.1	0.368	3.05	46.9	29.7	1.92	25.5	0.00	0.02	0.06	151	
169		8.75	8.73	33.960	26.346	170.1	0.401	2.87	43.9	32.4	1.99	26.8	0.00	0.01	0.06	170	208
199		8.37	8.35	34.005	26.440	161.7	0.450	2.74	41.5	35.8	2.07	28.2	0.00	0.01	0.05	200	207
200	ISL	8.36	8.34	34.006	26.443	161.5	0.452	2.73	41.4	35.9	2.07	28.3	0.00			201	
230		8.03	8.01	34.042	26.521	154.4	0.499	2.36	35.5	40.8	2.22	30.2	0.00			231	206
250	ISL	7.74	7.72	34.057	26.575	149.5	0.530	2.15	32.1	44.4	2.32	31.4	0.00			251	
270		7.45	7.42	34.067	26.625	145.0	0.559	1.96	29.1	48.1	2.42	32.6	0.00			272	205
300	ISL	7.07	7.04	34.073	26.683	139.7	0.602	1.74	25.6	52.8	2.55	34.1	0.00			302	
318		6.86	6.83	34.076	26.714	136.9	0.627	1.62	23.7	55.6	2.62	35.0	0.00			320	204
375		6.24	6.21	34.106	26.820	127.3	0.702	1.10	15.9	66.3	2.84	38.0	0.00			377	203
400	ISL	6.05	6.02	34.128	26.862	123.5	0.733	0.92	13.2	70.5	2.92	39.0	0.00			403	
438		5.83	5.79	34.164	26.918	118.5	0.779	0.69	9.9	76.1	3.02	40.3	0.00			441	202
500	ISL	5.58	5.54	34.216	26.990	112.2	0.851	0.45	6.4	83.1	3.13	41.2	0.00			503	
517		5.51	5.47	34.231	27.011	110.4	0.870	0.38	5.4	85.0	3.16	41.5	0.00			521	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 47.8 N	123 55.6 W	20/04/01	1733 UTC	4242 m	340 25 kn	330 15 10	1	1020.5 mb	12.4 C	10.3 C	18m	1/8 ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.53	13.53	33.145	24.851	309.0	0.000	6.18	104.2	3.2	0.35	0.0	0.00	0.39	0.06	0	
2	A	13.53	13.53	33.145	24.851	309.0	0.006	6.18	104.2	3.2	0.35	0.0	0.00	0.39	0.06	2	221
10	ISL	13.52	13.52	33.145	24.853	309.0	0.031	6.18	104.2	3.1	0.34	0.0	0.00	0.38	0.05	10	
11	A	13.52	13.52	33.145	24.853	309.1	0.034	6.18	104.2	3.1	0.34	0.0	0.00	0.38	0.05	11	220
20	ISL	13.52	13.52	33.146	24.854	309.2	0.062	6.18	104.2	3.1	0.34	0.0	0.00	0.39	0.06	20	
23	A	13.52	13.52	33.146	24.854	309.3	0.071	6.18	104.2	3.1	0.34	0.0	0.00	0.40	0.07	23	219
30	ISL	13.36	13.36	33.159	24.897	305.4	0.093	6.21	104.4	3.1	0.34	0.1	0.00	0.42	0.08	30	
37	A	13.15	13.14	33.171	24.948	300.7	0.114	6.23	104.3	3.1	0.35	0.1	0.00	0.45	0.10	37	218
47	A	12.89	12.88	33.169	24.998	296.2	0.144	6.22	103.5	3.0	0.38	0.4	0.03	0.56	0.13	47	217
50	ISL	12.94	12.93	33.196	25.009	295.2	0.153	6.22	103.7	2.8	0.37	0.4	0.03	0.58	0.13	50	
56		13.03	13.02	33.257	25.039	292.6	0.170	6.20	103.5	2.4	0.36	0.4	0.04	0.64	0.16	56	216
66	A	12.79	12.78	33.306	25.124	284.7	0.199	6.15	102.2	2.4	0.43	1.3	0.11	0.97	0.33	66	215
75		12.19	12.18	33.303	25.238	274.1	0.224	5.75	94.4	5.8	0.63	4.2	0.30	0.80	0.38	75	214
85		11.64	11.63	33.364	25.388	259.9	0.251	5.40	87.6	8.5	0.84	7.9	0.13	0.48	0.27	85	213
94		10.48	10.47	33.357	25.590	240.8	0.273	5.00	79.1	11.6	1.08	11.8	0.04	0.22	0.19	94	212
100	ISL	10.09	10.08	33.422	25.707	229.7	0.288	4.75	74.6	13.5	1.19	13.8	0.03	0.14	0.16	100	
110		9.78	9.77	33.552	25.860	215.3	0.310	4.37	68.2	16.4	1.34	16.5	0.02	0.08	0.13	111	211
125		9.48	9.47	33.634	25.974	204.7	0.341	3.86	59.9	20.8	1.59	20.1	0.01	0.04	0.11	126	210
143		9.21	9.19	33.773	26.127	190.6	0.377	3.51	54.1	24.7	1.72	22.7	0.01	0.07	0.05	144	209
150	ISL	9.10	9.08	33.830	26.189	184.8	0.390	3.38	52.0	26.3	1.77	23.6	0.01	0.07	0.04	151	
169		8.81	8.79	33.957	26.334	171.3	0.424	3.10	47.4	30.4	1.89	25.6	0.00	0.05	0.03	170	208
200		8.38	8.36	33.994	26.430	162.6	0.476	2.95	44.7	34.4	1.99	27.2	0.00	0.05	0.00	201	207
230		8.04	8.02	34.017	26.500	156.4	0.523	2.67	40.2	38.5	2.11	29.0	0.00			231	206
250	ISL	7.79	7.77	34.026	26.544	152.5	0.554	2.46	36.8	41.6	2.21	30.4	0.00			251	
268		7.57	7.54	34.031	26.579	149.3	0.581	2.29	34.1	44.4	2.29	31.5	0.00			270	205
300	ISL	7.22	7.19	34.039	26.635	144.3	0.628	2.15	31.7	48.3	2.38	32.5	0.00			302	
317		7.02	6.99	34.043	26.667	141.5	0.653	2.07	30.4	50.7	2.43	33.1	0.00			319	204
378		6.05	6.02	34.064	26.811	128.0	0.735	1.34	19.2	65.6	2.76	37.7	0.00			380	203
400	ISL	6.03	6.00	34.100	26.842	125.3	0.763	1.12	16.1	68.4	2.84	38.5	0.00			403	
438		5.99	5.95	34.147	26.885	121.8	0.810	0.82	11.8	72.1	2.95	39.3	0.00			441	202
500	ISL	5.69	5.65	34.193	26.959	115.3	0.883	0.56	8.0	79.5	3.06	40.7	0.00			503	
518		5.60	5.56	34.207	26.981	113.4	0.904	0.49	7.0	81.6	3.09	41.1	0.00			522	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 16.8 N	120 1.6 W	17/04/01	0756 UTC	579 m	320 05 kn			1015.5 mb	13.5 C	12.3 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	12.11	12.11	33.798	25.635	234.3	0.000	8.19	134.6	1.5	0.28	0.0	0.01	15.03	4.12	0	
2	A	12.11	12.11	33.798	25.635	234.4	0.005	8.19	134.6	1.5	0.28	0.0	0.01	15.03	4.12	2	224
10		11.00	11.00	33.844	25.876	211.7	0.023	5.71	91.7	12.6	1.00	8.6	0.13	19.14	3.46	10	223
20		9.84	9.84	33.956	26.164	184.5	0.042	2.70	42.3	29.2	2.00	24.3	0.15	2.34	0.93	20	222
30		9.70	9.70	34.002	26.224	179.1	0.061	2.26	35.3	31.6	2.10	26.0	0.04	0.56	0.55	30	221
39		9.64	9.64	34.016	26.245	177.3	0.077	2.21	34.5	32.1	2.13	26.4	0.03	0.29	0.43	39	220
50		9.52	9.51	34.037	26.281	174.0	0.096	2.11	32.8	33.0	2.16	26.9	0.02	0.10	0.44	50	219
60		9.40	9.39	34.046	26.308	171.7	0.113	2.07	32.1	33.9	2.19	27.4	0.02	0.09	0.52	60	218
70		9.29	9.28	34.081	26.354	167.6	0.130	1.96	30.4	35.5	2.24	28.0	0.02	0.06	0.37	70	217
75	ISL	9.26	9.25	34.089	26.365	166.6	0.138	1.92	29.7	35.9	2.25	28.2	0.02	0.06	0.35	75	
86		9.17	9.16	34.095	26.384	165.0	0.157	1.86	28.7	36.7	2.27	28.5	0.02	0.05	0.30	87	216
98		8.99	8.98	34.096	26.414	162.4	0.176	1.81	27.8	38.1	2.32	29.1	0.01	0.06	0.32	99	215
100	ISL	8.97	8.96	34.098	26.419	162.0	0.180	1.80	27.7	38.3	2.33	29.2	0.01	0.06	0.32	101	
119		8.84	8.83	34.117	26.454	158.9	0.210	1.67	25.6	40.4	2.39	30.1	0.01	0.03	0.29	120	214
125	ISL	8.79	8.78	34.121	26.465	158.0	0.220	1.63	25.0	40.9	2.40	30.2	0.01	0.03	0.29	126	
139		8.69	8.68	34.129	26.487	156.2	0.242	1.54	23.5	42.2	2.43	30.5	0.01	0.03	0.31	140	213
150	ISL	8.62	8.60	34.135	26.503	154.9	0.259	1.48	22.6	43.3	2.46	30.8	0.01	0.03	0.35	151	
169		8.48	8.46	34.147	26.534	152.2	0.288	1.35	20.5	45.6	2.52	31.5	0.01	0.04	0.40	170	212
199		8.19	8.17	34.171	26.598	146.7	0.333	1.05	15.9	50.5	2.66	32.6	0.01	0.03	0.26	200	211
200	ISL	8.18	8.16	34.171	26.599	146.5	0.334	1.05	15.9	50.6	2.66	32.6	0.01			201	
228		8.02	8.00	34.181	26.631	144.0	0.375	1.00	15.1	52.5	2.71	33.2	0.01			229	210
250	ISL	7.81	7.79	34.188	26.668	140.8	0.406	0.91	13.6	55.2	2.77	33.8	0.00			252	
269		7.63	7.60	34.193	26.698	138.1	0.433	0.83	12.4	57.7	2.82	34.3	0.00			271	209
300	ISL	7.43	7.40	34.199	26.732	135.4	0.475	0.73	10.8	60.8	2.87	34.8	0.00			302	
317		7.32	7.29	34.202	26.750	133.9	0.498	0.67	9.9	63.0	2.91	34.9	0.00			319	208
378		6.69	6.66	34.227	26.857	124.3	0.577	0.29	4.2	79.6	3.25	34.5	0.00			381	207
400	ISL	6.59	6.55	34.231	26.874	122.9	0.604	0.28	4.1	82.1	3.25	34.3	0.00			403	
438		6.51	6.47	34.234	26.887	122.2	0.650	0.27	3.9	84.6	3.25	33.9	0.00			441	206
477		6.46	6.42	34.236	26.896	121.9	0.698	0.23	3.3	87.7	3.29	33.1	0.00			480	205
500	ISL	6.44	6.39	34.238	26.900	121.8	0.726	0.16	2.3	92.3	3.35	31.3	0.00			504	
512		6.43	6.38	34.239	26.902	121.7	0.741	0.12	1.7	95.2	3.39	30.1	0.00			516	204
538		6.41	6.36	34.241	26.907	121.7	0.772	0.04	0.6	101.1	3.44	27.8	0.00			542	203
562		6.40	6.35	34.242	26.909	121.8	0.802	0.04	0.6	102.1	3.45	27.3	0.00			566	202
567		6.40	6.35	34.246	26.912	121.6	0.808	0.03	0.4	103.4	3.46	26.8	0.00			571	201

A) SANTA BARBARA BASIN STATION.

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 13.5 N	119 24.6 W	17/04/01	1259 UTC	34 m	280 03 kn	280 02 06	1	1014.6 mb	13.2 C	12.6 C		7/8 ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.30	13.30	33.760	25.373	259.3	0.000	7.27	122.5	1.3	0.23	0.0	0.02	3.47	0.67	0	
2		13.30	13.30	33.760	25.373	259.3	0.005	7.27	122.5	1.3	0.23	0.0	0.02	3.47	0.67	2	205
5		13.31	13.31	33.760	25.371	259.6	0.013	7.25	122.2	1.3	0.21	0.0	0.02	3.61	0.60	5	204
10		12.24	12.24	33.768	25.588	239.1	0.025	7.83	129.0	0.7	0.18	0.0	0.02	7.18	1.06	10	203
20		11.39	11.39	33.774	25.751	223.8	0.049	5.23	84.6	10.2	1.07	8.0	0.19	7.28	1.98	20	202
29		10.98	10.98	33.794	25.841	215.5	0.068	4.14	66.4	17.2	1.42	14.2	0.27	2.19	1.74	29	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 10.7 N	119 30.3 W	18/04/01	1928 UTC	120 m	260 11 kn	260 01 02	1	1016.3 mb	13.8 C	12.2 C	06m	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	12.51	12.51	33.780	25.545	243.0	0.000	7.11	117.9	2.1	0.30	0.0	0.06	9.67	1.84	0	
2	A	12.51	12.51	33.780	25.545	243.0	0.005	7.11	117.9	2.1	0.30	0.0	0.06	9.67	1.84	2	214
3	A	12.53	12.53	33.781	25.542	243.3	0.007	7.11	117.9	2.2	0.34	0.0	0.06	8.94	2.66	3	213
8	A	12.16	12.16	33.784	25.615	236.5	0.019	7.31	120.3	1.5	0.29	0.1	0.04	14.15	3.23	8	212
10	ISL	12.08	12.08	33.785	25.631	235.0	0.024	7.14	117.3	1.8	0.30	0.2	0.05	16.17	2.78	10	
12	A	12.01	12.01	33.787	25.646	233.6	0.029	6.94	113.8	2.2	0.33	0.4	0.06	18.22	2.37	12	211
16	A	11.82	11.82	33.796	25.689	229.7	0.038	6.88	112.4	2.6	0.42	1.2	0.06	22.63	2.95	16	210
20	ISL	11.71	11.71	33.793	25.707	228.0	0.047	6.43	104.8	5.0	0.61	3.6	0.11	17.32	3.12	20	
22	A	11.64	11.64	33.791	25.719	227.0	0.052	6.11	99.4	6.7	0.73	5.2	0.14	13.28	3.21	22	209
30	ISL	10.97	10.97	33.808	25.854	214.3	0.069	4.67	74.9	15.9	1.36	11.8	0.24	4.63	2.91	30	
31		10.88	10.88	33.811	25.872	212.6	0.071	4.50	72.1	17.1	1.43	12.6	0.25	3.89	2.87	31	208
40		10.56	10.56	33.830	25.943	206.0	0.090	3.62	57.6	22.3	1.71	18.0	0.29	1.29	1.70	40	207
50		10.23	10.22	33.849	26.016	199.3	0.111	3.16	49.9	25.5	1.83	21.0	0.29	0.70	1.43	50	206
60		10.16	10.15	33.894	26.063	195.1	0.130	2.78	43.8	27.1	1.90	22.6	0.28	0.54	1.21	60	205
70		9.82	9.81	33.961	26.173	184.8	0.149	2.37	37.1	30.0	2.06	25.0	0.17	0.17	0.92	70	204
75	ISL	9.71	9.70	33.991	26.214	180.9	0.158	2.26	35.3	31.1	2.10	25.7	0.14	0.18	0.83	75	
85		9.57	9.56	34.038	26.275	175.4	0.176	2.15	33.5	32.7	2.15	26.4	0.11	0.20	0.72	85	203
100		9.46	9.45	34.059	26.309	172.4	0.202	2.10	32.6	33.7	2.18	27.0	0.11	0.19	0.73	101	202
113		9.41	9.40	34.070	26.326	171.1	0.225	2.07	32.1	34.0	2.20	27.3	0.11	0.16	0.70	114	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 52.9 N	120 8.3 W	17/04/01	0241 UTC	99 m	300 25 kn	330 05 07	1	1014.6 mb	13.8 C	12.0 C		6/8	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	12.21	12.21	33.690	25.532	244.1	0.000	5.96	98.1	7.4	0.69	5.1	0.10	7.30	1.44	0	
3	12.21	12.21	33.690	25.532	244.2	0.007	5.96	98.1	7.4	0.69	5.1	0.10	7.30	1.44	3	210
8	12.22	12.22	33.690	25.531	244.5	0.020	5.98	98.5	7.3	0.68	5.0	0.10	7.75	1.83	8	209
10 ISL	12.20	12.20	33.691	25.535	244.1	0.024	5.94	97.8	7.5	0.69	5.2	0.10	7.63	1.76	10	
17	12.08	12.08	33.701	25.566	241.4	0.041	5.72	93.9	8.7	0.78	6.5	0.10	7.21	1.35	17	208
20 ISL	11.98	11.98	33.710	25.592	239.0	0.049	5.57	91.3	9.5	0.84	7.2	0.11	6.63	1.47	20	
28	11.74	11.74	33.731	25.653	233.3	0.068	5.21	84.9	11.6	0.99	9.0	0.12	5.05	1.76	28	207
30 ISL	11.73	11.73	33.732	25.656	233.1	0.072	5.20	84.8	11.8	1.00	9.2	0.12	4.82	1.60	30	
38	11.70	11.70	33.734	25.663	232.6	0.091	5.17	84.2	12.4	1.04	9.7	0.11	4.28	1.02	38	206
47	11.66	11.65	33.752	25.685	230.8	0.112	5.09	82.8	13.1	1.11	10.1	0.12	4.25	1.61	47	205
50 ISL	11.44	11.43	33.769	25.739	225.7	0.119	4.82	78.1	14.7	1.20	11.5	0.12	3.90	1.56	50	
58	10.75	10.74	33.823	25.905	210.1	0.136	3.93	62.7	19.9	1.48	16.1	0.12	2.60	1.43	58	204
69	10.23	10.22	33.881	26.041	197.4	0.158	2.99	47.2	25.5	1.83	21.6	0.13	0.73	1.11	69	203
74	10.18	10.17	33.882	26.050	196.6	0.168	2.96	46.7	25.7	1.83	21.6	0.13	0.74	0.95	74	202
75 ISL	10.14	10.13	33.889	26.063	195.4	0.170	2.92	46.0	26.1	1.85	21.8	0.13	0.71	0.94	75	
89	9.62	9.61	33.989	26.228	179.9	0.196	2.36	36.8	32.1	2.08	25.3	0.10	0.36	0.82	89	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 44.9 N	120 24.2 W	16/04/01	2310 UTC	1011 m	310 19 kn	300 05 05	1	1017.1 mb	13.9 C	12.8 C	06m	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	12.23	12.23	33.698	25.535	243.9	0.000	6.99	115.1	2.7	0.50	2.0	0.13	9.46	1.96	0	
3	12.23	12.23	33.698	25.535	244.0	0.007	6.99	115.1	2.7	0.50	2.0	0.13	9.46	1.96	3	220
10 ISL	12.20	12.20	33.696	25.539	243.7	0.024	6.94	114.2	2.7	0.53	2.2	0.13	9.12	1.94	10	
12	12.19	12.19	33.695	25.540	243.7	0.029	6.92	113.9	2.7	0.54	2.3	0.13	8.92	1.94	12	219
20 ISL	11.93	11.93	33.678	25.577	240.4	0.049	6.48	106.0	4.3	0.65	3.9	0.15	7.41	2.38	20	
22	11.87	11.87	33.675	25.586	239.6	0.053	6.38	104.3	4.7	0.67	4.2	0.15	7.08	2.48	22	218
30 ISL	11.87	11.87	33.699	25.604	238.0	0.073	6.47	105.7	4.5	0.66	3.6	0.13	7.42	2.19	30	
32	11.87	11.87	33.706	25.610	237.6	0.077	6.51	106.4	4.5	0.65	3.4	0.13	7.50	2.14	32	217
42	11.64	11.63	33.734	25.675	231.7	0.101	6.26	101.8	6.7	0.75	4.7	0.14	9.64	3.06	42	216
50 ISL	10.96	10.95	33.684	25.759	223.7	0.119	4.80	76.9	15.2	1.27	13.3	0.25	4.20	1.75	50	
51	10.87	10.86	33.678	25.771	222.7	0.121	4.61	73.7	16.3	1.33	14.4	0.26	3.43 A	1.56 A	51	215
62	10.59	10.58	33.700	25.837	216.5	0.145	4.26	67.7	18.3	1.43	16.4	0.20	2.15	1.34	62	214
72	10.17	10.16	33.742	25.943	206.7	0.167	3.87	61.0	21.0	1.56	18.6	0.10	2.34	1.52	72	213
75 ISL	10.02	10.01	33.762	25.984	202.9	0.173	3.67	57.6	22.3	1.63	19.8	0.09	1.94	1.39	75	
86	9.52	9.51	33.836	26.125	189.6	0.194	3.02	46.9	27.0	1.85	23.8	0.06	0.31	0.79	86	212
100 ISL	9.19	9.18	33.892	26.222	180.6	0.220	2.90	44.8	29.2	1.91	25.1	0.03	0.19	0.57	101	
102	9.16	9.15	33.901	26.234	179.5	0.224	2.90	44.7	29.5	1.92	25.2	0.03	0.17	0.56	103	211
121	9.11	9.10	34.067	26.372	166.8	0.257	2.07	31.9	36.3	2.22	27.8	0.03	0.16	0.50	122	210
125 ISL	9.10	9.09	34.076	26.381	166.0	0.263	2.05	31.6	36.5	2.23	28.0	0.03	0.15	0.47	126	
141	9.02	9.00	34.084	26.400	164.5	0.290	1.97	30.3	37.1	2.25	28.3	0.04	0.09	0.33	142	209
150 ISL	8.94	8.92	34.097	26.423	162.5	0.304	1.92	29.5	37.9	2.28	28.7	0.04	0.08	0.31	151	
171	8.72	8.70	34.128	26.483	157.2	0.338	1.78	27.2	40.3	2.35	29.7	0.02	0.07	0.27	172	208
200	8.43	8.41	34.159	26.552	151.1	0.383	1.60	24.3	43.6	2.46	30.8	0.01	0.06	0.30	201	207
231	8.17	8.15	34.180	26.608	146.3	0.429	1.43	21.6	46.8	2.53	31.8	0.01			232	206
250 ISL	8.01	7.98	34.188	26.639	143.7	0.456	1.32	19.9	48.8	2.58	32.5	0.01			252	
272	7.81	7.78	34.195	26.674	140.6	0.488	1.20	18.0	51.2	2.65	33.3	0.01			274	205
300 ISL	7.51	7.48	34.202	26.723	136.3	0.526	1.07	15.9	55.1	2.73	34.4	0.00			302	
320	7.31	7.28	34.208	26.756	133.3	0.553	0.98	14.5	57.9	2.78	35.2	0.00			322	204
379	7.01	6.97	34.251	26.833	126.9	0.630	0.71	10.4	64.3	2.91	36.6	0.00			382	203
400 ISL	6.85	6.81	34.255	26.858	124.7	0.657	0.64	9.4	66.5	2.95	37.1	0.00			403	
436	6.55	6.51	34.259	26.901	120.8	0.701	0.54	7.9	70.3	3.01	38.1	0.00			439	202
500 ISL	6.08	6.04	34.288	26.986	113.3	0.776	0.37	5.3	78.5	3.12	39.9	0.00			504	
513	5.98	5.93	34.294	27.003	111.7	0.790	0.34	4.9	80.2	3.14	40.3	0.00			517	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 0104 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 34.5 N	120 45.2 W	16/04/01	1842 UTC	1320 m	320 15 kn	340 05 06	1	1020.0 mb	15.1 C	13.2 C	07m	1/8	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	11.92	11.92	33.571	25.495	247.7	0.000	6.70	109.5	2.8	0.52	3.8	0.20	10.34	1.84	0	
2	A	11.92	11.92	33.571	25.495	247.7	0.005	6.70	109.5	2.8	0.52	3.8	0.20	10.34	1.84	2	223
6	A	11.99	11.99	33.622	25.521	245.3	0.015	6.74	110.4	2.8	0.56	3.5	0.20	10.65	1.42	6	222
10	ISL	12.01	12.01	33.624	25.519	245.6	0.025	6.73	110.3	2.8	0.55	3.5	0.20	10.14	2.15	10	
11	A	12.01	12.01	33.625	25.520	245.6	0.027	6.72	110.1	2.8	0.55	3.5	0.20	9.97	2.36	11	221
16	A	11.99	11.99	33.627	25.526	245.2	0.039	6.70	109.7	2.7	0.59 U	3.5	0.19	9.74	2.11	16	220
19	A	11.99	11.99	33.626 D	25.525	245.3	0.047	6.68	109.4	2.6	0.53	3.9	0.21	9.39	2.38	19	219
20	ISL	11.99	11.99	33.626	25.525	245.4	0.049	6.68	109.4	2.6	0.53	3.9	0.21	9.45	2.36	20	
28	A	11.97	11.97	33.631	25.533	244.8	0.069	6.66	109.0	2.6	0.57	3.6	0.19	9.89	2.24	28	218
30	ISL	11.97	11.97	33.631	25.533	244.8	0.074	6.65	108.9	2.7	0.57	3.6	0.19	10.12	2.16	30	
34		11.96	11.96	33.631	25.535	244.8	0.083	6.64	108.7	2.8	0.56	3.7	0.19	10.42	1.99	34	217
41		11.96	11.95	33.630	25.534	245.0	0.101	6.66	109.0	2.7	0.60	3.6	0.19	9.59	1.84	41	216
50	ISL	11.91	11.90	33.631	25.545	244.2	0.123	6.60	107.9	2.8	0.60	3.8	0.19	9.61	2.27	50	
51		11.91	11.90	33.631	25.545	244.3	0.125	6.59	107.7	2.8	0.60	3.8	0.19	9.61	2.33	51	215
61		11.64	11.63	33.706	25.653	234.1	0.149	5.95	96.8	7.8	0.90	5.8	0.15	5.31	2.47	61	214
71		11.24	11.23	33.732	25.747	225.4	0.172	5.35	86.3	11.8	1.11	9.2	0.17	6.25	2.43	71	213
75	ISL	11.14	11.13	33.739	25.771	223.3	0.181	5.18	83.4	13.0	1.18	10.4	0.18	5.97	2.76	75	
86		10.80	10.79	33.755	25.844	216.5	0.205	4.64	74.1	16.5	1.37	14.0	0.20	4.25	3.34	86	212
100	ISL	9.92	9.91	33.790	26.023	199.7	0.234	3.43	53.8	23.4	1.71	20.9	0.16	1.36	1.47	101	
101		9.86	9.85	33.794	26.036	198.4	0.236	3.35	52.4	23.9	1.73	21.4	0.16	1.17	1.31	102	211
121		9.45	9.44	33.917	26.200	183.2	0.274	2.69	41.8	29.1	1.96	25.1	0.06	0.17	0.53	122	210
125	ISL	9.39	9.38	33.932	26.222	181.2	0.282	2.67	41.4	29.7	1.98	25.4	0.06	0.16	0.53	126	
141		9.14	9.12	33.973	26.294	174.6	0.310	2.61	40.2	31.7	2.02	26.3	0.04	0.14	0.52	142	209
150	ISL	8.91	8.89	33.992	26.346	169.8	0.326	2.59	39.7	33.2	2.05	26.9	0.03	0.11	0.46	151	
171		8.39	8.37	34.024	26.452	160.1	0.360	2.55	38.7	36.8	2.12	28.3	0.02	0.06	0.31	172	208
200	ISL	8.04	8.02	34.043	26.520	154.0	0.406	2.38	35.8	40.4	2.22	29.9	0.01	0.07	0.20	201	
201		8.03	8.01	34.043	26.521	153.9	0.407	2.37	35.7	40.5	2.22	29.9	0.01	0.07	0.20	202	207
230		7.71	7.69	34.062	26.583	148.4	0.451	2.16	32.3	44.5	2.33	31.1	0.01			231	206
250	ISL	7.44	7.42	34.069	26.628	144.4	0.480	1.99	29.5	47.8	2.41	32.2	0.01			252	
270		7.20	7.17	34.077	26.668	140.8	0.509	1.81	26.7	51.0	2.49	33.3	0.00			272	205
300	ISL	7.03	7.00	34.102	26.711	137.0	0.551	1.53	22.5	54.8	2.60	34.6	0.00			302	
322		6.94	6.91	34.124	26.741	134.5	0.581	1.33	19.5	57.4	2.68	35.4	0.00			324	204
382		6.54	6.51	34.179	26.839	125.9	0.659	0.86	12.5	66.2	2.89	37.7	0.00			385	203
400	ISL	6.43	6.39	34.199	26.869	123.2	0.681	0.74	10.7	68.8	2.95	38.3	0.00			403	
441		6.21	6.17	34.242	26.932	117.7	0.730	0.51	7.4	74.3	3.05	39.4	0.00			444	202
500	ISL	5.92	5.88	34.277	26.997	112.0	0.798	0.38	5.4	80.1	3.13	40.5	0.00			504	
514		5.85	5.81	34.286	27.013	110.7	0.814	0.35	5.0	81.5	3.15	40.7	0.00			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 14.7 N	121 26.5 W	16/04/01	1134 UTC	3796 m	320 15 kn			1019.0 mb	13.5 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	13.29	13.29	33.179	24.925	301.9	0.000	6.14	103.1	3.6	0.35	0.1	0.01	0.30	0.05	0	
3		13.29	13.29	33.179	24.925	301.9	0.009	6.14	103.1	3.6	0.35	0.1	0.01	0.30	0.05	3	220
10	ISL	13.29	13.29	33.179	24.926	302.1	0.030	6.12	102.7	3.6	0.35	0.1	0.01	0.31	0.06	10	
16		13.29	13.29	33.180	24.927	302.2	0.048	6.10	102.4	3.6	0.35	0.1	0.01	0.32	0.06	16	219
20	ISL	13.27	13.27	33.187	24.936	301.4	0.060	6.11	102.5	3.6	0.35	0.2	0.01	0.38	0.08	20	
30	ISL	13.18	13.18	33.219	24.979	297.6	0.090	6.13	102.7	3.6	0.36	0.4	0.04	0.55	0.13	30	
31		13.17	13.17	33.223	24.984	297.1	0.093	6.13	102.7	3.6	0.36	0.4	0.04	0.57	0.14	31	218
46		12.94	12.93	33.315	25.101	286.4	0.137	6.07	101.2	4.1	0.45	1.6	0.12	0.74	0.27	46	217
50	ISL	12.83	12.82	33.319	25.126	284.1	0.148	6.02	100.2	4.4	0.48	2.0	0.15	0.77	0.26	50	
55		12.62	12.61	33.315	25.164	280.6	0.163	5.93	98.2	5.0	0.53	2.7	0.17	0.80	0.23	55	216
65		11.90	11.89	33.297	25.287	269.0	0.190	5.67	92.5	6.7	0.67	5.1	0.15	0.46	0.22	65	215
75	ISL	11.04	11.03	33.293	25.441	254.5	0.216	5.39	86.3	8.9	0.87	8.3	0.06	0.26	0.19	75	
76		10.95	10.94	33.295	25.459	252.9	0.219	5.36	85.7	9.2	0.89	8.7	0.05	0.24	0.19	76	214
85		9.99	9.98	33.344	25.663	233.6	0.241	5.08	79.5	12.3	1.08	12.1	0.03	0.10	0.10	85	213
96		9.84	9.83	33.358	25.699	230.3	0.266	5.14	80.2	13.0	1.13	12.8	0.02	0.08	0.10	96	212
100	ISL	9.74	9.73	33.382	25.734	227.0	0.275	5.03	78.3	13.8	1.18	13.5	0.02	0.07	0.10	100	
111		9.45	9.44	33.486	25.863	215.0	0.300	4.60	71.2	16.6	1.33	16.0	0.01	0.03	0.08	112	211
125		9.27	9.26	33.677	26.042	198.3	0.329	4.20	64.8	20.3	1.47	18.7	0.01	0.02	0.05	126	210
146		9.09	9.07	33.820	26.183	185.3	0.369	3.50	53.9	26.1	1.75	23.1	0.01	0.03	0.10	147	209
150	ISL	9.02	9.00	33.848	26.216	182.2	0.376	3.41	52.4	27.2	1.79	23.7	0.01	0.03	0.09	151	
171		8.65	8.63	33.967	26.367	168.2	0.413	3.05	46.5	32.1	1.94	26.2	0.01	0.02	0.05	172	208
200	ISL	8.36	8.34	34.014	26.449	160.8	0.461	2.76	41.8	36.0	2.06	27.9	0.01	0.03	0.05	201	
201		8.35	8.33	34.014	26.450	160.7	0.462	2.75	41.7	36.1	2.06	27.9	0.01	0.03	0.05	202	207
231		7.90	7.88	34.045	26.542	152.4	0.509	2.36	35.4	41.8	2.23	30.2	0.01			232	206
250	ISL	7.70	7.68	34.062	26.585	148.6	0.538	2.12	31.7	44.9	2.34	31.5	0.01			251	
270		7.50	7.47	34.076	26.625	145.0	0.567	1.89	28.1	48.1	2.44	32.7	0.00			272	205
300	ISL	7.13	7.10	34.086	26.685	139.6	0.610	1.61	23.7	53.1	2.57	34.2	0.00			302	
320		6.89	6.86	34.092	26.723	136.1	0.637	1.46	21.4	56.3	2.64	35.0	0.00			322	204
379		6.50	6.47	34.126	26.802	129.2	0.716	1.13	16.4	63.8	2.78	36.9	0.00			381	203
400	ISL	6.30	6.26	34.136	26.836	126.2	0.743	0.99	14.3	67.3	2.85	37.7	0.00			403	
439		5.93	5.89	34.155	26.899	120.5	0.791	0.75	10.7	73.8	2.97	39.2	0.00			442	202
500	ISL	5.57	5.53	34.198	26.977	113.5	0.862	0.52	7.4	82.1	3.08	40.9	0.00			503	
516		5.47	5.43	34.210	26.999	111.5	0.880	0.46	6.5	84.3	3.11	41.4	0.00			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 54.8 N	122 8.0 W	16/04/01	0538 UTC	4183 m	290 06 kn			1021.1 mb	13.8 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	13.88	13.88	33.160	24.791	314.7	0.000	6.10	103.6	4.1	0.36	0.1	0.01	0.20	0.03	0	
3		13.88	13.88	33.160	24.791	314.7	0.009	6.10	103.6	4.1	0.36	0.1	0.01	0.20	0.03	3	224
10	ISL	13.77	13.77	33.164	24.817	312.5	0.031	6.10	103.4	4.0	0.36	0.1	0.01	0.20	0.04	10	
17		13.62	13.62	33.168	24.851	309.4	0.053	6.10	103.1	3.9	0.36	0.0	0.00	0.20	0.05	17	219
20	ISL	13.57	13.57	33.168	24.861	308.6	0.062	6.11	103.2	3.9	0.36	0.0	0.00	0.21	0.05	20	
30	ISL	13.43	13.43	33.168	24.890	306.1	0.093	6.12	103.0	3.9	0.35	0.0	0.00	0.24	0.05	30	
31		13.42	13.42	33.168	24.892	305.9	0.096	6.12	103.0	3.9	0.35	0.0	0.00	0.24	0.05	31	218
46		13.41	13.40	33.180	24.903	305.2	0.142	6.10	102.6	3.8	0.36	0.1	0.01	0.28	0.06	46	217
50	ISL	13.36	13.35	33.179	24.913	304.4	0.154	6.10	102.5	3.9	0.36	0.1	0.01	0.29	0.07	50	
55		13.29	13.28	33.181	24.928	303.1	0.169	6.09	102.2	4.0	0.37	0.2	0.02	0.30	0.08	55	216
66		13.24	13.23	33.214	24.964	300.0	0.203	6.07	101.8	4.1	0.39	0.4	0.04	0.40	0.11	66	215
75	ISL	12.97	12.96	33.214	25.018	295.1	0.229	5.97	99.6	4.7	0.46	1.2	0.12	0.42	0.13	75	
76		12.91	12.90	33.213	25.029	294.0	0.232	5.96	99.3	4.8	0.47	1.4	0.13	0.42 A	0.13 A	76	214
86		11.84	11.83	33.197	25.221	275.8	0.261	5.79	94.3	6.8	0.66	4.5	0.23	0.31	0.12	86	213
95		11.56	11.55	33.202	25.277	270.7	0.285	5.70	92.2	7.4	0.71	5.6	0.13	0.26	0.11	95	212
100	ISL	11.14	11.13	33.226	25.372	261.7	0.299	5.53	88.7	8.6	0.81	7.3	0.08	0.20	0.10	100	
110		10.22	10.21	33.301	25.591	241.0	0.324	5.16	81.2	11.5	1.03	11.2	0.02	0.09	0.08	111	211
125	ISL	9.49	9.48	33.422	25.807	220.6	0.358	4.88	75.6	14.8	1.21	14.3	0.01	0.04	0.06	126	
126		9.46	9.45	33.431	25.819	219.5	0.361	4.86	75.2	15.0	1.22	14.5	0.01	0.04	0.06	127	210
146		9.21	9.19	33.667	26.044	198.5	0.402	4.06	62.6	21.5	1.54	19.7	0.01	0.02	0.05	147	209
150	ISL	9.19	9.17	33.702	26.074	195.6	0.410	3.94	60.7	22.5	1.58	20.5	0.01	0.02	0.05	151	
170		9.07	9.05	33.840	26.202	183.9	0.448	3.44	52.9	26.9	1.76	23.5	0.00	0.01	0.04	171	208
200		8.64	8.62	33.984	26.383	167.2	0.501	2.99	45.6	33.0	1.95	26.5	0.00	0.00	0.04	201	207
228		8.26	8.24	34.030	26.477	158.7	0.547	2.58	39.0	38.3	2.12	28.9	0.00			229	206
250	ISL	7.99	7.96	34.051	26.534	153.5	0.581	2.28	34.3	42.0	2.25	30.5	0.00			251	
268		7.78	7.75	34.063	26.574	149.9	0.608	2.06	30.8	44.8	2.35	31.7	0.00			270	205
300	ISL	7.40	7.37	34.081	26.643	143.7	0.655	1.82	27.0	49.5	2.47	33.2	0.00			302	
317		7.22	7.19	34.090	26.676	140.8	0.679	1.71	25.3	51.9	2.53	33.9	0.00			319	204
377		6.74	6.71	34.131	26.774	132.1	0.761	1.18	17.2	60.8	2.77	36.3	0.00			379	203
400	ISL	6.62	6.58	34.145	26.802	129.7	0.791	1.04	15.1	63.5	2.83	37.1	0.00			403	
438		6.40	6.36	34.168	26.849	125.6	0.840	0.84	12.2	68.3	2.91	38.3	0.00			441	202
500	ISL	5.81	5.77	34.217	26.963	115.1	0.915	0.57	8.1	80.1	3.08	40.7	0.00			503	
517		5.65	5.61	34.231	26.994	112.2	0.934	0.50	7.1	83.3	3.13	41.3	0.00			521	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 0104 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 34.7 N	122 48.7 W	15/04/01	2304 UTC	4273 m	250 06 kn	250 02 09	0	1020.2 mb	17.5 C	14.0 C	24m	0/8

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.42	14.42	33.216	24.722	321.3	0.000	6.14	105.5	2.9	0.34	0.1	0.00	0.27	0.04	0	
3		14.42	14.42	33.216	24.722	321.4	0.010	6.14	105.5	2.9	0.34	0.1	0.00	0.27	0.04	3	220
10	ISL	13.91	13.91	33.209	24.823	311.9	0.032	6.18	105.1	2.9	0.34	0.1	0.00	0.28	0.04	10	
17		13.31	13.31	33.204	24.941	300.8	0.053	6.23	104.6	2.8	0.34	0.1	0.00	0.30	0.05	17	219
20	ISL	13.29	13.29	33.204	24.945	300.5	0.062	6.23	104.6	2.8	0.34	0.1	0.00	0.31	0.05	20	
30	ISL	13.24	13.24	33.203	24.955	299.9	0.092	6.22	104.3	2.8	0.35	0.1	0.00	0.37	0.06	30	
31		13.23	13.23	33.203	24.957	299.7	0.095	6.22	104.3	2.8	0.35	0.1	0.00	0.38	0.06	31	218
47		13.15	13.14	33.204	24.974	298.5	0.143	6.21	103.9	3.0	0.35	0.1	0.02	0.49	0.10	47	217
50	ISL	13.14	13.13	33.204	24.976	298.4	0.152	6.20	103.8	3.0	0.35	0.1	0.02	0.49	0.09	50	
56		13.13	13.12	33.204	24.978	298.4	0.170	6.17	103.2	3.0	0.37	0.2	0.01	0.50	0.09	56	216
66		12.96	12.95	33.208	25.015	295.1	0.200	6.11	101.9	3.7	0.44	1.0	0.08	0.62	0.15	66	215
75	ISL	11.63	11.62	33.222	25.279	270.0	0.225	5.79	93.9	6.8	0.71	5.4	0.20	0.54	0.19	75	
76		11.47	11.46	33.224	25.310	267.1	0.228	5.75	92.9	7.2	0.74	5.9	0.21	0.52	0.19	76	214
86		10.82	10.81	33.210	25.416	257.2	0.254	5.50	87.6	8.9	0.88	8.3	0.04	0.31	0.13	86	213
96		10.19	10.18	33.287	25.585	241.2	0.279	5.26	82.7	10.9	1.02	10.8	0.02	0.17	0.10	96	212
100	ISL	9.92	9.91	33.323	25.658	234.3	0.288	5.14	80.3	12.2	1.10	12.1	0.02	0.13	0.08	100	
111		9.35	9.34	33.431	25.836	217.5	0.313	4.76	73.5	15.9	1.31	15.7	0.01	0.05	0.05	112	211
125	ISL	9.35	9.34	33.577	25.951	206.9	0.343	4.17	64.4	19.4	1.50	18.8	0.01	0.03	0.05	126	
126		9.35	9.34	33.585	25.957	206.4	0.345	4.13	63.8	19.6	1.51	19.0	0.01	0.03	0.05	127	210
145		9.20	9.18	33.804	26.153	188.1	0.383	3.28	50.6	26.3	1.81	24.0	0.00	0.01	0.05	146	209
150	ISL	9.12	9.10	33.834	26.189	184.8	0.392	3.26	50.2	27.2	1.83	24.5	0.00	0.01	0.05	151	
170		8.77	8.75	33.913	26.306	174.0	0.428	3.19	48.8	30.0	1.88	25.6	0.00	0.01	0.05	171	208
200		8.45	8.43	34.036	26.453	160.5	0.478	2.53	38.4	36.6	2.12	28.6	0.00	0.01	0.03	201	207
231		8.09	8.07	34.079	26.541	152.6	0.526	2.02	30.4	41.8	2.32	31.0	0.00			232	206
250	ISL	7.90	7.87	34.091	26.579	149.3	0.555	1.88	28.2	44.2	2.39	31.9	0.00			251	
270		7.68	7.65	34.093	26.612	146.3	0.585	1.81	27.0	46.7	2.44	32.6	0.00			272	205
300	ISL	7.15	7.12	34.073	26.672	140.8	0.628	1.78	26.2	51.4	2.50	33.8	0.00			302	
319		6.81	6.78	34.063	26.711	137.2	0.654	1.76	25.7	54.7	2.55	34.6	0.00			321	204
379		6.30	6.27	34.118	26.822	127.2	0.733	1.10	15.9	65.8	2.82	38.0	0.00			381	203
400	ISL	6.15	6.11	34.132	26.852	124.5	0.760	0.95	13.7	68.9	2.88	38.7	0.00			403	
438		5.91	5.87	34.156	26.902	120.1	0.806	0.75	10.7	74.1	2.97	39.7	0.00			441	202
500	ISL	5.56	5.52	34.194	26.975	113.6	0.879	0.53	7.5	82.2	3.09	41.2	0.00			503	
517		5.46	5.42	34.205	26.996	111.8	0.898	0.47	6.7	84.4	3.12	41.6	0.00			521	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 13.6 N	123 29.2 W	15/04/01	1757 UTC	4170 m	240 04 kn	310 03 06	0	1020.8 mb	15.1 C	13.2 C	25m	0/8

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.47	13.47	33.255	24.948	299.7	0.000	6.19	104.3	3.0	0.35	0.3	0.02	0.43	0.06	0	
3	A	13.47	13.47	33.255	24.948	299.8	0.009	6.19	104.3	3.0	0.35	0.3	0.02	0.43	0.06	3	222
10		13.31	13.31	33.255	24.980	296.9	0.030	6.19	104.0	3.0	0.35	0.2	0.02	0.40	0.08	10	221
16	A	13.24	13.24	33.253	24.993	295.9	0.048	6.22	104.3	2.9	0.35	0.2	0.02	0.42	0.09	16	220
20	ISL	13.18	13.18	33.261	25.011	294.2	0.059	6.23	104.4	2.8	0.35	0.2	0.02	0.48	0.10	20	
25		13.11	13.11	33.276	25.037	291.9	0.074	6.24	104.4	2.7	0.35	0.2	0.03	0.60	0.12	25	219
30	ISL	13.05	13.05	33.289	25.059	290.0	0.089	6.21	103.8	2.7	0.35	0.3	0.04	0.77	0.21	30	
34	A	13.01	13.01	33.299	25.075	288.6	0.100	6.19	103.4	2.8	0.36	0.4	0.05	0.90	0.28	34	218
43		13.01	13.00	33.311	25.084	287.9	0.126	6.17	103.0	2.9	0.38	0.5	0.06	1.03	0.35	43	217
50	ISL	12.98	12.97	33.319	25.097	286.9	0.146	6.11	102.0	3.3	0.40	0.8	0.07	1.11	0.35	50	
53	A	12.96	12.95	33.320	25.102	286.5	0.155	6.09	101.6	3.5	0.41	0.9	0.07	1.14	0.35	53	216
59		12.93	12.92	33.316	25.104	286.4	0.172	6.07	101.2	3.7	0.42	0.9	0.08	0.76	0.33	59	215
68	A	12.67	12.66	33.297	25.141	283.2	0.198	6.00	99.5	4.3	0.48	1.6	0.10	0.62	0.35	68	214
75	ISL	11.74	11.73	33.241	25.274	270.6	0.217	5.80	94.2	6.5	0.68	4.7	0.09	0.44	0.32	75	
80		11.01	11.00	33.215	25.386	259.9	0.230	5.63	90.0	8.3	0.83	7.3	0.08	0.31	0.28	80	213
93	A	10.27	10.26	33.293	25.576	242.0	0.263	5.30	83.5	11.0	1.01	10.6	0.03	0.14	0.16	93	212
100	ISL	9.80	9.79	33.349	25.698	230.4	0.280	5.03	78.4	13.3	1.16	13.1	0.02	0.10	0.14	100	
107		9.41	9.40	33.414	25.813	219.6	0.295	4.75	73.4	15.7	1.30	15.5	0.02	0.08	0.13	108	211
121		9.24	9.23	33.559	25.954	206.5	0.325	4.28	66.0	19.4	1.49	18.5	0.02	0.04	0.09	122	210
125	ISL	9.21	9.20	33.601	25.992	203.0	0.333	4.16	64.1	20.4	1.55	19.2	0.02	0.03	0.09	126	
141		9.10	9.08	33.750	26.126	190.5	0.365	3.74	57.5	24.0	1.76	21.7	0.01	0.02	0.09	142	209
150	ISL	9.01	8.99	33.808	26.186	185.0	0.382	3.51	53.9	26.1	1.83	23.2	0.01	0.02	0.07	151	
171		8.75	8.73	33.905	26.303	174.3	0.419	3.06	46.8	30.7	1.94	26.1	0.01	0.01	0.04	172	208
200		8.37	8.35	34.006	26.441	161.6	0.468	2.74	41.5	35.8	2.07	28.1	0.01	0.01	0.05	201	207
230		8.11	8.09	34.049	26.514	155.1	0.516	2.37	35.7	39.8	2.21	29.7	0.01			231	206
250	ISL	7.80	7.78	34.048	26.559	151.0	0.546	2.28	34.1	42.6	2.28	30.7	0.01			251	
270		7.47	7.44	34.042	26.602	147.1	0.576	2.21	32.8	45.6	2.34	31.7	0.01			272	205
300	ISL	7.08	7.05	34.055	26.667	141.2	0.619	1.90	28.0	50.9	2.49	33.6	0.01			302	
320		6.86	6.83	34.069	26.709	137.5	0.647	1.66	24.3	54.7	2.59	34.9	0.01			322	204
380		6.29	6.26	34.112	26.818	127.5	0.727	1.08	15.6	65.6	2.83	37.9	0.01			382	203
400	ISL	6.13	6.09	34.124	26.849	124.8	0.752	0.95	13.7	68.7	2.89	38.6	0.01			403	
440		5.86	5.82	34.149	26.903	120.0	0.801	0.75	10.7	74.5	2.98	39.8	0.01			443	202
500	ISL	5.56	5.52	34.204	26.983	112.9	0.871	0.49	7.0	82.5	3.10	41.3	0.01			503	
517		5.47	5.43	34.220	27.007	110.7	0.890	0.42	6.0	84.8	3.14	41.7	0.01			521	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 55.0 N	124 10.2 W	15/04/01	1054 UTC	4203 m	240 07 kn			1018.7 mb	15.2 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	14.91	14.91	33.513	24.846	309.4	0.000	5.87	102.1	3.3	0.31	0.0	0.00	0.10	0.02	0	
3		14.91	14.91	33.513	24.846	309.5	0.009	5.87	102.1	3.3	0.31	0.0	0.00	0.10	0.02	3	224
10	ISL	14.90	14.90	33.513	24.848	309.5	0.031	5.87	102.1	3.3	0.31	0.1	0.00	0.10	0.01	10	
16		14.89	14.89	33.512	24.850	309.5	0.050	5.86	101.9	3.3	0.30	0.1	0.00	0.10	0.01	16	219
20	ISL	14.89	14.89	33.519	24.856	309.1	0.062	5.86	101.9	3.3	0.30	0.1	0.00	0.10	0.01	20	
30	ISL	14.90	14.90	33.537	24.868	308.3	0.093	5.85	101.7	3.3	0.30	0.0	0.00	0.11	0.02	30	
31		14.90	14.90	33.539	24.869	308.2	0.096	5.85	101.7	3.3	0.30	0.0	0.00	0.11	0.02	31	218
46		14.90	14.89	33.544	24.874	308.2	0.142	5.85	101.7	3.2	0.30	0.1	0.00	0.14	0.03	46	217
50	ISL	14.92	14.91	33.552	24.875	308.2	0.154	5.86	101.9	3.2	0.30	0.1	0.00	0.15	0.04	50	
60		14.97	14.96	33.571	24.880	308.1	0.185	5.87	102.2	3.1	0.29	0.1	0.00	0.17	0.05	60	216
75		14.47	14.46	33.519	24.947	302.0	0.231	5.82	100.3	3.3	0.35	0.4	0.01	0.38	0.15	75	215
86		13.13	13.12	33.361	25.100	287.5	0.263	5.86	98.1	4.2	0.47	1.6	0.05	0.31 A	0.21 A	86	214
95		11.83	11.82	33.355	25.346	264.2	0.288	5.57	90.7	6.0	0.66	4.7	0.08	0.29 A	0.20 A	95	213
100	ISL	11.37	11.36	33.362	25.436	255.7	0.301	5.46	88.1	7.0	0.75	6.3	0.08	0.27	0.23	100	
105		11.02	11.01	33.376	25.510	248.7	0.314	5.36	85.8	7.9	0.83	7.8	0.07	0.25	0.25	105	212
115		10.39	10.38	33.425	25.659	234.7	0.338	5.12	80.9	9.9	0.96	10.5	0.03	0.18	0.13	116	211
125		10.01	10.00	33.462	25.752	225.9	0.361	4.93	77.3	12.2	1.14	12.6	0.03	0.13	0.10	126	210
140		9.63	9.61	33.583	25.910	211.2	0.394	4.46	69.4	16.2	1.34	16.5	0.01	0.05	0.05	141	209
150	ISL	9.47	9.45	33.672	26.006	202.2	0.414	4.25	65.9	18.7	1.45	18.5	0.01	0.03	0.03	151	
166		9.26	9.24	33.806	26.145	189.3	0.446	3.97	61.3	22.6	1.60	21.0	0.01	0.01	0.02	167	208
195		8.72	8.70	33.976	26.364	169.0	0.498	3.44	52.5	29.5	1.80	24.4	0.01	0.00	0.02	196	207
200	ISL	8.65	8.63	33.988	26.384	167.1	0.506	3.40	51.9	30.2	1.83	24.7	0.01			201	
230		8.25	8.23	34.013	26.465	159.8	0.555	3.22	48.7	34.1	2.00	26.6	0.01			231	206
250	ISL	7.84	7.82	34.020	26.532	153.7	0.587	2.92	43.7	38.8	2.13	28.6	0.01			251	
271		7.42	7.39	34.026	26.597	147.6	0.618	2.56	38.0	44.1	2.26	30.7	0.01			273	205
300	ISL	7.06	7.03	34.045	26.662	141.7	0.660	2.11	31.0	49.8	2.44	33.0	0.01			302	
320		6.89	6.86	34.064	26.701	138.2	0.688	1.81	26.5	53.4	2.55	34.3	0.01			322	204
377		6.61	6.58	34.153	26.809	128.7	0.764	1.03	15.0	62.9	2.84	37.3	0.01			379	203
400	ISL	6.43	6.39	34.166	26.843	125.6	0.793	0.90	13.1	66.3	2.90	38.1	0.01			403	
438		6.11	6.07	34.175	26.892	121.3	0.840	0.78	11.2	71.8	2.98	39.2	0.01			441	202
500	ISL	5.63	5.59	34.193	26.966	114.6	0.913	0.57	8.1	80.5	3.09	41.1	0.01			503	
514		5.52	5.48	34.197	26.983	113.1	0.929	0.52	7.4	82.5	3.12	41.5	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 0104 STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 53.4 N	118 29.3 W	12/04/01	2212 UTC	57 m	270 09 kn	260 02 07	0	1017.0 mb	15.7 C	13.4 C	04m	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	13.61	13.61	33.581	25.172	278.4	0.000	7.81	132.3	1.3	0.29	0.1	0.03	19.17	3.70	0	
1		13.61	13.61	33.581	25.172	278.5	0.003	7.81	132.3	1.3	0.29	0.1	0.03	19.17	3.70	1	207
2		13.62	13.62	33.581	25.170	278.7	0.006									2	208
6		12.95	12.95	33.583	25.306	265.8	0.016	7.35	122.8	2.0	0.32	0.3	0.05	22.25	2.93	6	206
10		12.28	12.28	33.600	25.449	252.3	0.027	5.48	90.3	7.8	0.77	6.3	0.24	14.41	2.13	10	205
20		11.06	11.06	33.688	25.744	224.5	0.051	3.36	54.0	20.9	1.74	17.6	0.39	1.38	1.08	20	204
30		10.95	10.95	33.705	25.777	221.6	0.073	3.26	52.2	21.4	1.74	17.9	0.38	2.15	1.61	30	203
41		10.49	10.49	33.842	25.965	204.0	0.096	2.68	42.6	25.7	1.90	21.8	0.25	0.57	0.54	41	202
50	ISL	10.49	10.48	33.844	25.967	204.0	0.115	2.69	42.7	25.5	1.90	21.6	0.23	0.63	0.60	50	
51		10.49	10.48	33.844	25.967	204.0	0.117	2.69	42.7	25.5	1.90	21.6	0.23	0.64	0.61	51	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 49.4 N	118 37.5 W	12/04/01	2345 UTC	629 m	270 13 kn	240 02 06	0	1016.1 mb	14.5 C	12.5 C	04m	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	13.59	13.59	33.577	25.173	278.3	0.000	8.24	139.5	0.9	0.22	0.1	0.02	16.51	4.06	0	
1		13.59	13.59	33.577	25.173	278.4	0.003	8.24	139.5	0.9	0.22	0.1	0.02	16.51	4.06	1	220
10		12.64	12.64	33.582	25.366	260.2	0.027	6.63	110.1	2.1	0.38	0.5	0.04	22.53	5.38	10	219
20		12.42	12.42	33.596	25.420	255.4	0.053	5.43	89.7	7.7	0.77	6.1	0.20	13.71	2.54	20	218
30		11.57	11.57	33.645	25.618	236.7	0.077	4.06	65.9	14.4	1.28	13.7	0.33	7.63	1.79	30	217
40		10.98	10.98	33.719	25.783	221.3	0.100	3.32	53.2	20.2	1.63	18.4	0.31	0.51	0.60	40	216
50		10.85	10.84	33.745	25.826	217.3	0.122	3.18	50.9	21.5	1.69	19.4	0.30	0.52	0.43	50	215
60		10.73	10.72	33.769	25.867	213.8	0.144	3.01	48.0	23.1	1.79	20.4	0.32	0.47	0.58	60	214
70		10.29	10.28	33.876	26.027	198.7	0.164	2.59	41.0	26.9	1.95	23.1	0.24	0.19	0.31	70	213
75	ISL	10.21	10.20	33.896	26.056	196.0	0.174	2.52	39.8	27.7	1.98	23.6	0.23	0.18	0.31	75	
85		10.11	10.10	33.927	26.098	192.3	0.194	2.45	38.6	28.6	2.01	24.1	0.20	0.16	0.31	85	212
100		9.72	9.71	34.050	26.259	177.2	0.221	2.19	34.2	31.7	2.12	26.3	0.03	0.07	0.17	101	211
120		9.63	9.62	34.086	26.303	173.5	0.256	2.09	32.6	32.8	2.17	26.9	0.02	0.04	0.14	121	210
125	ISL	9.59	9.58	34.104	26.324	171.6	0.265	2.02	31.5	33.5	2.20	27.3	0.02	0.04	0.13	126	
140		9.44	9.42	34.158	26.391	165.6	0.290	1.78	27.7	36.0	2.31	28.4	0.02	0.03	0.10	141	209
150	ISL	9.35	9.33	34.178	26.421	162.9	0.307	1.69	26.2	37.1	2.35	28.8	0.02	0.03	0.10	151	
169		9.21	9.19	34.204	26.464	159.1	0.337	1.56	24.1	38.9	2.40	29.4	0.01	0.03	0.10	170	208
199		9.03	9.01	34.253	26.532	153.3	0.384	1.35	20.8	41.4	2.50	30.2	0.01	0.02	0.18	200	207
200	ISL	9.02	9.00	34.255	26.535	153.0	0.386	1.34	20.6	41.5	2.50	30.2	0.01			201	
228		8.81	8.79	34.283	26.591	148.2	0.428	1.12	17.2	44.5	2.60	31.2	0.00			229	206
250	ISL	8.58	8.55	34.276	26.622	145.6	0.460	1.10	16.8	46.2	2.63	31.9	0.00			252	
268		8.36	8.33	34.263	26.645	143.6	0.486	1.09	16.5	47.9	2.65	32.6	0.00			270	205
300	ISL	7.82	7.79	34.250	26.716	137.1	0.531	0.97	14.5	53.3	2.75	34.2	0.00			302	
319		7.51	7.48	34.247	26.759	133.2	0.557	0.88	13.1	56.7	2.81	35.1	0.00			321	204
377		7.08	7.04	34.258	26.828	127.3	0.632	0.68	10.0	62.5	2.92	36.7	0.00			380	203
400	ISL	6.92	6.88	34.263	26.854	125.0	0.661	0.61	9.0	64.9	2.97	37.3	0.00			403	
438		6.66	6.62	34.274	26.899	121.2	0.708	0.50	7.3	69.2	3.04	38.3	0.01			441	202
500	ISL	6.28	6.23	34.315	26.981	114.0	0.781	0.33	4.8	77.8	3.15	39.5	0.00			504	
516		6.18	6.13	34.326	27.003	112.0	0.799	0.28	4.0	80.0	3.18	39.8	0.00			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 39.4 N	118 58.5 W	13/04/01	0400 UTC	754 m	270 14 kn			1016.0 mb	13.0 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	14.02	14.02	33.550	25.063	288.8	0.000	6.21	106.1	4.1	0.39	0.7	0.03	1.76	0.47	0	
2		14.02	14.02	33.550	25.063	288.8	0.006	6.21	106.1	4.1	0.39	0.7	0.03	1.76	0.47	2	220
10	ISL	14.00	14.00	33.549	25.067	288.7	0.029	6.21	106.0	4.0	0.36	0.7	0.04	1.78	0.54	10	
11		14.00	14.00	33.549	25.067	288.7	0.032	6.21	106.0	4.0	0.36	0.7	0.04	1.78	0.55	11	219
20	ISL	13.74	13.74	33.548	25.120	283.9	0.058	6.11	103.8	5.4	0.43	1.6	0.05	1.10	0.35	20	
21		13.70	13.70	33.548	25.128	283.2	0.060	6.09	103.3	5.6	0.44	1.7	0.05	1.02	0.33	21	218
30	ISL	13.46	13.46	33.548	25.177	278.7	0.086	5.94	100.3	5.9	0.46	2.1	0.06	0.87	0.39	30	
31		13.42	13.42	33.549	25.186	277.9	0.088	5.91	99.7	6.0	0.46	2.1	0.06	0.85	0.40	31	217
41		12.45	12.44	33.608	25.424	255.5	0.115	5.11	84.5	8.7	0.81	7.1	0.14	2.18	1.00	41	216
50	ISL	11.11	11.10	33.703	25.747	224.9	0.137	3.71	59.7	17.8	1.41	16.3	0.11	0.79	0.47	50	
51		10.98	10.97	33.714	25.779	221.9	0.139	3.57	57.2	18.8	1.47	17.3	0.11	0.60	0.39	51	215
61		10.64	10.63	33.772	25.885	212.0	0.161	3.28	52.2	21.5	1.62	19.6	0.05	0.33	0.22	61	214
71		10.23	10.22	33.880	26.040	197.5	0.181	2.77	43.7	25.8	1.86	22.9	0.01	0.05	0.11	71	213
75	ISL	10.14	10.13	33.908	26.077	194.0	0.189	2.65	41.8	26.8	1.91	23.6	0.01	0.04	0.10	75	
86		9.99	9.98	33.963	26.146	187.7	0.210	2.46	38.7	28.8	2.00	24.7	0.01	0.02	0.09	86	212
100	ISL	9.75	9.74	34.016	26.228	180.2	0.236	2.32	36.3	30.8	2.08	25.8	0.01	0.02	0.07	101	
101		9.73	9.72	34.019	26.234	179.7	0.238	2.31	36.1	30.9	2.08	25.9	0.01	0.02	0.07	102	211
121		9.46	9.45	34.078	26.324	171.4	0.273	2.11	32.8	33.7	2.18	27.3	0.01	0.01	0.07	122	210
125	ISL	9.41	9.40	34.092	26.344	169.7	0.279	2.06	32.0	34.3	2.20	27.6	0.01	0.01	0.07	126	
140		9.21	9.19	34.138	26.412	163.5	0.304	1.89	29.2	36.5	2.28	28.5	0.01	0.01	0.06	141	209
150	ISL	9.10	9.08	34.146	26.436	161.4	0.321	1.85	28.5	37.3	2.30	28.9	0.01	0.01	0.06	151	
172		8.88	8.86	34.153	26.477	157.9	0.356	1.79	27.5	39.1	2.34	29.5	0.00	0.01	0.05	173	208
200	ISL	8.59	8.57	34.202	26.561	150.3	0.399	1.50	22.9	43.1	2.47	30.9	0.00	0.01	0.04	201	
201		8.58	8.56	34.204	26.564	150.1	0.400	1.49	22.7	43.3	2.48	30.9	0.00	0.01	0.04	202	207
229		8.31	8.29	34.217	26.616	145.6	0.442	1.34	20.3	46.3	2.56	31.8	0.00			230	206
250	ISL	8.13	8.10	34.223	26.648	142.8	0.472	1.25	18.9	48.4	2.61	32.5	0.00			252	
268		7.98	7.95	34.226	26.673	140.7	0.498	1.17	17.6	50.2	2.65	33.0	0.00			270	205
300	ISL	7.70	7.67	34.230	26.718	136.9	0.542	1.04	15.5	53.6	2.72	34.0	0.00			302	
317		7.55	7.52	34.233	26.742	134.8	0.565	0.97	14.4	55.5	2.76	34.5	0.00			319	204
376		7.13	7.09	34.255	26.819	128.2	0.643	0.68	10.0	62.7	2.92	36.5	0.00			378	203
400	ISL	6.97	6.93	34.267	26.851	125.4	0.673	0.59	8.7	65.5	2.97	37.1	0.00			403	
435		6.76	6.72	34.285	26.894	121.7	0.716	0.49	7.2	69.4	3.04	37.9	0.00			438	202
500	ISL	6.43	6.38	34.312	26.960	116.2	0.794	0.35	5.1	75.6	3.12	38.9	0.00			504	
515		6.35	6.30	34.319	26.976	114.8	0.811	0.32	4.6	77.0	3.14	39.1	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 29.7 N	119 18.9 W	13/04/01	0822 UTC	1642 m	290 16 kn			1016.6 mb	12.2 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	12.44	12.44	33.642	25.451	251.9	0.000									0	
1		12.44	12.44	33.642 D	25.451	251.9	0.003									1	224
10		12.32	12.32	33.642	25.474	249.9	0.025	5.99	98.8	3.4	0.68	4.8	0.14	1.10	0.79	10	219
20		12.29	12.29	33.642	25.480	249.6	0.050	5.95	98.1	3.7	0.70	5.0	0.14	1.37	1.00	20	218
29		12.02	12.02	33.652	25.540	244.2	0.072	5.60	91.8	6.4	0.81	6.7	0.13	1.50	1.05	29	217
30	ISL	11.92	11.92	33.659	25.564	241.9	0.075	5.46	89.3	7.4	0.86	7.5	0.13	1.43	1.04	30	
40		10.79	10.79	33.757	25.846	215.2	0.098	3.93	62.8	18.7	1.43	16.4	0.12	0.62	0.85	40	216
50	ISL	9.94	9.93	33.859	26.073	193.9	0.118	2.97	46.6	26.1	1.83	22.7	0.07	0.24	0.56	50	
51		9.88	9.87	33.868	26.090	192.3	0.120	2.91	45.6	26.6	1.86	23.1	0.06	0.22	0.53	51	215
60		9.70	9.69	33.930	26.168	185.0	0.137	2.63	41.1	29.3	1.98	24.8	0.04	0.09	0.25	60	214
70		9.53	9.52	33.952	26.214	180.9	0.155	2.54	39.5	30.7	2.03	25.5	0.05	0.06	0.27	70	213
75	ISL	9.44	9.43	33.973	26.245	178.0	0.164	2.46	38.2	31.7	2.07	26.0	0.04	0.05	0.26	75	
85		9.28	9.27	34.016	26.305	172.5	0.182	2.30	35.6	33.7	2.14	27.1	0.02	0.03	0.22	85	212
100		9.16	9.15	34.052	26.352	168.3	0.207	2.18	33.7	35.1	2.20	27.9	0.02	0.02	0.13	101	211
119		9.10	9.09	34.068	26.375	166.5	0.239	2.12	32.7	35.9	2.22	28.0	0.02	0.03	0.16	120	210
125	ISL	9.04	9.03	34.081	26.395	164.8	0.249	2.07	31.9	36.6	2.25	28.3	0.02	0.03	0.16	126	
139		8.86	8.85	34.115	26.450	159.8	0.272	1.93	29.6	38.6	2.32	29.2	0.02	0.02	0.14	140	209
150	ISL	8.71	8.69	34.133	26.488	156.4	0.289	1.84	28.1	40.2	2.37	29.8	0.02	0.02	0.12	151	
169		8.46	8.44	34.156	26.545	151.2	0.318	1.68	25.5	43.0	2.45	30.7	0.01	0.01	0.10	170	208
199		8.09	8.07	34.179	26.619	144.6	0.363	1.40	21.1	47.8	2.58	32.3	0.01	0.01	0.09	200	207
200	ISL	8.09	8.07	34.179	26.619	144.6	0.364	1.40	21.1	47.9	2.58	32.3	0.01			201	
229		7.97	7.95	34.185	26.642	143.0	0.406	1.33	20.0	49.4	2.61	32.8	0.01			230	206
250	ISL	7.74	7.72	34.201	26.688	138.8	0.435	1.17	17.5	52.9	2.69	33.7	0.01			252	
269		7.51	7.48	34.217	26.734	134.7	0.461	1.01	15.0	56.3	2.77	34.6	0.01			271	205
300	ISL	7.32	7.29	34.229	26.771	131.6	0.503	0.89	13.2	59.2	2.83	35.4	0.00			302	
317		7.24	7.21	34.234	26.786	130.4	0.525	0.84	12.4	60.4	2.86	35.7	0.00			319	204
379		6.95	6.91	34.263	26.850	125.2	0.604	0.63	9.3	65.8	2.97	36.9	0.00			382	203
400	ISL	6.84	6.80	34.276	26.876	123.0	0.630	0.55	8.1	68.0	3.01	37.3	0.00			403	
438		6.63	6.59	34.300	26.923	118.9	0.676	0.43	6.3	72.3	3.09	38.1	0.00			441	202
500	ISL	6.27	6.23	34.324	26.990	113.1	0.748	0.31	4.5	79.3	3.17	39.0	0.00			504	
513		6.20	6.15	34.329	27.003	112.0	0.763	0.29	4.2	80.8	3.19	39.2	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 19.2 N	119 39.6 W	13/04/01	1240 UTC	79 m	310 25 kn			1016.3 mb	12.1 C	10.4 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	12.07	12.07	33.644	25.523	245.0	0.000	5.91	97.0	7.0	0.79	6.7	0.15	4.92	1.18	0	
2		12.07	12.07	33.644	25.523	245.0	0.005	5.91	97.0	7.0	0.79	6.7	0.15	4.92 A	1.18 A	2	209
5		12.07	12.07	33.644	25.523	245.1	0.012	5.91	97.0	6.9	0.80	6.7	0.14	4.90	1.09	5	208
10	ISL	12.07	12.07	33.644	25.524	245.2	0.025	5.92	97.1	7.0	0.78	6.6	0.15	4.96	1.19	10	
11		12.07	12.07	33.644	25.524	245.2	0.027	5.92	97.1	7.0	0.78	6.6	0.15	4.98	1.23	11	207
20		12.07	12.07	33.643	25.523	245.5	0.049	5.91	97.0	6.9	0.78	6.7	0.15	5.12	1.36	20	206
30	ISL	11.84	11.84	33.639	25.563	241.9	0.073	5.78	94.4	7.8	0.83	7.2	0.15	4.83	1.08	30	
31		11.79	11.79	33.638	25.572	241.1	0.076	5.77	94.1	7.9	0.83	7.3	0.15	4.80	1.04	31	205
40		10.96	10.96	33.616	25.706	228.5	0.097	4.78	76.6	14.2	1.19	12.8	0.14	1.27	0.81	40	204
50		10.66	10.65	33.665	25.798	220.1	0.119	4.30	68.5	17.3	1.35	15.4	0.12	0.97	0.72	50	203
61		10.30	10.29	33.743	25.921	208.6	0.143	3.77	59.6	21.2	1.55	18.5	0.10	0.58	0.71	61	202
68		9.70	9.69	33.846	26.103	191.4	0.157	3.14	49.0	26.8	1.80	22.6	0.09	0.27	0.62	68	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 0104 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 8.9 N	120 1.4 W	13/04/01	1805 UTC	1177 m	310 22 kn	300 08 08	1	1018.8 mb	12.6 C	10.8 C	12m	1/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.50	12.50	33.508	25.336	262.8	0.000	6.30	104.2	2.8	0.59	3.6	0.16	2.06	0.96	0	
2	A	12.50	12.50	33.508	25.336	262.9	0.005	6.30	104.2	2.8	0.59	3.6	0.16	2.06	0.96	2	222
8	A	12.52	12.52	33.508	25.332	263.4	0.021	6.34	104.9	2.7	0.59	3.5	0.16	2.07	1.02	8	221
10	ISL	12.52	12.52	33.508	25.332	263.4	0.026	6.34	104.9	2.6	0.59	3.5	0.16	2.08	0.97	10	
16	A	12.53	12.53	33.509	25.331	263.7	0.042	6.35	105.1	2.5	0.58	3.4	0.16	2.12	0.82	16	220
20	ISL	12.51	12.51	33.509	25.335	263.4	0.053	6.34	104.9	2.6	0.58	3.5	0.16	2.12	0.87	20	
25	A	12.49	12.49	33.508	25.338	263.3	0.066	6.32	104.5	2.7	0.59	3.6	0.16	2.13	0.95	25	219
30	ISL	12.48	12.48	33.508	25.340	263.2	0.079	6.29	104.0	2.7	0.60	3.6	0.16	1.97	0.91	30	
31	A	12.48	12.48	33.508	25.340	263.2	0.082	6.29	104.0	2.7	0.60	3.6	0.16	1.94	0.90	31	218
38		12.48	12.47	33.508	25.340	263.4	0.100	6.28	103.8	2.7	0.60	3.9	0.16	1.84	0.90	38	217
45	A	12.48	12.47	33.509	25.341	263.5	0.119	6.27	103.7	2.7	0.61	3.7	0.16	2.00	0.80	45	216
50	ISL	12.46	12.45	33.510	25.346	263.1	0.132	6.25	103.3	3.0	0.62	3.8	0.16	1.79	0.86	50	
52		12.45	12.44	33.511	25.349	262.9	0.137	6.23	103.0	3.2	0.62	3.9	0.16	1.67	0.88	52	215
60		12.34	12.33	33.528	25.383	259.9	0.158	6.09	100.4	4.6	0.69	4.7	0.17	1.19	0.68	60	214
72		12.20	12.19	33.574	25.446	254.2	0.189	5.92	97.3	6.2	0.75	5.1	0.17	0.82	0.84	72	213
75	ISL	12.14	12.13	33.567	25.452	253.7	0.196	5.85	96.1	6.7	0.78	5.5	0.19	0.87	0.84	75	
85		11.67	11.66	33.537	25.517	247.7	0.221	5.46	88.8	9.6	0.93	8.4	0.23	1.00	0.86	85	212
100		9.91	9.90	33.591	25.869	214.3	0.256	4.16	65.1	18.2	1.44	17.7	0.10	0.22	0.59	101	211
120		9.35	9.34	33.786	26.114	191.3	0.297	3.39	52.5	24.9	1.75	22.8	0.03	0.05	0.30	121	210
125	ISL	9.29	9.28	33.817	26.148	188.2	0.306	3.27	50.5	26.0	1.79	23.5	0.02	0.05	0.27	126	
137		9.16	9.15	33.878	26.217	181.9	0.328	3.06	47.2	28.3	1.88	24.9	0.01	0.06	0.22	138	209
150	ISL	8.83	8.81	33.943	26.320	172.3	0.351	2.83	43.3	32.0	1.99	26.6	0.01	0.06	0.18	151	
170		8.33	8.31	34.020	26.458	159.4	0.384	2.56	38.8	37.1	2.13	28.7	0.01	0.05	0.15	171	208
199		8.15	8.13	34.042	26.502	155.7	0.430	2.49	37.6	39.1	2.18	29.2	0.00	0.04	0.17	200	207
200	ISL	8.15	8.13	34.044	26.504	155.5	0.432	2.48	37.4	39.2	2.19	29.2	0.00			201	
229		8.02	8.00	34.090	26.560	150.7	0.476	2.00	30.1	43.4	2.36	31.0	0.00			230	206
250	ISL	7.67	7.65	34.098	26.618	145.4	0.507	1.81	27.0	47.5	2.49	32.3	0.00			251	
269		7.32	7.29	34.103	26.672	140.5	0.534	1.68	24.9	51.3	2.59	33.5	0.00			271	205
300	ISL	7.07	7.04	34.136	26.733	135.0	0.577	1.35	19.9	56.1	2.70	35.0	0.00			302	
318		6.98	6.95	34.159	26.763	132.4	0.601	1.16	17.0	58.8	2.75	35.7	0.00			320	204
377		6.52	6.49	34.225	26.878	122.1	0.676	0.68	9.9	68.9	2.97	38.2	0.00			379	203
400	ISL	6.39	6.35	34.245	26.911	119.2	0.704	0.56	8.1	71.7	3.02	38.8	0.00			403	
437		6.21	6.17	34.272	26.956	115.4	0.747	0.43	6.2	75.6	3.09	39.5	0.00			440	202
500	ISL	5.93	5.89	34.301	27.015	110.4	0.818	0.32	4.6	81.3	3.17	40.5	0.00			503	
526		5.81	5.76	34.314	27.040	108.2	0.847	0.28	4.0	83.6	3.20	40.9	0.00			530	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 59.5 N	120 21.0 W	13/04/01	2138 UTC	720 m	310 17 kn	300 07 08	1	1019.8 mb	12.7 C	11.0 C	10m	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	12.69	12.69	33.330	25.161	279.5	0.000	6.20	102.9	3.6	0.49	2.3	0.13	2.24	0.57	0	
2		12.69	12.69	33.330	25.161	279.5	0.006	6.20	102.9	3.6	0.49	2.3	0.13	2.24	0.57	2	220
10		12.68	12.68	33.330	25.163	279.5	0.028	6.18	102.5	3.5	0.47	2.3	0.13	1.83	0.53	10	219
20	ISL	12.61	12.61	33.330	25.177	278.5	0.056	6.18	102.4	3.5	0.48	2.4	0.13	1.99	0.50	20	
21		12.60	12.60	33.332	25.180	278.2	0.059	6.18	102.3	3.5	0.48	2.4	0.13	2.02	0.50	21	218
30		12.54	12.54	33.382	25.231	273.6	0.083	6.22	102.9	3.9	0.51	2.7	0.16	2.07	0.57	30	217
40		11.98	11.97	33.483	25.416	256.2	0.110	6.09	99.6	6.2	0.72	5.1	0.18	2.60	0.96	40	216
49		12.08	12.07	33.543	25.444	253.8	0.133	6.25	102.5	4.6	0.69	4.4	0.18	3.06	1.40	49	215
50	ISL	12.06	12.05	33.544	25.449	253.3	0.135	6.25	102.5	4.7	0.70	4.5	0.18	3.02	1.56	50	
61		11.53	11.52	33.499	25.513	247.5	0.163	5.89	95.4	7.4	0.84	6.8	0.15	2.62	2.52	61	214
70		10.80	10.79	33.415	25.579	241.3	0.185	5.19	82.7	10.3	1.00	10.2	0.07	1.45	0.83	70	213
75	ISL	10.41	10.40	33.394	25.630	236.5	0.197	5.01	79.2	11.7	1.08	11.7	0.05	0.87	0.57	75	
84		9.82	9.81	33.403	25.737	226.4	0.218	4.80	74.9	14.0	1.21	14.1	0.03	0.12	0.11	84	212
100		9.42	9.41	33.553	25.920	209.3	0.253	4.24	65.6	18.6	1.46	18.2	0.02	0.06	0.07	101	211
120		9.21	9.20	33.737	26.098	192.8	0.293	3.64	56.1	23.7	1.69	21.9	0.02	0.03	0.10	121	210
125	ISL	9.14	9.13	33.787	26.149	188.1	0.302	3.50	53.9	25.2	1.74	22.9	0.02	0.02	0.09	126	
139		8.92	8.91	33.911	26.281	175.8	0.328	3.12	47.9	29.4	1.88	25.3	0.01	0.01	0.06	140	209
150	ISL	8.77	8.75	33.965	26.347	169.7	0.347	2.85	43.6	32.0	1.98	26.7	0.01	0.01	0.07	151	
168		8.53	8.51	34.010	26.419	163.1	0.377	2.53	38.5	35.3	2.10	28.3	0.01	0.03	0.10	169	208
200		8.03	8.01	34.033	26.513	154.6	0.428	2.46	37.0	39.4	2.18	29.5	0.01	0.04	0.09	201	207
229		7.58	7.56	34.071	26.609	145.8	0.471	2.02	30.1	46.1	2.38	31.8	0.00			230	206
250	ISL	7.41	7.39	34.085	26.644	142.8	0.501	1.84	27.3	48.7	2.46	32.7	0.00			251	
268		7.28	7.25	34.093	26.669	140.6	0.527	1.71	25.3	50.6	2.52	33.4	0.00			270	205
300	ISL	6.89	6.86	34.109	26.736	134.6	0.571	1.41	20.7	56.7	2.66	35.3	0.00			302	
318		6.68	6.65	34.120	26.773	131.2	0.595	1.24	18.1	60.3	2.74	36.3	0.00			320	204
378		6.38	6.35	34.174	26.856	124.1	0.672	0.82	11.9	67.8	2.93	38.1	0.00			380	203
400	ISL	6.26	6.22	34.191	26.885	121.5	0.699	0.70	10.1	70.5	2.98	38.7	0.00			403	
437		6.07	6.03	34.220	26.932	117.4	0.743	0.53	7.6	74.9	3.05	39.6	0.00			440	202
500	ISL	5.84	5.80	34.282	27.011	110.6	0.815	0.34	4.9	81.3	3.15	40.7	0.00			503	
515		5.78	5.74	34.297	27.030	108.9	0.831	0.29	4.1	82.8	3.18	40.9	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 39.3 N	121 2.0 W	14/04/01	0404 UTC	3418 m	320 16 kn			1019.4 mb	12.0 C	10.0 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	13.39	13.39	33.228	24.943	300.2	0.000	6.10	102.6	3.9	0.37	0.2	0.01	0.31	0.17	0	
3		13.39	13.39	33.228	24.943	300.2	0.009	6.10	102.6	3.9	0.37	0.2	0.01	0.31	0.17	3	220
10	ISL	13.40	13.40	33.229	24.942	300.5	0.030	6.11	102.8	3.9	0.37	0.2	0.01	0.31	0.17	10	
16		13.40	13.40	33.230	24.943	300.6	0.048	6.11	102.8	3.8	0.36	0.2	0.01	0.32	0.17	16	219
20	ISL	13.40	13.40	33.229	24.943	300.8	0.060	6.10	102.7	3.8	0.36	0.2	0.01	0.33	0.16	20	
30	ISL	13.39	13.39	33.228	24.944	300.9	0.090	6.09	102.5	3.8	0.36	0.2	0.02	0.35	0.15	30	
31		13.39	13.39	33.228	24.944	300.9	0.093	6.09	102.5	3.8	0.36	0.2	0.02	0.35	0.15	31	218
45		13.35	13.34	33.228	24.953	300.5	0.135	6.11	102.7	3.7	0.37	0.2	0.02	0.35	0.15	45	217
50	ISL	13.31	13.30	33.229	24.961	299.8	0.150	6.11	102.6	3.7	0.37	0.3	0.03	0.38	0.14	50	
55		13.28	13.27	33.229	24.968	299.4	0.165	6.10	102.4	3.8	0.37	0.3	0.03	0.41	0.13	55	216
65		13.28	13.27	33.229	24.968	299.6	0.195	6.10	102.4	3.8	0.37	0.3	0.03	0.44	0.12	65	215
74		12.94	12.93	33.267	25.065	290.6	0.222	5.92	98.7	4.7	0.47	1.5	0.15	0.35	0.17	74	214
75	ISL	12.88	12.87	33.272	25.081	289.1	0.225	5.90	98.2	4.8	0.48	1.7	0.15	0.34	0.17	75	
85		12.15	12.14	33.312	25.253	272.9	0.253	5.66	92.8	6.2	0.64	4.4	0.19	0.22	0.21	85	213
94		11.44	11.43	33.312	25.385	260.4	0.277	5.44	87.9	7.7	0.79	7.1	0.04	0.16	0.12	94	212
100	ISL	11.17	11.16	33.334	25.451	254.3	0.292	5.33	85.6	8.5	0.86	8.3	0.03	0.13	0.12	100	
110		10.85	10.84	33.378	25.542	245.7	0.317	5.16	82.3	9.9	0.95	9.8	0.02	0.09	0.11	111	211
124		10.30	10.29	33.408	25.661	234.6	0.351	4.91	77.4	12.4	1.11	12.4	0.02	0.06	0.06	125	210
125	ISL	10.27	10.26	33.414	25.671	233.7	0.353	4.88	76.9	12.6	1.12	12.6	0.02	0.06	0.06	126	
144		9.76	9.74	33.580	25.886	213.5	0.396	4.30	67.1	17.4	1.38	17.0	0.01	0.02	0.07	145	209
150	ISL	9.63	9.61	33.650	25.963	206.4	0.408	4.08	63.5	19.5	1.47	18.5	0.01	0.02	0.06	151	
169		9.30	9.28	33.849	26.172	186.8	0.446	3.45	53.3	25.7	1.73	22.8	0.01	0.01	0.04	170	208
198		8.93	8.91	33.930	26.295	175.6	0.498	3.16	48.5	29.7	1.88	25.2	0.00	0.01	0.05	199	207
200	ISL	8.90	8.88	33.936	26.304	174.7	0.502	3.14	48.1	30.1	1.89	25.4	0.00			201	
229		8.41	8.39	34.021	26.447	161.6	0.550	2.76	41.9	35.8	2.06	27.8	0.00			230	206
250	ISL	8.13	8.10	34.058	26.519	155.0	0.584	2.42	36.5	39.9	2.20	29.5	0.00			251	
267		7.94	7.91	34.077	26.562	151.2	0.610	2.16	32.4	43.0	2.31	30.7	0.00			269	205
300	ISL	7.61	7.58	34.098	26.627	145.4	0.659	1.87	27.9	47.5	2.44	32.3	0.00			302	
319		7.44	7.41	34.107	26.658	142.6	0.686	1.74	25.8	49.9	2.51	33.0	0.00			321	204
378		6.98	6.94	34.172	26.774	132.3	0.767	1.09	16.0	59.6	2.78	35.8	0.00			380	203
400	ISL	6.84	6.80	34.196	26.813	128.9	0.796	0.91	13.3	62.8	2.86	36.7	0.00			403	
438		6.60	6.56	34.231	26.873	123.6	0.844	0.66	9.6	68.1	2.98	38.0	0.00			441	202
500	ISL	6.09	6.05	34.250	26.954	116.3	0.918	0.43	6.2	76.5	3.09	39.9	0.00			503	
515		5.97	5.92	34.255	26.974	114.5	0.936	0.38	5.5	78.5	3.12	40.3	0.00			518	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 19.7 N	121 43.1 W	14/04/01	1015 UTC	3989 m	330 14 kn			1019.3 mb	11.7 C	10.1 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	13.33	13.33	33.314	25.022	292.7	0.000	6.15	103.4	3.5	0.37	0.3	0.03	0.40	0.12	0	
2		13.33	13.33	33.314	25.022	292.8	0.006	6.15	103.4	3.5	0.37	0.3	0.03	0.40	0.12	2	224
10	ISL	13.33	13.33	33.314	25.022	293.0	0.029	6.14	103.2	3.5	0.37	0.3	0.03	0.40	0.13	10	
14		13.33	13.33	33.314	25.022	293.0	0.041	6.13	103.1	3.5	0.37	0.3	0.03	0.40	0.14	14	219
20	ISL	13.33	13.33	33.314	25.022	293.2	0.059	6.13	103.1	3.5	0.37	0.3	0.03	0.37	0.12	20	
30		13.34	13.34	33.315 D	25.021	293.6	0.088	6.15	103.4	3.5	0.36	0.3	0.03	0.34 A	0.09 A	30	218
45		13.33	13.32	33.316	25.025	293.7	0.132	6.16	103.6	3.5	0.37	0.3	0.04	0.45	0.10	45	217
50	ISL	13.32	13.31	33.318	25.028	293.4	0.147	6.14	103.2	3.5	0.37	0.4	0.04	0.49	0.11	50	
55		13.31	13.30	33.320	25.032	293.2	0.161	6.13	103.0	3.4	0.37	0.4	0.04	0.52	0.12	55	216
65		13.10	13.09	33.408	25.142	283.0	0.190	5.90	98.8	4.7	0.49	1.8	0.15	0.51	0.24	65	215
75		12.40	12.39	33.395	25.269	271.1	0.218	5.62	92.7	6.5	0.66	4.6	0.31	0.34	0.21	75	214
85		11.61	11.60	33.399	25.421	256.8	0.244	5.28	85.6	8.3	0.83	7.6	0.10	0.19	0.15	85	213
95		11.28	11.27	33.436	25.510	248.5	0.269	5.09	82.0	9.1	0.90	8.8	0.10	0.16	0.16	95	212
100	ISL	11.00	10.99	33.448	25.570	242.9	0.282	4.99	79.9	10.0	0.97	10.0	0.08	0.15	0.16	100	
110		10.44	10.43	33.493	25.703	230.4	0.305	4.69	74.2	12.8	1.15	13.1	0.04	0.12	0.14	111	211
124		9.96	9.95	33.657	25.913	210.7	0.336	3.98	62.4	18.8	1.48	18.4	0.02	0.06	0.09	125	210
125	ISL	9.94	9.93	33.666	25.923	209.7	0.338	3.95	61.9	19.1	1.49	18.6	0.02	0.06	0.09	126	
144		9.63	9.61	33.787	26.070	196.1	0.377	3.48	54.2	23.4	1.69	21.8	0.01	0.03	0.06	145	209
150	ISL	9.51	9.49	33.815	26.111	192.3	0.389	3.39	52.7	24.6	1.74	22.6	0.01	0.02	0.06	151	
169		9.16	9.14	33.888	26.225	181.7	0.424	3.17	48.9	28.0	1.87	24.6	0.01	0.01	0.05	170	208
198		8.77	8.75	33.995	26.371	168.4	0.475	2.80	42.8	33.0	2.00	26.9	0.00	0.02	0.07	199	207
200	ISL	8.75	8.73	34.000	26.378	167.7	0.478	2.78	42.5	33.3	2.01	27.0	0.00			201	
228		8.39	8.37	34.051	26.474	159.0	0.524	2.46	37.3	37.6	2.16	28.8	0.00			229	206
250	ISL	8.00	7.97	34.068	26.546	152.4	0.558	2.25	33.8	41.8	2.27	30.3	0.00			251	
268		7.69	7.66	34.079	26.600	147.4	0.585	2.08	31.1	45.4	2.36	31.5	0.00			270	205
300	ISL	7.39	7.36	34.117	26.673	140.9	0.631	1.68	24.9	51.0	2.53	33.4	0.00			302	
318		7.26	7.23	34.137	26.707	137.9	0.656	1.47	21.7	53.8	2.62	34.3	0.00			320	204
377		6.76	6.73	34.158	26.793	130.3	0.736	1.09	15.9	61.4	2.79	36.5	0.00			379	203
400	ISL	6.56	6.52	34.179	26.836	126.4	0.765	0.91	13.2	65.4	2.88	37.5	0.00			403	
438		6.26	6.22	34.220	26.908	119.9	0.812	0.61	8.8	72.1	3.02	39.1	0.00			441	202
500	ISL	5.93	5.89	34.279	26.997	112.0	0.884			79.8	3.13	40.5	0.00			503	
516		5.85	5.81	34.295	27.020	110.0	0.902			81.8	3.16	40.8	0.00			520	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 0104 | STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 59.9 N	122 23.3 W	14/04/01	1716 UTC	4069 m	310 07 kn	310 05 06	1	1021.8 mb	13.5 C	11.5 C	26m	7/8 ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.90	13.90	33.261	24.865	307.6	0.000	6.01	102.2	3.4	0.34	0.1	0.00	0.23	0.05	0	
1	B	13.90	13.90	33.261	24.865	307.7	0.003	6.01	102.2	3.4	0.34	0.1	0.00	0.23	0.05	1	222
10	ISL	13.95	13.95	33.282	24.871	307.3	0.031	6.01	102.3	3.3	0.34	0.0	0.00	0.26	0.05	10	
16	B	13.98	13.98	33.297	24.877	307.0	0.049	6.01	102.4	3.3	0.34	0.0	0.00	0.28 A	0.05 A	16	221
20	ISL	14.05	14.05	33.316	24.877	307.1	0.061	5.99	102.2	3.3	0.34	0.0	0.00	0.28	0.05	20	
24		14.12	14.12	33.337	24.879	307.0	0.074	5.96	101.9	3.3	0.33	0.1	0.00	0.27	0.05	24	220
30	ISL	14.21	14.21	33.370	24.885	306.6	0.092	5.95	101.9	3.2	0.32	0.1	0.00	0.25	0.06	30	
33	B	14.23	14.23	33.381	24.890	306.2	0.101	5.94	101.8	3.2	0.32	0.1	0.00	0.24	0.06	33	219
43		14.09	14.08	33.348	24.894	306.1	0.132	5.97	102.0	3.2	0.33	0.1	0.00	0.28	0.05	43	218
50	ISL	13.72	13.71	33.247	24.892	306.4	0.153	6.04	102.3	3.3	0.34	0.1	0.01	0.33	0.08	50	
54	B	13.53	13.52	33.195	24.891	306.6	0.166	6.07	102.4	3.4	0.35	0.1	0.01	0.34	0.09	54	217
60		13.49	13.48	33.187	24.893	306.6	0.184	6.06	102.1	3.4	0.36	0.1	0.01	0.29	0.16	60	216
67	B	13.40	13.39	33.175	24.902	305.9	0.205	6.08	102.3	3.4	0.36	0.1	0.01	0.36	0.10	67	215
75	ISL	13.30	13.29	33.192	24.935	303.0	0.230	6.07	101.9	3.5	0.37	0.2	0.02	0.37	0.13	75	
78		13.27	13.26	33.200	24.948	301.9	0.239	6.07	101.8	3.5	0.38	0.3	0.03	0.37	0.14	78	214
86		13.19	13.18	33.205	24.968	300.2	0.263	6.06	101.5	3.6	0.38	0.3	0.03	0.34	0.17	86	213
95	B	13.12	13.11	33.202	24.980	299.3	0.290	6.04	101.0	3.7	0.41	0.5	0.05	0.36	0.11	95	212
100	ISL	12.77	12.76	33.220	25.063	291.5	0.305	5.93	98.5	4.4	0.49	1.7	0.10	0.33	0.14	100	
110		11.93	11.92	33.270	25.262	272.6	0.333	5.65	92.2	6.2	0.66	4.6	0.17	0.23	0.22	110	211
125		11.18	11.16	33.315	25.435	256.4	0.373	5.39	86.6	7.9	0.81	7.5	0.04	0.15	0.10	126	210
145		9.85	9.83	33.401	25.732	228.2	0.421	4.87	76.0	13.3	1.18	13.5	0.01	0.06	0.08	146	209
150	ISL	9.67	9.65	33.466	25.812	220.7	0.432	4.66	72.5	15.2	1.28	15.2	0.01	0.05	0.07	151	
169		9.24	9.22	33.731	26.089	194.6	0.472	3.88	59.9	22.3	1.60	20.7	0.00	0.01	0.03	170	208
199		8.84	8.82	33.940	26.317	173.5	0.527	3.42	52.4	28.6	1.79	24.2	0.00	0.00	0.03	200	207
200	ISL	8.83	8.81	33.943	26.321	173.2	0.529	3.42	52.4	28.7	1.79	24.2	0.00			201	
229		8.58	8.56	33.990	26.397	166.4	0.578	3.52	53.6	30.5	1.79	24.7	0.00			230	206
250	ISL	8.20	8.17	34.018	26.477	159.0	0.612	3.04	45.9	35.9	1.99	27.4	0.00			251	
269		7.83	7.80	34.038	26.547	152.5	0.642	2.52	37.7	41.4	2.21	30.1	0.00			270	205
300	ISL	7.38	7.35	34.046	26.619	146.0	0.688	2.18	32.3	46.9	2.37	32.2	0.00			302	
319		7.15	7.12	34.047	26.652	143.0	0.715	2.06	30.4	49.7	2.44	33.0	0.00			321	204
377		6.58	6.55	34.077	26.753	133.9	0.796	1.53	22.3	59.0	2.66	35.9	0.01			379	203
400	ISL	6.40	6.36	34.106	26.800	129.7	0.826	1.44	20.9	63.4	2.77	37.2	0.01			402	
440		6.12	6.08	34.158	26.877	122.7	0.877	1.27	18.3	70.9	2.95	39.2	0.00			443	202
500	ISL	5.69	5.65	34.204	26.968	114.5	0.948	0.61	8.7	80.1	3.10	41.0	0.00			503	
514		5.59	5.55	34.215	26.989	112.6	0.964	0.45	6.4	82.2	3.13	41.4	0.00			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 0104 STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 39.7 N	123 4.2 W	14/04/01	2231 UTC	4123 m	320 05 kn	050 03 09	1	1021.1 mb	14.8 C	11.2 C	45m	4/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.21	15.21	33.538	24.800	313.8	0.000	5.80	101.5	3.4	0.30	0.0	0.00	0.11	0.00	0	
3		15.21	15.21	33.538	24.800	313.9	0.009	5.80	101.5	3.4	0.30	0.0	0.00	0.11	0.00	3	220
10	ISL	15.15	15.15	33.537	24.813	312.9	0.031	5.81	101.5	3.4	0.30	0.0	0.00	0.10	0.01	10	
17		15.07	15.07	33.536	24.829	311.5	0.053	5.83	101.7	3.3	0.30	0.0	0.00	0.09	0.02	17	219
20	ISL	15.07	15.07	33.536	24.830	311.6	0.063	5.83	101.7	3.3	0.30	0.0	0.00	0.09	0.02	20	
30	ISL	15.06	15.06	33.535	24.831	311.7	0.094	5.82	101.5	3.2	0.29	0.0	0.00	0.10	0.02	30	
32		15.06	15.06	33.535	24.831	311.8	0.100	5.82	101.5	3.2	0.29	0.0	0.00	0.10	0.02	32	218
47		15.05	15.04	33.535	24.834	312.0	0.147	5.80	101.1	3.2	0.31	0.0	0.00	0.10	0.01	47	217
50	ISL	15.05	15.04	33.535	24.834	312.1	0.156	5.80	101.1	3.2	0.31	0.0	0.00	0.10	0.01	50	
62		15.04	15.03	33.535	24.837	312.2	0.194	5.82	101.5	3.1	0.29	0.0	0.00	0.12	0.02	62	216
75	ISL	15.04	15.03	33.536	24.838	312.5	0.234	5.81	101.3	3.1	0.29	0.0	0.00	0.12	0.03	75	
76		15.04	15.03	33.536	24.838	312.5	0.237	5.81	101.3	3.1	0.29	0.0	0.00	0.12	0.03	76	215
86		15.03	15.02	33.535	24.840	312.7	0.269	5.82	101.4	3.2	0.29	0.0	0.00	0.13	0.03	86	214
96		13.98	13.97	33.462	25.006	296.9	0.299	5.84	99.6	3.6	0.34	0.2	0.01	0.45	0.21	96	213
100	ISL	13.37	13.36	33.411	25.092	288.8	0.311	5.80	97.6	4.1	0.41	1.0	0.04	0.42	0.22	100	
106		12.43	12.42	33.353	25.232	275.5	0.328	5.69	93.9	5.1	0.54	2.7	0.08	0.38	0.23	106	212
115		11.38	11.37	33.374	25.444	255.3	0.352	5.47	88.3	6.4	0.69	5.5	0.04	0.26	0.21	116	211
125	ISL	11.13	11.11	33.467	25.562	244.3	0.377	5.28	84.8	7.7	0.77	7.2	0.03	0.19	0.14	126	
126		11.13	11.11	33.477	25.570	243.6	0.379	5.26	84.5	7.8	0.78	7.3	0.03	0.19	0.13	127	210
141		10.49	10.47	33.528	25.722	229.2	0.414	5.01	79.4	10.5	0.95	10.4	0.02	0.11	0.08	142	209
150	ISL	10.18	10.16	33.532	25.779	224.0	0.435	4.81	75.7	12.4	1.08	12.5	0.02	0.09	0.08	151	
165		9.77	9.75	33.555	25.866	215.9	0.468	4.42	68.9	16.1	1.31	16.1	0.01	0.06	0.08	166	208
195		9.26	9.24	33.841	26.173	187.3	0.528	3.50	54.1	25.2	1.71	22.7	0.00	0.00	0.02	196	207
200	ISL	9.18	9.16	33.873	26.211	183.8	0.538	3.41	52.6	26.3	1.75	23.3	0.00			201	
230		8.69	8.67	33.998	26.386	167.5	0.590	3.05	46.6	32.0	1.92	25.9	0.00			231	206
250	ISL	8.30	8.27	34.033	26.474	159.4	0.623	2.84	43.0	36.0	2.03	27.4	0.00			251	
270		7.93	7.90	34.047	26.540	153.3	0.654	2.65	39.8	39.8	2.14	28.8	0.00			271	205
300	ISL	7.52	7.49	34.057	26.608	147.2	0.699	2.37	35.2	44.5	2.28	30.7	0.00			302	
320		7.28	7.25	34.058	26.642	144.0	0.728	2.17	32.1	47.7	2.37	31.9	0.00			322	204
379		6.45	6.42	34.080	26.772	132.0	0.810	1.48	21.5	61.0	2.69	36.1	0.00			381	203
400	ISL	6.26	6.22	34.097	26.811	128.5	0.837	1.27	18.3	64.9	2.78	37.2	0.00			402	
438		5.98	5.94	34.131	26.873	122.9	0.885	0.94	13.5	71.4	2.91	38.9	0.00			441	202
500	ISL	5.52	5.48	34.168	26.960	115.1	0.959	0.66	9.4	81.1	3.05	40.8	0.00			503	
517		5.39	5.35	34.179	26.984	112.8	0.978	0.58	8.2	83.8	3.09	41.3	0.00			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 19.5 N	123 44.6 W	15/04/01	0446 UTC	4006 m	300 04 kn			1020.9 mb	13.3 C	10.0 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	15.33	15.33	33.507	24.750	318.6	0.000	5.84	102.4	3.7	0.33	0.0	0.00	0.08	0.02	0	
4		15.33	15.33	33.507	24.750	318.7	0.013	5.84	102.4	3.7	0.33	0.0	0.00	0.08	0.02	4	224
10	ISL	15.15	15.15	33.503	24.786	315.4	0.032	5.85	102.2	3.7	0.33	0.0	0.00	0.08	0.02	10	
17		14.91	14.91	33.497	24.834	311.1	0.054	5.86	101.9	3.6	0.32	0.0	0.00	0.08	0.02	17	220
20	ISL	14.90	14.90	33.496	24.836	311.0	0.063	5.86	101.9	3.6	0.32	0.0	0.00	0.08	0.02	20	
30	ISL	14.88	14.88	33.491	24.836	311.3	0.094	5.85	101.6	3.6	0.32	0.0	0.00	0.10	0.03	30	
31		14.88	14.88	33.491	24.836	311.3	0.097	5.85	101.6	3.6	0.32	0.0	0.00	0.10	0.03	31	219
47		14.85	14.84	33.485	24.839	311.5	0.147	5.85	101.6	3.5	0.33	0.0	0.00	0.11	0.03	47	218
50	ISL	14.84	14.83	33.484	24.840	311.5	0.156	5.86	101.7	3.5	0.33	0.0	0.00	0.11	0.03	50	
62		14.68	14.67	33.446	24.846	311.3	0.194	5.88	101.7	3.7	0.33	0.0	0.00	0.18	0.04	62	217
75	ISL	14.18	14.17	33.386	24.906	305.9	0.234	5.90	101.0	3.8	0.36	0.1	0.01	0.38	0.19	75	
76		14.13	14.12	33.384	24.914	305.1	0.237	5.90	100.9	3.8	0.36	0.1	0.01	0.40	0.20	76	216
85		13.62	13.61	33.430	25.055	291.9	0.264	5.74	97.1	4.6	0.45	1.4	0.08	0.50	0.31	85	215
97		12.11	12.10	33.357	25.295	269.1	0.297	5.63	92.3	5.9	0.62	3.7	0.07	0.39	0.36	97	214
100	ISL	11.82	11.81	33.359	25.351	263.8	0.305	5.57	90.7	6.3	0.66	4.4	0.06	0.37	0.33	100	
106		11.33	11.32	33.370	25.450	254.5	0.321	5.44	87.7	7.1	0.74	5.9	0.03	0.32	0.25	106	213
116		10.70	10.69	33.364	25.557	244.4	0.346	5.31	84.4	8.8	0.87	8.2	0.02	0.19	0.19	117	212
125	ISL	10.35	10.34	33.396	25.643	236.4	0.368	5.21	82.2	9.9	0.95	9.7	0.01	0.14	0.13	126	
132		10.13	10.11	33.442	25.717	229.5	0.384	5.07	79.7	11.2	1.03	11.2	0.01	0.12	0.09	133	211
139		9.85	9.83	33.503	25.811	220.6	0.400	4.79	74.8	13.9	1.18	13.7	0.01	0.08	0.08	140	210
150	ISL	9.62	9.60	33.600	25.925	209.9	0.423	4.36	67.8	17.5	1.37	16.9	0.01	0.04	0.06	151	
165		9.44	9.42	33.726	26.053	198.0	0.454	3.83	59.4	21.9	1.59	20.4	0.00	0.02	0.03	166	209
195		8.90	8.88	33.937	26.305	174.6	0.510	3.01	46.2	30.4	1.94	25.9	0.00	0.00	0.02	196	208
200	ISL	8.81	8.79	33.956	26.334	171.9	0.519	2.93	44.8	31.5	1.97	26.4	0.00			201	
229		8.28	8.26	34.017	26.464	159.9	0.567	2.63	39.8	37.2	2.12	28.5	0.00			230	207
250	ISL	7.96	7.93	34.036	26.527	154.2	0.600	2.47	37.1	40.5	2.21	29.8	0.00			251	
269		7.70	7.67	34.043	26.570	150.3	0.629	2.34	34.9	43.2	2.28	30.8	0.00			270	206
300	ISL	7.32	7.29	34.056	26.635	144.4	0.674	2.09	30.9	47.9	2.41	32.4	0.00			302	
320		7.11	7.08	34.064	26.671	141.2	0.703	1.93	28.4	50.9	2.49	33.3	0.00			322	205
378		6.61	6.58	34.092	26.761	133.2	0.782	1.46	21.3	59.7	2.69	36.0	0.00			380	204
400	ISL	6.40	6.36	34.107	26.801	129.6	0.811	1.26	18.3	63.8	2.78	37.1	0.00			402	
437		6.06	6.02	34.136	26.867	123.5	0.858	0.94	13.5	70.7	2.92	38.9	0.00			440	203
500	ISL	5.62	5.58	34.189	26.964	114.8	0.933	0.60	8.5	80.9	3.08	41.0	0.00			503	
518		5.49	5.45	34.205	26.993	112.1	0.954	0.50	7.1	83.8	3.12	41.6	0.00			521	202

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 29.0 N	117 46.1 W	12/04/01	0948 UTC	69 m	060 01 kn			1017.9 mb	14.1 C	11.9 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.65	14.65	33.385	24.803	313.5	0.000	7.00	121.0	3.3	0.26	0.1	0.02	3.02	0.63	0	
1	14.65	14.65	33.385	24.803	313.5	0.003	7.00	121.0	3.3	0.26	0.1	0.02	3.02 A	0.63 A	1	208
5	14.61	14.61	33.383	24.810	313.0	0.016	6.93	119.7	3.3	0.26	0.1	0.02	3.08	0.74	5	207
10	14.27	14.27	33.408	24.902	304.4	0.031	6.88	118.0	2.3	0.25	0.1	0.01	5.32	1.04	10	206
20	12.56	12.56	33.545	25.353	261.7	0.059	4.86	80.5	9.1	0.85	6.5	0.46	2.45	0.79	20	205
30	11.76	11.76	33.598	25.547	243.5	0.085	4.08	66.5	13.5	1.21	13.0	0.37	0.69	0.43	30	204
40	11.20	11.20	33.671	25.706	228.6	0.108	3.51	56.5	17.6	1.50	17.3	0.19	0.40	0.30	40	203
50	10.73	10.72	33.744	25.847	215.4	0.130	3.12	49.8	21.7	1.72	20.0	0.20	0.22	0.28	50	202
61	10.46	10.45	33.822	25.955	205.3	0.154	2.86	45.4	24.6	1.86	21.8	0.15	0.13	0.21	61	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 0104 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 25.0 N	117 54.1 W	12/04/01	0657 UTC	621 m	330 08 kn			1019.3 mb	14.9 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	14.89	14.89	33.433	24.789	314.9	0.000	6.33	110.0	2.1	0.19	0.1	0.00	1.22	0.30	0	
2	14.89	14.89	33.433	24.789	315.0	0.006	6.33	110.0	2.1	0.19	0.1	0.00	1.22	0.30	2	220
10 ISL	14.87	14.87	33.433	24.793	314.8	0.031	6.31	109.6	1.9	0.18	0.1	0.00	1.24	0.32	10	
11	14.87	14.87	33.433	24.793	314.8	0.035	6.31	109.6	1.9	0.18	0.1	0.00	1.24	0.32	11	219
20	13.69	13.69	33.503	25.095	286.2	0.062	5.96	101.1	3.5	0.34	0.4	0.04	1.96	0.95	20	218
30	12.50	12.50	33.546	25.366	260.8	0.089	4.71	77.9	9.7	0.94	8.2	0.37	0.80	0.47	30	217
40	11.45	11.45	33.652	25.646	234.3	0.114	3.74	60.6	16.1	1.36	15.6	0.12	0.40	0.42	40	216
50	10.84	10.83	33.741	25.825	217.5	0.136	3.25	52.0	20.3	1.61	19.1	0.03	0.13	0.22	50	215
60	10.48	10.47	33.810	25.942	206.5	0.158	3.03	48.1	23.0	1.73	21.1	0.01	0.06	0.15	60	214
70	10.27	10.26	33.852	26.011	200.2	0.178	2.91	46.0	24.6	1.81	22.1	0.01	0.04	0.11	70	213
75 ISL	10.14	10.13	33.869	26.047	196.9	0.188	2.90	45.7	25.2	1.83	22.5	0.01	0.03	0.10	75	
85	9.88	9.87	33.901	26.116	190.5	0.207	2.89	45.3	26.4	1.87	23.4	0.01	0.01	0.08	85	212
100	9.62	9.61	33.958	26.204	182.4	0.235	2.73	42.6	28.7	1.95	24.8	0.01	0.01	0.07	101	211
120	9.47	9.46	34.054	26.304	173.4	0.271	2.34	36.4	32.2	2.09	26.4	0.01	0.01	0.05	121	210
125 ISL	9.42	9.41	34.061	26.318	172.1	0.279	2.32	36.0	32.6	2.10	26.5	0.01	0.01	0.05	126	
140	9.29	9.27	34.072	26.348	169.6	0.305	2.30	35.6	33.5	2.13	26.9	0.01	-0.01 U	0.08 U	141	209
150 ISL	9.23	9.21	34.102	26.381	166.6	0.322	2.17	33.6	34.8	2.20	27.5	0.01	0.01	0.05	151	
169	9.09	9.07	34.160	26.449	160.5	0.353	1.88	29.0	37.5	2.34	28.7	0.01	0.01	0.05	170	208
200 ISL	8.63	8.61	34.176	26.535	152.9	0.401	1.70	25.9	41.5	2.41	30.2	0.01	0.01	0.04	201	
201	8.61	8.59	34.176	26.538	152.6	0.403	1.70	25.9	41.6	2.41	30.2	0.01	0.01	0.04	202	207
230	8.15	8.13	34.166	26.600	147.0	0.446	1.62	24.5	45.4	2.49	31.5	0.01			231	206
250 ISL	7.93	7.90	34.165	26.632	144.2	0.476	1.55	23.3	47.5	2.56	32.2	0.01			252	
270	7.75	7.72	34.168	26.661	141.7	0.504	1.47	22.0	49.6	2.62	32.9	0.01			272	205
300 ISL	7.48	7.45	34.179	26.709	137.5	0.546	1.29	19.2	53.4	2.70	34.0	0.01			302	
320	7.31	7.28	34.191	26.743	134.6	0.573	1.15	17.0	56.1	2.75	34.7	0.01			322	204
377	6.93	6.89	34.240	26.835	126.5	0.648	0.72	10.6	63.9	2.94	36.9	0.01			379	203
400 ISL	6.83	6.79	34.251	26.857	124.7	0.677	0.63	9.2	65.8	2.98	37.4	0.01			403	
434	6.69	6.65	34.266	26.888	122.2	0.719	0.54	7.9	68.6	3.05	38.0	0.01			437	202
500 ISL	6.20	6.16	34.309	26.987	113.3	0.796	0.32	4.6	77.9		39.7	0.01			504	
507	6.15	6.10	34.314	26.997	112.4	0.804	0.30	4.3	78.9	3.51 U	39.9	0.01			511	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 15.2 N	118 15.3 W	12/04/01	0300 UTC	324 m	310 04 kn			1019.3 mb	14.5 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	14.75	14.75	33.501	24.871	307.0	0.000	6.12	106.1	2.6	0.25	0.0	0.01	0.84	0.21	0	
1	14.75	14.75	33.501	24.871	307.0	0.003	6.12	106.1	2.6	0.25	0.0	0.01	0.84	0.21	1	217
10	14.35	14.35	33.510	24.964	298.5	0.030	5.99	103.0	3.6	0.29	0.0	0.01	0.59	0.28	10	216
20	13.87	13.87	33.509	25.063	289.3	0.060	5.82	99.1	4.2	0.39	1.2	0.10	1.41	0.46	20	215
30	12.44	12.44	33.555	25.384	259.0	0.087	4.81	79.5	9.2	0.87	8.1	0.25	0.83	0.47	30	214
40	11.66	11.65	33.576	25.548	243.6	0.112	4.25	69.1	12.4	1.15	12.5	0.09	0.60	0.34	40	213
50	11.28	11.27	33.597	25.634	235.6	0.136	4.02	64.8	14.4	1.27	14.6	0.07	0.44	0.24	50	212
60	10.98	10.97	33.667	25.743	225.5	0.159	3.64	58.3	17.1	1.45	17.1	0.03	0.22	0.20	60	211
70	10.74	10.73	33.706	25.816	218.8	0.181	3.48	55.5	18.7	1.53	18.4	0.02	0.12	0.14	70	210
75 ISL	10.57	10.56	33.732	25.866	214.1	0.192	3.40	54.0	19.8	1.58	19.2	0.02	0.09	0.11	75	
84	10.26	10.25	33.786	25.962	205.2	0.211	3.24	51.2	21.8	1.67	20.8	0.02	0.05	0.08	84	209
99	9.95	9.94	33.886	26.093	193.0	0.241	2.91	45.7	25.1	1.83	23.1	0.02	0.01	0.06	100	208
100 ISL	9.93	9.92	33.892	26.101	192.3	0.243	2.90	45.5	25.3	1.84	23.2	0.02	0.01	0.06	101	
119	9.58	9.57	33.986	26.233	180.1	0.278	2.68	41.7	28.7	1.95	25.0	0.01	0.01	0.05	120	207
125 ISL	9.50	9.49	34.008	26.263	177.3	0.289	2.62	40.7	29.6	1.98	25.5	0.01	0.01	0.05	126	
139	9.33	9.31	34.051	26.325	171.7	0.314	2.45	38.0	31.8	2.07	26.6	0.01	0.01	0.04	140	206
150 ISL	9.13	9.11	34.083	26.382	166.5	0.332	2.28	35.2	34.0	2.15	27.6	0.01	0.01	0.04	151	
168	8.85	8.83	34.133	26.466	158.8	0.361	1.98	30.4	37.6	2.28	29.0	0.01	0.00	0.04	169	205
198	8.78	8.76	34.211	26.539	152.5	0.408	1.49	22.8	41.3	2.48	30.3	0.02	0.01	0.06	199	204
200 ISL	8.74	8.72	34.208	26.543	152.2	0.411	1.49	22.8	41.6	2.48	30.4	0.02			201	
229	8.08	8.06	34.155	26.602	146.8	0.454	1.65	24.9	44.9	2.47	31.6	0.02			230	203
250 ISL	8.02	7.99	34.173	26.625	144.9	0.485	1.56	23.5	46.5	2.52	32.0	0.02			252	
271	7.96	7.93	34.185	26.644	143.5	0.515	1.41	21.2	48.0	2.60	32.4	0.02			273	202
300 ISL	7.73	7.70	34.197	26.688	139.8	0.556	1.24	18.5	51.4	2.75	33.5	0.02			302	
321	7.56	7.53	34.206	26.719	137.0	0.586	1.12	16.7	53.9	2.86	34.3	0.02			323	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 11.3 N	118 23.2 W	12/04/01	0015 UTC	1179 m	280 06 kn	290 03 07	0	1019.3 mb	14.5 C	11.3 C	14m	0/8

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.82	14.82	33.524	24.874	306.8	0.000	6.01	104.3	3.6	0.31	0.1	0.00	0.70	0.21	0	
1		14.82	14.82	33.524	24.874	306.8	0.003	6.01	104.3	3.6	0.31	0.1	0.00	0.70	0.21	1	220
10		14.39	14.39	33.522	24.964	298.5	0.030	6.05	104.1	3.7	0.30	0.1	0.01	0.73	0.26	10	219
20		13.97	13.97	33.526	25.056	290.0	0.060	6.00	102.4	4.2	0.37	0.7	0.03	1.39	0.54	20	218
30		13.27	13.27	33.518	25.193	277.3	0.088	5.73	96.3	5.8	0.53	3.0	0.08	1.39	0.55	30	217
40		11.76	11.75	33.572	25.526	245.7	0.114	4.43	72.2	12.0	1.12	11.6	0.14	0.70	0.36	40	216
50		11.41	11.40	33.583	25.600	238.9	0.138	4.22	68.2	13.3	1.20	13.5	0.09	0.49	0.26	50	215
60		10.98	10.97	33.647	25.727	227.0	0.162	3.78	60.6	16.4	1.43	16.5	0.03	0.23	0.25	60	214
70		10.91	10.90	33.707	25.787	221.6	0.184	3.43	54.9	18.5	1.54	18.2	0.02	0.19	0.19	70	213
75	ISL	10.82	10.81	33.740	25.828	217.8	0.195	3.26	52.1	19.8	1.61	19.2	0.02	0.15	0.16	75	
85		10.63	10.62	33.804	25.912	210.0	0.217	2.98	47.4	22.3	1.73	21.0	0.01	0.06	0.12	85	212
100		10.42	10.41	33.875	26.004	201.6	0.247	2.72	43.1	24.6	1.85	22.6	0.01	0.03	0.10	101	211
119		10.04	10.03	33.961	26.137	189.4	0.285	2.53	39.8	27.7	1.97	24.3	0.01	0.01	0.09	120	210
125	ISL	9.89	9.88	33.997	26.190	184.4	0.296	2.44	38.3	29.1	2.02	25.0	0.01	0.01	0.08	126	
140		9.53	9.51	34.081	26.316	172.7	0.323	2.20	34.2	32.4	2.14	26.8	0.01	0.00	0.05	141	209
150	ISL	9.36	9.34	34.111	26.367	168.0	0.340	2.11	32.7	33.9	2.19	27.5	0.01	0.00	0.05	151	
170		9.12	9.10	34.157	26.442	161.2	0.373	1.92	29.6	36.4	2.28	28.5	0.01	0.00	0.04	171	208
199		8.99	8.97	34.251	26.537	152.8	0.418	1.31	20.2	41.3	2.51	30.3	0.01	0.00	0.04	200	207
200	ISL	8.96	8.94	34.249	26.540	152.5	0.420	1.31	20.2	41.4	2.51	30.4	0.01			201	
229		8.17	8.15	34.175	26.604	146.6	0.463	1.59	24.0	44.8	2.49	31.6	0.01			230	206
250	ISL	7.93	7.90	34.169	26.635	143.9	0.493	1.50	22.5	46.9	2.53	32.2	0.01			252	
270		7.82	7.79	34.179	26.660	141.9	0.522	1.41	21.1	48.9	2.59	32.8	0.01			272	205
300	ISL	7.57	7.54	34.192	26.707	137.9	0.564	1.22	18.2	52.6	2.68	33.9	0.00			302	
323		7.38	7.35	34.205	26.744	134.6	0.595	1.06	15.7	55.7	2.76	34.8	0.00			325	204
373		6.91	6.88	34.240	26.837	126.2	0.661	0.72	10.6	63.5	2.93	36.9	0.00			375	203
400	ISL	6.68	6.64	34.256	26.881	122.3	0.694	0.59	8.6	67.3	3.01	37.9	0.00			403	
437		6.41	6.37	34.276	26.933	117.7	0.738	0.46	6.7	72.1	3.10	39.0	0.00			440	202
500	ISL	6.08	6.04	34.308	27.001	111.8	0.811	0.33	4.7	78.7	3.21	40.1	0.00			503	
512		6.02	5.97	34.314	27.014	110.7	0.824	0.30	4.3	79.9	3.23	40.3	0.00			516	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 55.2 N	118 56.2 W	11/04/01	1851 UTC	1695 m	310 11 kn	300 04 05	1	1021.2 mb	13.2 C	11.1 C	12m	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	13.57	13.57	33.541	25.149	280.6	0.000	6.10	103.2	3.5	0.38	1.1	0.07	1.00	0.26	0	
2	B	13.57	13.57	33.541	25.149	280.7	0.006	6.10	103.2	3.5	0.38	1.1	0.07	1.00	0.26	2	222
7	B	13.54	13.54	33.541	25.155	280.2	0.020	6.11	103.3	3.5	0.38	1.1	0.07	1.01	0.26	7	221
10	ISL	13.51	13.51	33.540	25.161	279.8	0.028	6.11	103.3	3.5	0.38	1.1	0.07	1.02	0.27	10	
15	B	13.46	13.46	33.540	25.171	278.9	0.042	6.11	103.2	3.6	0.39	1.1	0.07	1.04	0.30	15	220
20	ISL	13.43	13.43	33.543	25.179	278.3	0.056	6.10	102.9	3.5	0.39	1.2	0.07	1.11	0.34	20	
24	B	13.41	13.41	33.545	25.185	277.8	0.067	6.10	102.9	3.5	0.39	1.2	0.07	1.17	0.37	24	219
30	ISL	12.88	12.88	33.555	25.299	267.2	0.083	6.18	103.1	1.7	0.46	1.9	0.10	2.07	0.91	30	
31	B	12.79	12.79	33.557	25.318	265.3	0.086	6.18	102.9	1.5	0.47	2.1	0.11	2.21	1.01	31	218
38		12.58	12.57	33.554	25.357	261.8	0.105	5.95	98.6	2.9	0.56	3.3	0.11	2.14	1.49	38	217
44	B	11.96	11.95	33.552	25.474	250.8	0.120	5.15	84.3	8.8	0.90	8.7	0.11	0.97	0.96	44	216
50	ISL	11.19	11.18	33.567	25.627	236.3	0.135	4.53	72.9	12.9	1.16	12.9	0.09	0.34	0.57	50	
52		10.96	10.95	33.575	25.675	231.8	0.139	4.37	70.0	13.9	1.22	14.0	0.08	0.23	0.48	52	215
60		10.61	10.60	33.612	25.765	223.4	0.157	4.11	65.3	16.0	1.35	16.0	0.05	0.12	0.32	60	214
70		10.25	10.24	33.674	25.876	213.0	0.179	3.80	60.0	18.7	1.48	18.2	0.03	0.12	0.33	70	213
75	ISL	10.12	10.11	33.704	25.922	208.8	0.190	3.68	57.9	20.0	1.54	19.1	0.03	0.10	0.29	75	
85		9.95	9.94	33.756	25.991	202.4	0.210	3.49	54.7	22.1	1.64	20.6	0.03	0.07 A	0.19 A	85	212
99		9.89	9.88	33.796	26.033	198.7	0.238	3.28	51.4	23.4	1.72	21.5	0.02	0.07	0.20	100	211
100	ISL	9.88	9.87	33.800	26.037	198.3	0.240	3.26	51.1	23.6	1.73	21.6	0.02	0.07	0.20	101	
120		9.61	9.60	33.895	26.157	187.4	0.279	2.85	44.4	27.7	1.90	24.1	0.01	0.04	0.16	121	210
125	ISL	9.55	9.54	33.915	26.182	185.0	0.288	2.77	43.1	28.5	1.93	24.6	0.01	0.03	0.15	126	
140		9.38	9.36	33.968	26.252	178.7	0.316	2.58	40.0	30.7	2.02	25.8	0.02	0.02	0.12	141	209
150	ISL	9.29	9.27	34.002	26.293	175.0	0.333	2.49	38.5	31.7	2.06	26.4	0.02	0.01	0.12	151	
170		9.11	9.09	34.060	26.368	168.3	0.368	2.34	36.1	33.7	2.13	27.4	0.02	0.01	0.12	171	208
200		8.67	8.65	34.114	26.480	158.1	0.416	2.01	30.7	38.3	2.28	29.4	0.03	0.01	0.08	201	207
230		8.46	8.44	34.153	26.543	152.5	0.463	1.73	26.3	41.5	2.41	30.7	0.01			231	206
250	ISL	8.21	8.18	34.166	26.592	148.2	0.493	1.55	23.4	44.6	2.49	31.8	0.01			252	
271		7.93	7.90	34.178	26.643	143.6	0.524	1.37	20.6	48.2	2.58	32.9	0.01			273	205
300	ISL	7.61	7.58	34.205	26.711	137.5	0.565	1.09	16.3	53.3	2.71	34.4	0.01			302	
317		7.45	7.42	34.221	26.747	134.3	0.588	0.94	14.0	56.1	2.78	35.2	0.01			319	204
378		7.04	7.00	34.256	26.832	126.9	0.667	0.66	9.7	63.0	2.93	36.9	0.01			380	203
400	ISL	6.91	6.87	34.268	26.860	124.5	0.695	0.58	8.5	65.4	2.98	37.4	0.01			403	
438		6.68	6.64	34.287	26.906	120.6	0.742	0.46	6.7	69.7	3.05	38.2	0.00			441	202
500	ISL	6.24	6.20	34.318	26.989	113.2	0.814	0.31	4.5	77.4	3.14	39.6	0.00			503	
512		6.15	6.10	34.324	27.005	111.7	0.827	0.28	4.0	78.9	3.16	39.9	0.00			516	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 0104 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 39.3 N	119 28.8 W	11/04/01	1121 UTC	1317 m	340 20 kn			1018.6 mb	12.2 C	10.5 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	12.27	12.27	33.583	25.438	253.1	0.000	6.35	104.6	2.0	0.55	3.2	0.17	6.11	2.55	0	
2		12.27	12.27	33.583	25.438	253.2	0.005	6.35	104.6	2.0	0.55	3.2	0.17	6.11	2.55	2	220
10	ISL	12.28	12.28	33.583	25.436	253.5	0.025	6.35	104.6	2.0	0.55	3.2	0.16	6.29	2.53	10	
15		12.28	12.28	33.583	25.436	253.6	0.038	6.34	104.5	2.0	0.55	3.2	0.16	6.42 A	2.50 A	15	219
20	ISL	12.28	12.28	33.583	25.437	253.8	0.051	6.33	104.3	2.0	0.56	3.2	0.16	6.39	2.44	20	
30		12.27	12.27	33.583	25.439	253.8	0.076	6.32	104.1	2.1	0.58	3.3	0.16	6.32	2.32	30	218
45		12.03	12.02	33.576	25.479	250.3	0.114	5.82	95.4	6.2	0.75	6.1	0.18	4.13	1.55	45	217
50	ISL	11.64	11.63	33.572	25.549	243.8	0.126	5.39	87.6	9.3	0.93	8.8	0.20	2.57	1.21	50	
55		11.18	11.17	33.572	25.633	235.9	0.138	4.95	79.6	12.5	1.11	11.6	0.21	1.14	0.90	55	216
65		10.39	10.38	33.584	25.782	221.9	0.161	4.47	70.7	16.1	1.32	15.4	0.18	0.44	0.55	65	215
75		9.90	9.89	33.636	25.906	210.3	0.183	4.03	63.1	19.1	1.49	18.3	0.11	0.22	0.37	75	214
85		9.78	9.77	33.690	25.968	204.6	0.203	3.78	59.0	20.8	1.57	19.7	0.08	0.12	0.36	85	213
95		9.60	9.59	33.826	26.104	191.8	0.223	3.28	51.1	24.9	1.76	22.7	0.05	0.08	0.23	95	212
100	ISL	9.54	9.53	33.851	26.134	189.1	0.233	3.19	49.6	25.7	1.79	23.3	0.05	0.07	0.23	101	
110		9.41	9.40	33.874	26.173	185.6	0.252	3.11	48.2	26.8	1.83	24.0	0.06	0.06	0.24	111	211
125		9.07	9.06	33.953	26.290	174.7	0.279	2.85	43.9	30.4	1.96	26.0	0.05	0.04	0.23	126	210
145		8.84	8.82	33.991	26.356	168.8	0.313	2.71	41.5	32.7	2.03	27.0	0.04	0.04	0.20	146	209
150	ISL	8.82	8.80	34.006	26.371	167.4	0.321	2.63	40.3	33.3	2.06	27.3	0.04	0.04	0.19	151	
169		8.76	8.74	34.060	26.423	162.9	0.353	2.33	35.6	35.6	2.17	28.4	0.04	0.03	0.17	170	208
198		8.41	8.39	34.086	26.498	156.2	0.399	2.16	32.8	39.3	2.27	29.7	0.03	0.01	0.13	199	207
200	ISL	8.37	8.35	34.087	26.505	155.6	0.402	2.15	32.6	39.7	2.28	29.8	0.03			201	
226		7.88	7.86	34.101	26.589	147.8	0.442	1.94	29.1	44.9	2.40	31.6	0.03			227	206
250	ISL	7.67	7.65	34.119	26.634	143.9	0.477	1.76	26.3	47.7	2.48	32.5	0.03			252	
269		7.56	7.53	34.135	26.663	141.4	0.504	1.61	24.0	49.6	2.54	33.0	0.03			271	205
300	ISL	7.29	7.26	34.160	26.721	136.3	0.547	1.33	19.7	54.1	2.66	34.4	0.02			302	
318		7.15	7.12	34.175	26.753	133.5	0.571	1.17	17.3	56.7	2.73	35.2	0.01			320	204
377		6.86	6.82	34.222	26.830	126.9	0.648	0.80	11.7	63.4	2.89	37.0	0.01			379	203
400	ISL	6.79	6.75	34.235	26.850	125.3	0.677	0.72	10.5	65.0	2.93	37.4	0.01			403	
437		6.66	6.62	34.254	26.883	122.7	0.723	0.62	9.0	67.7	2.98	38.1	0.01			440	202
500	ISL	6.22	6.18	34.293	26.972	114.8	0.798	0.42	6.1	75.9	3.11	39.8	0.01			503	
514		6.12	6.07	34.302	26.992	113.0	0.813	0.37	5.3	77.7	3.14	40.2	0.01			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 0104 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 25.2 N	119 57.8 W	11/04/01	0615 UTC	839 m	290 14 kn			1019.5 mb	12.6 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	12.94	12.94	33.441	25.198	276.0	0.000	5.96	99.5	4.7	0.49	2.5	0.12	0.61	0.21	0	
2		12.94	12.94	33.441	25.198	276.0	0.006	5.96	99.5	4.7	0.49	2.5	0.12	0.61	0.21	2	224
10	ISL	12.94	12.94	33.441	25.198	276.2	0.028	5.96	99.5	4.6	0.49	2.5	0.12	0.61	0.23	10	
15		12.94	12.94	33.441	25.198	276.3	0.041	5.96	99.5	4.6	0.49	2.5	0.12	0.61	0.24	15	219
20	ISL	12.94	12.94	33.441	25.198	276.4	0.055	5.96	99.5	4.6	0.49	2.5	0.12	0.62	0.24	20	
30	ISL	12.94	12.94	33.441	25.198	276.7	0.083	5.97	99.6	4.7	0.49	2.5	0.12	0.63	0.23	30	
31		12.94	12.94	33.441	25.199	276.7	0.086	5.97	99.6	4.7	0.49	2.5	0.12	0.63	0.23	31	218
45		12.81	12.80	33.438	25.222	274.8	0.124	5.73	95.4	5.1	0.54	3.1	0.16	0.59	0.21	45	217
50	ISL	12.77	12.76	33.443	25.234	273.8	0.138	5.74	95.5	5.0	0.55	3.2	0.16	0.72	0.29	50	
56		12.65	12.64	33.445	25.259	271.6	0.154	5.76	95.5	4.9	0.57	3.6	0.16	0.80	0.36	56	216
64		12.27	12.26	33.432	25.322	265.7	0.176	5.47	90.0	6.2	0.67	5.1	0.15	0.44	0.27	64	215
74		11.32	11.31	33.435	25.502	248.8	0.202	5.11	82.4	9.7	0.92	9.3	0.13	0.17	0.18	74	214
75	ISL	11.21	11.20	33.443	25.528	246.4	0.204	5.05	81.2	10.2	0.95	9.8	0.12	0.16	0.17	75	
84		10.39	10.38	33.516	25.729	227.3	0.225	4.56	72.1	13.9	1.20	14.0	0.03	0.09	0.14	84	213
95		10.30	10.29	33.529	25.755	225.1	0.250	4.49	70.8	14.6	1.24	14.7	0.03	0.07	0.12	95	212
100	ISL	10.17	10.16	33.568	25.807	220.2	0.261	4.30	67.7	16.1	1.32	16.0	0.03	0.06	0.11	100	
109		9.91	9.90	33.648	25.914	210.2	0.281	3.92	61.4	19.2	1.49	18.6	0.02	0.04	0.09	110	211
124		9.66	9.65	33.710	26.004	201.9	0.312	3.68	57.3	21.7	1.61	20.4	0.02	0.03	0.08	125	210
125	ISL	9.65	9.64	33.719	26.013	201.1	0.314	3.64	56.7	22.0	1.62	20.6	0.02	0.03	0.08	126	
143		9.47	9.45	33.885	26.172	186.3	0.349	2.95	45.8	27.3	1.87	24.3	0.01	0.01	0.09	144	209
150	ISL	9.34	9.32	33.918	26.219	182.0	0.361	2.82	43.7	28.8	1.93	25.2	0.01	0.01	0.09	151	
169		8.93	8.91	33.970	26.326	172.1	0.395	2.67	41.0	32.2	2.04	26.9	0.01	0.01	0.07	170	208
199		8.30	8.28	34.030	26.470	158.8	0.445	2.59	39.2	37.1	2.13	28.6	0.01	0.00	0.05	200	207
200	ISL	8.29	8.27	34.031	26.473	158.5	0.446	2.58	39.0	37.2	2.13	28.7	0.01			201	
228		8.06	8.04	34.059	26.530	153.6	0.490	2.33	35.1	40.4	2.24	30.0	0.01			229	206
250	ISL	7.88	7.85	34.074	26.568	150.2	0.523	2.18	32.7	42.7	2.31	30.8	0.01			251	
269		7.71	7.68	34.087	26.603	147.1	0.552	2.03	30.3	45.0	2.37	31.6	0.01			271	205
300	ISL	7.35	7.32	34.118	26.680	140.2	0.596	1.65	24.4	51.1	2.54	33.5	0.00			302	
318		7.15	7.12	34.137	26.723	136.3	0.621	1.42	20.9	54.6	2.64	34.6	0.00			320	204
379		6.91	6.87	34.182	26.792	130.6	0.703	1.02	15.0	60.6	2.81	36.3	0.00			381	203
400	ISL	6.79	6.75	34.197	26.820	128.2	0.730	0.89	13.0	63.0	2.87	37.0	0.00			403	
439		6.54	6.50	34.227	26.877	123.1	0.779	0.66	9.6	67.8	2.97	38.2	0.00			442	202
500	ISL	6.14	6.10	34.283	26.974	114.5	0.851	0.41	5.9	76.3	3.11	39.9	0.00			503	
516		6.03	5.98	34.298	27.000	112.1	0.869	0.34	4.9	78.5	3.15	40.3	0.00			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 5.2 N	120 38.3 W	10/04/01	2333 UTC	3817 m	300 10 kn	310 05 09	1	1019.0 mb	13.9 C	12.5 C	15m	7/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.96	13.96	33.447	24.996	295.1	0.000	6.03	102.8	3.4	0.34	0.3	0.02	0.51	0.10	0	
2		13.96	13.96	33.447	24.996	295.2	0.006	6.03	102.8	3.4	0.34	0.3	0.02	0.51	0.10	2	220
10		13.95	13.95	33.447	24.998	295.2	0.030	6.03	102.8	3.3	0.34	0.3	0.02	0.46	0.09	10	219
20		13.91	13.91	33.447	25.007	294.7	0.059	6.04	102.9	3.3	0.34	0.3	0.02	0.52	0.09	20	218
30		13.86	13.86	33.448	25.018	293.9	0.088	6.01	102.2	3.4	0.34	0.3	0.02	0.56	0.12	30	217
40		13.14	13.13	33.434	25.154	281.2	0.117	5.84	97.9	4.4	0.47	2.2	0.09	0.74	0.19	40	216
50		12.04	12.03	33.412	25.350	262.7	0.144	5.32	87.1	7.0	0.75	6.3	0.17	0.73	0.28	50	215
60		11.79	11.78	33.480	25.450	253.5	0.170	5.11	83.3	8.7	0.86	8.4	0.13	0.47	0.22	60	214
70		11.11	11.10	33.493	25.584	240.8	0.195	4.76	76.4	11.0	1.04	11.3	0.04	0.25	0.21	70	213
75	ISL	10.98	10.97	33.524	25.632	236.4	0.207	4.58	73.3	12.2	1.12	12.5	0.03	0.17	0.17	75	
85		10.77	10.76	33.589	25.720	228.3	0.230	4.29	68.4	14.6	1.25	14.5	0.02	0.07	0.09	85	212
100		9.88	9.87	33.620	25.897	211.6	0.263	4.15	64.9	17.6	1.40	17.4	0.02	0.06	0.09	100	211
120		9.57	9.56	33.702	26.013	201.0	0.304	3.91	60.8	20.3	1.52	19.5	0.01	0.02	0.05	121	210
125	ISL	9.58	9.57	33.729	26.032	199.3	0.314	3.77	58.6	21.2	1.57	20.2	0.01	0.02	0.07	126	
139		9.63	9.61	33.807	26.085	194.6	0.342	3.36	52.3	23.8	1.72	22.3	0.02	0.02	0.12	140	209
150	ISL	9.52	9.50	33.860	26.145	189.1	0.363	3.17	49.3	25.7	1.80	23.5	0.01	0.02	0.10	151	
170		9.20	9.18	33.940	26.260	178.5	0.400	2.93	45.2	29.0	1.91	25.2	0.00	0.01	0.03	171	208
200		8.67	8.65	34.021	26.407	165.0	0.451	2.65	40.4	34.0	2.06	27.4	0.00	0.00	0.02	201	207
229		8.15	8.13	34.055	26.513	155.2	0.498	2.42	36.5	39.2	2.20	29.4	0.00			230	206
250	ISL	7.83	7.81	34.062	26.566	150.4	0.530	2.29	34.3	42.4	2.28	30.6	0.00			251	
269		7.58	7.55	34.065	26.605	146.9	0.558	2.16	32.2	45.2	2.35	31.5	0.00			271	205
300	ISL	7.22	7.19	34.080	26.668	141.3	0.603	1.87	27.6	50.1	2.48	33.1	0.00			302	
321		7.01	6.98	34.096	26.710	137.5	0.632	1.65	24.2	53.6	2.58	34.2	0.00			323	204
379		6.62	6.59	34.169	26.820	127.6	0.709	0.98	14.3	63.6	2.85	37.2	0.00			381	203
400	ISL	6.50	6.46	34.196	26.858	124.3	0.735	0.80	11.6	66.8	2.93	38.0	0.00			403	
441		6.30	6.26	34.244	26.922	118.7	0.785	0.52	7.5	72.4	3.05	39.1	0.00			444	202
500	ISL	6.04	6.00	34.294	26.995	112.3	0.853	0.33	4.7	78.0	3.14	40.2	0.00			503	
511		5.99	5.95	34.303	27.009	111.2	0.866	0.30	4.3	79.1	3.16	40.4	0.00			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 45.1 N	121 19.6 W	10/04/01	1744 UTC	3752 m	330 16 kn	300 08 08	5	1020.9 mb	13.2 C	12.1 C	17m	7/8	NS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.49	13.49	33.316	24.991	295.6	0.000	6.08	102.6	3.7	0.36	0.4	0.03	0.39	0.08	0	
2	A	13.49	13.49	33.316	24.991	295.7	0.006	6.08	102.6	3.7	0.36	0.4	0.03	0.39	0.08	2	222
10	ISL	13.48	13.48	33.314	24.992	295.8	0.030	6.08	102.5	3.7	0.36	0.4	0.03	0.42	0.11	10	
11	A	13.48	13.48	33.314	24.992	295.8	0.033	6.08	102.5	3.7	0.36	0.4	0.03	0.42	0.11	11	221
20	ISL	13.49	13.49	33.320	24.995	295.8	0.059	6.08	102.6	3.6	0.36	0.4	0.03	0.41	0.10	20	
21	A	13.49	13.49	33.321	24.995	295.8	0.062	6.08	102.6	3.6	0.36	0.4	0.03	0.41	0.10	21	220
30	ISL	13.51	13.51	33.330	24.999	295.7	0.089	6.07	102.4	3.5	0.36	0.3	0.03	0.43	0.11	30	
35	A	13.52	13.52	33.338	25.003	295.4	0.104	6.06	102.3	3.4	0.36	0.3	0.03	0.45	0.11	35	219
44	A	13.54	13.53	33.361	25.017	294.4	0.130	6.06	102.4	3.4	0.36	0.3	0.03	0.47	0.11	44	218
50	ISL	13.53	13.52	33.357	25.016	294.6	0.148	6.06	102.3	3.4	0.36	0.4	0.03	0.45	0.12	50	
53		13.52	13.51	33.355	25.017	294.7	0.157	6.06	102.3	3.4	0.36	0.4	0.03	0.44	0.12	53	217
62	A	12.83	12.82	33.298	25.110	285.9	0.183	5.91	98.3	4.6	0.49	2.2	0.12	0.49	0.18	62	216
68		11.49	11.48	33.242	25.320	265.9	0.199	5.55	89.7	7.1	0.74	6.2	0.09	0.29	0.15	68	215
75		11.34	11.33	33.272	25.371	261.2	0.218	5.48	88.3	7.4	0.79	7.0	0.07	0.26	0.15	75	214
85		10.91	10.90	33.312	25.479	251.1	0.243	5.27	84.2	8.9	0.92	9.0	0.05	0.19	0.12	85	213
95		10.61	10.60	33.497	25.676	232.6	0.267	4.61	73.2	12.7	1.15	13.1	0.03	0.12	0.11	95	212
100	ISL	10.40	10.39	33.537	25.744	226.3	0.279	4.43	70.1	14.2	1.24	14.6	0.03	0.09	0.10	100	
111		10.00	9.99	33.588	25.852	216.1	0.303	4.13	64.8	17.1	1.40	17.1	0.02	0.05	0.07	112	211
125		9.94	9.93	33.697	25.947	207.4	0.333	3.65	57.2	20.4	1.58	19.8	0.01	0.04	0.08	126	210
144		9.51	9.49	33.820	26.115	191.8	0.371	3.27	50.8	24.8	1.77	23.0	0.01	0.01	0.07	145	209
150	ISL	9.41	9.39	33.856	26.160	187.7	0.382	3.15	48.8	26.1	1.82	23.8	0.01	0.01	0.06	151	
170		9.15	9.13	33.954	26.278	176.7	0.419	2.81	43.3	30.0	1.97	25.8	0.01	0.01	0.05	171	208
199		8.90	8.88	34.028	26.376	167.9	0.469	2.53	38.8	33.3	2.08	27.4	0.01	0.00	0.05	200	207
200	ISL	8.89	8.87	34.030	26.380	167.6	0.470	2.52	38.7	33.4	2.08	27.5	0.01			201	
229		8.51	8.49	34.067	26.468	159.7	0.518	2.31	35.1	37.3	2.20	28.9	0.01			230	206
250	ISL	8.18	8.15	34.081	26.529	154.1	0.551	2.18	32.9	40.5	2.29	30.0	0.00			251	
269		7.89	7.86	34.091	26.580	149.4	0.580	2.04	30.6	43.7	2.37	31.1	0.00			271	205
300	ISL	7.49	7.46	34.118	26.660	142.2	0.625	1.68	25.0	49.4	2.53	33.0	0.00			302	
319		7.28	7.25	34.136	26.704	138.2	0.651	1.45	21.4	52.9	2.63	34.2	0.00			321	204
378		6.80	6.76	34.197	26.818	128.0	0.730	0.89	13.0	62.6	2.87	36.9	0.00			380	203
400	ISL	6.67	6.63	34.220	26.854	124.8	0.758	0.73	10.7	65.7	2.94	37.7	0.00			403	
439		6.45	6.41	34.258	26.914	119.6	0.805	0.51	7.4	70.8	3.05	38.9	0.00			442	202
500	ISL	6.09	6.05	34.291	26.987	113.2	0.876	0.36	5.2	77.3	3.15	40.1	0.00			503	
526		5.94	5.89	34.305	27.017	110.5	0.906	0.30	4.3	80.0	3.19	40.6	0.00			530	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 25.2 N	121 59.5 W	10/04/01	0740 UTC	3842 m	330 15 kn			1022.1 mb	13.0 C	10.0 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	15.16	15.16	33.641	24.890	305.2	0.000	5.80	101.4	3.2	0.28	0.0	0.00	0.10	0.03	0	
3		15.16	15.16	33.641	24.890	305.3	0.009	5.80	101.4	3.2	0.28	0.0	0.00	0.10	0.03	3	224
10	ISL	15.16	15.16	33.644	24.893	305.3	0.031	5.79	101.3	3.2	0.28	0.0	0.00	0.11	0.04	10	
15		15.16	15.16	33.646	24.895	305.3	0.046	5.78	101.1	3.2	0.28	0.0	0.00	0.11	0.04	15	219
20	ISL	15.16	15.16	33.644	24.893	305.6	0.061	5.78	101.1	3.2	0.28	0.0	0.00	0.11	0.04	20	
30		15.17	15.17	33.640	24.888	306.3	0.092	5.78	101.1	3.1	0.28	0.0	0.00	0.11	0.03	30	218
44		15.16	15.15	33.639	24.890	306.6	0.135	5.80	101.4	3.1	0.28	0.0	0.00	0.10	0.03	44	217
50	ISL	15.17	15.16	33.641	24.890	306.8	0.153	5.79	101.3	3.1	0.28	0.0	0.00	0.10	0.03	50	
61		15.19	15.18	33.647	24.890	307.1	0.187	5.78	101.1	3.1	0.29	0.0	0.00	0.10	0.03	61	216
75	ISL	15.20	15.19	33.651	24.892	307.4	0.230	5.79	101.3	3.0	0.28	0.0	0.00	0.11	0.03	75	
76		15.20	15.19	33.652	24.892	307.4	0.233	5.79	101.3	3.0	0.28	0.0	0.00	0.11	0.03	76	215
85		15.22	15.21	33.662	24.896	307.3	0.260	5.79	101.4	3.0	0.28	0.0	0.00	0.11	0.04	85	214
94		15.23	15.22	33.668	24.899	307.3	0.288	5.78	101.2	2.9	0.28	0.0	0.00	0.13	0.04	94	213
100	ISL	15.24	15.22	33.675	24.902	307.2	0.307	5.78	101.3	2.9	0.28	0.0	0.00	0.14	0.04	100	
104		15.24	15.22	33.679	24.906	307.0	0.319	5.78	101.3	2.9	0.28	0.0	0.00	0.15	0.04	104	212
114		14.48	14.46	33.634	25.035	294.8	0.349	5.67	97.8	3.5	0.36	0.7	0.05	0.38	0.23	115	211
124		13.44	13.42	33.591	25.217	277.5	0.378	5.58	94.2	4.4	0.46	2.0	0.09	0.31	0.21	125	210
125	ISL	13.34	13.32	33.587	25.234	275.9	0.380	5.58	94.0	4.5	0.47	2.1	0.09	0.31	0.21	126	
139		12.05	12.03	33.550	25.458	254.8	0.417	5.48	89.8	5.8	0.60	4.5	0.05	0.24	0.15	140	209
150	ISL	11.30	11.28	33.549	25.596	241.7	0.445	5.24	84.5	8.0	0.77	7.5	0.03	0.16	0.11	151	
162		10.67	10.65	33.575	25.728	229.2	0.473	4.90	78.0	11.1	0.98	11.1	0.01	0.08	0.07	163	208
194		9.66	9.64	33.798	26.074	196.8	0.541	3.97	61.9	21.1	1.49	19.3	0.00	0.01	0.02	195	207
200	ISL	9.53	9.51	33.831	26.121	192.4	0.553	3.84	59.7	22.5	1.55	20.3	0.00			201	
230		8.95	8.93	33.956	26.313	174.6	0.608	3.36	51.6	28.7	1.79	24.1	0.00			231	206
250	ISL	8.55	8.52	33.997	26.407	165.8	0.642	3.15	47.9	32.6	1.91	25.9	0.00			251	
269		8.20	8.17	34.019	26.478	159.3	0.673	2.99	45.1	36.1	2.01	27.3	0.00			270	205
300	ISL	7.78	7.75	34.042	26.558	152.0	0.721	2.72	40.7	40.7	2.16	29.2	0.00			302	
319		7.53	7.50	34.048	26.599	148.3	0.750	2.53	37.6	43.8	2.25	30.4	0.00			321	204
375		6.57	6.54	34.064	26.744	134.7	0.829	1.77	25.7	57.5	2.60	35.1	0.00			377	203
400	ISL	6.38	6.34	34.092	26.791	130.5	0.862	1.43	20.7	62.0	2.73	36.6	0.00			402	
434		6.22	6.18	34.136	26.847	125.6	0.906	1.03	14.9	67.5	2.87	38.2	0.00			437	202
500	ISL	5.74	5.70	34.203	26.961	115.2	0.985	0.58	8.3	78.4	3.07	40.6	0.00			503	
514		5.64	5.60	34.218	26.985	113.0	1.001	0.49	7.0	80.7	3.11	41.1	0.00			517	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 4.9 N	122 39.2 W	10/04/01	0051 UTC	4055 m	330 23 kn	330 13 08	1	1021.2 mb	14.2 C	11.2 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	15.49	15.49	33.643	24.819	312.0	0.000	5.79	101.9	3.0	0.28	0.1	0.00	0.09	0.02	0	
3		15.49	15.49	33.643	24.819	312.1	0.009	5.79	101.9	3.0	0.28	0.1	0.00	0.09	0.02	3	220
10	ISL	15.49	15.49	33.643	24.819	312.3	0.031	5.77	101.6	3.0	0.28	0.1	0.00	0.08	0.02	10	
15		15.49	15.49	33.643	24.820	312.4	0.047	5.76	101.4	3.0	0.28	0.1	0.00	0.08	0.02	15	219
20	ISL	15.49	15.49	33.643	24.820	312.6	0.062	5.76	101.4	3.0	0.28	0.1	0.00	0.08	0.02	20	
28		15.49	15.49	33.643	24.820	312.8	0.087	5.76	101.4	2.9	0.28	0.1	0.00	0.08	0.02	28	218
30	ISL	15.49	15.49	33.643	24.820	312.8	0.094	5.76	101.4	2.9	0.28	0.1	0.00	0.08	0.02	30	
44		15.47	15.46	33.640	24.823	313.0	0.138	5.78	101.7	2.9	0.28	0.1	0.00	0.09	0.01	44	217
50	ISL	15.47	15.46	33.641	24.824	313.1	0.156	5.78	101.7	2.9	0.28	0.1	0.00	0.09	0.01	50	
58		15.47	15.46	33.642	24.825	313.3	0.181	5.77	101.5	2.9	0.28	0.1	0.00	0.09	0.02	58	216
75	ISL	15.98	15.97	33.848	24.870	309.6	0.234	5.70	101.4	2.7	0.26	0.1	0.00	0.15	0.07	75	
76		16.00	15.99	33.856 D	24.871	309.5	0.237	5.70	101.4	2.7	0.26	0.1	0.00	0.15	0.08	76	215
85		15.65	15.64	33.880	24.969	300.5	0.265	5.67	100.3	2.8	0.26	0.1	0.00	0.31	0.17	85	214
93		14.61	14.60	33.676	25.039	293.9	0.289	5.73	99.1	3.4	0.32	0.4	0.03	0.38	0.23	93	213
100	ISL	13.45	13.44	33.523	25.162	282.1	0.309	5.70	96.2	4.1	0.40	1.2	0.06	0.37	0.25	100	
104		12.82	12.81	33.461	25.240	274.8	0.320	5.69	94.7	4.5	0.46	1.9	0.07	0.36	0.25	104	212
115		11.87	11.86	33.420	25.390	260.6	0.349	5.53	90.2	5.8	0.61	4.3	0.05	0.25	0.27	116	211
123		11.27	11.25	33.397	25.482	251.8	0.370	5.42	87.3	7.0	0.72	6.2	0.03	0.19	0.23	124	210
125	ISL	11.18	11.16	33.393	25.495	250.6	0.375	5.38	86.5	7.4	0.75	6.7	0.03	0.18	0.21	126	
140		10.72	10.70	33.402 D	25.584	242.4	0.412							0.12	0.05	141	209
150	ISL	10.31	10.29	33.460	25.700	231.5	0.436	4.83	76.2	12.6	1.11	12.8	0.02	0.08	0.05	151	
165		9.76	9.74	33.580	25.887	213.9	0.469	4.40	68.6	16.4	1.32	16.3	0.01	0.04	0.05	166	208
194		9.35	9.33	33.793	26.121	192.2	0.528	3.51	54.3	24.4	1.70	22.5	0.01	0.01	0.02	195	207
200	ISL	9.27	9.25	33.825	26.159	188.7	0.539	3.40	52.5	25.6	1.75	23.3	0.01			201	
228		8.88	8.86	33.938	26.310	174.8	0.590	3.02	46.3	30.5	1.93	26.0	0.00			229	206
250	ISL	8.54	8.51	33.995	26.407	165.8	0.628	2.75	41.8	34.5	2.05	27.7	0.00			251	
267		8.27	8.24	34.025	26.472	159.9	0.655	2.56	38.7	37.6	2.13	28.9	0.00			268	205
300	ISL	7.80	7.77	34.057	26.567	151.2	0.707	2.24	33.5	43.1	2.30	31.1	0.00			302	
317		7.58	7.55	34.063	26.604	147.8	0.732	2.11	31.4	45.7	2.37	32.0	0.00			319	204
377		6.89	6.85	34.062	26.700	139.2	0.818	1.89	27.7	53.2	2.51	33.9	0.01			379	203
400	ISL	6.62	6.58	34.076	26.747	134.8	0.850									402	
437		6.20	6.16	34.106 D	26.826	127.6	0.898	0.91 U	13.1U	73.5 U	2.93 U	39.4 U	0.00 U			440	202
500	ISL	5.66	5.62	34.148	26.927	118.3	0.976									503	
516		5.52	5.48	34.159 D	26.953	115.9	0.994	0.92 U	13.1U	73.9 U	2.94 U	39.5 U	0.01 U			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 46.3 N	123 20.4 W	09/04/01	1803 UTC	4026 m	320 21 kn	320 13 08	1	1022.0 mb	13.1 C	10.3 C	27m	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	15.52	15.52	33.644	24.813	312.6	0.000	5.75	101.3	2.8	0.28	0.1	0.00	0.09	0.02	0	
3	A	15.52	15.52	33.644	24.813	312.6	0.009	5.75	101.3	2.8	0.28	0.1	0.00	0.09	0.02	3	222
10	ISL	15.52	15.52	33.644	24.814	312.8	0.031	5.75	101.3	2.9	0.28	0.1	0.00	0.09	0.02	10	
18	A	15.52	15.52	33.643	24.813	313.1	0.056	5.74	101.1	2.9	0.28	0.1	0.00	0.09	0.02	18	221
20	ISL	15.52	15.52	33.643	24.813	313.2	0.063	5.75	101.3	2.9	0.28	0.1	0.00	0.09	0.02	20	
26		15.52	15.52	33.643	24.813	313.4	0.081	5.76	101.5	2.8	0.28	0.1	0.00	0.08	0.02	26	220
30	ISL	15.52	15.52	33.643	24.813	313.5	0.094	5.75	101.3	2.8	0.28	0.1	0.00	0.08	0.01	30	
35	A	15.52	15.51	33.644	24.814	313.5	0.110	5.74	101.1	2.8	0.28	0.1	0.00	0.09	0.01	35	219
44		15.52	15.51	33.644	24.815	313.8	0.138	5.75	101.3	2.8	0.28	0.1	0.00	0.09	0.02	44	218
50	ISL	15.52	15.51	33.645	24.816	313.9	0.157	5.75	101.3	2.7	0.28	0.1	0.00	0.09	0.02	50	
55	A	15.53	15.52	33.646	24.814	314.2	0.172	5.75	101.3	2.7	0.28	0.1	0.00	0.09	0.02	55	217
71	A	15.54	15.53	33.647	24.813	314.8	0.223	5.74	101.1	2.7	0.28	0.2	0.00	0.08	0.02	71	216
75	ISL	15.54	15.53	33.647	24.814	314.9	0.235	5.74	101.1	2.7	0.28	0.2	0.00	0.08	0.01	75	
79		15.54	15.53	33.647	24.814	315.0	0.248	5.74	101.1	2.7	0.28	0.2	0.00	0.09	0.00	79	215
90		15.51	15.50	33.645	24.819	314.8	0.282	5.74	101.1	2.7	0.29	0.2	0.00	0.09	0.03	90	214
100	ISL	14.91	14.90	33.550	24.878	309.4	0.314	5.78	100.5	3.0	0.31	0.1	0.00	0.22	0.16	100	
101	A	14.81	14.79	33.535	24.888	308.5	0.317	5.78	100.3	3.0	0.31	0.1	0.00	0.24	0.17	101	213
105		14.26	14.24	33.459	24.946	303.0	0.329	5.80	99.5	3.2	0.35	0.3	0.02	0.36	0.20	105	212
113		13.42	13.40	33.430	25.097	288.7	0.353	5.73	96.6	3.8	0.42	1.2	0.07	0.32	0.21	113	211
123		12.24	12.22	33.362	25.275	271.7	0.381	5.65	92.9	4.7	0.54	2.8	0.08	0.30	0.24	124	210
125	ISL	12.05	12.03	33.358	25.308	268.6	0.386	5.63	92.1	4.9	0.57	3.3	0.07	0.29	0.23	126	
140		10.90	10.88	33.384	25.538	246.8	0.425	5.36	85.6	7.5	0.80	7.5	0.02	0.17	0.14	141	209
150	ISL	10.38	10.36	33.439	25.672	234.2	0.449	5.05	79.8	10.4	0.99	10.8	0.02	0.11	0.10	151	
166		9.83	9.81	33.554	25.855	217.0	0.485	4.49	70.1	15.6	1.29	15.7	0.01	0.04	0.06	167	208
195		9.36	9.34	33.768	26.100	194.2	0.545	3.70	57.3	22.9	1.64	21.3	0.00	0.01	0.02	196	207
200	ISL	9.27	9.25	33.804	26.142	190.3	0.554	3.59	55.5	24.2	1.69	22.1	0.00			201	
226		8.78	8.76	33.960	26.342	171.6	0.601	3.09	47.3	30.6	1.91	25.9	0.00			227	206
250	ISL	8.37	8.34	34.022	26.454	161.3	0.641	2.65	40.2	35.9	2.10	28.4	0.00			251	
268		8.08	8.05	34.043	26.515	155.7	0.670	2.35	35.4	39.6	2.23	29.9	0.00			269	205
300	ISL	7.62	7.59	34.084	26.615	146.6	0.718	1.89	28.2	46.3	2.44	32.2	0.00			302	
321		7.34	7.31	34.099	26.666	141.8	0.748	1.66	24.6	50.4	2.55	33.5	0.00			323	204
378		6.63	6.60	34.089	26.756	133.7	0.827	1.43	20.8	58.6	2.69	36.0	0.00			380	203
400	ISL	6.41	6.37	34.108	26.800	129.7	0.856									402	
433		6.13	6.09	34.143 D	26.864	123.8	0.898	0.75 U	10.8U	74.0 U	2.99 U	39.8 U	0.00 U			436	202
500	ISL	5.66	5.62	34.186	26.957	115.5	0.978									503	
511		5.58	5.54	34.193 D	26.972	114.1	0.990	0.79 U	11.2U	72.9 U	2.98 U	39.4 U	0.00 U			514	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 25.6 N	124 0.1 W	09/04/01	1000 UTC		330 23 kn			1021.6 mb	13.0 C	10.5 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	15.69	15.69	33.724	24.837	310.3	0.000	5.75	101.7	3.0	0.27	0.2	0.00	0.07	0.02	0	
2		15.69	15.69	33.724	24.837	310.4	0.006	5.75	101.7	3.0	0.27	0.2	0.00	0.07	0.02	2	220
10	ISL	15.70	15.70	33.724	24.835	310.8	0.031	5.76	101.9	3.0	0.27	0.2	0.00	0.07	0.02	10	
16		15.71	15.71	33.724	24.833	311.2	0.050	5.76	101.9	3.0	0.27	0.2	0.00	0.07	0.02	16	219
20	ISL	15.71	15.71	33.725	24.834	311.2	0.062	5.76	101.9	3.0	0.27	0.2	0.00	0.07	0.02	20	
30	ISL	15.73	15.73	33.728	24.832	311.7	0.093	5.75	101.8	3.0	0.27	0.2	0.00	0.07	0.02	30	
32		15.73	15.73	33.729	24.833	311.7	0.100	5.75	101.8	3.0	0.27	0.2	0.00	0.07	0.02	32	218
47		15.78	15.77	33.748	24.837	311.8	0.146	5.74	101.7	2.9	0.27	0.2	0.00	0.07	0.01	47	217
50	ISL	15.80	15.79	33.754	24.837	311.9	0.156	5.74	101.7	2.9	0.27	0.2	0.00	0.07	0.01	50	
61		15.88	15.87	33.782	24.841	311.9	0.190	5.72	101.6	2.8	0.26	0.2	0.00	0.07	0.02	61	216
71		15.96	15.95	33.813	24.847	311.6	0.221	5.72	101.7	2.8	0.26	0.2	0.00	0.07	0.02	71	215
75	ISL	16.01	16.00	33.829	24.848	311.6	0.234	5.71	101.7	2.8	0.25	0.2	0.00	0.07	0.02	75	
84		16.13	16.12	33.882	24.862	310.6	0.262	5.68	101.4	2.8	0.24	0.2	0.00	0.08	0.02	84	214
94		16.24	16.23	33.974	24.908	306.6	0.292	5.65	101.1	2.7	0.23	0.2	0.00	0.12	0.03	94	213
100	ISL	16.12	16.10	34.005	24.959	301.9	0.311	5.66	101.1	2.7	0.23	0.2	0.00	0.20	0.06	100	
107		15.98	15.96	34.042	25.020	296.4	0.332	5.66	100.8	2.7	0.24	0.2	0.01	0.28	0.11	107	212
113		13.57	13.55	33.676	25.256	273.6	0.349	5.64	95.5	4.1	0.41	1.6	0.09	0.29	0.15	113	211
125		12.92	12.90	33.726	25.426	257.7	0.381	5.45	91.1	4.9	0.50	3.4	0.05	0.22	0.14	126	210
140		11.83	11.81	33.613	25.548	246.2	0.418	5.32	86.8	6.7	0.67	6.0	0.03	0.18	0.12	141	209
150	ISL	11.36	11.34	33.588	25.615	239.9	0.443	5.26	84.9	7.5	0.74	7.2	0.02	0.14	0.10	151	
162		10.92	10.90	33.598	25.702	231.8	0.471	5.17	82.7	8.7	0.83	8.6	0.01	0.09	0.08	163	208
197		9.76	9.74	33.827	26.080	196.3	0.546	4.44	69.3	17.4	1.27	16.7	0.00	0.00	0.03	198	207
200	ISL	9.69	9.67	33.844	26.105	194.0	0.552	4.36	68.0	18.3	1.31	17.4	0.00			201	
233		9.04	9.01	33.985	26.321	173.9	0.613	3.53	54.3	27.9	1.74	23.6	0.00			234	206
250	ISL	8.59	8.56	34.011	26.412	165.4	0.641	3.27	49.8	32.3	1.88	25.7	0.00			251	
267		8.16	8.13	34.023	26.487	158.4	0.669	3.05	46.0	36.2	2.00	27.3	0.00			268	205
300	ISL	7.72	7.69	34.049	26.573	150.6	0.720	2.50	37.3	42.3	2.22	30.3	0.00			302	
317		7.58	7.55	34.060	26.602	148.1	0.745	2.22	33.1	45.1	2.33	31.6	0.00			319	204
378		7.08	7.04	34.119	26.719	137.6	0.832	1.42	20.9	54.8	2.66	35.2	0.00			380	203
400	ISL	6.75	6.71	34.133	26.775	132.4	0.862	1.20	17.5	60.2	2.76	36.7	0.00			402	
434		6.24	6.20	34.154	26.859	124.5	0.906	0.92	13.3	68.4	2.90	38.8	0.00			437	202
500	ISL	5.81	5.77	34.197	26.947	116.6	0.985	0.60	8.6	77.7	3.06	40.7	0.00			503	
516		5.70	5.66	34.208	26.970	114.5	1.004	0.52	7.4	79.9	3.10	41.2	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 57.3 N	117 18.0 W	05/04/01	1959 UTC	56 m	250 11 kn	260 03 06	1	1018.1 mb	13.7 C	12.5 C	10m	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	15.77	15.77	33.446	24.605	332.4	0.000	6.22	110.0	2.8	0.18	0.2	0.00	0.67	0.10	0	
1		15.77	15.77	33.446	24.605	332.4	0.003	6.22	110.0	2.8	0.18	0.2	0.00	0.67	0.10	1	207
6		15.71	15.71	33.448	24.620	331.1	0.020	6.24	110.2	2.8	0.18	0.2	0.00	0.60	0.20	6	206
10	ISL	15.70	15.70	33.448	24.623	331.0	0.033	6.25	110.4	2.8	0.18	0.2	0.00	0.60	0.22	10	
13		15.69	15.69	33.448	24.625	330.9	0.043	6.25	110.3	2.8	0.18	0.2	0.00	0.60	0.24	13	205
20		12.61	12.61	33.506	25.313	265.5	0.064	4.86	80.6	8.7	0.77	5.7	0.45	1.20	0.77	20	204
26		11.84	11.84	33.585	25.521	245.8	0.079	4.02	65.6	13.5	1.20	12.1	0.60	0.69	0.50	26	203
30	ISL	11.53	11.53	33.634	25.617	236.8	0.089	3.70	60.0	16.1	1.38	14.7	0.58	0.52	0.40	30	
37		11.21	11.21	33.702	25.728	226.4	0.105	3.37	54.3	19.4	1.56	17.3	0.54	0.38	0.32	37	202
49		10.93	10.92	33.757	25.822	217.8	0.132	3.04	48.7	21.8	1.66	19.0	0.41	0.25	0.29	49	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 54.6 N	117 23.6 W	05/04/01	2229 UTC	600 m	230 13 kn	260 03 06	1	1018.0 mb	15.0 C	11.5 C	11m	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	15.61	15.61	33.451	24.645	328.6	0.000	6.23	109.8	2.8	0.22	0.1	0.00	0.56	0.01	0	
2		15.61	15.61	33.451	24.645	328.7	0.007	6.23	109.8	2.8	0.22	0.1	0.00	0.56	0.01	2	220
10	ISL	15.33	15.33	33.442	24.700	323.6	0.033	6.33	111.0	2.9	0.23	0.2	0.00	0.43	0.09	10	
11		15.30	15.30	33.441	24.706	323.1	0.036	6.34	111.1	2.9	0.23	0.2	0.00	0.41	0.10	11	219
20	ISL	13.52	13.52	33.473	25.107	285.1	0.063	6.09	102.9	4.9	0.35	0.5	0.04	1.63	0.52	20	
21		13.31	13.31	33.481	25.156	280.5	0.066	6.06	102.0	5.2	0.38	0.5	0.04	1.75	0.56	21	218
30	ISL	12.44	12.44	33.545	25.377	259.7	0.090	4.95	81.8	8.8	0.82	7.1	0.27	1.12	0.52	30	
31		12.38	12.38	33.552	25.394	258.1	0.093	4.82	79.6	9.2	0.87	7.9	0.29	1.01	0.52	31	217
41		11.83	11.82	33.593	25.530	245.4	0.118	4.19	68.4	12.6	1.15	12.5	0.13	0.57	0.35	41	216
50	ISL	11.09	11.08	33.606	25.676	231.7	0.140	3.94	63.3	15.4	1.33	15.5	0.05	0.27	0.30	50	
51		11.02	11.01	33.608	25.690	230.4	0.142	3.93	63.0	15.7	1.35	15.8	0.05	0.25	0.30	51	215
60		10.75	10.74	33.637	25.760	223.9	0.162	3.80	60.6	17.0	1.43	17.1	0.04	0.18	0.23	60	214
70		10.54	10.53	33.729	25.869	213.7	0.184	3.43	54.5	20.0	1.58	19.4	0.02	0.10	0.14	70	213
75	ISL	10.43	10.42	33.753	25.907	210.3	0.195	3.34	52.9	20.9	1.62	20.1	0.02	0.07	0.12	75	
85		10.20	10.19	33.794	25.978	203.6	0.216	3.21	50.6	22.6	1.70	21.4	0.02	0.04	0.09	85	212
100		9.89	9.88	33.911	26.122	190.3	0.245	2.85	44.7	26.4	1.88	23.8	0.01	0.01	0.08	101	211
120		9.63	9.62	33.993	26.230	180.4	0.282	2.57	40.1	29.4	1.99	25.4	0.01	0.01	0.05	121	210
125	ISL	9.55	9.54	33.998	26.247	178.9	0.291	2.57	40.0	29.7	2.00	25.6	0.01	0.01	0.05	126	
139		9.38	9.36	34.013	26.287	175.3	0.316	2.57	39.9	30.7	2.02	26.1	0.01	0.01	0.04	140	209
150	ISL	9.43	9.41	34.075	26.328	171.8	0.335	2.27	35.3	32.5	2.12	26.9	0.01	0.01	0.04	151	
169		9.55	9.53	34.189	26.397	165.6	0.367	1.70	26.5	35.8	2.32	28.3	0.01	0.01	0.04	170	208
200		9.24	9.22	34.222	26.474	158.8	0.417	1.52	23.5	38.7	2.41	29.4	0.01	0.00	0.05	201	207
231		9.03	9.00	34.257	26.536	153.6	0.466	1.28	19.7	41.6	2.51	30.4	0.01			232	206
250	ISL	8.83	8.80	34.264	26.573	150.3	0.495	1.20	18.4	43.5	2.56	31.0	0.01			252	
266		8.64	8.61	34.264	26.603	147.7	0.519	1.16	17.7	45.1	2.60	31.5	0.01			268	205
300	ISL	8.25	8.22	34.259	26.659	142.8	0.568	1.06	16.0	48.6	2.68	32.6	0.01			302	
320		8.02	7.99	34.255	26.691	140.0	0.596	1.00	15.1	50.8	2.73	33.3	0.01			322	204
380		7.41	7.37	34.251	26.777	132.5	0.678	0.80	11.9	57.8	2.85	35.4	0.00			382	203
400	ISL	7.22	7.18	34.258	26.809	129.6	0.704	0.71	10.5	60.4	2.90	36.1	0.00			403	
434		6.93	6.89	34.273	26.861	124.9	0.747	0.56	8.2	64.9	2.98	37.3	0.00			437	202
500	ISL	6.48	6.43	34.293	26.938	118.3	0.828	0.40	5.8	72.1	3.08	39.0	0.00			503	
510		6.41	6.36	34.296	26.950	117.2	0.839	0.37	5.4	73.2	3.10	39.2	0.00			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 50.7 N	117 31.9 W	06/04/01	0136 UTC	859 m	250 07 kn	250 03 07	1	1017.8 mb	13.9 C	10.8 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	15.54	15.54	33.517	24.711	322.3	0.000	5.95	104.8	2.5	0.28	0.2	0.00	0.18	0.04	0	
2		15.54	15.54	33.517	24.711	322.4	0.006	5.95	104.8	2.5	0.28	0.2	0.00	0.18	0.04	2	220
10	ISL	15.53	15.53	33.517	24.714	322.4	0.032	5.92	104.2	2.5	0.28	0.2	0.00	0.18	0.05	10	
11		15.53	15.53	33.517	24.714	322.4	0.035	5.92	104.2	2.5	0.28	0.2	0.00	0.18	0.05	11	219
20		14.63	14.63	33.481	24.882	306.6	0.064	6.17	106.7	2.9	0.30	0.2	0.00	0.19	0.06	20	218
29		13.42	13.42	33.514	25.159	280.4	0.090	5.86	98.8	4.8	0.47	2.0	0.09	0.58	0.25	29	217
30	ISL	13.31	13.31	33.517	25.184	278.1	0.093	5.78	97.3	5.2	0.50	2.5	0.11	0.63	0.27	30	
40		12.32	12.31	33.539	25.395	258.2	0.120	4.89	80.6	9.3	0.88	8.4	0.24	0.92	0.41	40	216
49		11.41	11.40	33.567	25.587	240.1	0.142	4.27	69.0	13.0	1.18	13.3	0.08	0.52	0.37	49	215
50	ISL	11.31	11.30	33.562	25.602	238.8	0.145	4.30	69.4	13.0	1.18	13.3	0.07	0.48	0.35	50	
58		10.64	10.63	33.538	25.702	229.3	0.163	4.52	71.9	13.2	1.17	13.6	0.03	0.23	0.17	58	214
68		10.42	10.41	33.658	25.834	217.0	0.186	3.88	61.4	17.6	1.43	17.7	0.02	0.11	0.11	68	213
75	ISL	10.22	10.21	33.712	25.911	209.8	0.201	3.66	57.7	19.7	1.54	19.4	0.01	0.07	0.09	75	
83		10.06	10.05	33.777	25.989	202.6	0.217	3.41	53.6	21.9	1.65	20.9	0.01	0.04	0.07	83	212
98		10.23	10.22	33.993	26.129	189.7	0.246	2.35	37.1	28.1	2.00	24.6	0.01	0.01	0.06	99	211
100	ISL	10.22	10.21	34.009	26.143	188.4	0.250	2.28	36.0	28.6	2.03	24.9	0.01	0.01	0.06	101	
118		10.05	10.04	34.092	26.237	179.8	0.283	1.97	31.0	31.3	2.17	26.3	0.01	0.01	0.06	119	210
125	ISL	10.00	9.99	34.113	26.262	177.6	0.296	1.89	29.7	32.0	2.20	26.7	0.01	0.01	0.06	126	
138		9.91	9.89	34.143	26.301	174.2	0.319	1.77	27.8	33.2	2.24	27.4	0.00	0.01	0.05	139	209
150	ISL	9.81	9.79	34.169	26.338	170.9	0.339	1.68	26.3	34.3	2.28	27.9	0.00	0.01	0.05	151	
170		9.62	9.60	34.206	26.399	165.5	0.373	1.55	24.2	36.2	2.35	28.6	0.00	0.00	0.05	171	208
198		9.32	9.30	34.243	26.478	158.5	0.418	1.37	21.2	39.1	2.45	29.7	0.00	0.01	0.04	199	207
200	ISL	9.30	9.28	34.244	26.482	158.2	0.422	1.36	21.1	39.2	2.45	29.8	0.00			201	
228		9.00	8.98	34.248	26.534	153.7	0.465	1.30	20.0	41.3	2.49	30.4	0.00			229	206
250	ISL	8.77	8.74	34.256	26.576	150.0	0.499	1.21	18.5	43.5	2.54	31.1	0.00			251	
267		8.60	8.57	34.261	26.607	147.3	0.524	1.13	17.2	45.3	2.59	31.6	0.00			269	205
300	ISL	8.25	8.22	34.256	26.657	143.0	0.572	1.05	15.9	48.3	2.65	32.6	0.00			302	
318		8.06	8.03	34.252	26.682	140.8	0.597	1.02	15.4	50.0	2.68	33.1	0.00			320	204
377		7.49	7.45	34.248	26.763	133.8	0.678	0.86	12.8	56.6	2.80	35.0	0.00			379	203
400	ISL	7.32	7.28	34.251	26.790	131.5	0.709	0.79	11.7	58.9	2.84	35.6	0.00			403	
436		7.07	7.03	34.260	26.832	127.9	0.756	0.67	9.9	62.5	2.91	36.6	0.00			439	202
500	ISL	6.61	6.56	34.287	26.916	120.5	0.835	0.45	6.6	70.3	3.04	38.4	0.00			503	
516		6.49	6.44	34.294	26.938	118.5	0.854	0.40	5.8	72.2	3.07	38.9	0.00			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 40.9 N	117 52.4 W	06/04/01	0539 UTC	623 m	230 01 kn			1018.2 mb	14.0 C	10.4 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	14.87	14.87	33.505	24.848	309.2	0.000	5.90	102.5	3.5	0.33	0.2	0.00	0.11	0.02	0	
3		14.87	14.87	33.505	24.849	309.3	0.009	5.90	102.5	3.5	0.33	0.2	0.00	0.11	0.02	3	224
10	ISL	14.88	14.88	33.505	24.847	309.7	0.031	5.94	103.2	3.5	0.32	0.2	0.00	0.12	0.02	10	
11		14.88	14.88	33.505	24.847	309.7	0.034	5.94	103.2	3.5	0.32	0.2	0.00	0.12	0.02	11	219
20	ISL	14.87	14.87	33.507	24.851	309.6	0.062	5.89	102.3	3.5	0.32	0.2	0.00	0.12	0.03	20	
21		14.87	14.87	33.507	24.851	309.6	0.065	5.88	102.2	3.5	0.32	0.2	0.00	0.12	0.03	21	218
30	ISL	14.69	14.69	33.496	24.881	307.0	0.093	5.91	102.3	3.4	0.32	0.2	0.00	0.15	0.03	30	
31		14.67	14.67	33.495	24.885	306.7	0.096	5.91	102.3	3.4	0.32	0.2	0.00	0.15	0.03	31	217
39		13.98	13.97	33.465	25.007	295.2	0.120	6.00	102.3	3.8	0.34	0.3	0.01	0.30	0.20	39	216
50		13.31	13.30	33.451	25.133	283.5	0.152	5.80	97.6	4.7	0.46	2.0	0.08	0.51	0.16	50	215
59		12.77	12.76	33.447	25.237	273.7	0.177	5.56	92.5	5.9	0.62	4.0	0.13	0.54	0.14	59	214
70		11.65	11.64	33.478	25.475	251.3	0.206	4.93	80.1	9.7	0.95	9.3	0.10	0.39	0.16	70	213
75	ISL	11.30	11.29	33.562	25.604	239.1	0.218	4.36	70.3	13.3	1.18	12.8	0.07	0.31	0.15	75	
84		10.89	10.88	33.720	25.801	220.6	0.239	3.40	54.4	19.5	1.56	18.4	0.02	0.19	0.15	84	212
99		10.70	10.69	33.782	25.883	213.1	0.271	3.13	49.9	21.6	1.68	20.1	0.01	0.14	0.22	99	211
100	ISL	10.69	10.68	33.787	25.888	212.6	0.273	3.11	49.6	21.8	1.69	20.2	0.01	0.14	0.21	100	
119		10.44	10.43	33.895	26.017	200.8	0.313	2.72	43.1	25.1	1.87	22.6	0.01	0.05	0.07	120	210
125	ISL	10.41	10.40	33.924	26.045	198.3	0.325	2.61	41.4	26.0	1.91	23.1	0.01	0.04	0.07	126	
139		10.33	10.31	33.982	26.104	193.0	0.352	2.38	37.7	27.8	2.00	24.2	0.01	0.02	0.06	140	209
150	ISL	10.19	10.17	34.014	26.153	188.5	0.373	2.29	36.2	28.9	2.05	24.9	0.01	0.02	0.06	151	
169		9.93	9.91	34.066	26.238	180.8	0.408	2.15	33.8	31.0	2.13	26.1	0.02	0.01	0.05	170	208
199		9.67	9.65	34.181	26.372	168.7	0.460	1.61	25.2	35.7	2.35	28.5	0.01	0.01	0.05	200	207
200	ISL	9.66	9.64	34.183	26.375	168.4	0.462	1.60	25.0	35.8	2.35	28.5	0.01			201	
228		9.32	9.29	34.228	26.467	160.2	0.508	1.48	22.9	38.7	2.44	29.4	0.01			229	206
250	ISL	9.07	9.04	34.264	26.535	154.0	0.543	1.27	19.6	41.7	2.54	30.4	0.01			251	
267		8.84	8.81	34.283	26.587	149.4	0.568	1.10	16.9	44.3	2.61	31.2	0.01			269	205
300	ISL	8.17	8.14	34.266	26.677	141.1	0.616	0.98	14.8	50.2	2.71	33.1	0.01			302	
317		7.82	7.79	34.253	26.719	137.2	0.640	0.94	14.1	53.2	2.76	34.0	0.01			319	204
381		7.14	7.10	34.272	26.831	127.1	0.725	0.67	9.9	61.9	2.93	36.5	0.00			383	203
400	ISL	6.97	6.93	34.274	26.856	124.9	0.749	0.60	8.8	64.3	2.97	37.2	0.00			403	
434		6.71	6.67	34.276	26.894	121.7	0.791	0.49	7.2	68.3	3.03	38.2	0.00			437	202
500	ISL	6.37	6.32	34.293	26.953	116.8	0.869	0.39	5.7	73.9	3.12	39.4	0.00			503	
517		6.28	6.23	34.297	26.968	115.5	0.889	0.36	5.2	75.3	3.14	39.7	0.00			521	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 31.0 N	118 13.1 W	06/04/01	1006 UTC	1626 m	180 14 kn			1016.0 mb	14.7 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	14.34	14.34	33.369	24.856	308.4	0.000	5.93	101.8	3.5	0.32	0.2	0.00	0.15	0.05	0	
1		14.34	14.34	33.369	24.857	308.5	0.003	5.93	101.8	3.5	0.32	0.2	0.00	0.15	0.05	1	224
10		14.34	14.34	33.368	24.856	308.8	0.031	5.94	102.0	3.5	0.33	0.2	0.00	0.15	0.05	10	219
20		14.34	14.34	33.371	24.859	308.8	0.062	5.96	102.4	3.5	0.33	0.2	0.00	0.17	0.04	20	218
30		14.20	14.20	33.451	24.950	300.4	0.092	5.96	102.1	3.5	0.32	0.2	0.01	0.28	0.07	30	217
40		14.08	14.07	33.461	24.983	297.5	0.122	5.95	101.7	3.5	0.34	0.4	0.02	0.32	0.12	40	216
50		13.75	13.74	33.445	25.039	292.5	0.152	5.84	99.1	3.8	0.39	0.9	0.06	0.36	0.15	50	215
60		12.54	12.53	33.374	25.225	274.9	0.180	5.64	93.3	5.6	0.60	3.8	0.17	0.32	0.23	60	214
70		11.22	11.21	33.320	25.430	255.5	0.206	5.41	87.0	8.0	0.82	7.7	0.04	0.25	0.22	70	213
75	ISL	10.87	10.86	33.359	25.523	246.8	0.219	5.24	83.6	9.2	0.91	9.2	0.03	0.20	0.20	75	
85		10.52	10.51	33.478	25.677	232.3	0.243	4.85	76.9	11.8	1.07	12.0	0.02	0.11	0.14	85	212
100		10.31	10.30	33.607	25.814	219.6	0.277	4.21	66.5	16.5	1.34	16.4	0.01	0.07	0.10	100	211
120		9.77	9.76	33.788	26.047	197.8	0.319	3.47	54.2	23.1	1.67	21.7	0.01	0.01	0.04	121	210
125	ISL	9.65	9.64	33.816	26.089	193.9	0.328	3.39	52.8	24.2	1.72	22.4	0.01	0.01	0.03	126	
139		9.35	9.33	33.875	26.184	185.1	0.355	3.24	50.2	26.6	1.81	23.9	0.01	0.01	0.02	140	209
150	ISL	9.16	9.14	33.921	26.251	178.9	0.375	3.10	47.8	28.5	1.87	24.9	0.01	0.01	0.02	151	
170		8.85	8.83	33.991	26.355	169.4	0.410	2.84	43.5	32.2	1.99	26.6	0.01	0.00	0.04	171	208
199		8.31	8.29	34.062	26.494	156.5	0.457	2.44	36.9	38.8	2.20	29.1	0.01	0.00	0.04	200	207
200	ISL	8.30	8.28	34.063	26.496	156.3	0.459	2.43	36.8	38.9	2.20	29.2	0.01			201	
229		8.08	8.06	34.081	26.544	152.3	0.503	2.20	33.1	42.0	2.30	30.3	0.01			230	206
250	ISL	7.87	7.84	34.093	26.585	148.7	0.535	2.05	30.7	44.7	2.37	31.3	0.00			251	
268		7.68	7.65	34.105	26.622	145.4	0.561	1.91	28.5	47.1	2.44	32.1	0.00			270	205
300	ISL	7.41	7.38	34.131	26.681	140.1	0.607	1.61	23.9	51.5	2.57	33.6	0.00			302	
317		7.28	7.25	34.146	26.712	137.4	0.631	1.44	21.3	53.9	2.64	34.4	0.00			319	204
378		6.79	6.75	34.205	26.826	127.3	0.711	0.83	12.1	63.9	2.89	37.2	0.00			380	203
400	ISL	6.62	6.58	34.221	26.862	124.1	0.739	0.71	10.3	67.0	2.96	38.0	0.00			403	
437		6.35	6.31	34.247	26.918	119.1	0.784	0.58	8.4	71.7	3.05	39.1	0.00			440	202
500	ISL	6.05	6.01	34.305	27.003	111.7	0.857	0.36	5.2	78.9	3.16	40.5	0.00			503	
515		5.98	5.93	34.319	27.023	109.9	0.873	0.31	4.5	80.6	3.19	40.8	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 20.8 N	118 33.1 W	06/04/01	1447 UTC	1336 m	210 11 kn	250 03 06	1	1015.1 mb	13.9 C	13.0 C	14m	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	14.34	14.34	33.535	24.985	296.2	0.000	5.95	102.3	3.2	0.32	0.2	0.00	0.57	0.14	0	
2		14.34	14.34	33.535	24.985	296.3	0.006	5.95	102.3	3.2	0.32	0.2	0.00	0.57	0.14	2	220
10	ISL	14.34	14.34	33.536	24.986	296.4	0.030	5.93	101.9	3.2	0.32	0.2	0.00	0.57	0.14	10	
11		14.34	14.34	33.536	24.986	296.4	0.033	5.93	101.9	3.2	0.32	0.2	0.00	0.57	0.14	11	219
20	ISL	14.33	14.33	33.535	24.987	296.6	0.059	5.93	101.9	3.1	0.32	0.2	0.00	0.57	0.14	20	
21		14.33	14.33	33.535	24.987	296.6	0.062	5.93	101.9	3.1	0.32	0.2	0.00	0.57	0.14	21	218
30	ISL	14.32	14.32	33.534	24.989	296.7	0.089	5.94	102.1	3.1	0.33	0.2	0.00	0.59	0.11	30	
31		14.32	14.32	33.534	24.989	296.7	0.092	5.94	102.1	3.1	0.33	0.2	0.00	0.59	0.11	31	217
41		12.93	12.92	33.503	25.249	272.2	0.120	5.56	92.8	6.3	0.59	4.0	0.16	0.99	0.38	41	216
50		11.67	11.66	33.531	25.512	247.3	0.144	4.66	75.8	10.9	1.02	10.9	0.10	0.56	0.30	50	215
59		10.76	10.75	33.621	25.746	225.2	0.165	3.96	63.2	16.3	1.37	16.5	0.03	0.18	0.21	59	214
69		10.38	10.37	33.689	25.865	214.0	0.187	3.70	58.5	19.4	1.51	18.8	0.01	0.10	0.15	69	213
75	ISL	10.24	10.23	33.744	25.932	207.8	0.200	3.47	54.8	21.3	1.61	20.2	0.01	0.06	0.12	75	
86		10.05	10.04	33.841	26.041	197.7	0.222	3.07	48.3	24.3	1.77	22.3	0.01	0.01	0.08	86	212
100	ISL	9.77	9.76	33.911	26.142	188.3	0.249	2.85	44.6	26.9	1.88	24.0	0.01	0.01	0.05	101	
101		9.75	9.74	33.914	26.148	187.8	0.251	2.84	44.4	27.1	1.89	24.1	0.01	0.01	0.05	102	211
118		9.44	9.43	33.957	26.233	180.0	0.282	2.75	42.7	29.3	1.95	25.3	0.01	0.01	0.04	119	210
125	ISL	9.37	9.36	33.982	26.264	177.2	0.295	2.67	41.4	30.2	1.98	25.8	0.01	0.01	0.04	126	
140		9.23	9.21	34.031	26.325	171.7	0.321	2.49	38.5	32.2	2.06	26.8	0.00	0.01	0.04	141	209
150	ISL	9.03	9.01	34.047	26.370	167.6	0.338	2.43	37.4	33.7	2.10	27.4	0.00	0.01	0.04	151	
169		8.65	8.63	34.061	26.441	161.1	0.369	2.38	36.3	36.4	2.16	28.4	0.00	0.00	0.05	170	208
199		8.33	8.31	34.066	26.494	156.5	0.417	2.31	35.0	38.9	2.22	29.3	0.00	0.00	0.04	200	207
200	ISL	8.33	8.31	34.068	26.496	156.4	0.418	2.30	34.8	39.0	2.22	29.3	0.00			201	
229		8.21	8.19	34.112	26.549	151.9	0.463	2.00	30.2	41.9	2.34	30.5	0.00			230	206
250	ISL	7.97	7.94	34.119	26.590	148.2	0.494	1.89	28.4	44.6	2.41	31.4	0.00			251	
269		7.70	7.67	34.120	26.631	144.6	0.522	1.79	26.7	47.5	2.47	32.3	0.00			271	205
300	ISL	7.31	7.28	34.139	26.702	138.1	0.566	1.49	22.1	53.2	2.61	34.1	0.00			302	
322		7.07	7.04	34.157	26.750	133.8	0.596	1.26	18.6	57.3	2.71	35.4	0.00			324	204
379		6.67	6.64	34.208	26.844	125.4	0.670	0.83	12.1	65.2	2.89	37.4	0.00			381	203
400	ISL	6.54	6.50	34.226	26.876	122.6	0.696	0.71	10.3	68.1	2.95	38.1	0.00			403	
436		6.34	6.30	34.255	26.926	118.3	0.739	0.55	8.0	72.8	3.04	39.1	0.00			439	202
500	ISL	5.97	5.93	34.301	27.010	110.9	0.813	0.36	5.2	80.0	3.15	40.5	0.00			503	
512		5.90	5.86	34.310	27.026	109.5	0.826	0.33	4.7	81.4	3.17	40.8	0.00			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 10.7 N	118 53.5 W	06/04/01	1918 UTC	1462 m	270 14 kn	270 03 06	5	1016.6 mb	14.4 C	12.0 C	13m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.21	14.21	33.538	25.014	293.4	0.000	6.02	103.2	3.8	0.32	0.2	0.00	0.52	0.15	0	
1	A	14.21	14.21	33.538	25.014	293.4	0.003	6.02	103.2	3.8	0.32	0.2	0.00	0.52	0.15	1	222
8	A	14.19	14.19	33.538	25.019	293.2	0.023	6.03	103.3	3.8	0.32	0.2	0.00	0.53	0.15	8	221
10	ISL	14.18	14.18	33.539	25.022	293.0	0.029	6.03	103.3	3.8	0.32	0.2	0.00	0.53	0.15	10	
16	A	14.14	14.14	33.540	25.031	292.3	0.047	6.03	103.2	3.8	0.31	0.2	0.00	0.57	0.17	16	220
20	ISL	14.07	14.07	33.537	25.043	291.2	0.059	6.04	103.3	4.0	0.32	0.2	0.00	0.64	0.19	20	
26	A	13.90	13.90	33.529	25.073	288.6	0.076	6.05	103.1	4.3	0.34	0.4	0.01	0.73	0.23	26	219
30	ISL	13.72	13.72	33.521	25.104	285.8	0.087	6.06	102.8	4.6	0.36	0.6	0.02	0.71	0.25	30	
34	A	13.55	13.55	33.514	25.133	283.1	0.099	6.06	102.5	4.9	0.38	0.8	0.04	0.67	0.26	34	218
41		13.42	13.41	33.508	25.155	281.2	0.119	6.00	101.2	5.1	0.40	1.2	0.06	0.65	0.27	41	217
48	A	12.10	12.09	33.459	25.375	260.3	0.138	5.34	87.6	7.5	0.74	6.4	0.23	0.35	0.20	48	216
50	ISL	12.05	12.04	33.458	25.384	259.5	0.143	5.31	87.0	7.7	0.76	6.6	0.23	0.35	0.20	50	
54		11.94	11.93	33.456	25.403	257.8	0.153	5.25	85.8	8.0	0.79	7.1	0.23	0.36	0.21	54	215
60		11.77	11.76	33.466	25.443	254.1	0.168	5.16	84.0	8.6	0.84	8.0	0.21	0.28	0.18	60	214
70		11.19	11.18	33.537	25.604	239.0	0.193	4.65	74.8	12.4	1.08	11.9	0.09	0.20	0.09	70	213
75	ISL	10.94	10.93	33.564	25.670	232.8	0.205	4.45	71.2	13.9	1.18	13.5	0.06	0.15	0.10	75	
85		10.53	10.52	33.612	25.780	222.6	0.228	4.13	65.5	16.3	1.33	16.1	0.03	0.08	0.11	85	212
99		10.22	10.21	33.682	25.888	212.5	0.258	3.78	59.6	19.2	1.49	18.5	0.02	0.06	0.09	99	211
100	ISL	10.20	10.19	33.687	25.895	211.9	0.260	3.75	59.1	19.4	1.50	18.7	0.02	0.06	0.09	100	
120		9.89	9.88	33.798	26.035	199.0	0.301	3.25	50.9	23.8	1.72	21.8	0.01	0.02	0.07	121	210
125	ISL	9.79	9.78	33.826	26.073	195.4	0.311	3.14	49.1	24.9	1.77	22.6	0.01	0.02	0.07	126	
140		9.48	9.46	33.910	26.190	184.6	0.340	2.84	44.1	28.3	1.91	24.7	0.01	0.01	0.06	141	209
150	ISL	9.33	9.31	33.971	26.262	177.9	0.358	2.64	40.9	30.4	1.99	25.8	0.01	0.01	0.06	151	
169		9.08	9.06	34.067	26.378	167.2	0.391	2.33	35.9	34.0	2.13	27.4	0.00	0.00	0.05	170	208
200		8.64	8.62	34.112	26.483	157.8	0.441	2.06	31.4	38.4	2.27	29.4	0.01	0.00	0.04	201	207
229		8.25	8.23	34.135	26.561	150.8	0.486	1.87	28.3	42.6	2.38	30.8	0.00			230	206
250	ISL	7.96	7.93	34.148	26.615	145.9	0.517	1.67	25.1	46.0	2.48	32.0	0.00			251	
268		7.74	7.71	34.160	26.656	142.1	0.543	1.49	22.3	49.0	2.56	33.0	0.01			270	205
300	ISL	7.48	7.45	34.186	26.715	137.0	0.587	1.20	17.8	53.7	2.69	34.4	0.00			302	
320		7.35	7.32	34.203	26.747	134.2	0.615	1.03	15.3	56.4	2.76	35.1	0.00			322	204
378		7.01	6.97	34.253	26.834	126.7	0.690	0.65	9.6	63.5	2.93	37.0	0.00			380	203
400	ISL	6.82	6.78	34.270	26.874	123.2	0.718	0.53	7.8	67.0	2.99	37.7	0.00			403	
437		6.51	6.47	34.296	26.936	117.6	0.762	0.38	5.5	72.7	3.08	38.7	0.00			440	202
500	ISL	6.19	6.15	34.322	26.999	112.2	0.835	0.30	4.3	78.7	3.16	39.6	0.00			503	
511		6.13	6.08	34.327	27.010	111.2	0.847	0.29	4.2	79.7	3.17	39.8	0.00			515	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 1.0 N	119 13.7 W	06/04/01	2321 UTC	1575 m	310 17 kn	280 03 05	1	1017.1 mb	13.5 C	10.8 C	21m	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	14.41	14.41	33.511	24.951	299.4	0.000	5.92	101.9	3.2	0.32	0.2	0.00	0.26	0.06	0	
2		14.41	14.41	33.511	24.951	299.5	0.006	5.92	101.9	3.2	0.32	0.2	0.00	0.26	0.06	2	220
10	ISL	14.40	14.40	33.510	24.953	299.5	0.030	5.94	102.2	3.2	0.32	0.2	0.00	0.27	0.05	10	
16		14.40	14.40	33.510	24.953	299.7	0.048	5.95	102.4	3.2	0.32	0.2	0.00	0.28	0.05	16	219
20	ISL	14.38	14.38	33.510	24.958	299.4	0.060	5.95	102.4	3.2	0.32	0.2	0.00	0.28	0.06	20	
30		14.31	14.31	33.509	24.972	298.3	0.090	5.94	102.0	3.2	0.32	0.2	0.00	0.29	0.07	30	218
44		14.28	14.27	33.507	24.977	298.2	0.132	5.93	101.8	3.2	0.32	0.2	0.00	0.36	0.07	44	217
50	ISL	14.26	14.25	33.505	24.980	298.2	0.149	5.92	101.6	3.2	0.33	0.3	0.00	0.37	0.11	50	
54		14.24	14.23	33.503	24.983	298.0	0.161	5.91	101.4	3.2	0.33	0.3	0.00	0.38	0.13	54	216
64		13.60	13.59	33.472	25.091	287.9	0.191	5.75	97.3	4.1	0.43	1.7	0.10	0.44	0.13	64	215
74		12.94	12.93	33.447	25.204	277.3	0.219	5.59	93.3	5.1	0.55	3.3	0.18	0.41	0.17	74	214
75	ISL	12.87	12.86	33.445	25.217	276.2	0.222	5.57	92.8	5.2	0.56	3.5	0.18	0.40	0.17	75	
84		12.11	12.10	33.444	25.363	262.4	0.246	5.30	86.9	6.8	0.72	6.2	0.16	0.29	0.15	84	213
95		10.76	10.75	33.487	25.642	235.9	0.273	4.81	76.6	11.3	1.04	11.8	0.03	0.16	0.15	95	212
100	ISL	10.47	10.46	33.519	25.718	228.7	0.285	4.62	73.2	13.0	1.15	13.5	0.03	0.13	0.13	100	
109		10.20	10.19	33.582	25.813	219.8	0.305	4.30	67.7	15.7	1.30	16.0	0.02	0.09	0.09	110	211
125		9.87	9.86	33.704	25.965	205.7	0.339	3.81	59.6	20.0	1.52	19.5	0.01	0.04	0.06	126	210
145		9.42	9.40	33.838	26.144	189.1	0.379	3.35	51.9	25.1	1.74	23.1	0.01	0.01	0.04	146	209
150	ISL	9.30	9.28	33.870	26.188	184.9	0.388	3.23	50.0	26.6	1.80	23.9	0.01	0.01	0.04	151	
169		8.90	8.88	33.975	26.334	171.3	0.422	2.82	43.3	31.8	1.98	26.5	0.00	0.00	0.04	170	208
199		8.54	8.52	34.048	26.448	161.0	0.472	2.43	37.0	36.5	2.14	28.6	0.00	0.00	0.03	200	207
200	ISL	8.53	8.51	34.050	26.451	160.7	0.473	2.42	36.8	36.7	2.15	28.7	0.00			201	
229		8.25	8.23	34.109	26.541	152.7	0.519	2.02	30.6	41.5	2.33	30.4	0.00			230	206
250	ISL	8.01	7.98	34.132	26.595	147.8	0.550	1.80	27.1	44.9	2.43	31.6	0.00			251	
269		7.80	7.77	34.147	26.638	144.0	0.578	1.62	24.3	47.7	2.51	32.5	0.00			271	205
300	ISL	7.61	7.58	34.180	26.691	139.3	0.622	1.32	19.7	51.6	2.63	33.7	0.00			302	
318		7.52	7.49	34.197	26.718	137.1	0.647	1.16	17.3	53.8	2.70	34.4	0.00			320	204
378		6.97	6.93	34.233	26.824	127.6	0.726	0.77	11.3	62.5	2.89	36.8	0.00			380	203
400	ISL	6.82	6.78	34.251	26.859	124.6	0.754	0.65	9.5	65.6	2.95	37.5	0.00			403	
438		6.59	6.55	34.282	26.914	119.7	0.800	0.49	7.1	70.7	3.04	38.5	0.00			441	202
500	ISL	6.16	6.12	34.310	26.993	112.7	0.872	0.34	4.9	77.9	3.14	39.9	0.00			503	
515		6.06	6.01	34.317	27.011	111.1	0.889	0.30	4.3	79.7	3.17	40.3	0.00			519	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 51.3 N	119 34.1 W	07/04/01	0345 UTC	2011 m	320 15 kn			1018.8 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	14.26	14.26	33.353	24.861	308.0	0.000	5.96	102.2	3.6	0.33	0.2	0.00	0.17	0.04	0	
3		14.26	14.26	33.353	24.861	308.1	0.009	5.96	102.2	3.6	0.33	0.2	0.00	0.17	0.04	3	221
10	ISL	14.26	14.26	33.352	24.860	308.3	0.031	5.97	102.3	3.6	0.33	0.2	0.00	0.17	0.04	10	
14		14.26	14.26	33.352	24.861	308.4	0.043	5.97	102.3	3.6	0.33	0.2	0.00	0.17	0.04	14	220
20	ISL	14.26	14.26	33.352	24.861	308.6	0.062	5.97	102.3	3.6	0.33	0.2	0.00	0.17	0.04	20	
30		14.26	14.26	33.352	24.861	308.9	0.093	5.97	102.3	3.6	0.33	0.2	0.00	0.17	0.04	30	219
45		14.19	14.18	33.334	24.862	309.2	0.139	5.98	102.4	3.6	0.33	0.2	0.00	0.20	0.05	45	218
50	ISL	13.65	13.64	33.275	24.928	303.0	0.154	5.99	101.4	3.9	0.37	0.5	0.04	0.30	0.09	50	
56		13.03	13.02	33.229	25.017	294.6	0.172	6.01	100.4	4.2	0.42	0.9	0.10	0.42	0.14	56	216
66		12.96	12.95	33.331	25.110	286.0	0.201	5.90	98.4	4.4	0.46	1.4	0.15	0.46	0.16	66	215
75	ISL	12.45	12.44	33.377	25.246	273.3	0.226	5.70	94.1	5.4	0.57	3.4	0.25	0.29	0.13	75	
76		12.37	12.36	33.379	25.262	271.7	0.229	5.67	93.5	5.5	0.59	3.7	0.26	0.27	0.13	76	214
86		11.36	11.35	33.348	25.427	256.2	0.255	5.41	87.3	7.2	0.76	6.8	0.05	0.16	0.11	86	213
96		10.84	10.83	33.415	25.572	242.5	0.280	5.22	83.3	8.7	0.87	8.9	0.03	0.11	0.09	96	212
100	ISL	10.68	10.67	33.443	25.622	237.9	0.290	5.14	81.7	9.5	0.92	9.8	0.03	0.10	0.08	100	
112		10.34	10.33	33.514	25.737	227.2	0.318	4.91	77.5	11.5	1.04	11.9	0.02	0.08	0.07	113	211
125		10.24	10.23	33.545	25.778	223.5	0.347	4.77	75.2	12.6	1.11	13.0	0.02	0.05	0.06	126	210
143		9.69	9.67	33.634	25.940	208.4	0.386	4.05	63.1	19.0	1.48	18.7	0.01	0.02	0.05	144	209
150	ISL	9.51	9.49	33.705	26.025	200.4	0.400	3.83	59.4	21.3	1.58	20.4	0.01	0.01	0.04	151	
171		9.07	9.05	33.916	26.261	178.3	0.440	3.27	50.3	27.7	1.82	24.4	0.01	0.00	0.03	172	208
199		8.59	8.57	34.022	26.420	163.7	0.488	2.70	41.1	34.3	2.07	27.6	0.00	0.00	0.02	200	207
200	ISL	8.57	8.55	34.025	26.425	163.2	0.490	2.68	40.8	34.5	2.08	27.7	0.00			201	
228		8.15	8.13	34.082	26.534	153.2	0.534	2.18	32.9	40.6	2.29	30.2	0.00			229	206
250	ISL	7.86	7.84	34.091	26.584	148.7	0.567	2.04	30.6	43.7	2.37	31.3	0.00			251	
269		7.65	7.62	34.093	26.617	145.9	0.595	1.96	29.2	46.0	2.42	32.0	0.00			271	205
300	ISL	7.45	7.42	34.127	26.673	141.0	0.640	1.63	24.2	50.2	2.56	33.4	0.00			302	
319		7.34	7.31	34.149	26.706	138.1	0.666	1.41	20.9	52.9	2.64	34.2	0.00			321	204
384		6.67	6.63	34.178	26.821	127.7	0.753	0.96	14.0	63.1	2.86	37.2	0.00			386	203
400	ISL	6.57	6.53	34.187	26.841	125.9	0.773	0.86	12.5	65.1	2.91	37.7	0.00			403	
446		6.34	6.30	34.217	26.896	121.3	0.830	0.61	8.8	70.4	3.02	38.9	0.00			449	202
500	ISL	6.01	5.97	34.264	26.975	114.2	0.893	0.41	5.9	77.2	3.13	40.4	0.00			503	
507		5.97	5.93	34.270	26.985	113.3	0.901	0.38	5.5	78.1	3.14	40.6	0.00			510	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 31.0 N	120 14.8 W	07/04/01	1205 UTC	3925 m	340 24 kn			1020.8 mb	12.5 C	9.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.25	14.25	33.419	24.914	303.0	0.000	5.97	102.4	3.4	0.33	0.2	0.00	0.24	0.07	0	
3		14.25	14.25	33.419	24.914	303.0	0.009	5.97	102.4	3.4	0.33	0.2	0.00	0.24	0.07	3	220
10	ISL	14.25	14.25	33.420	24.915	303.1	0.030	5.96	102.2	3.4	0.33	0.2	0.00	0.23	0.07	10	
16		14.26	14.26	33.420	24.913	303.5	0.049	5.94	101.9	3.4	0.32	0.2	0.00	0.23	0.07	16	219
20	ISL	14.26	14.26	33.420	24.913	303.6	0.061	5.94	101.9	3.4	0.32	0.2	0.00	0.23	0.07	20	
30	ISL	14.26	14.26	33.419	24.913	303.9	0.091	5.94	101.9	3.3	0.32	0.2	0.00	0.24	0.07	30	
31		14.26	14.26	33.419	24.913	304.0	0.094	5.94	101.9	3.3	0.32	0.2	0.00	0.24	0.07	31	218
45		14.22	14.21	33.426	24.927	303.0	0.137	5.97	102.3	3.3	0.32	0.2	0.00	0.27	0.09	45	217
50	ISL	13.99	13.98	33.462	25.003	295.9	0.152	5.92	101.0	3.3	0.35	0.4	0.03	0.59	0.23	50	
56		13.56	13.55	33.495	25.117	285.2	0.169	5.86	99.1	3.3	0.39	0.7	0.10	0.87	0.37	56	216
64		12.75	12.74	33.465	25.255	272.2	0.191	5.54	92.1	5.1	0.58	3.7	0.25	0.49	0.32	64	215
75	ISL	11.86	11.85	33.511	25.461	252.7	0.220	4.90	80.0	9.1	0.93	9.4	0.05	0.18	0.15	75	
76		11.78	11.77	33.518	25.482	250.8	0.223	4.84	78.9	9.5	0.96	9.9	0.02	0.16	0.14	76	214
86		10.94	10.93	33.576	25.680	232.1	0.247	4.26	68.2	14.2	1.26	14.8	0.01	0.08	0.10	86	213
91		10.36	10.35	33.607	25.805	220.2	0.258	4.05	64.0	16.7	1.40	17.1	0.02	0.04	0.07	91	212
100	ISL	10.11	10.10	33.705	25.925	209.1	0.277	3.82	60.1	19.3	1.52	19.2	0.02	0.03	0.05	100	
108		9.89	9.88	33.729	25.980	203.9	0.294	3.73	58.4	20.7	1.56	20.0	0.02	0.02	0.04	109	211
125		9.30	9.29	33.792	26.127	190.2	0.327	3.74	57.8	23.8	1.67	22.1	0.02	0.01	0.03	126	210
146		8.90	8.88	33.901	26.276	176.4	0.366	3.35	51.4	28.4	1.83	24.8	0.01	0.00	0.03	147	209
150	ISL	8.85	8.83	33.913	26.293	174.8	0.373	3.32	50.8	28.9	1.84	25.0	0.01	0.00	0.03	151	
171		8.59	8.57	33.955	26.367	168.1	0.409	3.22	49.0	31.5	1.90	26.1	0.01	0.00	0.03	172	208
197		8.10	8.08	34.007	26.482	157.5	0.451	2.90	43.7	37.1	2.07	28.5	0.01	0.00	0.03	198	207
200	ISL	8.06	8.04	34.011	26.491	156.7	0.456	2.86	43.0	37.6	2.09	28.7	0.01			201	
227		7.75	7.73	34.032	26.554	151.1	0.498	2.47	36.9	42.3	2.24	30.7	0.01			228	206
250	ISL	7.40	7.38	34.042	26.612	145.8	0.532	2.22	32.9	46.6	2.36	32.2	0.00			251	
274		7.05	7.02	34.050	26.667	140.8	0.566	2.01	29.6	50.9	2.48	33.6	0.00			276	205
300	ISL	6.78	6.75	34.056	26.709	137.1	0.602	1.79	26.2	54.8	2.57	34.8	0.01			302	
315		6.68	6.65	34.065	26.730	135.3	0.623	1.66	24.2	56.8	2.62	35.4	0.01			317	204
380		6.77	6.73	34.215	26.837	126.3	0.708	0.78	11.4	64.4	2.92	37.5	0.01			382	203
400	ISL	6.58	6.54	34.228	26.873	123.0	0.733	0.67	9.8	67.8	2.98	38.3	0.01			403	
433		6.23	6.19	34.241	26.929	117.9	0.772	0.56	8.1	73.5	3.07	39.6	0.00			436	202
500	ISL	5.90	5.86	34.310	27.026	109.3	0.848	0.31	4.4	81.2	3.18	40.9	0.00			503	
509		5.86	5.82	34.319	27.038	108.3	0.858	0.28	4.0	82.2	3.20	41.1	0.00			512	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 10.4 N	120 55.1 W	07/04/01	1845 UTC	3828 m	330 11 kn	300 07 08	1	1023.8 mb	13.3 C	10.9 C	26m	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	14.48	14.48	33.440	24.882	306.0	0.000	5.91	101.8	3.2	0.32	0.2	0.00	0.23	0.05	0	
2	A	14.48	14.48	33.440	24.882	306.1	0.006	5.91	101.8	3.2	0.32	0.2	0.00	0.23	0.05	2	223
10	ISL	14.47	14.47	33.440	24.884	306.1	0.031	5.92	102.0	3.2	0.32	0.2	0.00	0.24	0.04	10	
15	A	14.47	14.47	33.440	24.884	306.2	0.046	5.92	102.0	3.2	0.32	0.2	0.00	0.24	0.04	15	222
20	ISL	14.45	14.45	33.440	24.889	306.0	0.061	5.91	101.8	3.2	0.32	0.2	0.00	0.23	0.05	20	
24		14.44	14.44	33.440	24.891	305.9	0.073	5.91	101.7	3.2	0.32	0.2	0.00	0.23	0.05	24	221
30	ISL	14.43	14.43	33.439	24.892	305.9	0.092	5.92	101.9	3.1	0.32	0.2	0.00	0.23	0.05	30	
32	A	14.43	14.43	33.439	24.893	305.9	0.098	5.92	101.9	3.1	0.32	0.2	0.00	0.23	0.05	32	220
43		14.42	14.41	33.441	24.896	305.9	0.132	5.92	101.9	3.2	0.32	0.2	0.00	0.25	0.05	43	219
50	ISL	14.34	14.33	33.453	24.923	303.6	0.153	5.92	101.7	3.1	0.33	0.2	0.00	0.38	0.08	50	
51	A	14.31	14.30	33.454	24.930	302.9	0.156	5.92	101.6	3.1	0.33	0.2	0.00	0.40	0.09	51	218
58		13.94	13.93	33.447	25.002	296.2	0.177	5.84	99.5	3.6	0.38	0.9	0.03	0.55	0.15	58	217
65	A	13.74	13.73	33.444	25.041	292.7	0.198	5.80	98.4	3.8	0.41	1.3	0.04	0.55	0.15	65	216
74		12.81	12.80	33.444	25.228	275.1	0.223	5.53	92.0	5.6	0.60	4.0	0.11	0.56	0.26	74	215
75	ISL	12.76	12.75	33.448	25.240	273.9	0.226	5.50	91.4	5.7	0.61	4.2	0.11	0.55	0.27	75	
83		12.32	12.31	33.476	25.347	263.9	0.247	5.27	86.8	7.0	0.73	6.4	0.11	0.50	0.31	83	214
91	A	11.33	11.32	33.476	25.532	246.4	0.268	4.90	79.0	10.0	0.97	10.2	0.05	0.27	0.25	91	213
100	ISL	10.76	10.75	33.480	25.637	236.5	0.289	4.70	74.9	11.9	1.11	12.4	0.04	0.21	0.22	100	
101		10.72	10.71	33.483	25.646	235.6	0.292	4.68	74.5	12.1	1.12	12.6	0.04	0.21	0.22	101	212
110		10.52	10.51	33.564	25.745	226.4	0.313	4.26	67.6	14.9	1.29	15.4	0.02	0.13	0.14	111	211
125		10.01	10.00	33.694	25.933	208.7	0.345	3.71	58.2	19.8	1.54	19.6	0.01	0.04	0.06	126	210
145		9.68	9.66	33.850	26.111	192.3	0.385	3.13	48.8	25.2	1.79	23.4	0.01	0.01	0.05	146	209
150	ISL	9.58	9.56	33.878	26.149	188.7	0.395	3.05	47.5	26.2	1.83	24.0	0.01	0.01	0.05	151	
170		9.20	9.18	33.963	26.277	176.8	0.431	2.82	43.5	29.7	1.95	25.8	0.01	0.00	0.04	171	208
200		8.78	8.76	34.052	26.414	164.3	0.483	2.37	36.3	35.1	2.14	28.4	0.01	0.00	0.04	201	207
230		8.44	8.42	34.082	26.491	157.5	0.531	2.17	33.0	38.8	2.25	29.6	0.00			231	206
250	ISL	8.17	8.14	34.101	26.547	152.5	0.562	2.00	30.2	42.0	2.34	30.7	0.00			251	
269		7.89	7.86	34.115	26.599	147.7	0.590	1.83	27.5	45.3	2.43	31.8	0.00			271	205
300	ISL	7.41	7.38	34.118	26.671	141.1	0.635	1.55	23.0	50.4	2.57	33.5	0.00			302	
316		7.18	7.15	34.119 D	26.704	138.1	0.657									318	204
376		6.69	6.66	34.168	26.810	128.6	0.737	0.96	14.0	63.0	2.85	37.3	0.00			378	203
400	ISL	6.42	6.38	34.170	26.848	125.2	0.768	0.84	12.2	67.1	2.92	38.4	0.00			403	
436		6.02	5.98	34.171	26.900	120.4	0.812	0.70	10.1	73.0	3.00	39.8	0.00			439	202
500	ISL	5.61	5.57	34.206	26.979	113.4	0.887	0.50	7.1	81.5	3.11	41.3	0.00			503	
515		5.52	5.48	34.215	26.997	111.7	0.904	0.45	6.4	83.5	3.14	41.7	0.00			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 50.8 N	121 35.4 W	08/04/01	0054 UTC	4117 m	330 13 kn	310 08 09	1	1021.3 mb	12.4 C	10.1 C	29m	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	15.26	15.26	33.624	24.855	308.6	0.000	5.81	101.8	2.8	0.28	0.3	0.00	0.09	0.02	0	
3		15.26	15.26	33.624	24.855	308.6	0.009	5.81	101.8	2.8	0.28	0.3	0.00	0.09	0.02	3	220
10	ISL	15.26	15.26	33.625	24.856	308.8	0.031	5.80	101.6	2.9	0.29	0.3	0.00	0.09	0.03	10	
15		15.26	15.26	33.626	24.857	308.8	0.046	5.80	101.6	2.9	0.29	0.3	0.00	0.09	0.03	15	219
20	ISL	15.26	15.26	33.626	24.857	309.0	0.062	5.80	101.6	2.9	0.29	0.3	0.00	0.09	0.03	20	
30	ISL	15.25	15.25	33.625	24.859	309.1	0.093	5.80	101.6	2.9	0.28	0.3	0.00	0.09	0.02	30	
31		15.25	15.25	33.625	24.859	309.1	0.096	5.80	101.6	2.9	0.28	0.3	0.00	0.09	0.02	31	218
45		15.23	15.22	33.625	24.864	309.1	0.139	5.80	101.6	2.9	0.28	0.2	0.00	0.09	0.02	45	217
50	ISL	15.23	15.22	33.626	24.865	309.2	0.154	5.79	101.4	2.9	0.28	0.2	0.00	0.10	0.02	50	
62		15.23	15.22	33.627	24.866	309.4	0.192	5.78	101.2	2.9	0.28	0.2	0.00	0.11	0.02	62	216
75		15.24	15.23	33.630	24.867	309.8	0.232	5.80	101.6	2.8	0.28	0.2	0.00	0.11	0.03	75	215
85		15.25	15.24	33.636	24.870	309.8	0.263	5.79	101.4	2.7	0.28	0.2	0.00	0.13	0.03	85	214
94		15.28	15.27	33.696	24.909	306.3	0.291	5.74	100.6	2.7	0.28	0.2	0.00	0.23	0.10	94	213
100	ISL	15.24	15.22	33.698	24.920	305.5	0.309	5.73	100.4	2.7	0.28	0.2	0.00	0.27	0.14	100	
105		15.21	15.19	33.699	24.927	304.9	0.324	5.73	100.3	2.7	0.28	0.2	0.00	0.29	0.18	105	212
114		14.16	14.14	33.636	25.104	288.2	0.351	5.64	96.6	3.6	0.38	1.1	0.07	0.35	0.27	115	211
123		13.01	12.99	33.701	25.389	261.2	0.376	5.34	89.4	5.1	0.54	3.8	0.06	0.23	0.21	124	210
125	ISL	12.87	12.85	33.703	25.418	258.4	0.381	5.31	88.6	5.3	0.56	4.2	0.06	0.22	0.20	126	
140		12.19	12.17	33.671	25.525	248.5	0.419	5.17	85.0	6.7	0.68	6.4	0.03	0.17	0.13	141	209
150	ISL	11.56	11.54	33.662	25.636	238.0	0.443	5.02	81.5	8.4	0.81	8.5	0.02	0.12	0.09	151	
164		10.70	10.68	33.676	25.802	222.3	0.475	4.76	75.8	11.6	1.01	11.9	0.01	0.06	0.05	165	208
194		9.65	9.63	33.827	26.098	194.5	0.538	3.98	62.0	20.8	1.48	19.7	0.01	0.01	0.02	195	207
200	ISL	9.50	9.48	33.855	26.145	190.1	0.549	3.90	60.6	22.0	1.53	20.5	0.01			201	
228		8.95	8.93	33.962	26.317	174.1	0.600	3.63	55.7	26.9	1.71	23.2	0.01			229	206
250	ISL	8.55	8.52	33.999	26.409	165.7	0.638	3.42	52.0	30.9	1.82	25.1	0.00			251	
268		8.26	8.23	34.014	26.465	160.5	0.667	3.22	48.7	34.3	1.92	26.5	0.00			269	205
300	ISL	7.84	7.81	34.042	26.550	152.9	0.717	2.69	40.3	40.3	2.15	29.3	0.00			302	
318		7.61	7.58	34.053	26.592	149.0	0.744	2.37	35.3	43.8	2.29	30.9	0.00			320	204
377		6.70	6.67	34.085	26.744	134.9	0.828	1.56	22.8	57.3	2.63	35.5	0.00			379	203
400	ISL	6.47	6.43	34.106	26.791	130.6	0.859	1.30	18.9	61.9	2.74	36.8	0.00			402	
437		6.18	6.14	34.141	26.856	124.7	0.906	0.95	13.7	68.7	2.90	38.6	0.01			440	202
500	ISL	5.78	5.74	34.196	26.950	116.3	0.982	0.60	8.6	78.1	3.06	40.6	0.01			503	
517		5.67	5.63	34.211	26.976	114.0	1.001	0.50	7.1	80.6	3.10	41.1	0.01			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0104 STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 31.1 N	122 15.5 W	08/04/01	0705 UTC	4163 m	290 10 kn			1021.3 mb	13.2 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	15.38	15.38	33.590	24.803	313.6	0.000	5.81	102.0	3.2	0.29	0.2	0.00	0.09	0.02	0	
3		15.38	15.38	33.590	24.803	313.6	0.009	5.81	102.0	3.2	0.29	0.2	0.00	0.09	0.02	3	220
10	ISL	15.38	15.38	33.590	24.803	313.8	0.031	5.82	102.2	3.1	0.30	0.2	0.00	0.09	0.02	10	
14		15.38	15.38	33.589	24.802	314.0	0.044	5.82	102.2	3.1	0.30	0.2	0.00	0.09	0.02	14	219
20	ISL	15.39	15.39	33.591	24.802	314.3	0.063	5.81	102.1	3.1	0.30	0.2	0.00	0.09	0.02	20	
30		15.40	15.40	33.594	24.802	314.5	0.094	5.79	101.7	3.1	0.29	0.2	0.00	0.09	0.02	30	218
45		15.41	15.40	33.595	24.801	315.1	0.141	5.81	102.1	3.1	0.29	0.2	0.00	0.10	0.02	45	217
50	ISL	15.41	15.40	33.596	24.802	315.2	0.157	5.80	101.9	3.1	0.29	0.2	0.00	0.10	0.02	50	
59		15.40	15.39	33.597	24.806	315.1	0.186	5.78	101.5	3.1	0.30	0.2	0.00	0.12	0.02	59	216
73		15.17	15.16	33.602	24.860	310.3	0.229	5.83	101.9	3.1	0.29	0.2	0.00	0.20	0.06	73	215
75	ISL	15.14	15.13	33.595	24.862	310.3	0.236	5.83	101.9	3.1	0.29	0.2	0.00	0.21	0.08	75	
84		15.01	15.00	33.605	24.898	307.1	0.263	5.78	100.7	3.0	0.29	0.2	0.00	0.28	0.16	84	214
94		13.94	13.93	33.525	25.063	291.5	0.293	5.65	96.3	4.1	0.42	1.3	0.06	0.40	0.24	94	213
100	ISL	13.46	13.45	33.490	25.135	284.7	0.311	5.63	95.0	4.4	0.46	1.9	0.08	0.38	0.23	100	
106		13.00	12.99	33.468	25.210	277.7	0.327	5.61	93.7	4.9	0.52	2.8	0.09	0.37	0.22	106	212
113		12.37	12.36	33.470	25.334	265.9	0.346	5.41	89.2	6.1	0.65	4.9	0.10	0.31	0.21	113	211
124		11.70	11.68	33.511	25.492	251.0	0.375	5.20	84.6	7.4	0.76	7.1	0.06	0.22	0.17	125	210
125	ISL	11.63	11.61	33.511	25.505	249.8	0.377	5.18	84.1	7.6	0.78	7.4	0.06	0.21	0.17	126	
139		10.75	10.73	33.525	25.675	233.8	0.411	4.87	77.6	10.9	1.01	11.2	0.02	0.13	0.10	140	209
150	ISL	10.38	10.36	33.595	25.794	222.6	0.436	4.52	71.5	13.9	1.19	14.1	0.01	0.08	0.07	151	
164		10.08	10.06	33.711	25.936	209.4	0.467	4.09	64.3	17.8	1.40	17.5	0.00	0.03	0.05	165	208
193		9.44	9.42	33.935	26.217	183.1	0.523	3.59	55.7	24.7	1.66	22.1	0.00	0.00	0.03	194	207
200	ISL	9.32	9.30	33.959	26.256	179.6	0.536	3.57	55.3	25.7	1.69	22.6	0.00			201	
229		8.83	8.81	34.001	26.367	169.4	0.587	3.53	54.1	29.3	1.78	24.1	0.00			230	206
250	ISL	8.43	8.40	34.013	26.438	162.8	0.622	3.28	49.8	33.0	1.90	25.9	0.00			251	
267		8.11	8.08	34.018	26.491	158.0	0.649	3.02	45.5	36.2	2.01	27.5	0.00			268	205
300	ISL	7.65	7.62	34.035	26.572	150.7	0.700	2.56	38.2	42.1	2.21	30.2	0.00			302	
318		7.43	7.40	34.045	26.611	147.1	0.727	2.32	34.4	45.3	2.32	31.5	0.00			320	204
377		6.75	6.72	34.080	26.733	136.0	0.810	1.66	24.2	56.1	2.63	35.1	0.00			379	203
400	ISL	6.50	6.46	34.098	26.780	131.6	0.841	1.40	20.3	60.9	2.74	36.5	0.00			402	
438		6.17	6.13	34.140	26.857	124.7	0.890	1.00	14.4	68.1	2.89	38.4	0.00			441	202
500	ISL	6.12	6.08	34.258	26.957	116.1	0.964	0.50	7.2	74.5	3.09	39.8	0.00			503	
517		6.11	6.06	34.290	26.984	113.8	0.984	0.36	5.2	76.3	3.14	40.2	0.00			520	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 10.7 N	122 55.3 W	08/04/01	1801 UTC	3860 m	320 24 kn	290 08 05	1	1020.4 mb	13.5 C	11.0 C	25m	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	15.32	15.32	33.566	24.797	314.1	0.000	5.77	101.2	3.0	0.29	0.2	0.00	0.10	0.03	0	
2	A	15.32	15.32	33.566	24.797	314.1	0.006	5.77	101.2	3.0	0.29	0.2	0.00	0.10	0.03	2	222
10	ISL	15.32	15.32	33.566	24.798	314.3	0.031	5.80	101.7	2.9	0.29	0.2	0.00	0.10	0.02	10	
16	A	15.32	15.32	33.566	24.798	314.5	0.050	5.82	102.1	2.9	0.29	0.2	0.00	0.10	0.02	16	221
20	ISL	15.32	15.32	33.566	24.798	314.6	0.063	5.80	101.7	2.9	0.29	0.2	0.00	0.10	0.02	20	
25		15.32	15.32	33.566	24.798	314.8	0.079	5.78	101.4	2.9	0.29	0.2	0.00	0.14	U-0.02 U	25	220
30	ISL	15.32	15.32	33.566	24.798	314.9	0.094	5.79	101.5	2.9	0.29	0.2	0.00	0.10	0.02	30	
33	A	15.32	15.31	33.566	24.798	315.0	0.104	5.80	101.7	2.9	0.29	0.2	0.00	0.10	0.02	33	219
42		15.32	15.31	33.566	24.799	315.2	0.132	5.77	101.2	2.9	0.29	0.2	0.00	0.13	0.00	42	218
50	ISL	15.32	15.31	33.567	24.800	315.4	0.157	5.78	101.4	2.9	0.29	0.2	0.00	0.18	0.03	50	
53	A	15.32	15.31	33.567	24.800	315.5	0.167	5.78	101.4	2.9	0.29	0.2	0.00	0.15	U-0.04 U	53	217
68	A	15.32	15.31	33.568	24.801	315.8	0.214	5.77	101.2	2.9	0.29	0.2	0.00	0.21	U-0.04 U	68	216
75	ISL	15.34	15.33	33.578	24.805	315.7	0.236	5.78	101.4	2.9	0.29	0.2	0.00	0.33	0.17	75	
77		15.34	15.33	33.581	24.807	315.5	0.243	5.78	101.4	2.9	0.29	0.2	0.00	0.21 U	0.27 U	77	215
86		15.26	15.25	33.655	24.882	308.7	0.271	5.73	100.4	2.8	0.30	0.2	0.00	0.41	0.25	86	214
94	A	14.53	14.52	33.612	25.007	296.9	0.295	5.67	97.9	3.2	0.35	0.5	0.04	0.45	0.27	94	213
100	ISL	14.04	14.03	33.586	25.090	289.1	0.312	5.56	95.0	3.9	0.43	1.3	0.10	0.41	0.25	100	
106		13.53	13.52	33.568	25.181	280.5	0.330	5.40	91.3	4.8	0.53	2.7	0.13	0.33	0.23	106	212
114		12.73	12.71	33.566	25.339	265.6	0.351	5.15	85.6	6.2	0.69	5.4	0.08	0.16	0.26	114	211
122		12.23	12.21	33.595	25.458	254.4	0.372	5.11	84.1	6.8	0.72	6.5	0.05	0.11	0.10	123	210
125	ISL	12.03	12.01	33.608	25.506	249.8	0.380	5.07	83.1	7.3	0.75	7.1	0.04	0.10	0.09	126	
142		11.08	11.06	33.676	25.734	228.4	0.420	4.78	76.8	10.5	0.97	10.7	0.02	0.05	0.04	143	209
150	ISL	10.86	10.84	33.689	25.783	223.8	0.439	4.67	74.7	11.6	1.03	11.8	0.01			151	
166		10.54	10.52	33.716	25.861	216.7	0.474	4.42	70.2	14.0	1.16	14.1	0.01	0.03 U	0.00 U	167	208
194		9.74	9.72	33.858	26.108	193.6	0.531	3.73	58.2	21.5	1.55	20.3	0.01	0.12	U-0.02 U	195	207
200	ISL	9.61	9.59	33.890	26.154	189.3	0.543	3.59	55.9	23.1	1.62	21.4	0.01			201	
225		9.16	9.14	34.012	26.323	173.6	0.588	3.02	46.6	29.4	1.89	25.0	0.00			226	206
250	ISL	8.82	8.79	34.093	26.441	162.8	0.630	2.48	38.0	34.9	2.12	27.6	0.00			251	
267		8.59	8.56	34.125	26.502	157.2	0.657	2.19	33.4	38.3	2.25	29.0	0.00			268	205
300	ISL	7.92	7.89	34.107	26.589	149.2	0.708	2.09	31.4	43.7	2.35	30.8	0.00			302	
322		7.53	7.50	34.093	26.635	145.0	0.740	2.04	30.3	46.9	2.40	31.7	0.00			324	204
376		7.45	7.41	34.215	26.743	135.7	0.816	1.07	15.9	55.0	2.74	34.6	0.00			378	203
400	ISL	7.26	7.22	34.238	26.788	131.6	0.848	0.85	12.6	58.6	2.84	35.7	0.00			402	
438		6.86	6.82	34.250	26.853	125.7	0.897	0.65	9.5	64.4	2.95	37.2	0.00			441	202
500	ISL	6.08	6.04	34.228	26.938	117.8	0.972	0.56	8.1	74.4	3.05	39.7	0.00			503	
517		5.87	5.83	34.224	26.962	115.5	0.992	0.54	7.7	77.1	3.08	40.4	0.00			520	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN | CALCOFI CRUISE 0104 | STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
29 50.8 N	123 35.1 W	09/04/01	0018 UTC	4106 m	310 27 kn	330 09 07		1020.0 mb	13.9 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	15.61	15.61	33.647	24.796	314.2	0.000	5.77	101.8	3.0	0.27	0.3	0.00	0.08	0.01	0	
3		15.61	15.61	33.647	24.796	314.3	0.009	5.77	101.8	3.0	0.27	0.3	0.00	0.08	0.01	3	220
10	ISL	15.61	15.61	33.648	24.797	314.5	0.031	5.75	101.5	3.0	0.27	0.3	0.00	0.08	0.01	10	
16		15.62	15.62	33.648	24.795	314.8	0.050	5.74	101.3	3.0	0.27	0.3	0.00	0.08 A	0.00 A	16	219
20	ISL	15.62	15.62	33.648	24.795	314.9	0.063	5.74	101.3	3.0	0.27	0.3	0.00	0.09	0.00	20	
30		15.62	15.62	33.647	24.794	315.3	0.094	5.75	101.5	3.0	0.27	0.3	0.00	0.10	0.00	30	218
46		15.63	15.62	33.653	24.797	315.5	0.145	5.76	101.7	3.0	0.27	0.3	0.00	0.08	-0.01	46	217
50	ISL	15.82	15.81	33.731	24.815	314.0	0.157	5.73	101.6	2.9	0.26	0.3	0.00	0.09	-0.01	50	
61		16.34	16.33	33.959	24.872	308.9	0.192	5.65	101.3	2.6	0.22	0.3	0.00	0.12	0.00	61	216
75	ISL	16.40	16.39	34.025	24.910	305.9	0.235	5.60	100.6	2.5	0.22	0.4	0.00	0.14	0.02	75	
76		16.40	16.39	34.030	24.914	305.5	0.238	5.60	100.6	2.5	0.22	0.4	0.00	0.14	0.02	76	215
85		16.61	16.60	34.167	24.971	300.4	0.265	5.58	100.7	2.5	0.21	0.4	0.00	0.18	0.01	85	214
94		16.69	16.67	34.219	24.992	298.7	0.292	5.58	100.9	2.4	0.20	0.4	0.00	0.19	0.05	94	213
100	ISL	16.61	16.59	34.215	25.008	297.4	0.310	5.54	100.0	2.5	0.21	0.4	0.01	0.23	0.10	100	
105		16.55	16.53	34.211	25.019	296.5	0.325	5.51	99.4	2.5	0.21	0.4	0.01	0.27	0.16	105	212
114		15.12	15.10	33.994	25.175	281.7	0.351	5.49	96.1	3.1	0.32	1.1	0.07	0.38	0.33	114	211
124		12.78	12.76	33.616	25.368	263.1	0.378	5.55	92.4	4.5	0.47	2.7	0.08	0.22	0.19	125	210
125	ISL	12.67	12.65	33.602	25.379	262.1	0.381	5.54	92.0	4.6	0.48	2.9	0.08	0.22	0.18	126	
140		11.82	11.80	33.562	25.510	249.8	0.419	5.37	87.6	6.1	0.66	5.4	0.03	0.17	0.10	141	209
150	ISL	11.41	11.39	33.592	25.609	240.5	0.444	5.25	84.9	7.1	0.73	6.9	0.02	0.13	0.07	151	
162		11.00	10.98	33.661	25.737	228.5	0.472	5.05	81.0	9.0	0.83	9.1	0.01	0.08	0.04	163	208
193		9.85	9.83	33.878	26.105	193.9	0.537	3.93	61.5	20.1	1.44	18.9	0.01	0.00	0.02	194	207
200	ISL	9.66	9.64	33.907	26.159	188.8	0.551	3.93	61.3	21.4	1.46	19.8	0.01			201	
227		9.10	9.08	33.978	26.306	175.2	0.600	3.92	60.4	25.2	1.56	21.6	0.00			228	206
250	ISL	8.81	8.78	34.009	26.377	168.9	0.639	3.65	55.9	28.5	1.70	23.5	0.00			251	
267		8.61	8.58	34.021	26.417	165.2	0.668	3.38	51.5	31.3	1.82	25.0	0.00			268	205
300	ISL	7.99	7.96	34.044	26.529	154.9	0.721	2.79	41.9	38.7	2.09	28.4	0.00			302	
318		7.65	7.62	34.054	26.587	149.5	0.748	2.48	37.0	42.9	2.23	30.2	0.00			320	204
378		6.87	6.83	34.071	26.710	138.3	0.834	1.86	27.2	53.7	2.51	33.9	0.00			380	203
400	ISL	6.67	6.63	34.088	26.750	134.6	0.864	1.62	23.6	57.6	2.61	35.2	0.00			402	
437		6.36	6.32	34.117	26.814	128.8	0.913	1.24	17.9	64.1	2.77	37.2	0.00			440	202
500	ISL	5.75	5.71	34.139	26.909	120.1	0.991	0.88	12.6	74.9	2.95	39.9	0.00			503	
516		5.60	5.56	34.146	26.933	117.9	1.011	0.79	11.2	77.6	2.99	40.6	0.00			519	201

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

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 4.0 N	122 58.4 W	21/04/01	1723 UTC	15 m		1210 - 1909 PST	1210 PST	1909 PST	291.6 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	13.05	33.197	24.987	6.24	104.2	3.1	0.24	0.4	0.03	0.59	0.12	81. A	6.4	6.7	6.6	0.12
10	13.05	33.197	24.987	6.22	103.9	3.0	0.24	0.4	0.03	0.58	0.11	36.	10.4	10.7	10.5	0.20
20	13.05	33.197	24.988	6.23	104.1	3.0	0.24	0.4	0.03	0.58	0.11	13.	14.8	7.5	11.1	0.21
30	13.05	33.197	24.988	6.22	103.9	3.0	0.24	0.4	0.03	0.59	0.13	4.6	3.3	3.5	3.4	0.12
39	13.05	33.197	24.988	6.21	103.7	3.0	0.24	0.4	0.03	0.58	0.11	1.8	1.1	1.0	1.1	0.11
47	13.05	33.197	24.988	6.21	103.7	3.0	0.25	0.4	0.03	0.59	0.12					
55	13.05	33.197	24.989	6.22	103.9	3.0	0.25	0.5	0.03	0.58	0.12	0.36	0.06	0.03	0.05	0.09

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 49.0 N	121 50.4 W	19/04/01	1812 UTC	13 m		1206 - 1910 PST	1206 PST	1910 PST	444.3 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	13.15	33.287	25.037	6.39	107.0	1.7	0.43	1.2	0.07	1.15	0.22	79. A	16.8	16.9	16.9	0.27
7	13.13	33.285	25.039	6.42	107.5	1.7	0.42	1.1	0.07	1.06	0.28	44.	21.9	22.2	22.0	0.29
16	12.92	33.268	25.068	6.37	106.2	2.1	0.42	1.2	0.07	0.99	0.21	15.	13.9	13.7	13.8	0.21
27	12.48	33.260	25.148	6.18	102.0	2.9	0.49	1.8	0.11	0.82	0.24	4.1	5.7	5.5	5.6	0.22
35	12.50	33.303	25.177	6.15	101.6	3.0	0.49	1.9	0.14	0.76	0.29	1.6	2.0	2.0	2.0	0.15
42	12.56	33.343	25.197	6.18	102.3	2.7	0.48	1.7	0.13	0.62	0.27					
49	12.31	33.376	25.271	6.02	99.1	4.2	0.62	3.3	0.18	0.66	0.29	0.31	0.13	0.17	0.15	0.08

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 47.8 N	123 55.6 W	20/04/01	1733 UTC	18 m		1914 - 1914 PST	1215 PST	1215 PST	203.3 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	13.53	33.145	24.851	6.18	104.2	3.2	0.35	0.0	0.00	0.39	0.06	84. A	4.7	4.8	4.8	0.14
11	13.52	33.145	24.853	6.18	104.2	3.1	0.34	0.0	0.00	0.38	0.05	39.	7.0	6.5	6.8	0.15
23	13.52	33.146	24.854	6.18	104.2	3.1	0.34	0.0	0.00	0.40	0.07	14.	4.3	4.6	4.4	0.13
37	13.15	33.171	24.948	6.23	104.3	3.1	0.35	0.1	0.00	0.45	0.10	4.3	2.1	2.1	2.1	0.13
47	12.89	33.169	24.998	6.22	103.5	3.0	0.38	0.4	0.03	0.56	0.13	1.8	1.1	1.1	1.1	0.10
56	13.03	33.257	25.039	6.20	103.5	2.4	0.36	0.4	0.04	0.64	0.16					
66	12.79	33.306	25.124	6.15	102.2	2.4	0.43	1.3	0.11	0.97	0.33	0.36	0.34	0.15	0.25	0.07

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 10.7 N	119 30.3 W	18/04/01	1928 UTC	6 m		1202 - 1904 PST	1157 PST	1904 PST	2099.2 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	12.51	33.780	25.545	7.11	117.9	2.1	0.30	0.0	0.06	9.67	1.84	60. A	195.2	205.4	200.3	1.2
3	12.53	33.781	25.542	7.11	117.9	2.2	0.34	0.0	0.06	8.94	2.66	46.	131.6	138.6	135.1	1.5
8	12.16	33.784	25.615	7.31	120.3	1.5	0.29	0.1	0.04	14.15	3.23	13.	121.6	156.6	139.1	1.5
12	12.01	33.787	25.646	6.94	113.8	2.2	0.33	0.4	0.06	18.22	2.37	4.6	84.5	88.1	86.3	0.58
16	11.82	33.796	25.689	6.88	112.4	2.6	0.42	1.2	0.06	22.63	2.95	1.7	43.4	43.0	43.2	0.84
22	11.64	33.791	25.719	6.11	99.4	6.7	0.73	5.2	0.14	13.28	3.21	0.36	2.3	1.6	2.0	0.53

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 34.5 N	120 45.2 W	16/04/01	1842 UTC	7 m		1200 - 1857 PST	1203 PST	1857 PST	1551.2 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	11.92	33.571	25.495	6.70	109.5	2.8	0.52	3.8	0.20	10.34	1.84	64. A	54.6	53.5	54.0	0.58
6	11.99	33.622	25.521	6.74	110.4	2.8	0.56	3.5	0.20	10.65	1.42	27.	115.4	111.8	113.6	4.0
11	12.01	33.625	25.520	6.72	110.1	2.8	0.55	3.5	0.20	9.97	2.36	9.0	94.7	89.9	92.3	1.8
16	11.99	33.627	25.526	6.70	109.7	2.7	0.59 U	3.5	0.19	9.74	2.11	3.0	61.7	47.7	54.7	1.1
19	11.99	33.626 D	25.525	6.68	109.4	2.6	0.53	3.9	0.21	9.39	2.38	1.6	23.8	21.9	22.9	0.40
28	11.97	33.631	25.533	6.66	109.0	2.6	0.57	3.6	0.19	9.89	2.24	0.22	1.5	1.2	1.4	0.37

A) INCUBATION LIGHT INTENSITIES WERE 93, 41, 14, 4.5, 1.8, 0.36 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 13.6 N	123 29.2 W	15/04/01	1757 UTC	25 m		1213 - 1913 PST	1213 PST	1913 PST	614.8 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
3	13.47	33.255	24.948	6.19	104.3	3.0	0.35	0.3	0.02	0.43	0.06	83. A	6.3	5.6	6.0	0.10
10	13.31	33.255	24.980	6.19	104.0	3.0	0.35	0.2	0.02	0.40	0.08					
16	13.24	33.253	24.993	6.22	104.3	2.9	0.35	0.2	0.02	0.42	0.09	37.	8.8	9.6	9.2	0.31
25	13.11	33.276	25.037	6.24	104.4	2.7	0.35	0.2	0.03	0.60	0.12					
34	13.01	33.299	25.075	6.19	103.4	2.8	0.36	0.4	0.05	0.90	0.28	12.	12.8	13.6	13.2	0.20
43	13.01	33.311	25.084	6.17	103.0	2.9	0.38	0.5	0.06	1.03	0.35					
53	12.96	33.320	25.102	6.09	101.6	3.5	0.41	0.9	0.07	1.14	0.35	3.9	6.7	7.3	7.0	0.15
59	12.93	33.316	25.104	6.07	101.2	3.7	0.42	0.9	0.08	0.76	0.33					
68	12.67	33.297	25.141	6.00	99.5	4.3	0.48	1.6	0.10	0.62	0.35	1.5	2.1	2.3	2.2	0.20
80	11.01	33.215	25.386	5.63	90.0	8.3	0.83	7.3	0.08	0.31	0.28					
93	10.27	33.293	25.576	5.30	83.5	11.0	1.01	10.6	0.03	0.14	0.16	0.33		0.64	0.64	0.15

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 8.9 N	120 1.4 W	13/04/01	1805 UTC	12 m		1200 - 1850 PST	1200 PST	1853 PST	876.6 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	12.50	33.508	25.336	6.30	104.2	2.8	0.59	3.6	0.16	2.06	0.96	77. A		12.3	12.3	0.22
8	12.52	33.508	25.332	6.34	104.9	2.7	0.59	3.5	0.16	2.07	1.02	36.	41.3	41.3	41.3	0.44
16	12.53	33.509	25.331	6.35	105.1	2.5	0.58	3.4	0.16	2.12	0.82	13.	38.3	36.7	37.5	0.38
25	12.49	33.508	25.338	6.32	104.5	2.7	0.59	3.6	0.16	2.13	0.95	4.1	16.9	18.6	17.7	0.32
31	12.48	33.508	25.340	6.29	104.0	2.7	0.60	3.6	0.16	1.94	0.90	1.9	7.1		7.1	0.23
38	12.48	33.508	25.340	6.28	103.8	2.7	0.60	3.9	0.16	1.84	0.90					
45	12.48	33.509	25.341	6.27	103.7	2.7	0.61	3.7	0.16	2.00	0.80	0.32	0.48	0.52	0.50	0.14

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 59.9 N	122 23.3 W	14/04/01	1716 UTC	26 m		1209 - 1906 PST	1209 PST	1906 PST	230.7 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	13.90	33.261	24.865	6.01	102.2	3.4	0.34	0.1	0.00	0.23	0.05	94. A	3.2	3.5	3.3	0.06
16	13.98	33.297	24.877	6.01	102.4	3.3	0.34	0.0	0.00	0.28 B	0.05 B	39.	5.1	5.0	5.1	0.07
24	14.12	33.337	24.879	5.96	101.9	3.3	0.33	0.1	0.00	0.27	0.05					
33	14.23	33.381	24.890	5.94	101.8	3.2	0.32	0.1	0.00	0.24	0.06	14.	3.4	3.2	3.3	0.07
43	14.09	33.348	24.894	5.97	102.0	3.2	0.33	0.1	0.00	0.28	0.05					
54	13.53	33.195	24.891	6.07	102.4	3.4	0.35	0.1	0.01	0.34	0.09	4.1	2.2	2.2	2.2	0.06
60	13.49	33.187	24.893	6.06	102.1	3.4	0.36	0.1	0.01	0.29	0.16					
67	13.40	33.175	24.902	6.08	102.3	3.4	0.36	0.1	0.01	0.36	0.10	1.9	0.95	0.98	0.96	0.07
78	13.27	33.200	24.948	6.07	101.8	3.5	0.38	0.3	0.03	0.37	0.14					
86	13.19	33.205	24.968	6.06	101.5	3.6	0.38	0.3	0.03	0.34	0.17					
95	13.12	33.202	24.980	6.04	101.0	3.7	0.41	0.5	0.05	0.36	0.11	0.37	0.10	0.08	0.09	0.05

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

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 55.2 N	118 56.2 W	11/04/01	1851 UTC	12 m		1156 - 1844 PST	1157 PST	1844 PST	518.3 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	13.57	33.541	25.149	6.10	103.2	3.5	0.38	1.1	0.07	1.00	0.26	77. A	14.2	14.6	14.4	0.16
7	13.54	33.541	25.155	6.11	103.3	3.5	0.38	1.1	0.07	1.01	0.26	41.	21.3	21.0	21.2	0.26
15	13.46	33.540	25.171	6.11	103.2	3.6	0.39	1.1	0.07	1.04	0.30	15.	18.5	18.3	18.4	0.39
24	13.41	33.545	25.185	6.10	102.9	3.5	0.39	1.2	0.07	1.17	0.37	4.6	9.7	10.2	10.0	0.18
31	12.79	33.557	25.318	6.18	102.9	1.5	0.47	2.1	0.11	2.21	1.01	1.9	7.9	7.4	7.7	0.16
38	12.58	33.554	25.357	5.95	98.6	2.9	0.56	3.3	0.11	2.14	1.49					
44	11.96	33.552	25.474	5.15	84.3	8.8	0.90	8.7	0.11	0.97	0.96	0.36	0.35	0.34	0.35	0.08

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 45.1 N	121 19.6 W	10/04/01	1744 UTC	17 m		1206 - 1906 PST	1206 PST	1906 PST	192.5 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	13.49	33.316	24.991	6.08	102.6	3.7	0.36	0.4	0.03	0.39	0.08	83. A	4.3	4.5	4.4	0.06
11	13.48	33.314	24.992	6.08	102.5	3.7	0.36	0.4	0.03	0.42	0.11	37.	6.2	6.7	6.4	0.08
21	13.49	33.321	24.995	6.08	102.6	3.6	0.36	0.4	0.03	0.41	0.10	15.	4.8	4.9	4.8	0.07
35	13.52	33.338	25.003	6.06	102.3	3.4	0.36	0.3	0.03	0.45	0.11	4.2	2.8	2.6	2.7	0.07
44	13.54	33.361	25.017	6.06	102.4	3.4	0.36	0.3	0.03	0.47	0.11	1.9	1.0	1.0	1.0	0.05
53	13.52	33.355	25.017	6.06	102.3	3.4	0.36	0.4	0.03	0.44	0.12					
62	12.83	33.298	25.110	5.91	98.3	4.6	0.49	2.2	0.12	0.49	0.18	0.37	0.10	0.12	0.11	0.04

A) INCUBATION LIGHT INTENSITIES WERE 93, 41, 14, 4.5, 1.8, 0.36 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 46.3 N	123 20.4 W	09/04/01	1803 UTC	27 m		1214 - 1902 PST	1214 PST	1902 PST	60.3 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	15.52	33.644	24.813	5.75	101.3	2.8	0.28	0.1	0.00	0.09	0.02	84. A	0.31	0.38	0.35	0.05
18	15.52	33.643	24.813	5.74	101.1	2.9	0.28	0.1	0.00	0.09	0.02	36.	1.3	1.3	1.3	0.05
26	15.52	33.643	24.813	5.76	101.5	2.8	0.28	0.1	0.00	0.08	0.02					
35	15.52	33.644	24.814	5.74	101.1	2.8	0.28	0.1	0.00	0.09	0.01	14.	1.1	1.0	1.1	0.07
44	15.52	33.644	24.815	5.75	101.3	2.8	0.28	0.1	0.00	0.09	0.02					
55	15.53	33.646	24.814	5.75	101.3	2.7	0.28	0.1	0.00	0.09	0.02	4.4	0.56	0.54	0.55	0.05
71	15.54	33.647	24.813	5.74	101.1	2.7	0.28	0.2	0.00	0.08	0.02	1.8	0.20	0.17	0.19	0.04
79	15.54	33.647	24.814	5.74	101.1	2.7	0.28	0.2	0.00	0.09	0.00					
90	15.51	33.645	24.819	5.74	101.1	2.7	0.29	0.2	0.00	0.09	0.03					
101	14.81	33.535	24.888	5.78	100.3	3.0	0.31	0.1	0.00	0.24	0.17	0.32	0.06	0.11	0.08	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 10.7 N	118 53.5 W	06/04/01	1918 UTC	13 m		1210 - 1847 PST	1158 PST	1847 PST	267.6 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	14.21	33.538	25.014	6.02	103.2	3.8	0.32	0.2	0.00	0.52	0.15	89. A	5.6	5.3	5.5	0.08
8	14.19	33.538	25.019	6.03	103.3	3.8	0.32	0.2	0.00	0.53	0.15	39.	9.2	9.2	9.2	0.18
16	14.14	33.540	25.031	6.03	103.2	3.8	0.31	0.2	0.00	0.57	0.17	15.	8.7	8.3	8.5	0.19
26	13.90	33.529	25.073	6.05	103.1	4.3	0.34	0.4	0.01	0.73	0.23	4.6	6.8	6.8	6.8	0.13
34	13.55	33.514	25.133	6.06	102.5	4.9	0.38	0.8	0.04	0.67	0.26	1.8	3.4	3.3	3.3	0.12
41	13.42	33.508	25.155	6.00	101.2	5.1	0.40	1.2	0.06	0.65	0.27					
48	12.10	33.459	25.375	5.34	87.6	7.5	0.74	6.4	0.23	0.35	0.20	0.35	-0.02	-0.03	-0.02	0.04 B

B) DARK UPTAKE EXCEEDED LIGHT UPTAKE.

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 10.4 N	120 55.1 W	07/04/01	1845 UTC	26 m		1206 - 1855 PST	1206 PST	1855 PST	171.4 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
2	14.48	33.440	24.882	5.91	101.8	3.2	0.32	0.2	0.00	0.23	0.05	89. A	1.7	1.5	1.6	0.09
15	14.47	33.440	24.884	5.92	102.0	3.2	0.32	0.2	0.00	0.24	0.04	41.	3.1	2.9	3.0	0.09
24	14.44	33.440	24.891	5.91	101.7	3.2	0.32	0.2	0.00	0.23	0.05					
32	14.43	33.439	24.893	5.92	101.9	3.1	0.32	0.2	0.00	0.23	0.05	15.	2.6	2.5	2.5	0.09
43	14.42	33.441	24.896	5.92	101.9	3.2	0.32	0.2	0.00	0.25	0.05					
51	14.31	33.454	24.930	5.92	101.6	3.1	0.33	0.2	0.00	0.40	0.09	4.9	2.3	2.3	2.3	0.06
58	13.94	33.447	25.002	5.84	99.5	3.6	0.38	0.9	0.03	0.55	0.15					
65	13.74	33.444	25.041	5.80	98.4	3.8	0.41	1.3	0.04	0.55	0.15	2.2	1.3	1.4	1.4	0.06
74	12.81	33.444	25.228	5.53	92.0	5.6	0.60	4.0	0.11	0.56	0.26					
83	12.32	33.476	25.347	5.27	86.8	7.0	0.73	6.4	0.11	0.50	0.31					
91	11.33	33.476	25.532	4.90	79.0	10.0	0.97	10.2	0.05	0.27	0.25	0.46	0.16	0.12	0.14	0.04

RV DAVID STARR JORDAN — CALCOFI CRUISE 0104 — STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 10.7 N	122 55.3 W	08/04/01	1801 UTC	25 m		1214 - 1901 PST	1214 PST	1901 PST	55.3 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	15.32	33.566	24.797	5.77	101.2	3.0	0.29	0.2	0.00	0.10	0.03	88. A	0.38	0.42	0.40	0.05
16	15.32	33.566	24.798	5.82	102.1	2.9	0.29	0.2	0.00	0.10	0.02	37.	1.2	1.3	1.2	0.06
25	15.32	33.566	24.798	5.78	101.4	2.9	0.29	0.2	0.00	0.14 U	-0.02 U					
33	15.32	33.566	24.798	5.80	101.7	2.9	0.29	0.2	0.00	0.10	0.02	13.	0.96	0.96	0.96	0.05
42	15.32	33.566	24.799	5.77	101.2	2.9	0.29	0.2	0.00	0.13	0.00					
53	15.32	33.567	24.800	5.78	101.4	2.9	0.29	0.2	0.00	0.15 U	-0.04 U	3.9	0.48	0.46	0.47	0.05
68	15.32	33.568	24.801	5.77	101.2	2.9	0.29	0.2	0.00	0.21 U	-0.04 U	1.5	0.20	0.22	0.21	0.05
77	15.34	33.581	24.807	5.78	101.4	2.9	0.29	0.2	0.00	0.21 U	0.27 U					
86	15.26	33.655	24.882	5.73	100.4	2.8	0.30	0.2	0.00	0.41	0.25					
94	14.53	33.612	25.007	5.67	97.9	3.2	0.35	0.5	0.04	0.45	0.27	0.31	0.22	0.22	0.22	0.04

A) INCUBATION LIGHT INTENSITIES WERE 93, 41, 14, 4.5, 1.8, 0.36 PERCENT RESPECTIVELY.

CalCOFI Cruise 0104

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 46.8	04/23	1014	1021	158	63	126	126
77	51	35 01.3	120 55.2	04/23	0823	0844	444	213	218	218
77	55	34 53.2	121 12.0	04/23	0452	0514	434	212	196	196
77	60	34 43.3	121 33.1	04/23	0017	0038	472	201	153	153
77	70	34 23.2	122 14.9	04/22	1646	1708	450	216	91	91
77	80	34 03.4	122 56.8	04/22	0826	0847	453	218	97	97
77	90	33 43.3	123 38.2	04/22	0052	0114	480	210	115	115
77	100	33 23.2	124 19.6	04/21	1756	1818	490	215	31	31
80	51	34 27.0	120 31.3	04/19	1928	1936	160	70	470	470
80	55	34 19.1	120 48.0	04/19	2246	2308	452	214	268	268
80	60	34 08.9	121 09.3	04/20	0243	0305	456	210	217	217
80	70	33 48.9	121 50.7	04/20	0909	0931	428	217	192	192
80	80	33 29.1	122 31.9	04/20	1654	1715	474	199	84	84
80	90	33 09.1	123 13.0	04/20	2354	2416	507	191	120	120
80	100	32 49.1	123 54.3	04/21	0824	0846	502	211	60	60
82	47	34 16.6	120 01.6	04/18	0114	0136	438	218	199	199
83	40.6	34 13.6	119 24.8	04/18	0539	0542	80	24	587	587
83	42	34 10.7	119 30.4	04/19	1212	1227	303	145	446	446
83	51	33 52.8	120 08.2	04/17	1929	1941	236	114	352	352
83	55	33 44.7	120 24.6	04/17	1615	1636	465	207	277	277
83	60	33 34.6	120 45.4	04/17	1155	1216	491	199	189	189
83	70	33 14.8	121 26.6	04/17	0437	0459	427	213	131	131
83	80	32 54.7	122 08.0	04/16	2240	2301	434	212	187	187
83	90	32 34.7	122 48.7	04/16	1632	1655	472	224	125	125
83	100	32 14.7	123 29.4	04/16	0849	0911	425	210	195	195
83	110	31 54.8	124 10.2	04/16	0356	0418	440	213	61	61
87	33	33 53.4	118 29.3	04/13	1327	1332	103	38	222	222
87	35	33 49.5	118 37.6	04/13	1652	1713	434	214	58	58
87	40	33 39.4	118 58.5	04/13	2108	2130	442	215	131	81
87	45	33 29.4	119 18.9	04/14	0131	0152	428	212	348	348
87	50	33 19.3	119 39.7	04/14	0606	0612	119	49	336	336
87	55	33 09.5	120 00.2	04/14	0907	0928	448	213	241	241
87	60	32 59.6	120 20.9	04/14	1456	1517	444	219	56	56
87	70	32 39.3	121 02.0	04/14	2110	2132	452	214	95	95
87	80	32 19.5	121 42.9	04/15	0320	0342	440	219	143	143
87	90	31 59.3	122 23.6	04/15	0816	0838	444	212	61	61
87	100	31 39.5	123 04.2	04/15	1543	1605	455	211	26	26
87	110	31 19.5	123 44.7	04/15	2147	2209	457	211	46	46
90	28	33 29.1	117 46.2	04/13	0306	0327	428	214	157	157
90	30	33 25.1	117 54.4	04/13	0006	0028	414	216	164	164
90	35	33 15.1	118 15.2	04/12	1956	2018	455	203	106	106
90	37	33 11.1	118 23.3	04/12	1720	1742	439	217	52	52
90	45	32 55.1	118 56.2	04/12	1155	1216	433	217	97	97
90	53	32 39.2	119 28.8	04/12	0435	0457	458	211	168	168
90	60	32 25.1	119 57.7	04/11	2323	2345	463	207	108	108
90	70	32 05.1	120 38.4	04/11	1650	1711	453	211	53	53
90	80	31 44.9	121 19.0	04/11	0847	0909	489	224	47	47
90	90	31 25.1	121 59.5	04/11	0044	0106	465	219	24	24
90	100	31 04.9	122 39.3	04/10	1805	1827	505	212	16	16
90	110	30 45.1	123 20.0	04/10	0900	0922	502	212	20	20
90	120	30 25.1	123 59.8	04/10	0313	0334	492	214	26	26
93	26.7	32 57.3	117 18.3	04/06	1317	1323	127	46	95	95
93	28	32 54.7	117 23.7	04/06	1541	1602	473	210	53	53
93	30	32 50.8	117 31.9	04/06	1845	1907	457	214	63	52
93	35	32 40.9	117 52.5	04/06	2251	2313	451	213	93	93
93	40	32 30.9	118 12.9	04/07	0318	0340	432	217	51	51
93	45	32 20.9	118 33.4	04/07	0800	0822	468	211	32	32
93	50	32 10.7	118 53.6	04/07	1225	1246	463	208	35	35
93	55	32 00.9	119 13.8	04/07	1637	1658	474	204	23	23
93	60	31 51.0	119 34.2	04/07	2232	2254	460	209	52	52
93	70	31 30.8	120 14.9	04/08	0523	0544	476	214	42	42
93	80	31 10.7	120 55.2	04/08	1156	1217	456	214	24	24
93	90	30 50.9	121 35.4	04/08	1800	1821	454	216	20	20
93	100	30 31.0	122 15.5	04/09	0014	0036	473	209	34	34
93	110	30 10.6	122 55.1	04/09	0853	0914	452	213	18	18

FIGURES

Avifauna Observations

CalCOFI Cruise 0101

1a. Red and Red-necked Phalarope distribution.

1b. Black-legged Kittiwake distribution.

1c. Black-vented Shearwater distribution.

1d. Western Gull distribution.

1e. Ring-billed Gull distribution.

1f. Western Greebe distribution.

CalCOFI Cruise 0104

1a. Red and Red-necked Phalarope distribution.

1b. Black-legged Kittiwake distribution.

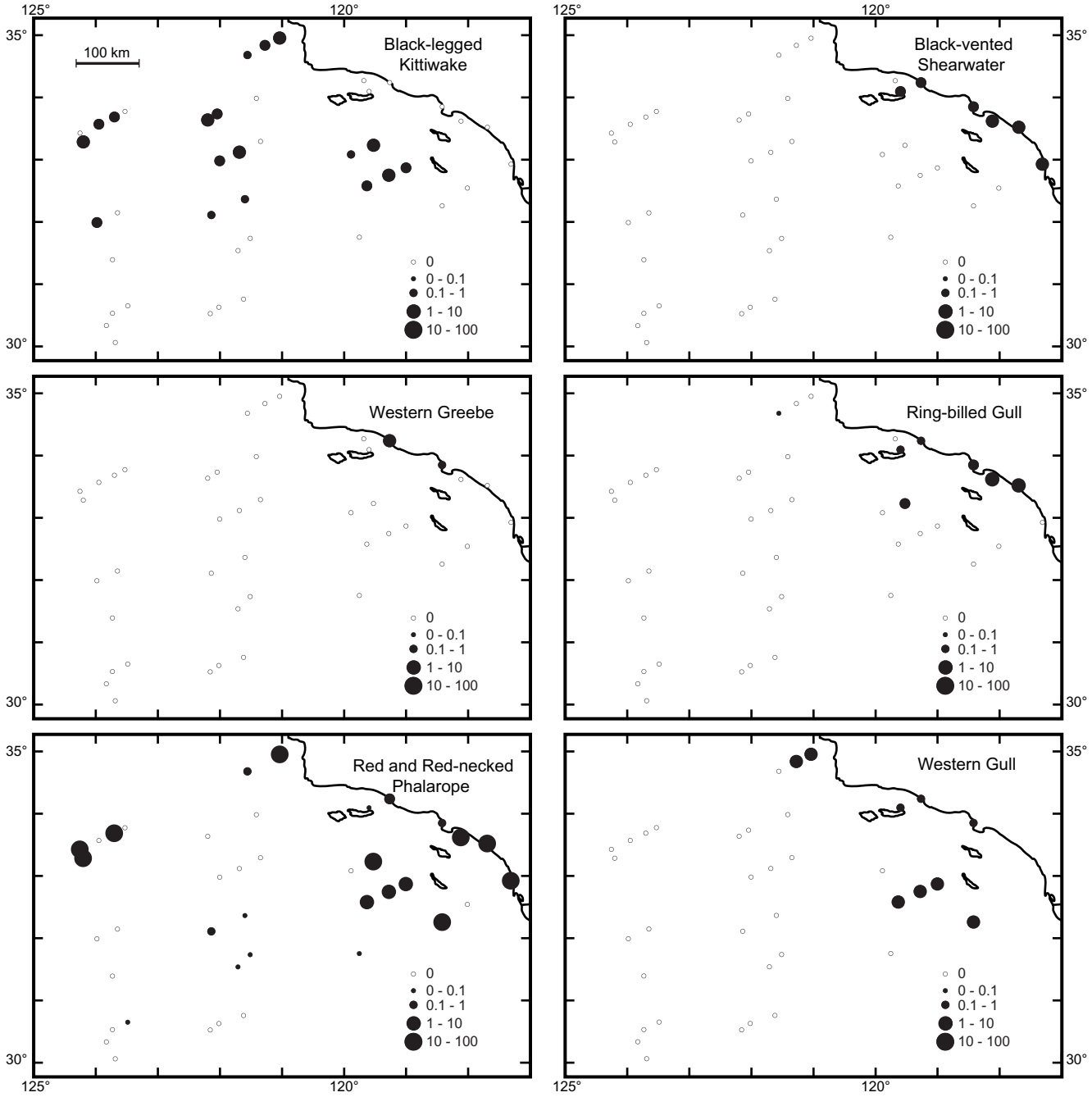
1c. Sooty Shearwater distribution.

1d. Western Gull distribution.

1e. Leach's Storm-petrel distribution.

1f. Northern Fulmar distribution.

CalCOFI Cruise 0101



CalCOFI Cruise 0104