

UNIVERSITY OF CALIFORNIA, SAN DIEGO SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

**CalCOFI Cruise 0302
30 January – 15 February 2003**

**CC Reference 06-02
20 January 2006**

**UNIVERSITY OF CALIFORNIA, SAN DIEGO
SCRIPPS INSTITUTION OF OCEANOGRAPHY
LA JOLLA, CALIFORNIA 92093-0227**

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INTRODUCTION

The data presented in this report were collected during the 0302 cruise 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 Integrative Oceanography Division (IOD) at Scripps Institution of Oceanography (SIO). IOD contributes to this program by investigations of the physical, chemical and biological structure of the California Current. Data from the cruises were collected and processed by personnel of the Integrative Oceanography Division and the Southwest Fisheries Science Center. Other SIO staff members and volunteers also assisted in the collection of data and chemical analyses at sea. CalCOFI data presented in this report and collected on previous cruises can be accessed at <http://www.calcofi.org>.

STANDARD PROCEDURES

CTD/Rosette Cast Data

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

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

Salinity samples were collected from all rosette bottles and analyzed at sea using a Guildline model 8410 Portasal salinometer. Salinity samples were drawn into 200 ml Kimax high-alumina borosilicate bottles that were rinsed three times with sample prior to filling. The results were compared with the CTD salinity to verify that the rosette bottle did not mis-trip or leak. The salinometer was standardized before and after each group of samples with standardized seawater. Periodic checks on the conductivity of the standardized seawater were made by comparison with IAPSO Standard Seawater batch P134. Salinity values were calculated using the algorithms for the Practical Salinity Scale, 1978 (UNESCO, 1981a) and are reported to three decimal places, provided that accepted standards were met.

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

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

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

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

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

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

Primary Productivity Sampling

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

Macrozooplankton Net Tows

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

Avifauna Observations (Point Reys Bird Observatory)

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

Ancillary Programs

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

- 1) *Underway Data.* Continuous near surface measurements of temperature and salinity were recorded from seawater pumped through the ship's uncontaminated seawater system. Water was drawn from a depth of approximately 3 meters. The data were logged in one-minute averages using a Sea-Bird Electronics, Inc., SBE 21 TSG Thermosalinograph.
- 2) *ADCP.* Continuous profiles of ocean currents and acoustic backscatter between 20 and 500 meters deep were measured along the shiptrack from a hull-mounted 150 kHz Acoustic Doppler Current Profiler (ADCP). The ADCP data were averaged over 3-minute intervals. Sixty 8-meter depth bins were recorded. (T. Chereskin, SIO)
- 3) *Taxon-specific pigments.* Water samples were collected from a depth of 10 m for the analysis of taxon-specific pigments (chlorophylls and carotenoids) by high-pressure liquid chromatography (R. Goericke, SIO).
- 4) *Trace metals.* Surface seawater samples were obtained for iron analysis (dissolved and total iron) at 31 stations using a trace metal-clean pole sampler. Iron addition incubations were also performed at 3 stations to assay for iron limitation in the phytoplankton community. (K. Barbeau, SIO).

TABULATED DATA

CTD/Rosette Cast Data

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

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

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

Primary Productivity Data

In addition to the normal hydrographic data that are reported in the rosette cast data section, the tabulated data include: the *in situ* light levels at which the samples were collected, the uptake from each of the replicate light bottles, uptake 1 and uptake 2 (which have been corrected for dark uptake by subtracting the dark value), the mean of the two uptake values and the dark uptake. The uptake values are totals for the incubation period. Also shown are the times of LAN, civil twilight, and the value of the mean uptake integrated from the surface to the deepest sample, assuming the shallowest value continues to the surface and that negative values (when dark uptake exceeds light uptake) are zero. The uptake data are reported to two significant digits (values <1.00) or one decimal (values >1.00). Incubation time, LAN, and civil twilight are given in local Pacific Standard Time (PST); to convert to UTC, add eight hours to the PST time. Incubation light intensities are listed in a footnote at the bottom of each page.

Macrozooplankton Data

Macrozooplankton biomass volumes are tabulated as total biomass volume ($\text{cm}^3/1000\text{m}^3$ 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 0302

1. CalCOFI Cruise 0302 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.

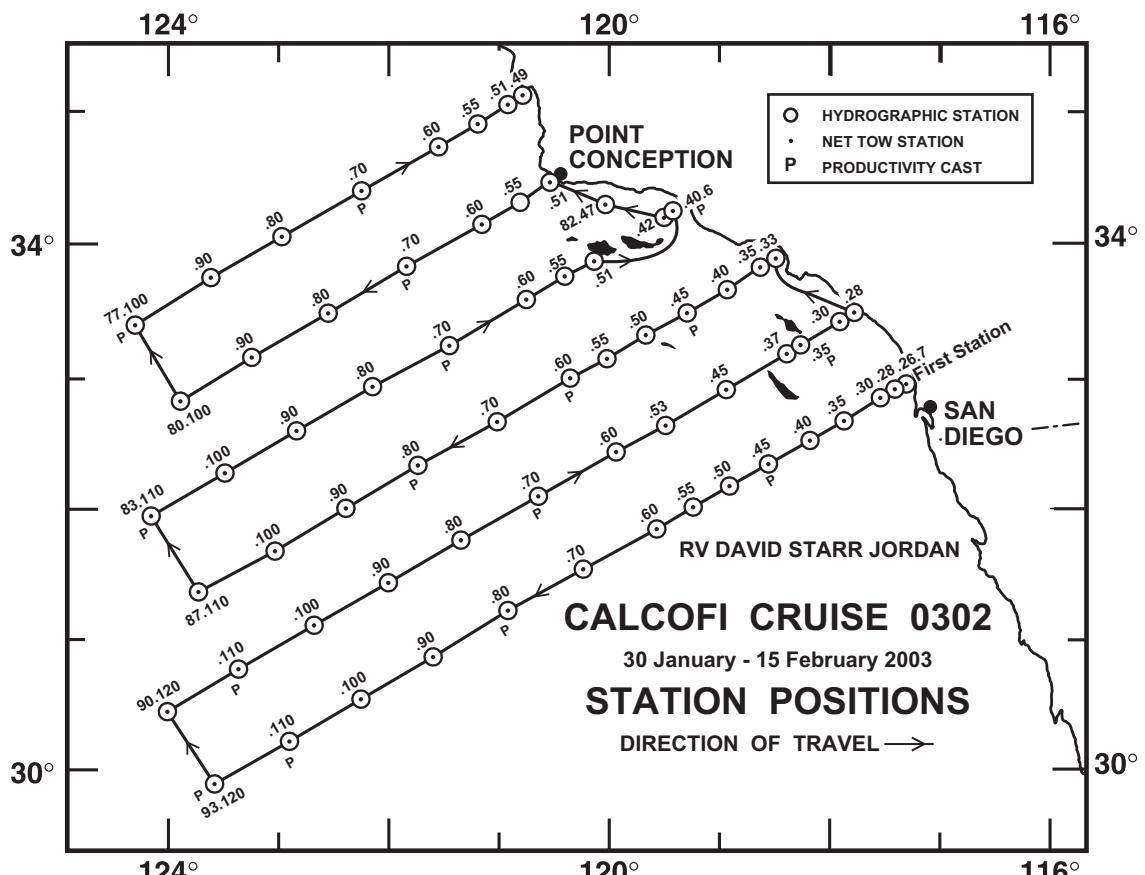


FIGURE 1

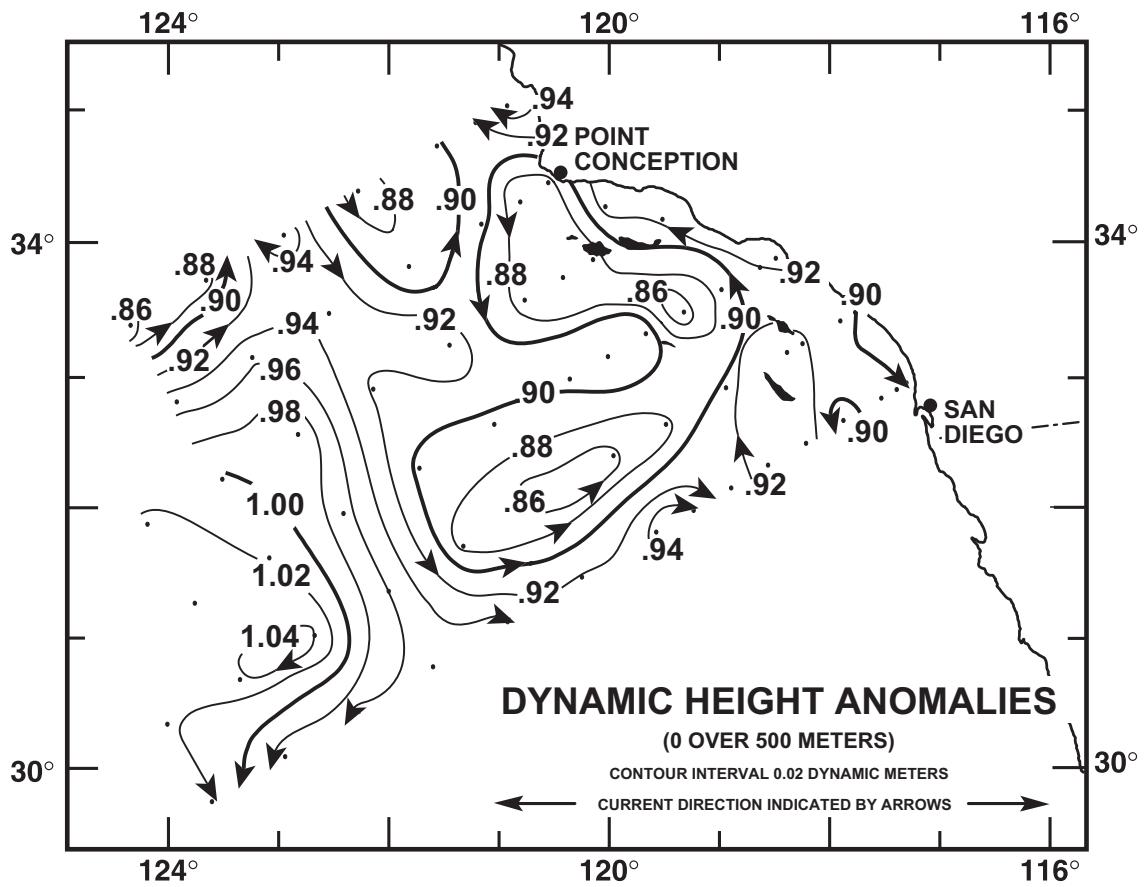


FIGURE 2

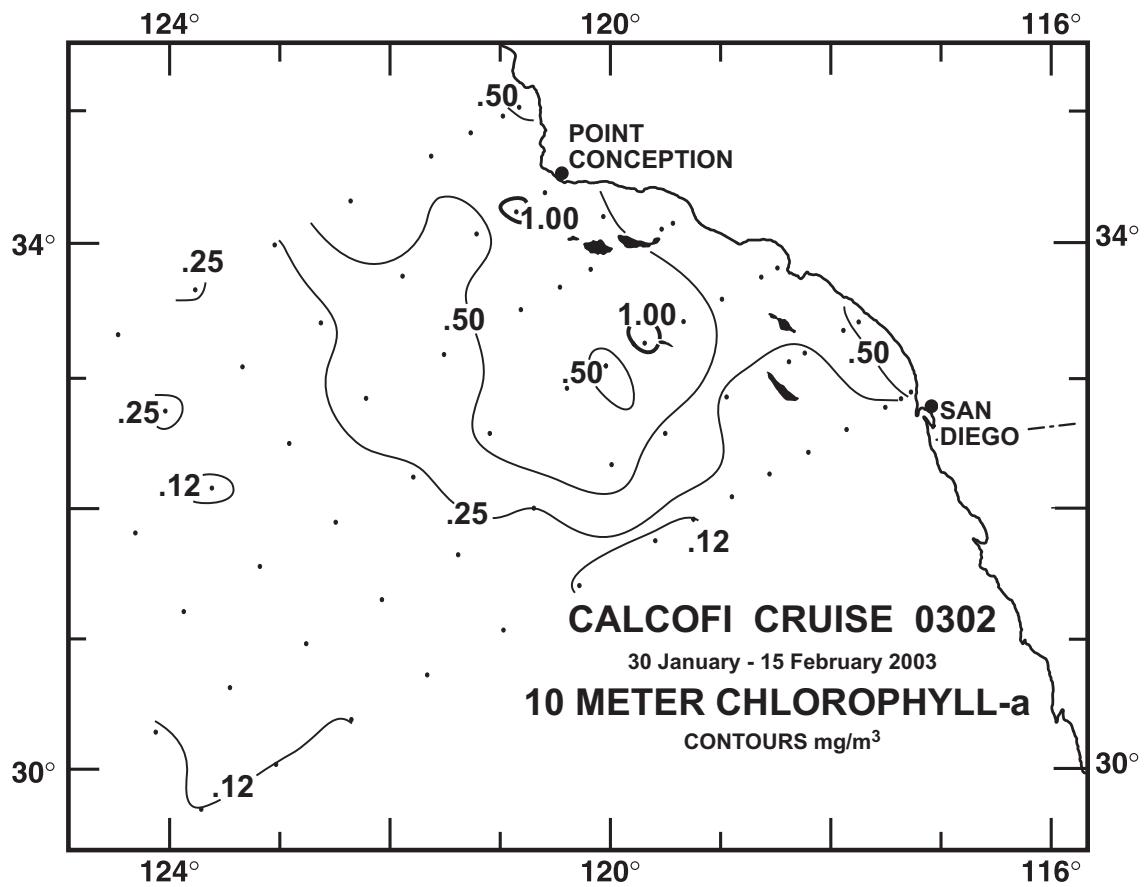


FIGURE 3A

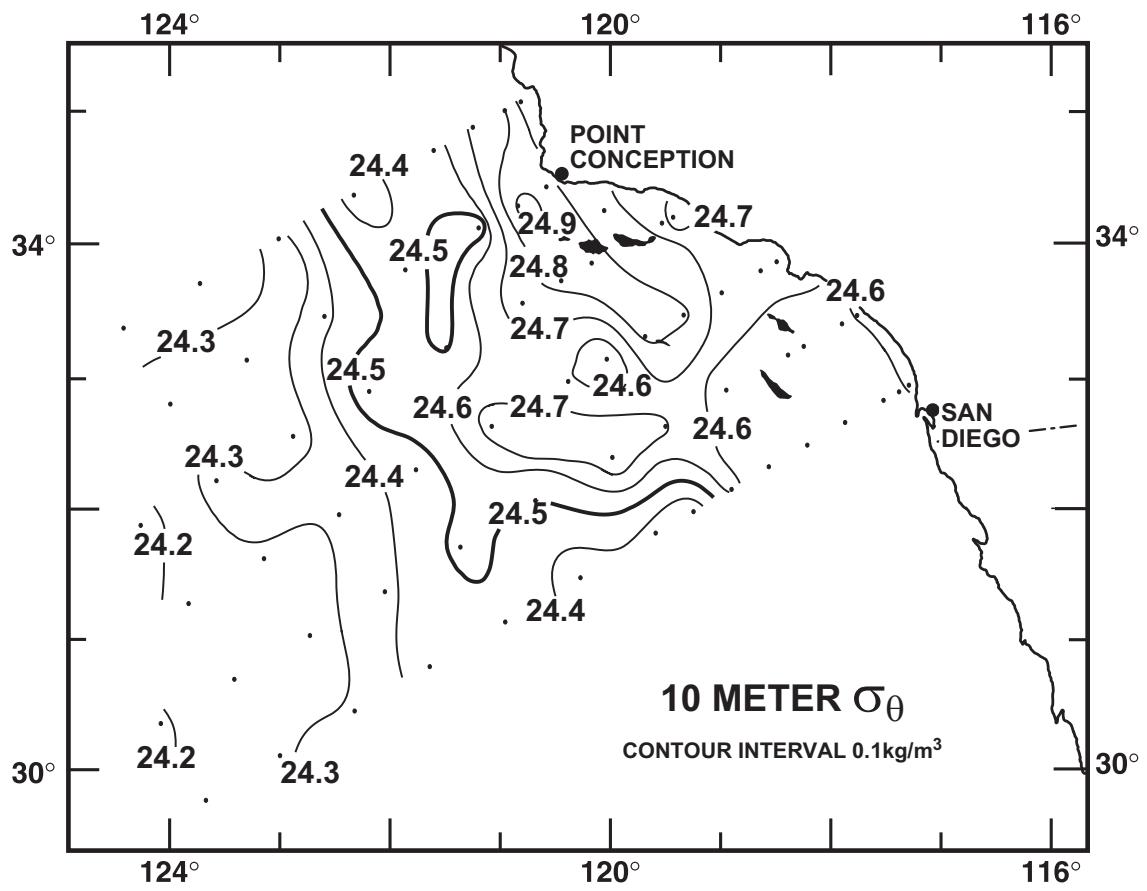


FIGURE 3B

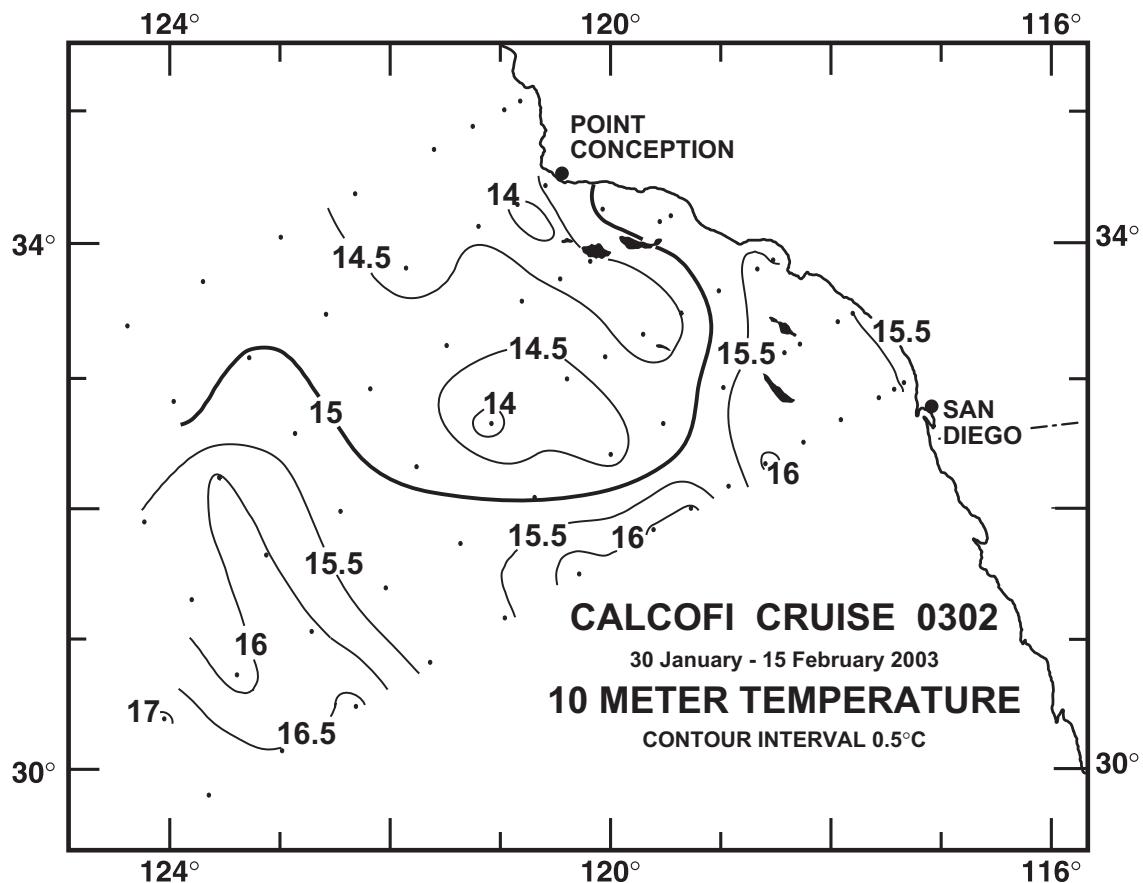


FIGURE 3C

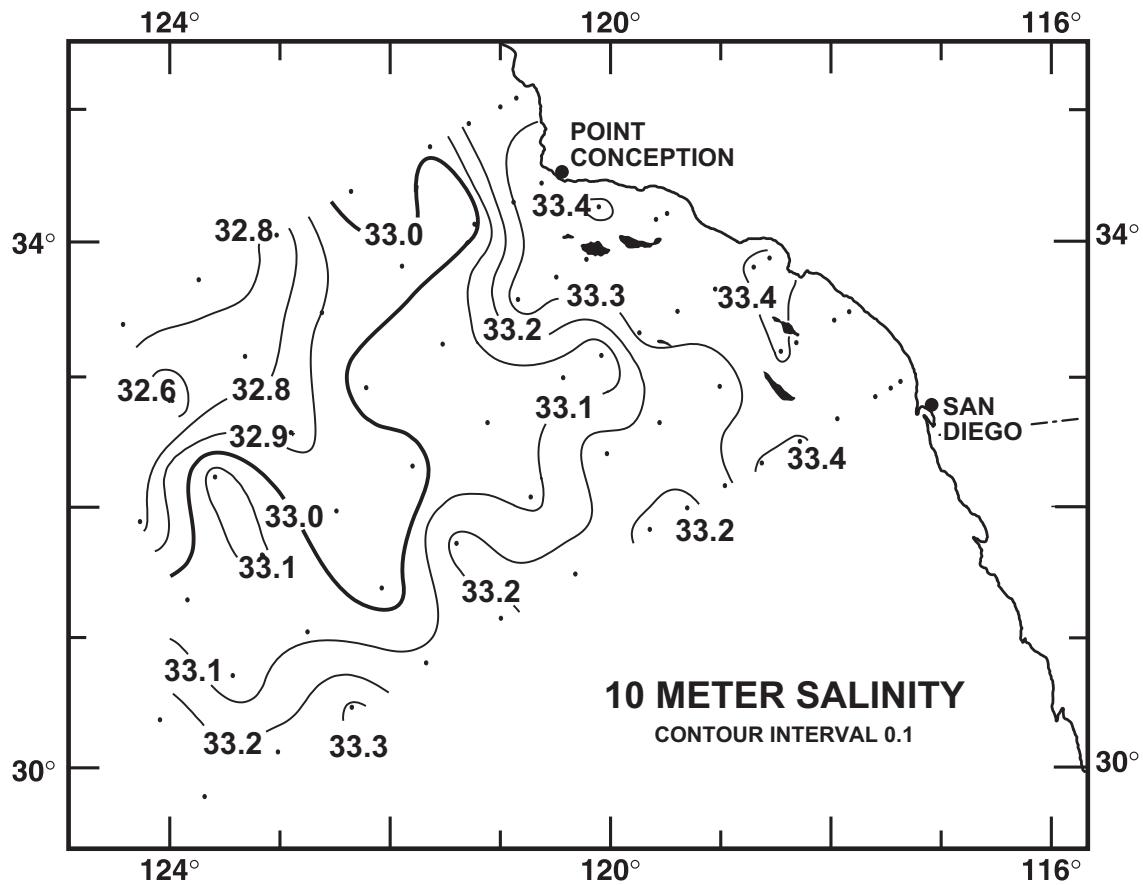


FIGURE 3D

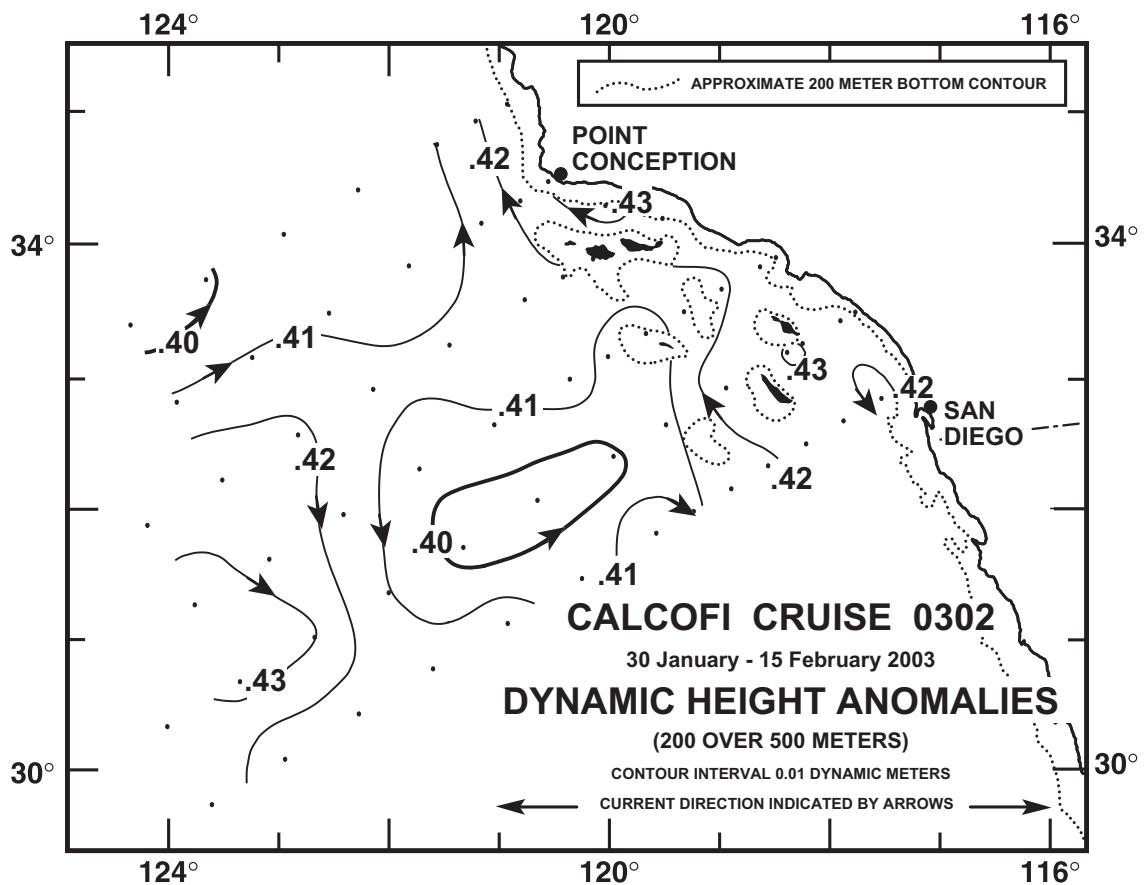


FIGURE 4A

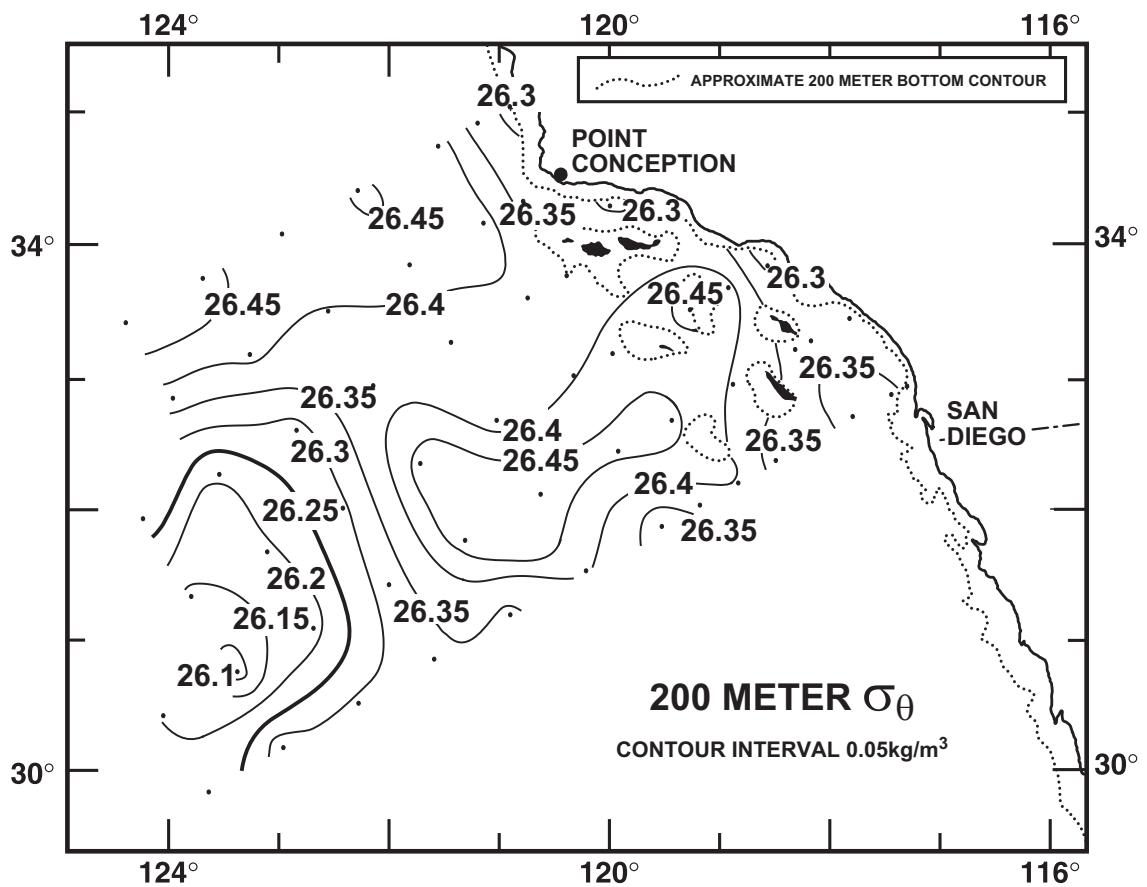


FIGURE 4B

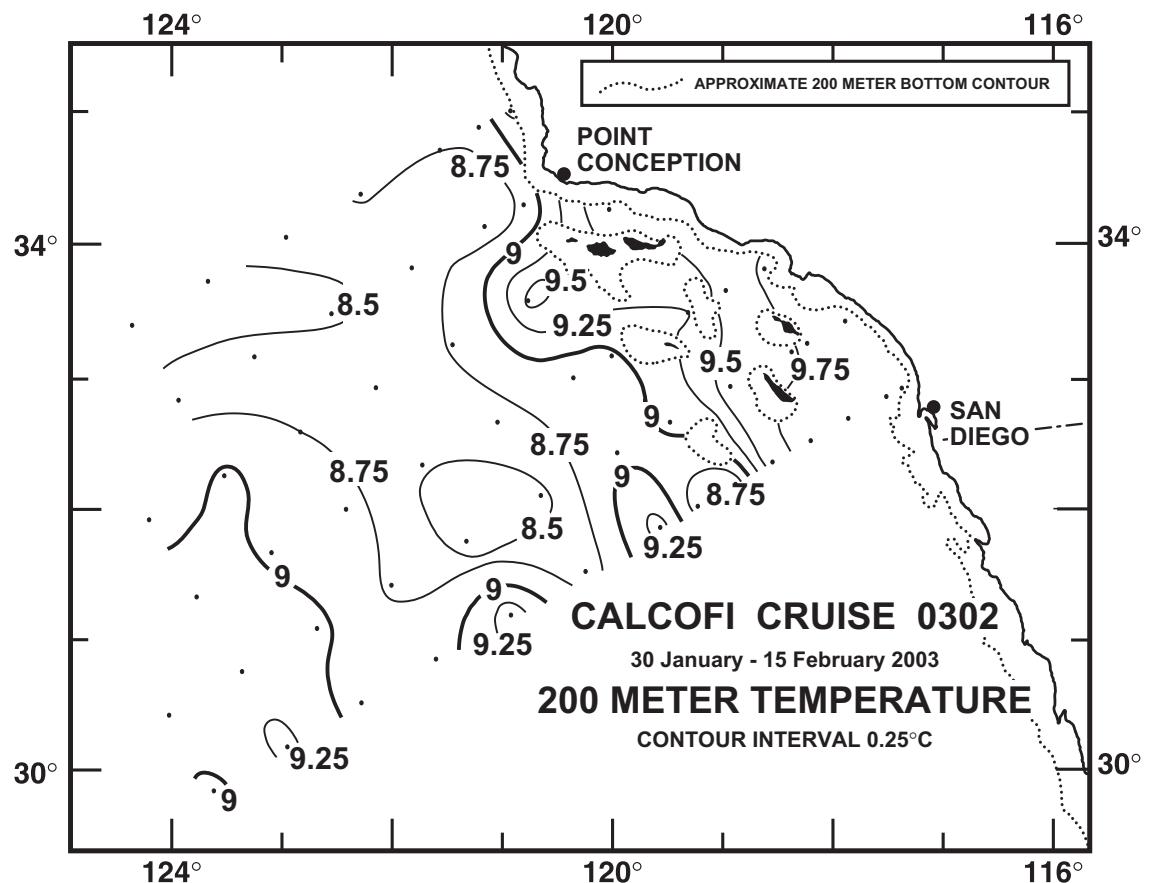


FIGURE 4C

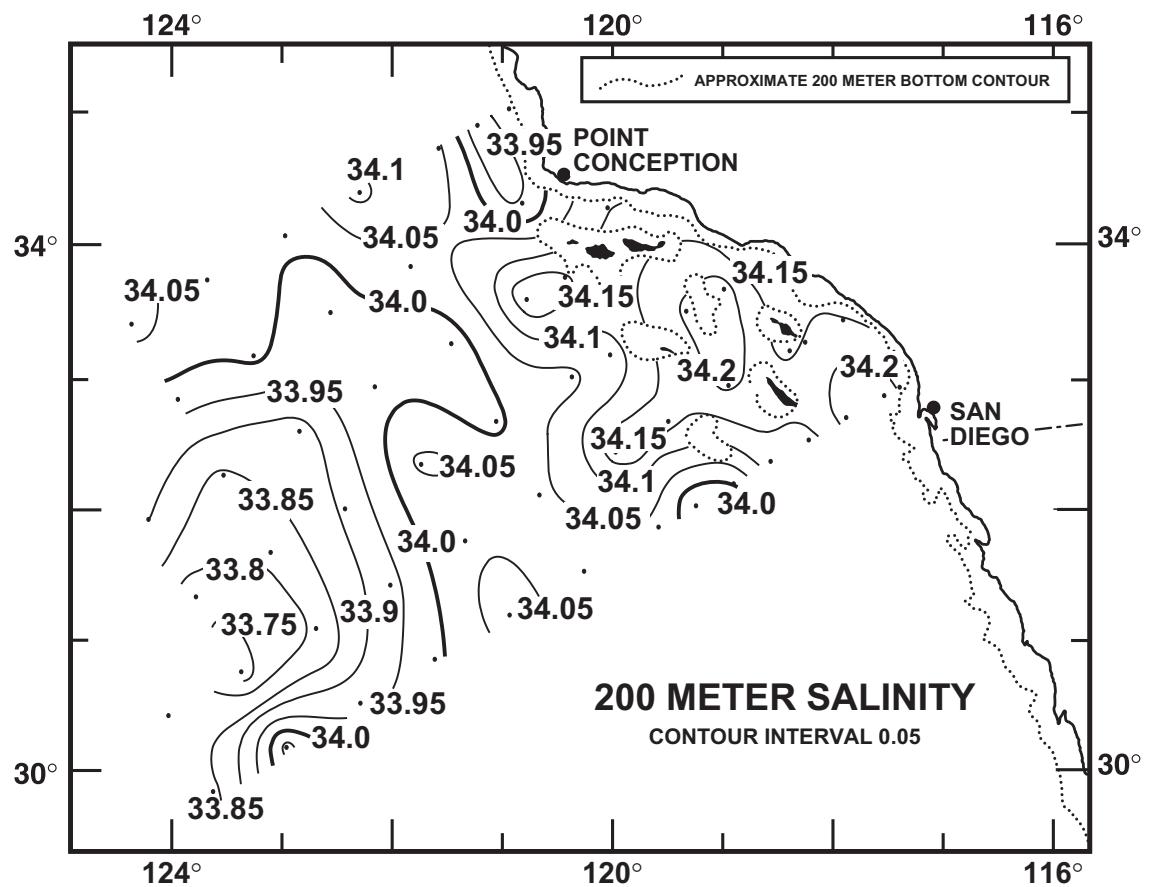
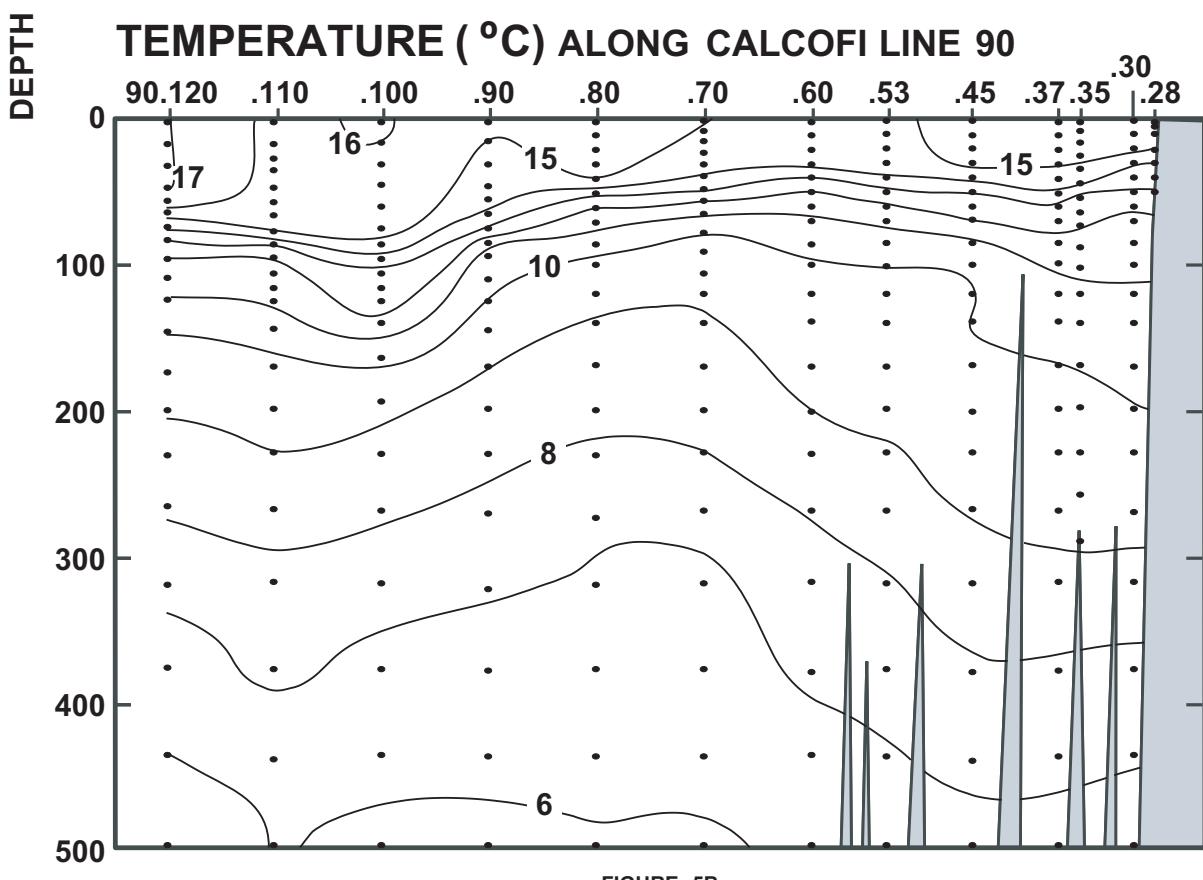
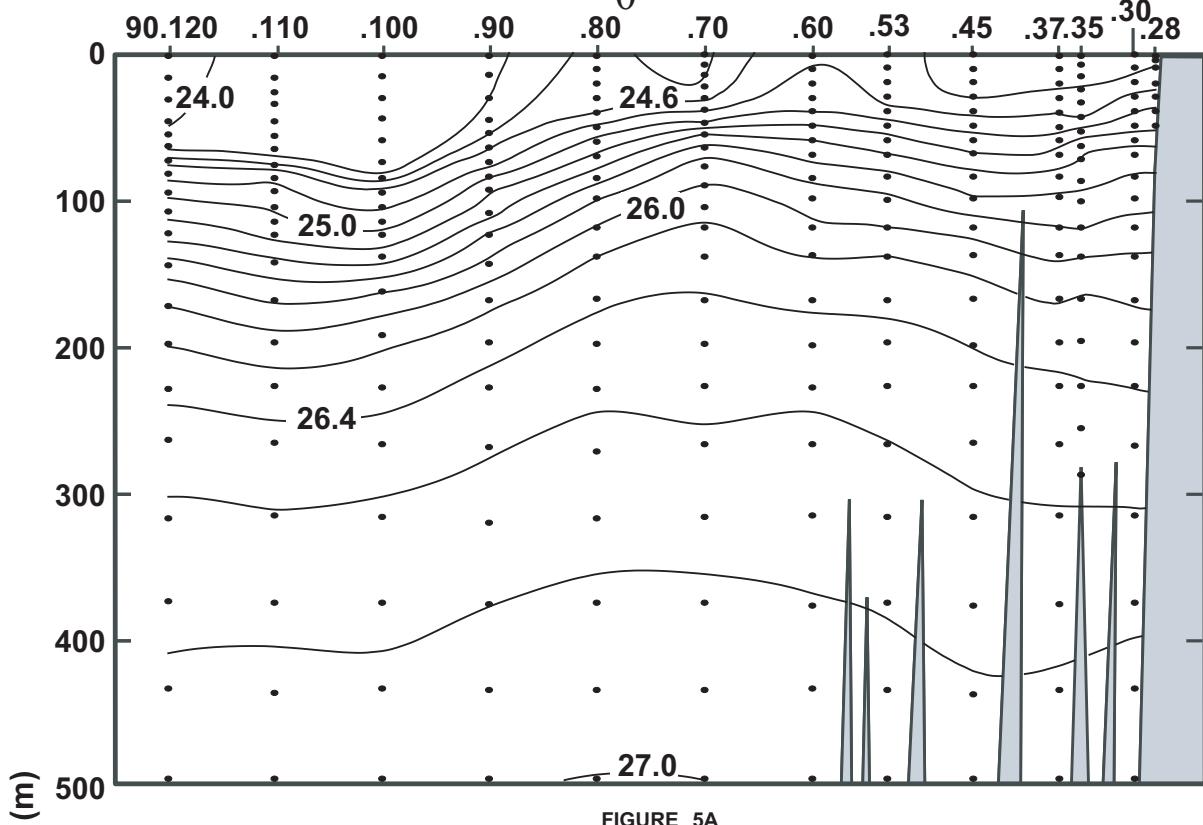


FIGURE 4D

CALCOFI CRUISE 0302

3 - 6 February 2003

POTENTIAL DENSITY (σ_0) ALONG CALCOFI LINE 90



CALCOFI CRUISE 0302

3 - 6 February 2003

SALINITY ALONG CALCOFI LINE 90

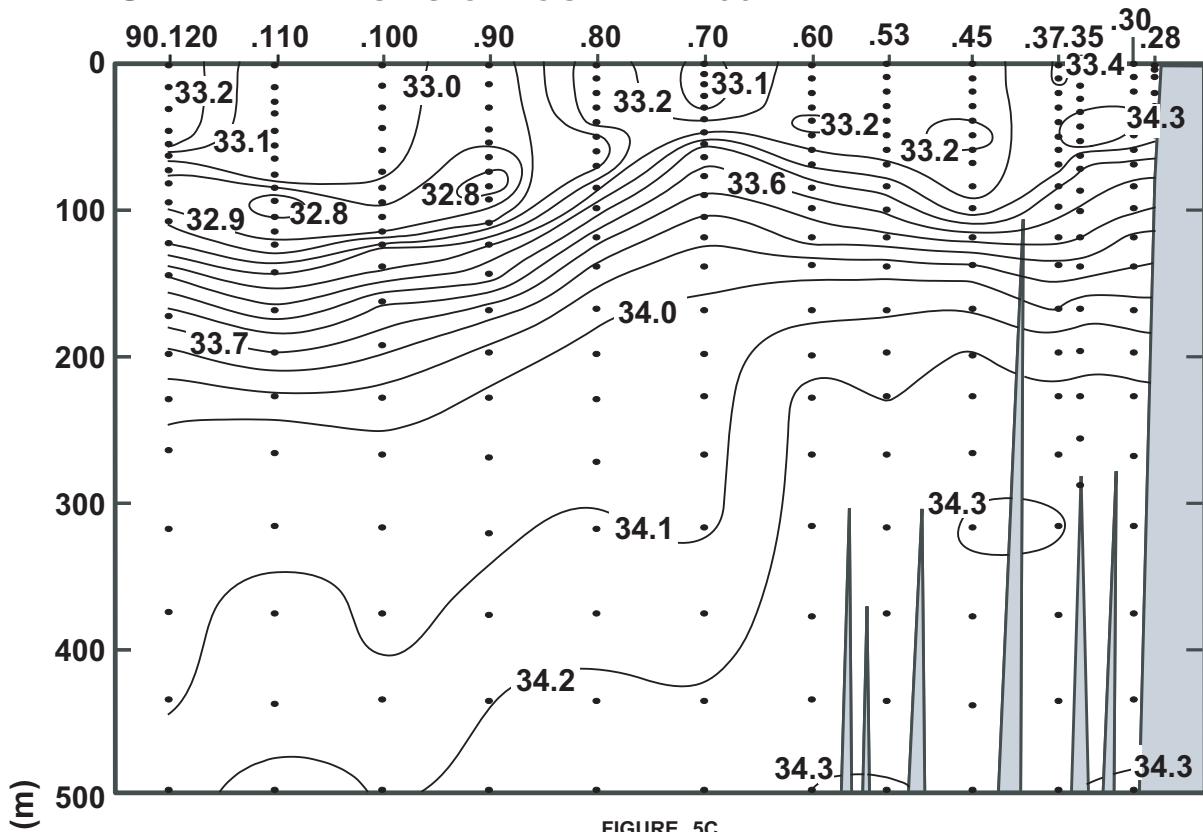


FIGURE 5C

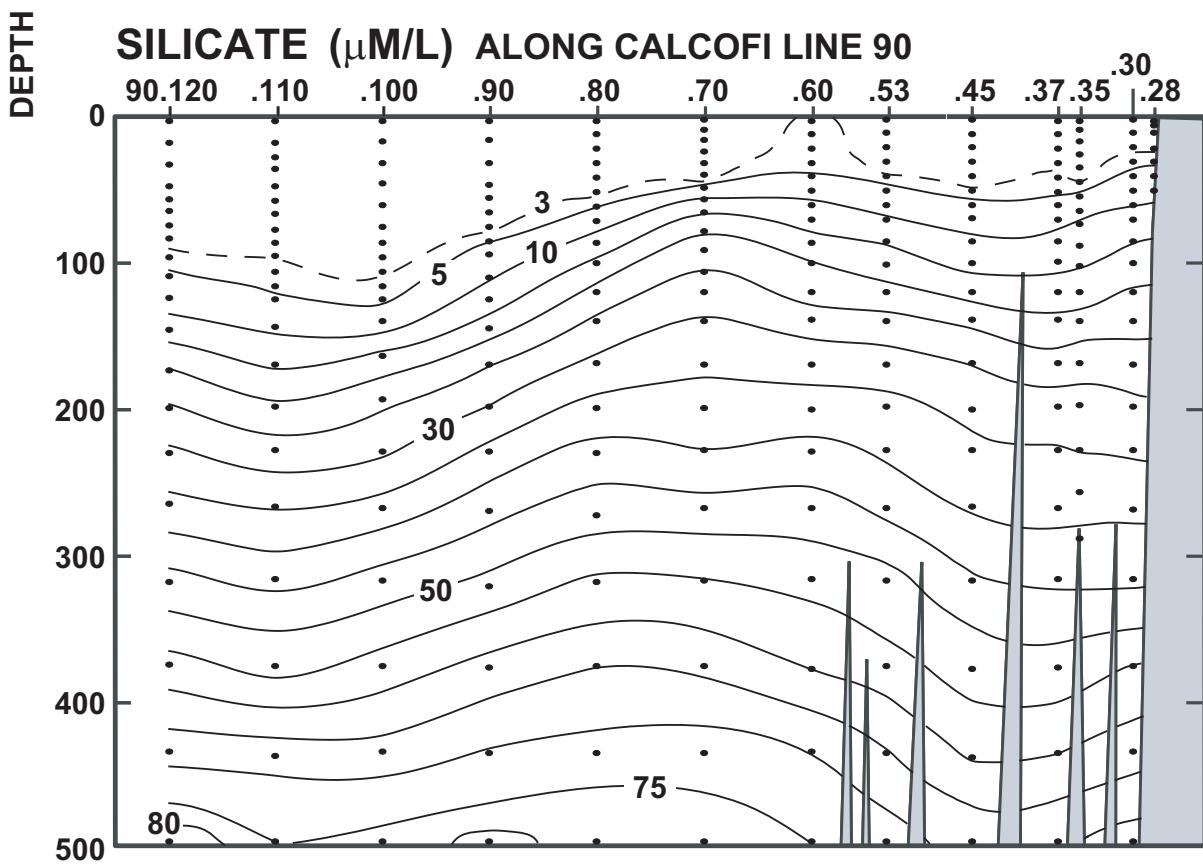
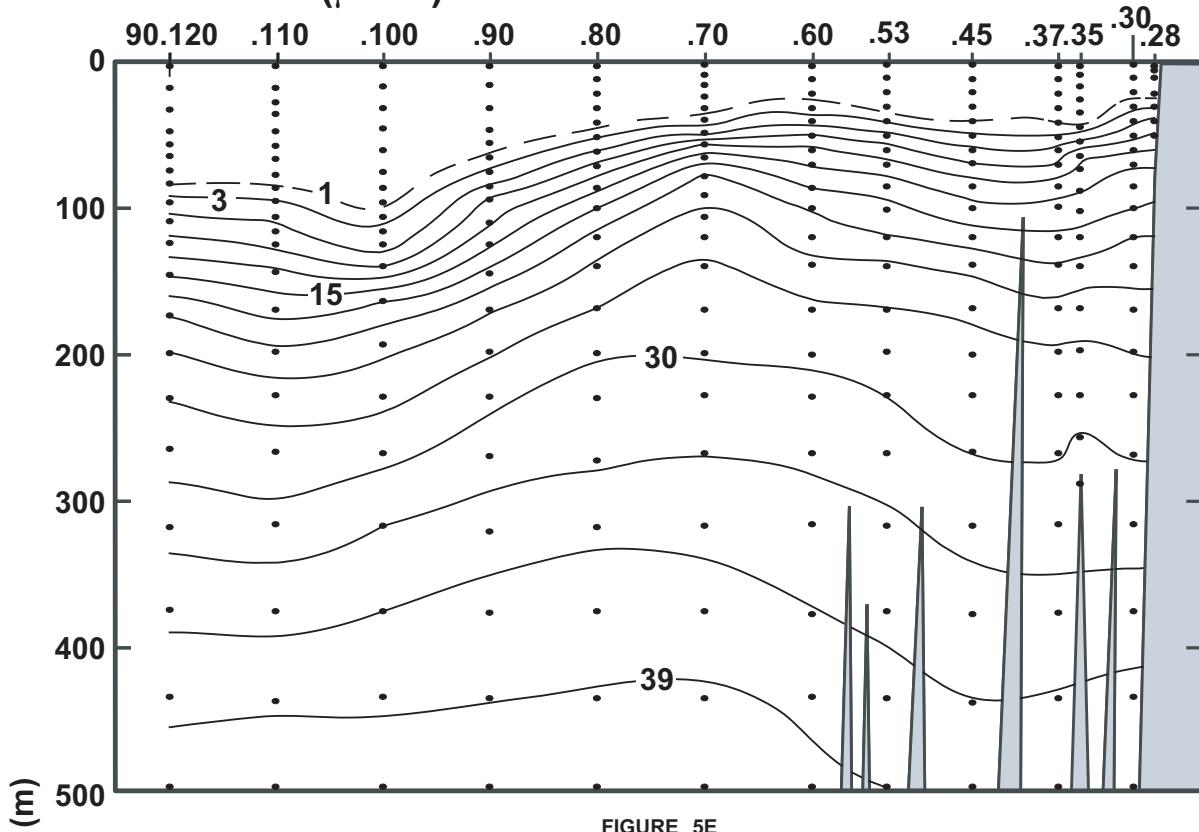


FIGURE 5D

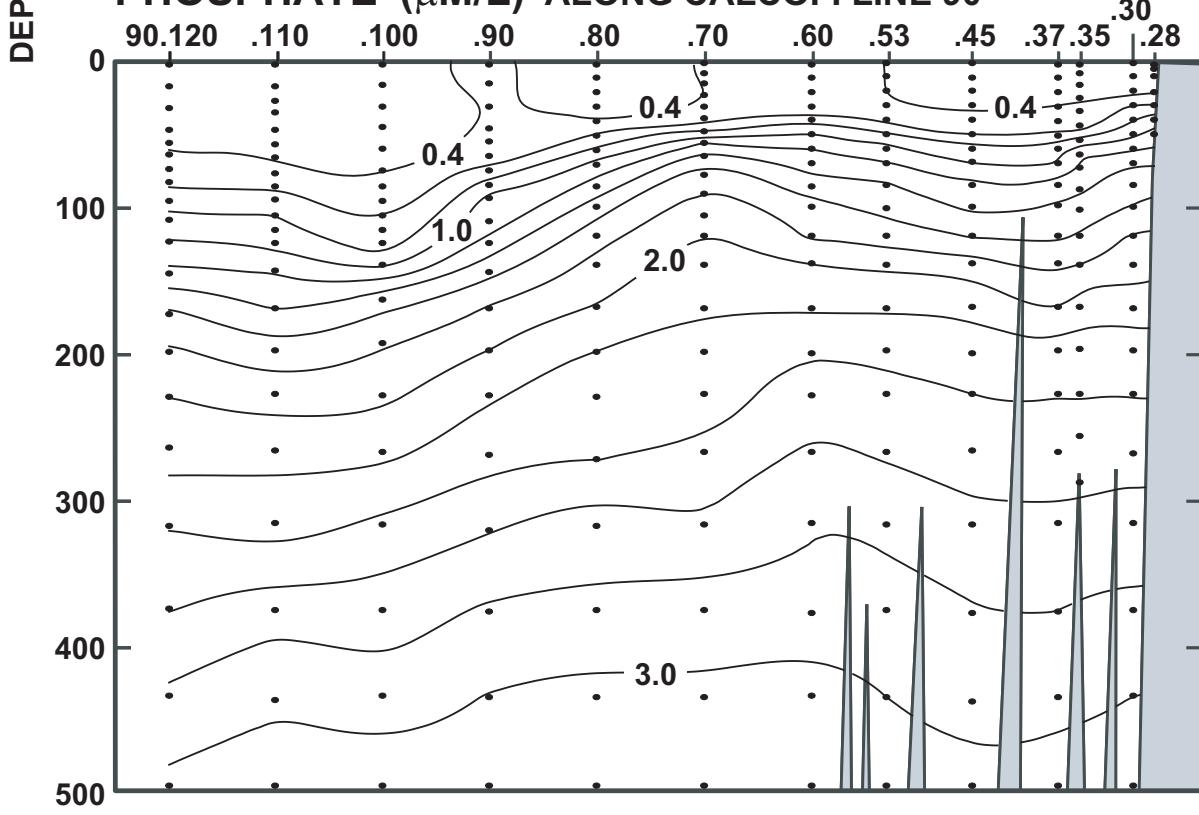
CALCOFI CRUISE 0302

3 - 6 February 2003

NITRATE ($\mu\text{M/L}$) ALONG CALCOFI LINE 90



PHOSPHATE ($\mu\text{M/L}$) ALONG CALCOFI LINE 90



CALCOFI CRUISE 0302

3 - 6 February 2003

CHLOROPHYLL-a ($\mu\text{g/L}$) ALONG CALCOFI LINE 90

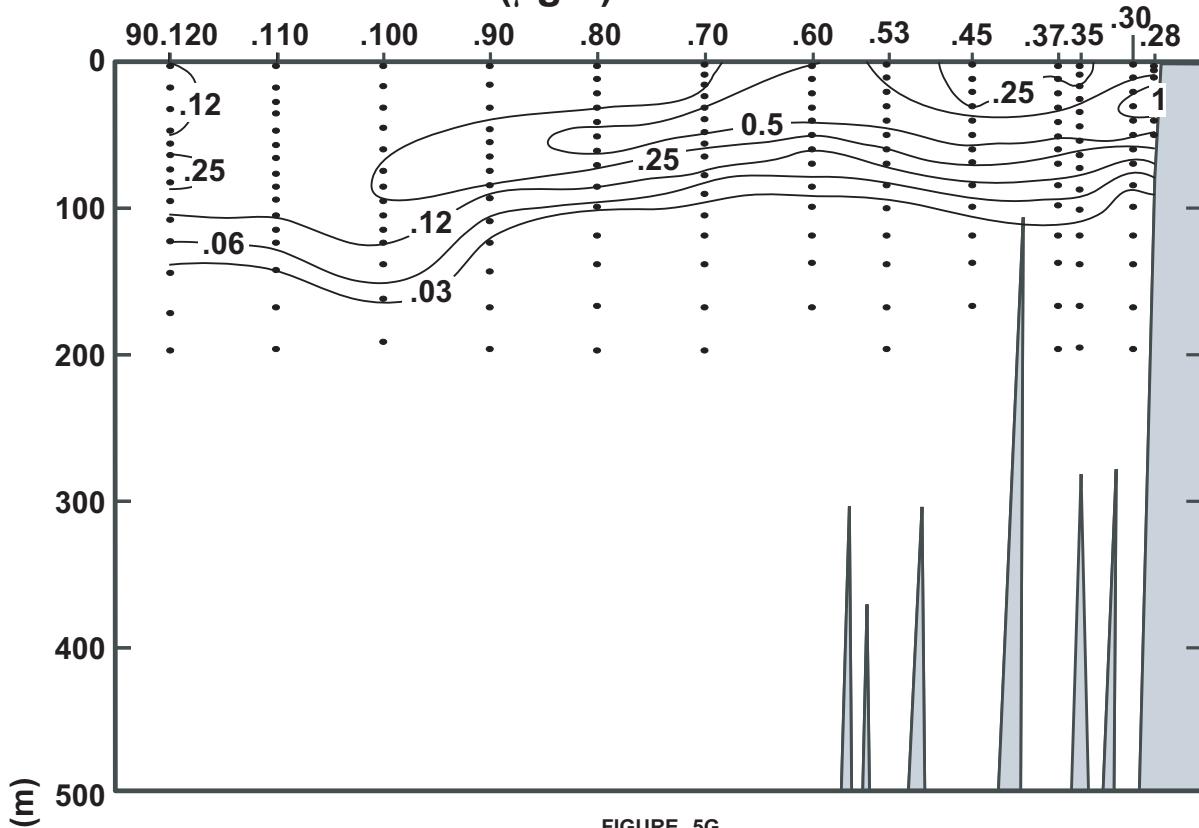


FIGURE 5G

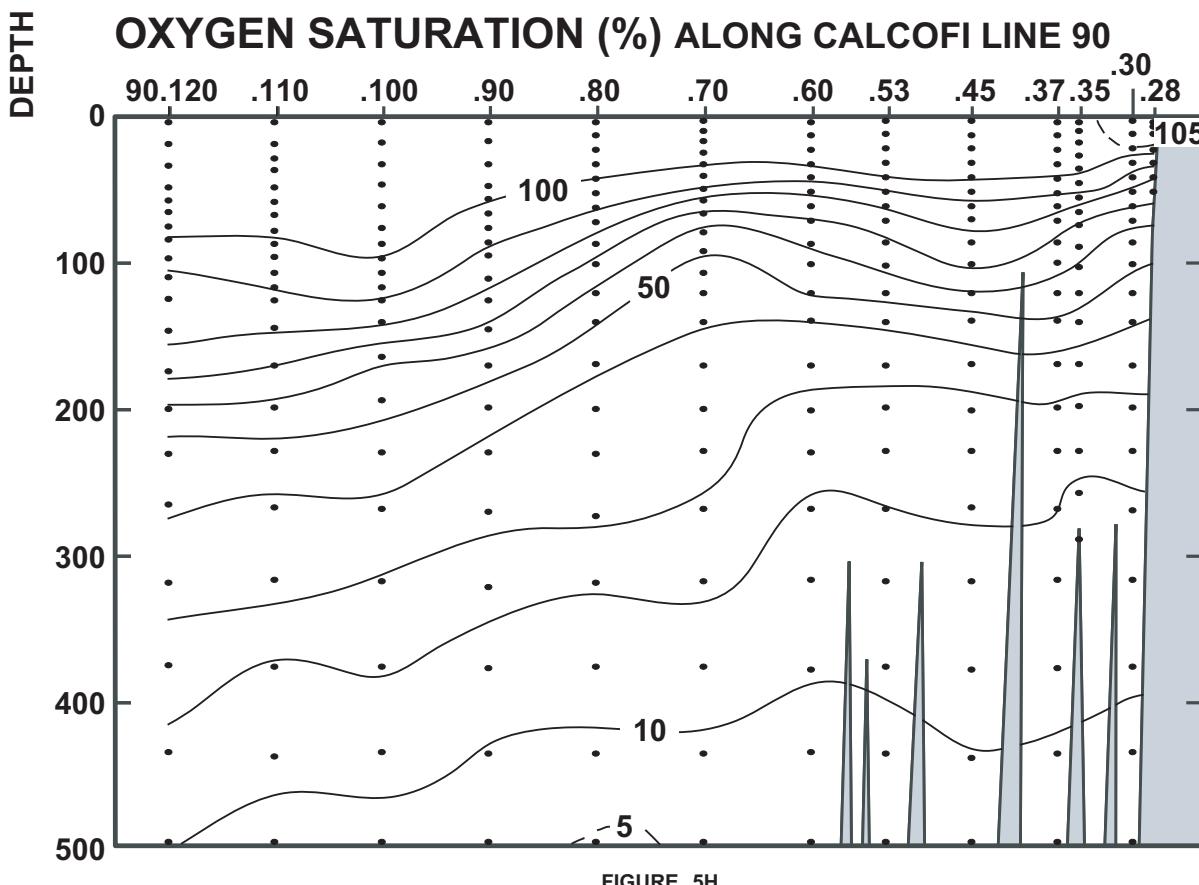


FIGURE 5H

CALCOFI CRUISE 0302

3 - 6 February 2003

OXYGEN (mL/L) ALONG CALCOFI LINE 90

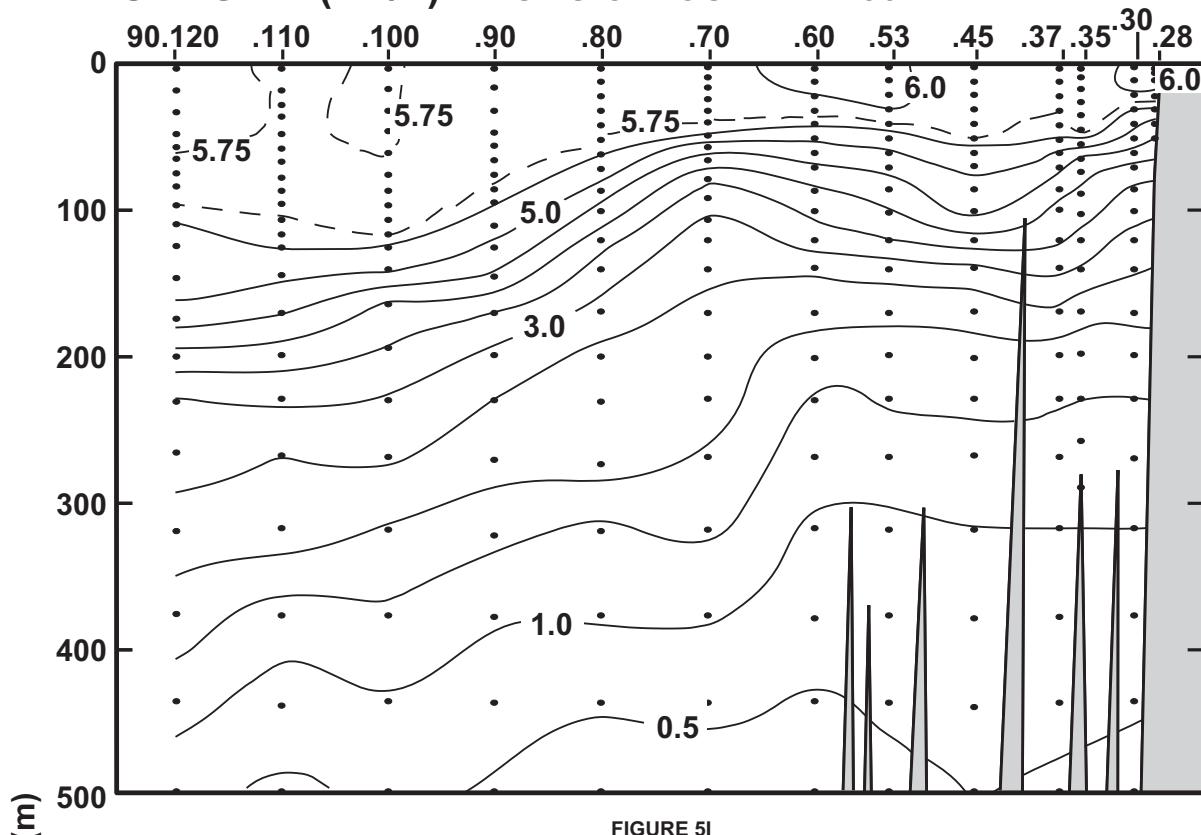


FIGURE 5I

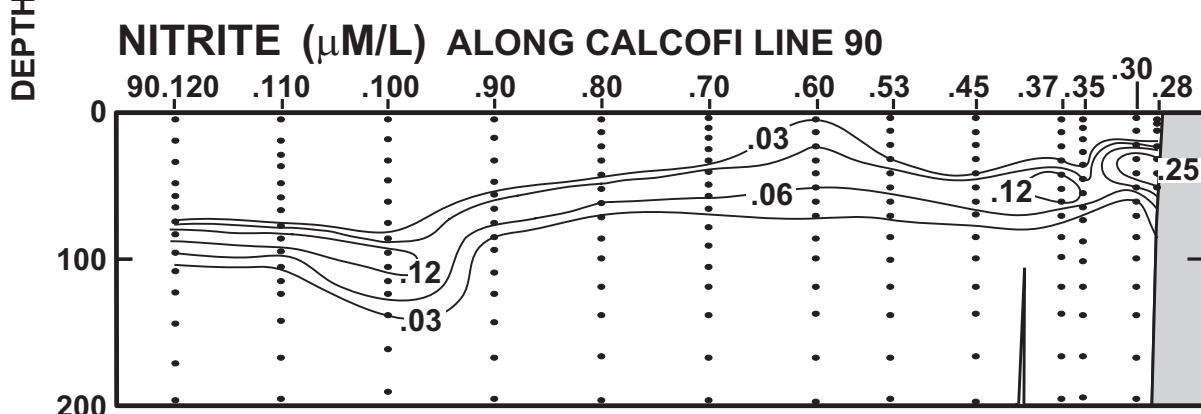


FIGURE 5J

PHAEOPIGMENTS ($\mu\text{g/L}$) ALONG CALCOFI LINE 90

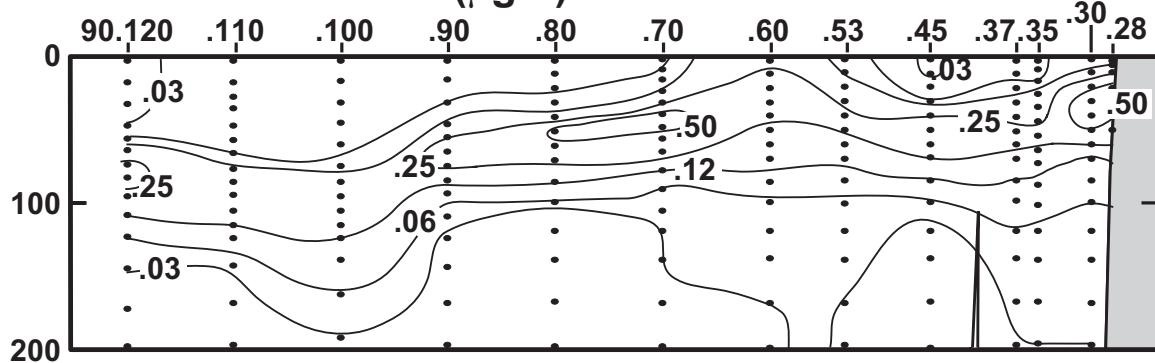


FIGURE 5K

PERSONNEL

CalCOFI Cruise 0302

SHIP'S CAPTAIN

Chris Moore, RV *David Starr Jordan*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participating (Legs)
Dotson, Ronald C. (Chief Scientist)	Fishery Biologist, NMFS	1,2,3
Andreassi, Valerie A.	Oceanographer, NMFS	1
Ramirez, Fernando	Staff Research Associate, SIO	1,2
Gardner, David	Seabird Biologist, Pt. Reyes Bird Observatory	1,2,3
Hays, Amy E.	Fishery Biologist, NMFS	1,2,3
Holtermann, Karie E.	Staff Research Associate, SIO	1,2
King, Andrew L.	Graduate Student, SIO	1,2
Manion, Susan M.	Fishery Biologist, NMFS	1,2,3
Masten, Douglas M.	Staff Research Associate, SIO	1,2
Powell, Jesse R.	Staff Research Associate, SIO	1,2
Sheldon, Jennifer L.	Scientific Aid, CDFG	2,3
Wilkinson, James R.	Programmer Analyst, SIO	1,2
Wolgast, David M.	Staff Research Associate, SIO	1,2

Leg 1: San Diego to Dana Point, California, 30 January - 5 February, 2003

Leg 2: Dana Point to Monterey, California, 5 – 18 February, 2003

Leg 3: Monterey to San Diego, California, 18 – 25 February , 2003

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
					66 m	320	18 kn			1016.0 mb	13.3 C	12.4 C				
35 5.3 N	120 46.4 W	15/02/03	0947	UTC												
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SI03	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	db	
0 ISL	14.13	14.13	33.189	24.762	317.5	0.000	5.80	99.1	3.8	0.55	1.3	0.12	0.39	0.14	0	
1	14.13	14.13	33.189	24.762	317.5	0.003	5.80	99.1	3.8	0.55	1.3	0.12	0.39	0.14	1	208
5	14.12	14.12	33.190	24.765	317.3	0.016	5.80	99.1	3.8	0.55	1.3	0.12	0.35	0.15	5	207
10	14.12	14.12	33.232	24.797	314.4	0.032	5.79	98.9	4.1	0.54	1.5	0.12	0.45	0.17	10	206
20	14.11	14.11	33.299	24.851	309.5	0.063	5.77	98.6	4.6	0.55	1.8	0.12	0.50	0.23	20	205
30	14.06	14.06	33.292	24.857	309.3	0.094	5.77	98.5	4.6	0.56	1.9	0.12	0.53	0.27	30	204
40	13.79	13.78	33.242	24.874	307.9	0.125	5.76	97.7	4.3	0.57	2.1	0.13	0.59	0.29	40	203
49	13.79	13.78	33.343	24.952	300.7	0.152	5.63	95.6	5.8	0.63	2.7	0.15	0.58	0.43	49	202
50 ISL	13.77	13.76	33.344	24.957	300.3	0.155	5.61	95.2	5.9	0.64	2.8	0.15	0.56	0.42	50	
59	13.54	13.53	33.350	25.009	295.6	0.182	5.47	92.4	6.8	0.70	3.9	0.19	0.42	0.28	59	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
					235 m	310	14 kn			1016.8 mb	13.3 C	12.2 C				
35 1.3 N	120 55.0 W	15/02/03	0706	UTC												
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SI03	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	db	
0 ISL	14.34	14.34	33.298	24.802	313.7	0.000	5.83	100.1	3.9	0.50	1.2	0.08	0.53	0.20	0	
2	14.34	14.34	33.298	24.802	313.7	0.006	5.83	100.1	3.9	0.50	1.2	0.08	0.53	0.20	2	214
10 ISL	14.34	14.34	33.297	24.801	314.0	0.031	5.81	99.7	3.9	0.49	1.1	0.08	0.55	0.21	10	
11	14.34	14.34	33.297	24.801	314.0	0.035	5.81	99.7	3.9	0.49	1.1	0.08	0.55	0.21	11	213
20 ISL	14.34	14.34	33.300	24.804	314.0	0.063	5.80	99.6	3.9	0.49	1.1	0.08	0.56	0.18	20	
21	14.34	14.34	33.300	24.804	314.1	0.066	5.80	99.6	3.9	0.49	1.1	0.08	0.56	0.18	21	212
30	14.37	14.37	33.330	24.821	312.7	0.094	5.77	99.1	4.1	0.51	1.2	0.08	0.49	0.18	30	211
41	14.37	14.36	33.367	24.850	310.3	0.128	5.72	98.3	4.4	0.52	1.3	0.09	0.45	0.22	41	210
50 ISL	14.33	14.32	33.365	24.857	309.8	0.156	5.70	97.9	4.5	0.53	1.4	0.10	0.47	0.18	50	
51	14.33	14.32	33.364	24.856	310.0	0.159	5.70	97.9	4.5	0.53	1.4	0.10	0.47	0.17	51	209
60	14.30	14.29	33.364	24.863	309.6	0.187	5.69	97.6	4.6	0.53	1.5	0.10	0.38	0.16	60	208
70	14.23	14.22	33.359	24.874	308.8	0.218	5.66	97.0	4.8	0.55	1.7	0.11	0.32	0.17	70	207
75 ISL	14.21	14.20	33.360	24.879	308.5	0.234	5.65	96.7	4.8	0.55	1.8	0.11	0.32	0.17	75	
86	14.17	14.16	33.362	24.889	307.8	0.268	5.62	96.2	4.9	0.56	2.0	0.11	0.31	0.15	86	206
100	13.52	13.51	33.336	25.003	297.2	0.310	5.30	89.5	6.2	0.72	4.2	0.33	0.21	0.14	100	205
120	12.08	12.06	33.409	25.342	265.3	0.366	4.43	72.6	10.4	1.10	10.4	0.10	0.15	0.15	121	204
125 ISL	11.40	11.38	33.433	25.487	251.5	0.379	4.31	69.6	12.7	1.24	12.9	0.09	0.12	0.13	126	
140	9.58	9.56	33.563	25.903	211.9	0.414	3.93	61.0	20.1	1.64	20.3	0.06	0.02	0.05	141	203
150 ISL	9.66	9.64	33.760	26.044	198.7	0.434	3.33	51.9	23.8	1.84	23.1	0.07	0.02	0.06	151	
170	9.83	9.81	33.975	26.184	185.9	0.473	2.20	34.4	29.2	2.11	26.0	0.08	0.01	0.07	171	202
200 ISL	9.28	9.26	33.992	26.288	176.5	0.527	2.21	34.2	33.2	2.18	27.1	0.16	0.01	0.10	201	
202	9.24	9.22	33.993	26.295	175.8	0.531	2.21	34.2	33.5	2.19	27.2	0.17	0.01	0.10	203	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
					570 m	310	21 kn			1016.5 mb	13.8 C	12.0 C				
34 53.8 N	121 12.1 W	15/02/03	0310	UTC												
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SI03	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	db	
0 ISL	14.45	14.45	33.228	24.724	321.0	0.000	5.87	101.0	2.4	0.45	0.6	0.04	0.62	0.21	0	
2	14.45	14.45	33.228	24.725	321.1	0.006	5.87	100.9	2.4	0.45	0.6	0.04	0.62	0.21	2	220
10 ISL	14.46	14.46	33.228	24.723	321.5	0.032	5.88	101.1	2.3	0.45	0.6	0.04	0.61	0.22	10	
16	14.47	14.47	33.230	24.722	321.7	0.051	5.88	101.2	2.3	0.45	0.6	0.04	0.61	0.24	16	219
20 ISL	14.49	14.49	33.236	24.723	321.7	0.064	5.87	101.0	2.4	0.45	0.6	0.04	0.62	0.25	20	
30 ISL	14.52	14.52	33.255	24.731	321.2	0.096	5.84	100.6	2.6	0.46	0.7	0.05	0.66	0.28	30	
31	14.52	14.52	33.257	24.732	321.1	0.100	5.84	100.6	2.6	0.46	0.7	0.05	0.67	0.28	31	218
45	14.50	14.49	33.285	24.759	319.0	0.144	5.82	100.2	2.8	0.46	0.8	0.06	0.85	0.33	45	217
50 ISL	14.14	14.13	33.297	24.844	311.0	0.160	5.70	97.4	3.8	0.54	1.9	0.13	0.66	0.31	50	
55	13.67	13.66	33.314	24.954	300.6	0.175	5.51	93.3	5.1	0.66	3.5	0.19	0.44	0.28	55	216
65	12.67	12.66	33.375	25.201	277.3	0.204	4.83	80.1	8.5	0.99	8.6	0.21	0.23	0.20	65	215
75	12.27	12.26	33.469	25.351	263.3	0.231	4.39	72.2	11.1	1.17	11.3	0.15	0.16	0.14	75	214
86	11.93	11.92	33.495	25.436	255.4	0.260	4.18	68.3	12.5	1.26	12.9	0.10	0.13	0.14	86	213
94	11.77	11.76	33.505	25.474	252.0	0.280	4.06	66.1	13.2	1.31	13.6	0.09	0.13	0.13	94	212
100 ISL	11.51	11.50	33.550	25.557	244.2	0.295	3.83	62.0	14.6	1.41	15.1	0.06	0.10	0.11	100	
109	11.07	11.06	33.625	25.695	231.2	0.317	3.48	55.9	16.8	1.56	17.5	0.02	0.05	0.08	110	211
125	10.60	10.59	33.659	25.805	221.1	0.353	3.38	53.7	18.9	1.66	19.2	0.02	0.04	0.08	126	210
145	10.48	10.48	33.833	25.958	207.0	0.396	2.63	41.8	22.9	1.89	22.2	0.01	0.01	0.06	146	209
150 ISL	10.27	10														

RV DAVID STARR JORDAN

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STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
34 43.4 N	121 33.1 W	14/02/03	2245	UTC	926 m	320	18 kn	290 05 05	2	1016.1 mb	14.7 C	12.4 C	14m	8/8	CB	
0 ISL	14.40	14.40	32.995	24.555	337.1	0.000	5.93	101.7	0.4	0.44	0.4	0.02	0.58	0.11	0	
2	14.40	14.40	32.995	24.555	337.2	0.007	5.93	101.7	0.4	0.44	0.4	0.02	0.58	0.11	2	220
10	14.40	14.40	32.999	24.559	337.1	0.034	5.93	101.7	0.4	0.43	0.3	0.02	0.58	0.11	10	219
20	14.40	14.40	32.995	24.556	337.6	0.067	5.92	101.6	0.4	0.43	0.3	0.02	0.58	0.12	20	218
30	14.39	14.39	32.995	24.558	337.7	0.101	5.92	101.5	0.3	0.43	0.3	0.01	0.59	0.14	30	217
40	14.38	14.37	32.995	24.561	337.8	0.135	5.90	101.2	0.1	0.43	0.3	0.02	0.56	0.13	40	216
50	13.96	13.95	33.028	24.674	327.2	0.168	5.80	98.6	1.0	0.52	1.6	0.04	0.54	0.20	50	215
60	12.62	12.61	33.073	24.977	298.5	0.200	5.45	90.1	3.8	0.84	6.1	0.04	0.38	0.24	60	214
70	11.59	11.58	33.084	25.179	279.4	0.228	5.25	85.0	6.4	1.03	9.4	0.02	0.23	0.18	70	213
75 ISL	11.14	11.13	33.128	25.295	268.4	0.242	5.07	81.3	8.4	1.16	11.6	0.01	0.19	0.15	75	
85	10.40	10.39	33.250	25.520	247.2	0.268	4.67	73.7	12.6	1.40	15.8	0.01	0.14	0.11	85	212
100	9.75	9.74	33.428	25.768	223.8	0.303	4.21	65.6	17.1	1.59	19.4	0.01	0.05	0.05	100	211
120	9.33	9.32	33.718	26.064	196.1	0.345	3.37	52.1	23.3	1.84	23.5	0.01	0.01	0.03	121	210
125 ISL	9.29	9.28	33.751	26.096	193.1	0.355	3.29	50.8	23.9	1.86	23.8	0.01	0.01	0.03	126	
140	9.23	9.21	33.817	26.158	187.6	0.383	3.14	48.5	25.1	1.90	24.3	0.01	0.00	0.03	141	209
150 ISL	9.13	9.11	33.883	26.226	181.3	0.402	2.94	45.3	27.1	1.96	25.3	0.01	0.00	0.03	151	
169	8.92	8.90	33.996	26.348	170.0	0.435	2.56	39.3	31.0	2.08	27.2	0.01	0.00	0.03	170	208
199	8.76	8.74	34.058	26.422	163.6	0.485	2.29	35.0	33.9	2.20	28.5	0.00	0.00	0.02	200	207
200 ISL	8.76	8.74	34.061	26.424	163.4	0.487	2.28	34.9	34.0	2.21	28.5	0.00			201	
230	8.65	8.63	34.132	26.498	157.0	0.535	1.85	28.2	37.8	2.36	29.8	0.01			231	206
250 ISL	8.50	8.47	34.149	26.534	153.8	0.566	1.71	26.0	39.9	2.42	30.6	0.01			251	
269	8.32	8.29	34.159	26.570	150.7	0.595	1.60	24.2	42.1	2.48	31.4	0.00			271	205
300 ISL	8.01	7.98	34.206	26.654	143.2	0.641	1.21	18.2	47.7	2.65	33.0	0.00			302	
318	7.81	7.78	34.231	26.703	138.7	0.666	1.00	15.0	51.2	2.74	33.9	0.00			320	204
379	7.01	6.97	34.219	26.807	129.2	0.748	0.83	12.2	60.1	2.88	36.2	0.00			381	203
400 ISL	6.81	6.77	34.215	26.832	127.1	0.775	0.78	11.4	62.6	2.92	36.9	0.00			403	
440	6.51	6.47	34.215	26.872	123.6	0.825	0.69	10.0	66.8	2.99	38.1	0.00			443	202
500 ISL	6.30	6.25	34.258	26.934	118.4	0.897	0.49	7.1	72.6	3.08	39.1	0.00			503	
511	6.26	6.21	34.266	26.945	117.5	0.910	0.45	6.5	73.7	3.10	39.3	0.00			515	201

RV DAVID STARR JORDAN

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STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
34 23.3 N	122 15.9 W	14/02/03	1719	UTC	3994 m	320	17 kn	320 06 05	2	1016.7 mb	14.9 C	13.3 C	15m	8/8	CB	
0 ISL	14.14	14.14	33.062	24.661	327.0	0.000	6.01	102.6	1.1	0.43	0.1	0.01	1.71	0.37	0	
2 A	14.14	14.14	33.062	24.661	327.1	0.007	6.01	102.6	1.1	0.43	0.1	0.01	1.71	0.37	2	221
9 A	14.14	14.14	33.067	24.666	326.9	0.029	6.01	102.6	1.1	0.42	0.1	0.01	0.93	0.23	9	220
10 ISL	14.14	14.14	33.067	24.666	326.9	0.033	6.01	102.6	1.1	0.42	0.1	0.01	0.93	0.23	10	
19 A	14.13	14.13	33.062	24.664	327.3	0.062	6.01	102.6	1.0	0.42	0.1	0.01	0.97	0.25	19	219
20 ISL	14.13	14.13	33.062	24.664	327.3	0.065	6.01	102.6	1.0	0.42	0.1	0.01	0.94	0.25	20	
30 A	14.12	14.12	33.063	24.667	327.3	0.098	6.01	102.5	1.2	0.42	0.2	0.01	0.63	0.28	30	218
42 A	13.35	13.34	33.104	24.856	309.6	0.136	5.54	93.1	3.0	0.63	3.3	0.06	0.44	0.31	42	217
50	12.20	12.19	33.165	25.128	283.8	0.160	5.24	86.0	6.6	0.97	8.5	0.05	0.25	0.20	50	216
57 A	11.41	11.41	33.219	25.315	266.2	0.179	4.90	79.1	9.5	1.18	12.0	0.03	0.17	0.16	57	215
65	11.11	11.10	33.251	25.396	258.6	0.200	4.75	76.2	10.9	1.27	13.4	0.02	0.13	0.12	65	214
70	10.84	10.83	33.255	25.447	253.8	0.213	4.72	75.2	11.6	1.33	14.4	0.02	0.05	0.05	70	213
75 ISL	10.57	10.56	33.287	25.519	247.1	0.226	4.61	73.1	12.8	1.40	15.6	0.02	0.04	0.05	75	
85	10.07	10.06	33.382	25.679	232.0	0.250	4.34	68.1	15.7	1.53	18.1	0.02	0.02	0.04	85	212
100	9.47	9.46	33.519	25.885	212.6	0.283	4.01	62.1	19.7	1.68	20.8	0.01	0.01	0.03	100	211
120	9.09	9.08	33.745	26.124	190.4	0.323	3.31	50.9	25.0	1.88	24.0	0.01	0.00	0.04	121	210
125 ISL	9.11	9.10	33.800	26.163	186.7	0.333	3.15	48.5	26.1	1.93	24.6	0.01	0.00	0.04	126	
140	9.16	9.14	33.930	26.258	178.1	0.360	2.73	42.1	29.2	2.05	26.2	0.01	0.01	0.04	141	209
150 ISL	9.14	9.12	33.983	26.302	174.0	0.378	2.50	38.6	30.8	2.12	27.0	0.01	0.01	0.04	151	
169	9.11	9.09	34.058	26.366	168.4	0.410	2.15	33.1	33.5	2.23	28.2	0.01	0.00	0.03	170	208
199	8.79	8.77	34.111	26.459	160.1	0.459	1.86	28.5	37.7	2.36	29.9	0.01	0.00	0.00	200	207
200 ISL	8.78	8.76	34.112	26.461	159.9	0.461	1.85	28.3	37.9	2.36	30.0	0.01			201	
230	8.35	8.33	34.137	26.547	152.1	0.508	1.70	25.8	42.3	2.48	31.4	0.01			231	206
250 ISL	8.16	8.13	34.149	26.586	148.7	0.538	1.56	23.6	44.4	2.54	32.2	0.01			251	
269	8.00	7.97	34.159	26.618	146.0	0.566	1.42	21.4	46.3	2.60	32.9	0.01			271	205
300 ISL	7.70	7.67	34.176	26.675	140.9	0.610	1.27	19.0	50.2	2.69	33.8	0.01			302	
319	7.51	7.48	34.184	26.709	137.9	0.637	1.19	17.7	52.9	2.74	34.4	0.01			321	204
378	6.85	6.81	34.189	26.805	129.3	0.716	0.90	13.2	61.7	2.91	36.8	0.01			380	203
400 ISL	6.76	6.72	34.208	26.833	126.9	0.744										

RV DAVID STARR JORDAN

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STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN	HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA				ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
34	3.6 N	122 56.2 W	14/02/03	0801	UTC	4231 m	310	15 kn		1016.1 mb	14.5	C	12.5	C			
0	ISL	14.94	14.94	32.756	24.256	365.6	0.000	5.89	102.0	0.2	0.42	0.0	0.00	0.22	0.06	0	
1		14.94	14.94	32.756	24.256	365.6	0.004	5.89	102.0	0.2	0.42	0.0	0.00	0.22	0.06	1	220
10	ISL	14.94	14.94	32.756	24.256	365.9	0.037	5.90	102.2	0.1	0.41	0.0	0.00	0.21	0.05	10	
15		14.94	14.94	32.756	24.257	366.0	0.055	5.90	102.2	0.1	0.41	0.0	0.00	0.21	0.05	15	219
20	ISL	14.94	14.94	32.756	24.257	366.2	0.073	5.89	102.0	0.1	0.41	0.0	0.00	0.21	0.05	20	
30		14.94	14.94	32.755	24.256	366.5	0.110	5.88	101.8	0.2	0.41	0.0	0.00	0.21	0.06	30	218
45		14.92	14.91	32.767	24.270	365.6	0.165	5.95	103.0	0.4	0.41	0.0	0.00	0.26	0.08	45	217
50	ISL	14.65	14.64	32.828	24.375	355.7	0.183	5.95	102.5	0.4	0.42	0.1	0.02	0.47	0.22	50	
55		14.31	14.30	32.900	24.503	343.7	0.200	5.96	102.0	0.5	0.45	0.2	0.05	0.64	0.34	55	216
65		13.57	13.56	33.023	24.750	320.3	0.233	5.82	98.2	1.1	0.56	1.5	0.21	0.45	0.28	65	215
75		11.59	11.58	32.786	24.948	301.5	0.265	5.80	93.7	3.5	0.81	5.3	0.03	0.19	0.17	75	214
84		11.06	11.05	32.850	25.093	287.8	0.291	5.60	89.5	5.4	0.94	7.7	0.02	0.12	0.12	84	213
95		10.61	10.60	33.034	25.316	266.8	0.322	5.23	82.8	8.4	1.14	11.5	0.02	0.09	0.09	95	212
100	ISL	10.43	10.42	33.098	25.397	259.2	0.335	5.09	80.3	9.6	1.21	12.8	0.02	0.07	0.07	100	
109		10.11	10.10	33.213	25.541	245.7	0.357	4.84	75.9	12.1	1.34	15.1	0.02	0.04	0.04	109	211
124		9.56	9.55	33.466	25.830	218.4	0.392	4.25	65.9	17.7	1.60	19.5	0.02	0.01	0.02	125	210
125	ISL	9.53	9.52	33.476	25.842	217.2	0.394	4.23	65.6	17.9	1.61	19.6	0.02	0.01	0.02	126	
143		9.15	9.13	33.615	26.013	201.4	0.432	3.92	60.3	21.2	1.70	21.5	0.02	0.01	0.02	144	209
150	ISL	9.06	9.04	33.677	26.076	195.5	0.446	3.74	57.5	22.7	1.76	22.5	0.02	0.01	0.02	151	
168		8.89	8.87	33.827	26.220	182.1	0.480	3.24	49.6	26.9	1.91	25.0	0.01	0.00	0.02	169	208
200		8.58	8.56	34.002	26.406	165.0	0.535	2.56	39.0	33.9	2.14	28.4	0.01	0.00	0.01	201	207
231		8.24	8.22	34.062	26.505	156.1	0.585	2.08	31.4	39.2	2.33	30.6	0.01			232	206
250	ISL	7.95	7.92	34.072	26.556	151.4	0.614	1.95	29.3	42.4	2.40	31.6	0.01			251	
269		7.65	7.62	34.075	26.603	147.2	0.643	1.86	27.7	45.6	2.46	32.6	0.01			271	205
300	ISL	7.21	7.18	34.086	26.674	140.7	0.687	1.61	23.8	51.1	2.59	34.3	0.01			302	
319		6.98	6.95	34.093	26.711	137.3	0.714	1.45	21.3	54.3	2.67	35.2	0.01			321	204
379		6.48	6.45	34.123	26.802	129.2	0.794	1.07	15.5	63.0	2.86	37.4	0.01			381	203
400	ISL	6.37	6.33	34.138	26.829	126.9	0.821	0.95	13.8	65.4	2.92	37.9	0.01			403	
443		6.16	6.12	34.170	26.882	122.4	0.874	0.74	10.7	70.3	3.02	38.9	0.01			446	202
500	ISL	5.72	5.68	34.204	26.964	114.9	0.942	0.51	7.3	79.4	3.13	40.5	0.01			503	
515		5.61	5.57	34.213	26.985	113.0	0.959	0.45	6.4	81.8	3.16	40.9	0.01			519	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN	HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA				ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
33	43.5 N	123 38.4 W	14/02/03	0131	UTC	4179 m	320	20 kn	280 05 07	1	1012.9 mb	14.9	C	12.9	C	7/8	SC
0	ISL	14.63	14.63	32.851	24.396	352.3	0.000	5.95	102.5	0.6	0.41	0.0	0.00	0.25	0.05	0	
2		14.63	14.63	32.851	24.399	352.4	0.007	5.95	102.5	0.6	0.41	0.0	0.00	0.25	0.05	2	220
10	ISL	14.62	14.62	32.852	24.399	352.3	0.035	5.94	102.3	0.7	0.41	0.0	0.00	0.26	0.06	10	
11		14.62	14.62	32.852	24.399	352.3	0.039	5.94	102.3	0.7	0.41	0.0	0.00	0.26	0.06	11	219
20	ISL	14.53	14.53	32.864	24.427	349.9	0.070	5.98	102.8	0.6	0.41	0.0	0.00	0.38	0.11	20	
21		14.51	14.51	32.866	24.433	349.4	0.074	5.99	102.9	0.6	0.41	0.0	0.00	0.41	0.12	21	218
30		14.22	14.22	32.902	24.522	341.1	0.105	6.06	103.5	0.7	0.43	0.1	0.01	0.80	0.24	30	217
41		13.43	13.42	32.869	24.659	328.4	0.142	6.06	101.8	1.5	0.55	1.4	0.04	0.97	0.37	41	216
50		12.71	12.70	33.073	24.959	300.0	0.170	5.59	92.6	3.5	0.77	5.0	0.05	0.42	0.29	50	215
60		10.73	10.72	32.854	25.154	281.5	0.199	5.57	88.3	6.8	1.04	9.2	0.02	0.18	0.13	60	214
70		10.95	10.94	33.269	25.439	254.7	0.226	4.66	74.5	11.4	1.35	14.8	0.02	0.10	0.09	70	213
75	ISL	10.74	10.73	33.336	25.528	246.3	0.238	4.60	73.2	12.6	1.42	16.0	0.02	0.07	0.07	75	
85		10.15	10.14	33.367	25.654	234.4	0.262	4.48	70.4	14.2	1.48	17.3	0.02	0.04	0.05	85	212
100		9.77	9.76	33.473	25.800	220.8	0.297	4.18	65.2	17.2	1.62	19.7	0.02	0.02	0.04	100	211
119		9.22	9.21	33.675	26.048	197.5	0.336	3.55	54.7	22.9	1.83	23.3	0.01	0.01	0.02	120	210
125	ISL	9.14	9.13	33.728	26.102	192.5	0.348	3.37	51.9	24.4	1.89	24.2	0.01	0.01	0.02	126	
139		9.03	9.02	33.834	26.203	183.2	0.374	2.99	46.0	27.4	2.00	25.9	0.01	0.00	0.02	140	209
150	ISL	8.90	8.88	33.904	26.279	176.2	0.394	2.75	42.2	29.6	2.07	27.1	0.01	0.00	0.02	151	
170		8.65	8.63	33.996	26.390	166.0	0.428	2.44	37.2	33.1	2.17	28.8	0.01	0.00	0.02	171	208
199		8.32	8.30	34.039	26.474	158.4	0.475	2.32	35.1	36.8	2.24	29.9	0.01	0.00	0.01	200	207
200	ISL	8.30	8.28	34.039	26.478	158.1	0.477	2.32	35.1	36.9	2.24	29.9	0.01			201	
229		7.86	7.84	34.039	26.543	152.2	0.522	2.28	34.2	40.8	2.31	31.1	0.01			230	206
250	ISL	7.61	7.59	34.061	26.597	147.4	0.553	2.01	29.9	44.5	2.43	32.4	0.01			251	
268		7.43	7.40	34.083	26.640	143.5	0.580	1.74	25.8	47.7	2.54	33.6	0.01			270	205
300	ISL	7.16	7.13	34.103	26.694	138.7	0.625	1.49	22.0	52							

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN	OXY PCT	SIO3 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/l	PHAEAO ug/l	PRES db	SAMP	
33 23.4 N	124 19.4 W	13/02/03	1906	UTC	4430 m	290	14 kn	300 03 06	1	1011.1 mb	16.1 C	15.1 C	20m	7/8	100		
0 ISL	14.76	14.76	32.862	24.376	354.2	0.000	5.93	102.4	0.5	0.42	0.0	0.00	0.21	0.05	0		
2 A	14.76	14.76	32.862	24.376	354.2	0.007	5.93	102.4	0.5	0.42	0.0	0.00	0.21	0.05	2	222	
10 ISL	14.72	14.72	32.866	24.388	353.3	0.035	5.95	102.7	0.4	0.41	0.0	0.00	0.22	0.04	10		
13 A	14.70	14.70	32.871	24.396	352.6	0.046	5.95	102.6	0.4	0.41	0.0	0.00	0.23	0.04	13	221	
19	14.64	14.64	32.894	24.427	349.9	0.067	5.93	102.2	0.4	0.41	0.0	0.00	0.25	0.05	19	220	
20 ISL	14.64	14.64	32.896	24.429	349.7	0.071	5.95	102.5	0.4	0.41	0.0	0.00	0.28	0.07	20		
26	14.54	14.54	32.937 D	24.482	344.9	0.091										26	219
30 ISL	14.33	14.33	35.032	24.599	335.8	0.105	6.07	104.0	0.6	0.43	0.0	0.01	0.67	0.27	30		
33	14.15	14.15	35.103	24.692	325.0	0.115	6.09	104.0	0.7	0.44	0.0	0.01	0.82	0.34	33	218	
41 A	13.84	13.83	35.143	24.787	316.2	0.140	5.93	100.7	1.4	0.52	0.8	0.10	1.07	0.40	41	217	
47	13.16	13.15	35.165	24.942	301.6	0.159	5.55	92.9	3.2	0.74	4.3	0.07	0.51	0.28	47	216	
50 ISL	12.63	12.62	35.163	25.044	291.9	0.168	5.35	88.6	4.8	0.89	6.7	0.06	0.37	0.24	50		
54 A	11.92	11.91	35.163	25.179	279.0	0.179	5.10	83.2	7.0	1.08	9.9	0.05	0.26	0.20	54	215	
65	10.90	10.89	35.230	25.417	256.6	0.209	4.77	76.1	10.8	1.31	14.1	0.05	0.16	0.12	65	214	
75 ISL	10.41	10.40	35.335	25.584	240.9	0.234	4.50	71.1	13.6	1.47	16.9	0.05	0.10	0.07	75		
76 A	10.37	10.36	35.347	25.600	239.3	0.236	4.47	70.6	13.9	1.48	17.1	0.05	0.09	0.07	76	213	
88	9.85	9.84	35.506	25.813	219.4	0.264	3.98	62.2	18.1	1.66	20.4	0.05	0.03	0.04	88	212	
100	9.64	9.63	35.612	25.930	208.4	0.289	3.64	56.6	20.7	1.77	22.2	0.05	0.02	0.04	100	211	
120	9.00	8.99	35.752	26.143	188.5	0.329	3.34	51.3	25.6	1.91	24.9	0.05	0.00	0.04	121	210	
125 ISL	8.89	8.88	35.776	26.179	185.1	0.338	3.31	50.7	26.4	1.93	25.3	0.05	0.00	0.04	126		
140	8.65	8.64	35.843	26.270	176.8	0.365	3.21	48.9	27.7	1.97	26.2	0.05	0.00	0.03	141	209	
150 ISL	8.60	8.58	35.908	26.328	171.4	0.383	2.97	45.2	30.6	2.03	27.1	0.05	0.00	0.03	151		
168	8.56	8.54	35.914	26.418	163.3	0.413	2.50	38.1	34.0	2.15	28.8	0.05	0.00	0.02	169	208	
198	8.33	8.31	35.069	26.497	156.3	0.461	2.08	31.5	38.3	2.32	30.8	0.05	0.00	0.02	199	207	
200 ISL	8.30	8.28	35.071	26.503	155.7	0.464	2.07	31.3	38.6	2.33	30.9	0.05			201		
229	7.81	7.79	35.077	26.580	148.7	0.508	1.95	29.2	42.5	2.42	32.2	0.04			230	206	
250 ISL	7.42	7.40	35.063	26.626	144.5	0.539	1.90	28.2	46.4	2.48	33.3	0.04			251		
268	7.12	7.09	35.055	26.661	141.3	0.565	1.83	27.0	49.9	2.53	34.3	0.04			270	205	
300 ISL	6.86	6.83	35.093	26.727	135.4	0.609	1.46	21.4	55.3	2.69	35.9	0.04			302		
317	6.76	6.73	35.117	26.760	132.5	0.632	1.25	18.3	57.9	2.77	36.7	0.04			319	204	
377	6.20	6.17	35.112	26.830	126.3	0.709	1.03	14.9	66.3	2.91	38.9	0.04			379	203	
400 ISL	6.12	6.08	35.137	26.860	123.7	0.738	0.89	12.8	68.8	2.97	39.4	0.04			403		
437	6.03	5.99	35.185	26.910	119.5	0.783	0.65	9.3	72.7	3.06	40.1	0.04			440	202	
500 ISL	5.66	5.62	35.235	26.996	111.8	0.856	0.42	6.0	81.0	3.16	41.6	0.04			503		
515	5.57	5.53	35.247	27.016	110.0	0.873	0.37	5.3	83.0	3.19	41.9	0.04			519	201	

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN	OXY PCT	SIO3 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/l	PHAEAO ug/l	PRES db	SAMP
34 27.0 N	120 32.7 W	11/02/03	1142	UTC	83 m	330	27 kn									
0 ISL	14.60	14.60	33.389	24.817	312.2	0.000	5.90	101.9	3.0	0.42	0.4	0.04	0.77	0.25	0	
1	14.60	14.60	33.389	24.817	312.2	0.003	5.90	101.9	3.0	0.42	0.4	0.04	0.77	0.25	1	209
5	14.60	14.60	33.395	24.822	311.9	0.016	5.88	101.5	3.1	0.42	0.4	0.04	0.79	0.23	5	208
10 ISL	14.60	14.60	33.392	24.819	312.2	0.031	5.92	102.2	3.2	0.42	0.4	0.04	0.78	0.25	10	207
20	14.46	14.46	35.414	24.867	308.1	0.062	5.87	101.1	3.6	0.45	0.8	0.04	0.86	0.09	20	206
30 ISL	14.43	14.43	35.414	24.873	307.7	0.093	5.83	100.3	3.8	0.47	1.0	0.05	0.69	0.25	30	
31	14.43	14.43	35.414	24.873	307.8	0.096	5.83	100.3	3.8	0.47	1.0	0.05	0.66	0.27	31	205
41	13.94	13.93	35.416	24.978	298.1	0.126	5.44	92.7	5.7	0.66	3.6	0.18	0.28	0.22	41	204
50	12.49	12.48	35.423	25.273	270.1	0.152	4.57	75.5	9.7	1.06	10.0	0.12	0.21	0.24	50	203
60	12.55	12.54	35.424	25.262	271.4	0.179	4.65	77.0	9.6	1.05	9.8	0.14	0.20	0.23	60	202
73	12.34	12.33	35.436	25.312	266.9	0.214	4.56	75.1	10.4	1.10	10.6	0.14	0.21	0.26	73	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN	OXY PCT	SIO3 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/l	PHAEAO ug/l	PRES db	SAMP
34 18.4 N	120 47.9 W	11/02/03	1514	UTC	747 m	330	37 kn	110 10 05	2	1017.9 mb	12.9 C	11.6 C	20m	8/8	55	
0 ISL	13.85	13.85	33.330	24.928	301.6	0.000	5.92	100.6	4.6	0.49	1.4	0.04	1.05	0.51	0	
2	13.85	13.85	33.330	24.928	301.6	0.006	5.92	100.6	4.6	0.49	1.4	0.04	1.05	0.51	2	220
10 ISL	13.85	13.85	33.334	24.932	301.5	0.030	5.93	100.8	4.5	0.49	1.4	0.04	1.08	0.43	10	219
12	13.85	13.85	33.335	24.933	301.5	0.036	5.93	100.8	4.5	0.49	1.4	0.04	1.08	0.41	12	219
20 ISL	13.84	13.84	33.337	24.936	301.4	0.060	5.86	99.6	4.9	0.50	1.6	0.05	1.03	0.46	20	
21	13.84	13.84	33.337	24.937	301.4	0.063	5.85	99.4	4.9	0.50	1.6	0.05	1.02	0.47	21	218
30	13.23	13.23	35.401	25.110	285.1	0.090	5.31	89.1	7.1	0.75	5.3	0.15	0.73	0.45	30	217
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RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
34 8.5 N	121 9.0 W	12/02/03	0758	UTC	2182 m	120	25 kn									
0 ISL	14.50	14.50	32.962	24.509	341.5	0.000	5.93	101.9	1.4	0.56	0.1	0.01	0.32	0.09	0	
1	14.50	14.50	32.962	24.509	341.6	0.003	5.93	101.9	1.4	0.56	0.1	0.01	0.32	0.09	1	220
10 ISL	14.50	14.50	32.963	24.510	341.7	0.034	5.95	102.3	1.3	0.55	0.0	0.01	0.31	0.08	10	
15	14.50	14.50	32.963	24.510	341.9	0.051	5.96	102.4	1.2	0.55	0.0	0.01	0.31	0.08	15	219
20 ISL	14.50	14.50	32.963	24.510	342.0	0.068	5.95	102.3	1.2	0.55	0.0	0.01	0.31	0.08	20	
30 ISL	14.50	14.50	32.963	24.510	342.3	0.103	5.92	101.7	1.1	0.55	0.0	0.00	0.31	0.09	30	
31	14.50	14.50	32.963	24.510	342.3	0.106	5.92	101.7	1.1	0.55	0.0	0.00	0.31	0.09	31	218
45	14.50	14.49	32.964	24.512	342.6	0.154	5.93	101.9	0.9	0.55	0.0	0.00	0.32	0.10	45	217
50 ISL	14.09	14.08	32.962	24.596	334.6	0.171	5.88	100.2	1.3	0.60	0.7	0.08	0.43	0.20	50	
56	13.42	13.41	32.949	24.723	322.7	0.191	5.82	97.8	2.0	0.68	1.8	0.15	0.53	0.31	56	216
65	12.31	12.30	32.887	24.892	306.7	0.219	5.75	94.4	3.3	0.83	4.1	0.08	0.38	0.31	65	215
75	11.43	11.42	32.942	25.098	287.2	0.249	5.45	87.8	6.1	1.07	8.3	0.02	0.20	0.20	75	214
86	10.69	10.68	33.103	25.355	262.9	0.279	5.05	80.2	9.9	1.31	12.9	0.01	0.11	0.08	86	213
96	10.31	10.30	33.192	25.490	250.2	0.305	4.82	75.9	11.9	1.43	15.0	0.01	0.07	0.05	96	212
100 ISL	10.22	10.21	33.230	25.535	246.0	0.314	4.73	74.4	12.6	1.47	15.7	0.01	0.06	0.05	100	
110	10.02	10.01	33.329	25.646	235.6	0.339	4.52	70.8	14.3	1.55	17.4	0.01	0.05	0.05	111	211
125 ISL	9.45	9.44	33.477	25.856	215.9	0.372	4.18	64.7	18.1	1.69	20.0	0.01	0.01	0.03	126	
127	9.37	9.36	33.499	25.886	213.1	0.377	4.13	63.8	18.7	1.71	20.4	0.01	0.01	0.03	128	210
145	9.03	9.01	33.754	26.141	189.2	0.413	3.39	52.1	24.5	1.92	24.1	0.01	0.00	0.02	146	209
150 ISL	8.99	8.97	33.803	26.185	185.1	0.422	3.21	49.3	25.8	1.97	24.9	0.01	0.00	0.02	151	
170	8.87	8.85	33.940	26.312	173.4	0.458	2.67	40.9	30.0	2.12	27.2	0.00	0.00	0.03	171	208
200 ISL	8.58	8.56	34.017	26.418	163.9	0.509	2.42	36.9	33.6	2.22	28.8	0.00	0.00	0.03	201	
202	8.56	8.54	34.019	26.422	163.5	0.512	2.41	36.7	33.8	2.22	28.9	0.00	0.00	0.03	203	207
229	8.31	8.29	34.051	26.486	157.9	0.555	2.21	33.5	36.9	2.31	30.2	0.00			230	206
250 ISL	7.95	7.92	34.051	26.540	153.0	0.588	2.18	32.7	39.9	2.35	31.0	0.00			251	
269	7.59	7.56	34.046	26.589	148.5	0.617	2.17	32.3	42.9	2.39	31.8	0.00			271	205
300 ISL	7.15	7.12	34.049	26.653	142.6	0.662	1.96	28.9	48.1	2.50	33.3	0.00			302	
319	6.93	6.90	34.054	26.687	139.5	0.689	1.79	26.3	51.2	2.58	34.3	0.00			321	204
381	6.48	6.45	34.085	26.773	132.0	0.773	1.28	18.6	59.6	2.79	37.0	0.00			383	203
400 ISL	6.40	6.36	34.107	26.801	129.6	0.798	1.11	16.1	62.1	2.86	37.6	0.00			403	
437	6.29	6.25	34.158	26.855	124.9	0.845	0.81	11.7	66.8	2.98	38.5	0.00			440	202
500 ISL	6.21	6.17	34.261	26.948	117.0	0.921	0.47	6.8	73.1	3.11	39.3	0.00			503	
511	6.20	6.15	34.279	26.964	115.7	0.934	0.41	5.9	74.2	3.13	39.4	0.00			515	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
33 49.6 N	121 48.3 W	12/02/03	1736	UTC	3612 m	150	14 kn	130 08 05	4	1004.0 mb	16.1	C 15.6 C	15m	8/8	ST	
0 ISL	14.30	14.30	32.978	24.563	336.4	0.000	6.03	103.2	0.8	0.41	0.1	0.01	0.43	0.10	0	
2 A	14.30	14.30	32.978	24.563	336.4	0.007	6.03	103.2	0.8	0.41	0.1	0.01	0.43	0.10	2	222
10 A	14.28	14.28	32.978	24.568	336.2	0.034	5.98	102.3	0.7	0.41	0.1	0.01	0.42	0.10	10	221
19 A	14.28	14.28	32.979	24.569	336.4	0.064	5.97	102.2	0.5	0.41	0.1	0.01	0.41	0.11	19	220
20 ISL	14.28	14.28	32.979	24.569	336.4	0.067	5.97	102.2	0.5	0.41	0.1	0.01	0.41	0.11	20	
30 A	14.27	14.27	32.980	24.572	336.4	0.101	5.98	102.3	0.4	0.41	0.1	0.01	0.45	0.10	30	219
41 A	14.18	14.17	32.989	24.598	334.2	0.138	5.95	101.6	0.5	0.43	0.4	0.03	0.48	0.13	41	218
50	12.21	12.20	32.937	24.949	300.8	0.166	5.69	93.2	3.0	0.75	4.7	0.14	0.44	0.29	50	217
58 A	11.33	11.32	32.933	25.109	285.8	0.190	5.53	88.9	5.1	0.92	7.7	0.05	0.27	0.27	58	216
65	11.01	11.00	32.992	25.212	276.1	0.209	5.38	85.9	6.6	1.04	9.9	0.03	0.19	0.23	65	215
70	10.71	10.70	33.046	25.307	267.1	0.223	5.23	83.0	8.1	1.14	11.7	0.02	0.17	0.13	70	214
75 ISL	10.52	10.51	33.128	25.404	258.0	0.236	5.03	79.6	9.8	1.25	13.5	0.01	0.14	0.11	75	
85	10.23	10.22	33.296	25.585	241.0	0.261	4.61	72.5	13.1	1.44	16.8	0.01	0.09	0.07	85	213
100 ISL	9.69	9.68	33.442	25.789	221.8	0.296	4.15	64.6	16.9	1.61	19.8	0.01	0.04	0.03	100	
101	9.66	9.65	33.450	25.800	220.8	0.298	4.12	64.1	17.1	1.62	19.9	0.01	0.04	0.03	101	212
120	9.35	9.34	33.643	26.002	201.9	0.338	3.58	55.4	21.2	1.78	22.6	0.00	0.01	0.03	121	211
125 ISL	9.31	9.30	33.684	26.041	198.4	0.348	3.45	53.3	22.1	1.82	23.2	0.00	0.01	0.03	126	
140	9.20	9.18	33.789	26.141	189.2	0.377	3.12	48.1	24.8	1.92	24.9	0.00	0.00	0.03	141	210
150 ISL	9.08	9.06	33.847	26.206	183.2	0.396	2.97	45.7	26.5	1.97	25.8	0.00	0.00	0.03	151	
170	8.83	8.81	33.940	26.318	172.8	0.432	2.72	41.6	29.7	2.06	27.3	0.00	0.00	0.02	171	209
199	8.53	8.51	34.027	26.433	162.4	0.480	2.35	35.8	33.9	2.20	29.4	0.00	0.00	0.03	200	208
200 ISL	8.52	8.50	34.029	26.436	162.1	0.482	2.34	35.6	34.1	2.21	29.5	0.00			201	
229	8.06	8.04	34.057	26.528	153.7	0.528	2.05	30.9	39.4	2.35	31.6	0.00			230	207
250 ISL	7.74	7.72	34.060	26.578	149.3	0.559	1.94	29.0	42.6	2.41	32.6	0.00			251	
269	7.45	7.42	34.057	26.617	145.7	0.587	1									

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
33 28.7 N	122 31.7 W	12/02/03	2346	UTC	3983 m	150	14 kn	170 07 05	1	1012.7 mb	17.5	C 16.5 C	18m	2/8	ST	
0 ISL	14.94	14.94	32.906	24.372	354.6	0.000	5.94	103.0	0.4	0.40	0.0	0.00	0.20	0.04	0	
3	14.94	14.94	32.906	24.372	354.7	0.011	5.94	103.0	0.4	0.40	0.0	0.00	0.20	0.04	3	220
10 ISL	14.91	14.91	32.904	24.377	354.4	0.035	5.92	102.6	0.1	0.40	0.0	0.00	0.20	0.05	10	
11	14.90	14.90	32.904	24.379	354.2	0.039			0.1	0.40	0.0	0.00	0.20	0.05	11	219
20	14.82	14.82	32.905	24.397	352.8	0.071	5.90	102.0	0.2	0.40	0.0	0.00	0.21	0.05	20	218
29	14.81	14.81	32.905	24.400	352.8	0.103	5.90	102.0	0.3	0.40	0.0	0.00	0.22	0.06	29	217
30 ISL	14.81	14.81	32.905	24.400	352.8	0.106	5.90	102.0	0.3	0.40	0.0	0.00	0.22	0.06	30	
40	14.80	14.79	32.906	24.403	352.8	0.141	5.90	102.0	0.1	0.40	0.0	0.00	0.25	0.06	40	216
50	14.47	14.46	32.926	24.489	344.9	0.176	5.92	101.6	0.3	0.42	0.1	0.01	0.43	0.24	50	215
60	13.09	13.08	32.909	24.758	319.4	0.209	5.85	97.6	1.7	0.60	1.9	0.12	0.47	0.35	60	214
70	12.22	12.21	32.877	24.901	305.9	0.241	5.72	93.7	3.2	0.76	4.5	0.05	0.28	0.32	70	213
75 ISL	11.68	11.67	32.886	25.009	295.7	0.256	5.62	91.0	4.3	0.85	6.2	0.04	0.21	0.25	75	
85	10.73	10.72	32.945	25.225	275.2	0.284	5.41	85.9	6.8	1.03	9.6	0.03	0.12	0.11	85	212
100	10.27	10.26	33.094	25.421	256.9	0.324	5.13	80.7	9.8	1.22	13.0	0.03	0.06	0.05	100	211
120	9.69	9.68	33.337	25.708	229.9	0.373	4.60	71.5	15.1	1.48	17.5	0.02	0.02	0.02	121	210
125 ISL	9.58	9.57	33.389	25.766	224.5	0.384	4.48	69.5	16.2	1.53	18.3	0.02	0.02	0.02	126	
140	9.30	9.28	33.536	25.927	209.5	0.417	4.09	63.1	19.3	1.65	20.6	0.02	0.01	0.02	141	209
150 ISL	9.18	9.16	33.645	26.031	199.7	0.437	3.74	57.6	21.9	1.76	22.4	0.02	0.01	0.02	151	
170	8.97	8.95	33.836	26.215	182.7	0.476	3.13	48.0	26.8	1.94	25.4	0.02	0.00	0.01	171	208
199	8.50	8.48	33.973	26.395	166.0	0.526	2.97	45.1	31.6	2.00	27.1	0.02	0.00	0.01	200	207
200 ISL	8.49	8.47	33.976	26.399	165.6	0.528	2.95	44.8	31.8	2.01	27.2	0.02			201	
229	8.18	8.16	34.045	26.501	156.4	0.574	2.22	33.5	38.4	2.29	30.8	0.02			230	206
250 ISL	7.87	7.85	34.053	26.553	151.6	0.607	2.14	32.1	41.6	2.36	31.9	0.02			251	
269	7.58	7.55	34.049	26.592	148.1	0.635	2.06	30.7	44.0	2.39	32.5	0.02			271	205
300 ISL	7.17	7.14	34.052	26.653	142.6	0.680	1.91	28.2	48.6	2.49	33.8	0.02			302	
319	6.94	6.91	34.055	26.687	139.6	0.707	1.79	26.3	51.5	2.56	34.6	0.02			321	204
378	6.39	6.36	34.083	26.783	131.0	0.787	1.27	18.4	60.9	2.79	37.4	0.02			380	203
400 ISL	6.18	6.14	34.096	26.820	127.6	0.815	1.13	16.3	64.8	2.86	38.3	0.02			403	
440	5.85	5.81	34.123	26.883	121.8	0.865	0.89	12.7	71.6	2.98	39.8	0.02			443	202
500 ISL	5.54	5.50	34.172	26.960	115.0	0.936	0.50	7.1	79.7	3.11	41.3	0.02			503	
510	5.49	5.45	34.180	26.973	113.9	0.948	0.44	6.2	81.1	3.13	41.6	0.02			513	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
33 9.0 N	123 13.3 W	13/02/03	0613	UTC	4239 m	220	08 kn									
0 ISL	15.04	15.04	32.724	24.210	370.0	0.000	5.87	101.9	0.6	0.41	0.0	0.00	0.17	0.03	0	
2	15.04	15.04	32.724	24.210	370.1	0.007	5.87	101.8	0.6	0.41	0.0	0.00	0.17	0.03	2	220
10 ISL	15.04	15.04	32.724	24.210	370.3	0.037	5.86	101.7	0.7	0.41	0.0	0.00	0.16	0.04	10	
11	15.04	15.04	32.724	24.210	370.3	0.041	5.86	101.7	0.7	0.41	0.0	0.00	0.16	0.04	11	219
20	15.01	15.01	32.724	24.217	369.9	0.074	5.87	101.8	0.6	0.41	0.0	0.00	0.17	0.04	20	218
30	14.81	14.81	32.732	24.226	365.5	0.111	5.90	101.9	0.6	0.40	0.2	0.00	0.22	0.06	30	217
41	14.49	14.48	32.805	24.391	353.9	0.150	5.97	102.5	0.7	0.42	0.2	0.01	0.44	0.16	41	216
50 ISL	14.36	14.35	32.943	24.525	341.4	0.182	6.00	102.8	0.6	0.41	0.1	0.01	0.60	0.24	50	
51	14.35	14.34	32.958	24.539	340.2	0.185	6.00	102.8	0.6	0.41	0.1	0.01	0.61	0.24	51	215
61	14.37	14.36	33.032	24.592	335.4	0.219	5.94	101.8	0.6	0.42	0.3	0.03	0.43	0.18	61	214
70	12.70	12.69	32.799	24.749	320.4	0.248	5.88	97.2	2.3	0.66	3.2	0.09	0.27	0.26	70	213
75 ISL	12.04	12.03	32.763	24.847	311.2	0.264	5.85	95.4	3.1	0.74	4.4	0.07	0.20	0.23	75	
84	11.15	11.14	32.772	25.017	295.1	0.291	5.77	92.3	4.6	0.85	6.5	0.02	0.11	0.13	84	212
100	10.08	10.07	32.823	25.241	273.9	0.337	5.56	86.9	8.2	1.10	10.9	0.02	0.06	0.05	100	211
120	9.71	9.70	33.229	25.620	238.3	0.388	4.90	76.2	12.6	1.32	15.5	0.02	0.02	0.02	121	210
125 ISL	9.64	9.63	33.302	25.689	231.9	0.400	4.74	73.6	13.9	1.39	16.6	0.02	0.02	0.02	126	
138	9.48	9.46	33.462	25.840	217.7	0.429	4.31	66.8	17.5	1.56	19.5	0.02	0.01	0.02	139	209
150 ISL	9.30	9.28	33.597	25.975	205.1	0.455	3.90	60.2	20.8	1.70	21.8	0.02	0.01	0.02	151	
170	8.99	8.97	33.790	26.175	186.4	0.494	3.24	49.7	26.2	1.91	25.1	0.01	0.00	0.02	171	208
199	8.61	8.59	34.011	26.408	164.8	0.545	2.41	36.7	33.7	2.17	28.9	0.01	0.00	0.02	200	207
200 ISL	8.60	8.58	34.014	26.412	164.4	0.546	2.40	36.6	33.9	2.18	29.0	0.01			201	
229	8.32	8.30	34.057	26.489	157.6	0.593	2.15	32.6	38.0	2.29	30.4	0.01			230	206
250 ISL	7.96	7.93	34.065	26.549	152.1	0.625	2.01	30.2	41.8	2.38	31.6	0.01			251	
269	7.64	7.61	34.068	26.599	147.6	0.654	1.90	28.3	45.2	2.45	32.7	0.01			271	205
300 ISL	7.40	7.37	34.090	26.651	143.0	0.699	1.66	24.6	48.9	2.56	33.9	0.01			302	
319	7.27	7.24	34.101	26.678	140.7	0.726	1.52	22.5	51.0	2.62	34.6	0.01			321	204
378	6.48	6.45	34.095	26.780	131.3	0.806	1.23	17.9	61.1	2.80	37.3	0.01	</td			

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP	
m	DEG C	DEG C		THETA			ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db		
32	49.2 N	123 54.3 W	13/02/03	1235	UTC	4407 m	280	10 kn		1006.7 mb	14.9	C 14.0	C				
0	ISL	14.61	14.61	32.586	24.196	371.4	0.000	5.93	101.9	0.6	0.43	0.0	0.00	0.26	0.06	0	
2		14.61	14.61	32.586	24.196	371.5	0.007	5.93	101.9	0.6	0.43	0.0	0.00	0.26	0.06	2 220	
10	ISL	14.61	14.61	32.588	24.197	371.5	0.037	5.94	102.1	0.6	0.42	0.0	0.00	0.25	0.06	10	
11		14.61	14.61	32.588	24.197	371.5	0.041	5.94	102.1	0.6	0.42	0.0	0.00	0.25	0.06	11 219	
20	ISL	14.70	14.70	32.659	24.233	368.4	0.074	5.95	102.5	0.5	0.42	0.0	0.00	0.26	0.08	20	
21		14.70	14.70	32.665	24.238	368.0	0.078	5.95	102.5	0.5	0.42	0.0	0.00	0.26	0.09	21 218	
30		14.46	14.46	32.785	24.382	354.5	0.110	5.88	100.9	0.6	0.43	0.1	0.02	0.49	0.19	30 217	
41		14.28	14.27	32.929	24.531	340.6	0.149	6.00	102.6	0.5	0.43	0.0	0.00	0.67	0.23	41 216	
50		14.45	14.44	33.070	24.604	333.9	0.179	5.95	102.2	0.3	0.40	0.0	0.00	0.48	0.21	50 215	
60		14.41	14.40	33.082	24.622	332.5	0.212	5.91	101.4	0.2	0.40	0.1	0.00	0.27	0.15	60 214	
71		14.23	14.22	33.089	24.666	328.7	0.249	5.89	100.7	0.3	0.44	0.3	0.04	0.27	0.14	71 213	
75	ISL	13.40	13.39	32.973	24.746	321.0	0.262	5.85	98.3	1.3	0.55	1.9	0.04	0.24	0.14	75	
85		11.22	11.21	32.766	25.000	296.8	0.293	5.75	92.1	4.8	0.89	6.8	0.03	0.15	0.15	85 212	
100		10.82	10.81	33.106	25.335	265.1	0.335	5.10	81.2	9.4	1.19	12.3	0.02	0.08	0.08	100 211	
119		10.01	10.00	33.370	D	25.680	232.6	0.382	4.58	71.7	14.4	1.46	17.2	0.01	0.03	0.04	120 210
125	ISL	9.82	9.81	33.435	25.763	224.9	0.396	4.38	68.3	16.0	1.53	18.5	0.01	0.02	0.04	126	
139		9.48	9.46	33.567	25.922	210.0	0.426	3.92	60.8	19.7	1.67	21.1	0.02	0.01	0.04	140 209	
150	ISL	9.28	9.26	33.662	26.029	200.0	0.449	3.63	56.0	22.1	1.76	22.8	0.02	0.01	0.03	151	
170		9.00	8.98	33.810	26.190	185.1	0.487	3.18	48.8	26.2	1.90	25.2	0.01	0.01	0.02	171 208	
199		8.65	8.63	33.972	26.372	168.3	0.538	2.67	40.7	32.1	2.07	28.0	0.01	0.00	0.02	200 207	
200	ISL	8.64	8.62	33.975	26.375	167.9	0.540	2.66	40.6	32.2	2.07	28.1	0.01			201	
230		8.35	8.33	34.030	26.464	160.0	0.589	2.38	36.1	36.4	2.20	29.8	0.01			231 206	
250	ISL	8.13	8.10	34.061	26.521	154.8	0.621	2.12	32.0	39.9	2.31	31.1	0.01			251	
271		7.87	7.84	34.084	26.578	149.7	0.653	1.87	28.0	43.6	2.43	32.4	0.01			273 205	
300	ISL	7.45	7.42	34.081	26.636	144.4	0.695	1.74	25.8	47.7	2.51	33.7	0.00			302	
319		7.19	7.16	34.077	26.670	141.4	0.723	1.67	24.6	50.3	2.56	34.4	0.00			321 204	
381		6.68	6.64	34.134	26.785	131.1	0.807	1.09	15.9	60.2	2.81	37.1	0.00			383 203	
400	ISL	6.50	6.46	34.148	26.820	127.9	0.832	0.96	13.9	63.6	2.89	37.9	0.00			402	
433		6.20	6.16	34.170	26.876	122.8	0.873	0.77	11.1	69.4	3.00	39.3	0.00			436 202	
500	ISL	5.66	5.62	34.204	26.971	114.1	0.952	0.51	7.3	80.2	3.12	41.1	0.00			503	
514		5.55	5.51	34.212	26.991	112.3	0.968	0.45	6.4	82.4	3.14	41.5	0.00			517 201	

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
34	16.3 N	120 1.7 W	11/02/03	0623	UTC	578 m	330	14 kn		1011.0 mb	15.6	C 13.2	C			
0	ISL	15.13	15.13	33.406	24.716	321.8	0.000	5.89	102.8	2.3	0.38	0.1	0.01	0.50	0.25	0
1	A	15.13	15.13	33.406	24.716	321.9	0.003	5.89	102.8	2.3	0.38	0.1	0.01	0.50	0.25	1 224
10		15.12	15.12	33.405	24.718	322.0	0.032	5.90	103.0	2.3	0.37	0.0	0.01	0.53	0.23	10 223
20	ISL	15.00	15.00	33.401	24.741	320.1	0.064	5.92	103.1	2.3	0.38	0.1	0.01	0.70	0.29	20
21		14.99	14.99	33.401	24.743	319.9	0.067	5.92	103.0	2.3	0.38	0.1	0.01	0.72	0.30	21 222
30		14.98	14.98	33.407	24.750	319.5	0.096	5.90	102.7	2.1	0.38	0.1	0.01	0.72	0.34	30 221
40		14.49	14.48	33.391	24.843	310.9	0.128	5.55	95.6	3.6	0.54	1.7	0.12	0.84	0.35	40 220
50		13.85	13.84	33.357	24.951	300.9	0.158	5.30	90.1	4.9	0.69	3.7	0.25	0.62	0.30	50 219
60		13.18	13.17	33.322	25.060	290.7	0.188	5.05	84.6	5.8	0.83	5.9	0.16	0.51	0.39	60 218
70		12.26	12.25	33.412	25.309	267.2	0.216	4.44	73.0	9.2	1.12	10.8	0.05	0.22	0.23	70 217
75	ISL	11.99	11.98	33.455	25.394	259.2	0.229	4.23	69.2	10.6	1.21	12.3	0.04	0.18	0.18	75
85		11.69	11.68	33.523	25.502	249.1	0.254	3.95	64.2	12.5	1.32	14.2	0.02	0.11	0.12	85 216
100		11.59	11.58	33.554	25.545	245.4	0.292	3.82	62.0	13.2	1.38	15.0	0.02	0.08	0.10	100 215
120		11.17	11.16	33.616	25.670	233.9	0.339	3.58	57.6	15.7	1.51	17.0	0.02	0.05	0.09	121 214
125	ISL	10.95	10.93	33.686	25.764	225.0	0.351	3.31	53.0	17.8	1.62	18.6	0.02	0.04	0.08	126
139		10.36	10.34	33.895	26.031	199.9	0.381	2.53	40.1	24.0	1.94	23.1	0.02	0.01	0.05	140 213
150	ISL	10.26	10.24	33.979	26.114	192.3	0.402	2.26	35.7	26.2	2.04	24.6	0.02	0.01	0.05	151
169		10.10	10.08	34.015	26.170	187.4	0.438	2.05	32.3	28.2	2.12	25.7	0.01	0.01	0.05	170 212
199		9.76	9.74	34.096	26.291	176.4	0.493	1.67	26.1	32.3	2.28	27.8	0.01	0.01	0.04	200 211
200	ISL	9.75	9.73	34.098	26.294	176.1	0.495	1.66	26.0	32.4	2.28	27.8	0.01			201
229		9.55	9.52	34.152	26.370	169.5	0.545	1.42	22.1	36.2	2.40	28.9	0.01			230 210
250	ISL	9.17	9.14	34.166	26.443	162.9	0.580	1.23	19.0	39.9	2.50	30.5	0.01			251
268		8.81	8.78	34.172	26.505	157.1	0.608	1.07	16.4	43.3	2.59	31.9	0.01			270 209
300	ISL	8.41	8.38	34.188	26.579	150.4	0.658	0.87	13.2	49.2	2.71	33.1	0.01			302
318		8.23	8.20	34.196	26.613	147.5	0.684	0.78	11.8	52.4	2.77	33.5	0.01			320 208
378		7.67	7.63	34.214	26.711	138.9	0.770	0.63	9.4	61.0	2.93	34.2	0.01			380 207
400	ISL	7.42	7.38	34.220	26.751	135.2	0.801	0.58								

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	um/l	um/l	um/l	um/l	ug/l	ug/l	db	
0 ISL	15.10	15.10	33.387	24.708	322.6	0.000	5.90	102.9	2.2	0.37	0.0	0.01	0.53	0.13	0	
1 B	15.10	15.10	33.387	24.708	322.6	0.003	5.90	102.9	2.2	0.37	0.0	0.01	0.53	0.13	1	205
5	15.06	15.06	33.388	24.717	321.8	0.016	5.94	103.5	2.1	0.37	0.0	0.01	0.51	0.13	5	204
10 ISL	15.06	15.06	33.389	24.718	321.9	0.032	5.92	103.2	2.1	0.37	0.0	0.01	0.50	0.14	10	
12 B	15.06	15.06	33.389	24.718	322.0	0.039	5.90	102.8	2.1	0.37	0.0	0.01	0.50	A 0.14 A	12	203
19	15.05	15.05	33.388	24.720	322.0	0.061	5.91	103.0	2.2	0.37	0.0	0.01	0.55	0.16	19	202
20 ISL	15.05	15.05	33.388	24.720	322.0	0.064	5.91	103.0	2.2	0.37	0.0	0.01	0.56	0.16	20	
26 B	15.05	15.05	33.388	24.720	322.2	0.084	5.90	102.8	2.1	0.37	0.0	0.01	0.60	0.18	26	201

A) FIRST 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 0302

STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	um/l	um/l	um/l	um/l	ug/l	ug/l	db	
0 ISL	15.23	15.23	33.366	24.663	326.8	0.000	5.91	103.3	2.1	0.36	0.1	0.01	0.29	0.09	0	
2	15.23	15.23	33.366	24.663	326.9	0.007	5.91	103.3	2.1	0.36	0.1	0.01	0.29	0.09	2	212
5	15.22	15.22	33.366	24.665	326.8	0.016	5.91	103.3	2.1	0.36	0.1	0.01	0.31	0.08	5	211
10 ISL	15.23	15.23	33.366	24.663	327.1	0.033	5.90	103.2	2.1	0.36	0.1	0.01	0.29	0.09	10	
11	15.23	15.23	33.366	24.663	327.1	0.036	5.90	103.2	2.1	0.36	0.1	0.01	0.28	0.09	11	210
20 ISL	15.23	15.23	33.366	24.664	327.4	0.065	5.91	103.3	2.1	0.36	0.1	0.01	0.29	0.08	20	
21	15.23	15.23	33.366	24.664	327.4	0.069	5.91	103.3	2.1	0.36	0.1	0.01	0.29	0.08	21	209
30 ISL	15.19	15.19	33.364	24.671	327.0	0.098	5.91	103.2	2.1	0.36	0.1	0.01	0.34	0.09	30	
31	15.19	15.19	33.364	24.671	327.0	0.101	5.91	103.2	2.1	0.36	0.1	0.01	0.35	0.09	31	208
40	13.69	13.68	33.272	24.918	303.7	0.130	5.77	97.7	3.6	0.54	1.6	0.10	0.72	0.28	40	207
50	12.83	12.82	33.255	25.077	288.8	0.159	5.26	87.5	5.8	0.83	6.2	0.14	0.50	0.35	50	206
60	12.44	12.43	33.262	25.158	281.3	0.188	5.13	84.6	6.6	0.92	7.7	0.10	0.42	0.31	60	205
70	11.75	11.74	33.376	25.377	260.7	0.215	4.60	74.8	9.8	1.14	11.6	0.05	0.19	0.19	70	204
75 ISL	11.59	11.58	33.451	25.465	252.4	0.228	4.27	69.3	11.5	1.25	13.3	0.05	0.13	0.15	75	
84	11.47	11.46	33.567	25.577	241.9	0.250	3.76	60.9	13.9	1.42	15.5	0.05	0.09	0.10	84	203
100 ISL	11.41	11.40	33.584	25.602	240.0	0.289	3.71	60.0	14.5	1.45	15.9	0.05	0.08	0.10	100	
102	11.40	11.39	33.586	25.605	239.7	0.293	3.70	59.8	14.5	1.45	15.9	0.05	0.08	0.10	102	202
121	10.96	10.95	33.714	25.784	223.0	0.337	3.18	51.0	18.4	1.66	19.0	0.05	0.04	0.08	122	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	um/l	um/l	um/l	um/l	ug/l	ug/l	db	
0 ISL	14.56	14.56	33.374	24.814	312.5	0.000	5.92	102.1	3.6	0.49	1.5	0.04	0.53	0.19	0	
2	14.56	14.56	33.374	24.814	312.5	0.006	5.92	102.1	3.6	0.49	1.5	0.04	0.53	0.19	2	211
5	14.54	14.54	33.373	24.818	312.3	0.016	5.83	100.5	3.6	0.49	1.5	0.04	0.49	0.19	5	210
10	14.45	14.45	33.372	24.836	310.7	0.031	5.79	99.7	3.8	0.52	1.7	0.04	0.54	0.20	10	209
20	14.19	14.19	33.365	24.885	306.3	0.062	5.69	97.4	4.1	0.54	2.1	0.05	0.56	0.22	20	208
30	13.22	13.22	33.345	25.069	289.1	0.092	5.32	89.3	6.3	0.78	5.7	0.11	0.71	0.34	30	207
40	12.53	12.52	33.390	25.239	273.0	0.120	4.86	80.4	8.6	0.99	8.9	0.11	0.53	0.31	40	206
50	12.12	12.11	33.438	25.355	262.3	0.147	4.59	75.3	10.4	1.11	10.9	0.10	0.37	0.25	50	205
60	11.75	11.74	33.433	25.421	256.2	0.173	4.42	71.9	11.1	1.20	12.5	0.09	0.32	0.26	60	204
69	11.71	11.70	33.436	25.431	255.5	0.196	4.40	71.5	11.3	1.21	12.7	0.09	0.33	0.23	69	203
75 ISL	11.64	11.63	33.459	25.462	252.7	0.211	4.32	70.1	12.0	1.24	13.1	0.09	0.28	0.23	75	
81	11.51	11.50	33.492	25.511	248.1	0.226	4.19	67.9	13.0	1.30	13.9	0.09	0.22	0.24	81	202
90	11.13	11.12	33.545	25.622	237.8	0.248	3.91	62.8	14.9	1.43	15.9	0.09	0.14	0.16	90	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
33 44.7 N	120 24.7 W	10/02/03	0511	UTC	979 m	330	08 kn									
0 ISL	14.59	14.59	33.367	24.802	313.6	0.000	6.04	104.3	2.9	0.40	0.1	0.02	0.66	0.19	0	
2	14.59	14.59	33.367	24.802	313.7	0.006	6.04	104.3	2.9	0.40	0.1	0.02	0.66	0.19	2	220
10	14.44	14.44	33.366	24.833	310.9	0.031	6.04	103.9	2.8	0.41	0.3	0.02	0.71	0.22	10	219
20	14.36	14.36	33.368	24.852	309.4	0.062	5.95	102.2	3.1	0.43	0.7	0.03	1.12	0.38	20	218
30	14.23	14.23	33.364	24.877	307.4	0.093	5.84	100.1	3.7	0.47	1.4	0.05	1.20	0.40	30	217
40	13.41	13.40	33.357	25.040	292.1	0.123	5.49	92.5	5.4	0.67	4.3	0.10	1.44 A	0.49 A	40	216
50 ISL	12.93	12.92	33.357	25.136	283.2	0.152	5.11	85.2	7.1	0.84	7.2	0.14	1.07	0.39	50	
51	12.86	12.85	33.359	25.151	281.7	0.155	5.06	84.3	7.3	0.86	7.6	0.14	1.01	0.38	51	215
60	11.51	11.50	33.438	25.469	251.6	0.179	4.35	70.4	11.5	1.22	13.2	0.06	0.55	0.32	60	214
70	11.31	11.30	33.490	25.546	244.5	0.203	4.15	66.9	12.9	1.30	14.7	0.05	0.24	0.20	70	213
75 ISL	11.06	11.05	33.546	25.635	236.2	0.215	3.94	63.2	14.5	1.39	16.1	0.04	0.22	0.18	75	
85	10.54	10.53	33.671	25.824	218.4	0.238	3.47	55.1	18.0	1.58	19.1	0.02	0.17	0.15	85	212
100	10.22	10.21	33.797	25.978	204.1	0.270	3.02	47.7	21.9	1.76	21.5	0.02	0.05	0.07	101	211
119	10.04	10.03	33.912	26.098	193.0	0.308	2.62	41.2	25.4	1.92	23.7	0.01	0.02 A	0.05 A	120	210
125 ISL	10.00	9.99	33.935	26.123	190.8	0.319	2.53	39.8	26.0	1.95	24.1	0.01	0.02	0.05	126	
140	9.92	9.90	33.983	26.174	186.2	0.347	2.35	36.9	27.3	2.01	24.9	0.01	0.01	0.06	141	209
150 ISL	9.85	9.83	34.019	26.214	182.6	0.366	2.21	34.6	28.5	2.06	25.6	0.01	0.01	0.05	151	
169	9.72	9.70	34.083	26.286	176.2	0.400	1.97	30.8	30.8	2.16	26.8	0.01	0.01	0.04	170	208
198	9.50	9.48	34.157	26.381	167.7	0.450	1.70	26.5	34.0	2.28	28.3	0.01	0.01	0.04	199	207
200 ISL	9.48	9.46	34.160	26.387	167.2	0.453	1.69	26.3	34.2	2.29	28.4	0.01			201	
227	9.20	9.18	34.195	26.460	160.7	0.497	1.54	23.8	37.1	2.38	29.4	0.02			228	206
250 ISL	9.03	9.00	34.224	26.510	156.4	0.534	1.36	20.9	39.3	2.46	30.2	0.02			251	
268	8.87	8.84	34.240	26.548	153.0	0.562	1.24	19.0	41.2	2.51	30.9	0.01			270	205
300 ISL	8.35	8.32	34.235	26.625	146.1	0.610	1.18	17.9	45.4	2.58	32.1	0.01			302	
318	8.03	8.00	34.226	26.667	142.3	0.636	1.17	17.6	47.9	2.62	32.8	0.01			320	204
378	7.31	7.27	34.206	26.755	134.4	0.719	1.02	15.1	55.5	2.74	34.9	0.01			380	203
400 ISL	7.10	7.06	34.217	26.794	131.0	0.748	0.89	13.1	58.7	2.81	35.8	0.01			403	
437	6.79	6.75	34.242	26.856	125.4	0.795	0.67	9.8	64.2	2.92	37.2	0.01			440	202
500 ISL	6.30	6.25	34.270	26.943	117.5	0.872	0.45	6.5	73.2	3.04	39.1	0.01			503	
515	6.18	6.13	34.277	26.964	115.6	0.889	0.40	5.8	75.3	3.07	39.5	0.01			519	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 0302

STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
33 34.6 N	120 45.5 W	10/02/03	0051	UTC	1443 m	00 kn	240 01 08	2	1018.2 mb	15.9 C	13.3 C	12m	2/8	CS		
0 ISL	14.77	14.77	33.364	24.761	317.5	0.000	6.11	105.9	2.5	0.40	0.1	0.01	0.83	0.20	0	
2	14.77	14.77	33.364	24.761	317.6	0.006	6.11	105.9	2.5	0.40	0.1	0.01	0.83	0.20	2	220
10	14.59	14.59	33.365	24.801	314.0	0.032	6.12	105.6	2.6	0.40	0.1	0.01	0.90	0.23	10	219
20	14.37	14.37	33.360	24.844	310.2	0.063	5.96	102.4	3.0	0.45	0.8	0.02	1.20	0.40	20	218
30	13.60	13.60	33.351	24.997	295.9	0.093	5.45	92.2	5.2	0.71	4.6	0.10	0.84	0.40	30	217
40	12.78	12.77	33.360	25.167	279.9	0.122	5.06	84.1	7.0	0.90	7.5	0.12	0.40 A	0.25 A	40	216
50	11.84	11.83	33.395	25.374	260.4	0.149	4.57	74.5	10.0	1.16	11.8	0.09	0.30	0.26	50	215
60	11.48	11.47	33.427	25.466	251.9	0.175	4.36	70.5	11.2	1.25	13.3	0.05	0.22	0.20	60	214
70	11.09	11.08	33.495	25.589	240.3	0.199	4.11	66.0	13.3	1.37	15.3	0.03	0.15	0.14	70	213
75 ISL	10.84	10.83	33.569	25.692	230.7	0.211	3.84	61.3	15.3	1.48	17.0	0.03	0.10	0.10	75	
85	10.40	10.39	33.716	25.883	212.7	0.233	3.30	52.2	19.2	1.69	20.2	0.02	0.03	0.05	85	212
99	10.19	10.18	33.774	25.965	205.2	0.262	3.09	48.7	21.3	1.79	21.5	0.01	0.03	0.06	99	211
100 ISL	10.19	10.18	33.781	25.970	204.7	0.264	3.07	48.4	21.4	1.80	21.6	0.01	0.03	0.06	101	
119	10.17	10.16	33.892	26.061	196.6	0.303	2.72	42.9	23.5	1.90	23.0	0.01	0.01	0.03	120	210
125 ISL	10.13	10.12	33.916	26.086	194.3	0.314	2.64	41.6	24.2	1.93	23.4	0.01	0.01	0.03	126	
140	10.00	9.98	33.965	26.147	188.8	0.343	2.48	39.0	25.9	2.01	24.4	0.01	0.00	0.03	141	209
150 ISL	9.87	9.85	33.992	26.190	184.9	0.362	2.40	37.6	27.2	2.06	25.1	0.01	0.00	0.03	151	
171	9.64	9.62	34.057	26.279	176.8	0.400	2.18	34.0	30.1	2.16	26.6	0.02	0.00	0.04	172	208
199	9.60	9.58	34.189	26.390	167.0	0.448	1.62	25.3	33.9	2.35	28.3	0.01	0.00	0.05	200	207
200 ISL	9.58	9.56	34.190	26.394	166.6	0.449	1.62	25.3	34.0	2.35	28.4	0.01			201	
229	9.07	9.05	34.202	26.486	158.2	0.497	1.54	23.7	38.2	2.46	29.9	0.01			230	206
250 ISL	8.87	8.84	34.229	26.540	153.5	0.529	1.33	20.4	40.8	2.54	30.8	0.00			251	
269	8.70	8.67	34.245	26.579	150.1	0.558	1.17	17.9	43.1	2.60	31.5	0.00			271	205
300 ISL	8.10	8.07	34.196	26.632	145.2	0.604	1.29	19.5	47.1	2.62	32.7	0.00			302	
318	7.76	7.73	34.165	26.658	142.9	0.630	1.39	20.8	49.3	2.63	33.4	0.00			320	204
378	7.36	7.32	34.203	26.746	135.3	0.713	1.03	15.3	54.8	2.78	34.9	0.00			380	203
400 ISL	7.15	7.11	34.215	26.785	131.8	0.743	0.90	13.3	58.2	2.85	35.7	0.00			403	
438	6.78	6.74	34.													

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
33 14.5 N	121 26.3 W	09/02/03	1846	UTC	3796 m	340	06 kn	040 01 06	1	1019.8 mb	16.9	C 13.1	C	25m	7/8	CC
0 ISL	14.85	14.85	33.013	24.474	344.9	0.000	5.91	102.3	0.5	0.40	0.1	0.00	0.25	0.05	0	
1 A	14.85	14.85	33.013	24.474	344.9	0.003	5.91	102.3	0.5	0.40	0.1	0.00	0.25	0.05	1	221
10 ISL	14.80	14.80	33.013	24.485	344.1	0.034	5.91	102.2	0.5	0.40	0.1	0.00	0.25	0.06	10	
16 A	14.76	14.76	33.013	24.493	343.5	0.055	5.91	102.1					0.25	0.07	16	220
20 ISL	14.76	14.76	33.013	24.493	343.6	0.069	5.92	102.3	0.6	0.40	0.1	0.00	0.25	0.07	20	
30 ISL	14.75	14.75	33.014	24.497	343.6	0.103	5.93	102.5	0.6	0.40	0.1	0.00	0.28	0.07	30	
31 A	14.75	14.75	33.014	24.497	343.6	0.107	5.93	102.5	0.6	0.40	0.1	0.00	0.28	0.07	31	219
40	14.76	14.75	33.017	24.497	343.8	0.138	5.90	102.0	0.6	0.40	0.1	0.00	0.33	0.10	40	218
50 A	14.47	14.46	32.998	24.544	339.6	0.172	5.87	100.8	0.9	0.45	0.5	0.04	0.54	0.22	50	217
60	12.81	12.80	32.869	24.782	317.1	0.205	5.79	96.0	2.4	0.67	3.0	0.09	0.39	0.28	60	216
68 A	11.71	11.70	32.826	24.957	300.5	0.229	5.71	92.5	4.2	0.84	5.9	0.03	0.23	0.25	68	215
75 ISL	11.17	11.16	32.809	25.042	292.5	0.250	5.66	90.6	5.3	0.93	7.3	0.02	0.18	0.19	75	
77	11.06	11.05	32.814	25.065	290.3	0.256	5.64	90.1	5.6	0.95	7.6	0.02	0.17	0.17	77	214
86	10.66	10.65	32.936	25.230	274.7	0.281	5.42	85.9	7.8	1.08	10.3	0.02	0.09	0.11	86	213
95 A	10.37	10.36	33.050	25.369	261.7	0.305	5.23	82.4	9.6	1.17	12.3	0.01	0.06	0.07	95	212
100 ISL	10.25	10.24	33.140	25.460	253.2	0.318	5.04	79.2	10.9	1.24	13.6	0.01	0.05	0.06	100	
110	10.07	10.06	33.305	25.619	238.2	0.343	4.68	73.4	13.5	1.38	16.0	0.01	0.03	0.04	111	211
125	9.87	9.86	33.395	25.723	228.6	0.378	4.51	70.4	15.4	1.47	17.6	0.01	0.02	0.04	126	210
145	9.30	9.28	33.678	26.038	199.0	0.421	3.66	56.5	22.1	1.73	22.1	0.01	0.00	0.02	146	209
150 ISL	9.23	9.21	33.730	26.090	194.2	0.430	3.51	54.2	23.3	1.77	22.9	0.01	0.00	0.02	151	
169	9.07	9.05	33.876	26.230	181.3	0.466	3.13	48.2	26.9	1.89	24.9	0.01	0.00	0.03	170	208
199	8.79	8.77	33.966	26.345	170.8	0.519	2.98	45.6	30.1	1.96	26.1	0.01	0.00	0.02	200	207
200 ISL	8.78	8.76	33.968	26.348	170.6	0.521	2.97	45.4	30.3	1.96	26.2	0.01			201	
229	8.34	8.32	34.029	26.464	159.9	0.569	2.66	40.3	35.2	2.10	28.3	0.01			230	206
250 ISL	8.09	8.06	34.064	26.529	154.0	0.602	2.32	35.0	39.2	2.24	30.0	0.01			251	
269	7.90	7.87	34.089	26.577	149.7	0.630	2.02	30.3	42.7	2.37	31.4	0.01			271	205
300 ISL	7.64	7.61	34.115	26.636	144.6	0.676	1.71	25.5	46.9	2.51	33.0	0.01			302	
320	7.49	7.46	34.126	26.666	141.9	0.705	1.55	23.0	49.3	2.58	33.8	0.01			322	204
378	6.97	6.93	34.163	26.769	132.8	0.784	1.08	15.9	58.0	2.80	36.2	0.01			380	203
400 ISL	6.83	6.79	34.188	26.808	129.4	0.813	0.93	13.6	61.2	2.87	36.9	0.01			403	
438	6.61	6.57	34.234	26.874	123.5	0.861	0.66	9.6	66.6	2.99	38.0	0.01			441	202
500 ISL	6.28	6.24	34.293	26.964	115.6	0.935									503	
514	6.20	6.15	34.306 D	26.985	113.7	0.951									517	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
32 54.9 N	122 7.7 W	09/02/03	1255	UTC	4181 m	00 kn										
0 ISL	14.49	14.49	33.067	24.592	333.6	0.000	6.01	103.3	1.0	0.42	0.1	0.00	0.36	0.10	0	
2	14.49	14.49	33.067	24.592	333.7	0.007	6.01	103.3	1.0	0.42	0.1	0.00	0.36	0.10	2	220
10	14.47	14.47	33.068	24.597	333.4	0.033	6.01	103.3	1.0	0.43	0.1	0.00	0.37	0.09	10	219
20	14.45	14.45	33.071	24.604	333.1	0.067	6.01	103.3	1.0	0.42	0.1	0.00	0.38	0.21	20	218
30	14.33	14.33	33.099	24.651	328.9	0.100	6.03	103.4	1.4	0.42	0.1	0.00	0.92	0.26	30	217
40	14.01	14.00	33.127	24.740	320.7	0.132	5.90	100.5	2.1	0.50	0.9	0.12	0.85	0.35	40	216
49	13.75	13.74	33.196	24.847	310.7	0.161	5.80	98.3	3.1	0.56	1.9	0.27	0.43	0.29	49	215
50 ISL	13.69	13.68	33.201	24.863	309.2	0.164	5.76	97.5	3.3	0.58	2.2	0.26	0.40	0.29		
60	12.97	12.96	33.231	25.031	293.4	0.194	5.32	88.7	5.5	0.80	5.9	0.07	0.21	0.26	60	214
69	12.37	12.36	33.228	25.145	282.7	0.220	5.08	83.7	7.1	0.95	8.3	0.02	0.15	0.18	69	213
75 ISL	12.23	12.22	33.265	25.201	277.6	0.237	4.93	81.0	7.8	1.01	9.2	0.02	0.13	0.17	75	
84	12.09	12.08	33.344	25.289	269.4	0.261	4.67	76.5	9.0	1.09	10.6	0.01	0.10	0.16	84	212
99	11.35	11.34	33.477	25.529	246.8	0.300	4.12	66.5	12.9	1.35	14.8	0.01	0.05	0.11	99	211
100 ISL	11.28	11.27	33.475	25.540	245.8	0.302	4.13	66.5	13.0	1.36	14.9	0.01	0.05	0.11	100	
119	10.02	10.01	33.433	25.728	228.1	0.347	4.39	68.8	14.9	1.44	17.0	0.00	0.02	0.05	120	210
125 ISL	9.86	9.85	33.474	25.787	222.6	0.361	4.26	66.5	16.1	1.49	18.0	0.00	0.02	0.05	126	
138	9.65	9.63	33.591	25.913	210.8	0.389	3.87	60.2	19.0	1.62	20.2	0.00	0.01	0.05	139	209
150 ISL	9.38	9.36	33.678	26.025	200.4	0.414	3.64	56.3	21.8	1.72	22.0	0.00	0.00	0.04	151	
168	9.00	8.98	33.798	26.180	185.9	0.449	3.31	50.8	26.0	1.87	24.5	0.00	0.00	0.02	169	208
198	8.67	8.65	33.976	26.372	168.3	0.502	2.58	39.4	33.0	2.13	28.3	0.00	0.00	0.06	199	207
200 ISL	8.64	8.62	33.982	26.381	167.4	0.505	2.56	39.0	33.3	2.14	28.4	0.00			201	
229	8.21	8.19	34.029	26.484	158.0	0.552	2.42	36.6	37.5	2.22	29.8	0.00			230	206
250 ISL	7.93	7.90	34.044	26.537	153.2	0.585	2.26	33.9	40.5	2.30	30.9	0.00			251	
267	7.71	7.68	34.049	26.574	149.9	0.611	2.14	32.0	42.9	2.36	31.8	0.00			269	205
300 ISL	7.26	7.23	34.048	26.637	144.2	0.659	2.03	30.0	47.2	2.44	33.0	0.00				

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN	HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA				ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
32	34.7 N	122 48.5 W	09/02/03	0716	UTC	4265 m	350	05 kn		1018.1 mb	14.0	C 12.1	C				
0	ISL	15.33	15.33	32.857	24.249	366.3	0.000	5.84	102.0	0.5	0.40	0.1	0.00	0.15	0.04	0	
2		15.33	15.33	32.857	24.249	366.3	0.007	5.84	102.0	0.5	0.40	0.1	0.00	0.15	0.04	2	220
10	ISL	15.39	15.39	32.875	24.250	366.5	0.037	5.85	102.3	0.5	0.40	0.1	0.00	0.15	0.05	10	
16		15.48	15.48	32.900	24.250	366.7	0.059	5.85	102.5	0.5	0.40	0.1	0.00	0.15	0.05	16	219
20	ISL	15.55	15.55	32.937	24.263	365.6	0.073	5.83	102.3	0.4	0.40	0.1	0.00	0.15	0.05	20	
30		15.73	15.73	33.029	24.294	362.9	0.110	5.77	101.7	0.2	0.41	0.1	0.00	0.16	0.04	30	218
45		15.84	15.83	33.075	24.306	362.3	0.164	5.77	101.9	0.3	0.38	0.0	0.00	0.22	0.07	45	217
50	ISL	15.66	15.65	33.050	24.327	360.4	0.182	5.78	101.7	0.3	0.39	0.1	0.01	0.26	0.10	50	
55		15.40	15.39	33.013	24.356	357.8	0.200	5.80	101.5	0.3	0.40	0.1	0.01	0.30	0.14	55	216
65		14.70	14.69	32.924	24.439	350.1	0.236	5.84	100.7	0.3	0.42	0.0	0.00	0.32	0.22	65	215
75		13.99	13.98	32.888	24.560	338.7	0.270	5.86	99.6	0.8	0.48	0.4	0.12	0.38	0.23	75	214
85		12.16	12.15	32.777	24.836	312.5	0.303	5.93	96.9	2.5	0.62	2.2	0.09	0.25	0.23	85	213
95		11.07	11.06	32.699	24.974	299.4	0.333	5.88	93.9	4.3	0.83	5.7	0.02	0.14	0.14	95	212
100	ISL	10.78	10.77	32.712	25.035	293.6	0.348	5.83	92.5	5.1	0.89	6.9	0.02	0.11	0.11	100	
110		10.47	10.46	32.812	25.167	281.2	0.377	5.65	89.1	6.7	0.99	8.9	0.01	0.08	0.07	110	211
125		10.30	10.29	33.109	25.428	256.8	0.417	5.15	81.0	9.9	1.19	12.7	0.01	0.03	0.05	126	210
144		9.71	9.69	33.365	25.727	228.6	0.463	4.70	73.1	13.7	1.35	15.9	0.01	0.01	0.02	145	209
150	ISL	9.58	9.56	33.426	25.796	222.2	0.477	4.54	70.5	15.2	1.42	17.1	0.01	0.01	0.02	151	
169		9.25	9.23	33.593	25.980	205.0	0.517	4.01	61.8	20.2	1.65	20.9	0.01	0.00	0.03	170	208
199		8.76	8.74	33.866	26.271	177.8	0.575	3.28	50.1	27.7	1.90	25.2	0.00	0.00	0.02	200	207
200	ISL	8.75	8.73	33.872	26.278	177.2	0.576	3.26	49.8	27.9	1.91	25.3	0.00			201	
228		8.37	8.35	34.001	26.438	162.4	0.624	2.76	41.8	34.3	2.09	28.2	0.00		229	206	
250	ISL	8.15	8.12	34.038	26.500	156.8	0.659	2.46	37.1	37.8	2.21	29.8	0.00		251		
268		7.98	7.95	34.047	26.533	154.0	0.687	2.27	34.1	40.3	2.29	30.8	0.00		269	205	
300	ISL	7.62	7.59	34.062	26.597	148.2	0.735	2.00	29.8	44.9	2.42	32.4	0.00		302		
318		7.41	7.38	34.066	26.630	145.2	0.762	1.87	27.7	47.5	2.49	33.2	0.00		320	204	
378		6.68	6.65	34.079	26.741	135.1	0.846	1.47	21.4	56.6	2.69	35.9	0.00		380	203	
400	ISL	6.43	6.39	34.091	26.784	131.2	0.875	1.28	18.6	61.1	2.78	37.1	0.00		402		
438		6.05	6.01	34.115	26.852	125.0	0.924	0.98	14.1	68.8	2.93	38.9	0.00		441	202	
500	ISL	5.67	5.63	34.156	26.932	117.8	0.999	0.70	10.0	77.4	3.06	40.4	0.00		503		
512		5.60	5.56	34.164	26.947	116.5	1.013	0.64	9.1	79.1	3.08	40.7	0.00		515	201	

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN	HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA				ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
32	14.7 N	123 29.6 W	09/02/03	0114	UTC	4164 m	310	13 kn	290 02 09	1	1016.0 mb	15.0	C 12.1	C	5/8	SC	
0	ISL	16.03	16.03	33.180	24.342	357.4	0.000	5.72	101.5	0.6	0.38	0.0	0.00	0.12	0.02	0	
2		16.03	16.03	33.180	24.342	357.5	0.007	5.72	101.5	0.6	0.38	0.0	0.00	0.12	0.02	2	220
10	ISL	16.03	16.03	33.180	24.343	357.7	0.036	5.73	101.7	0.6	0.38	0.0	0.00	0.11	0.03	10	
16		16.03	16.03	33.180	24.343	357.9	0.057	5.73	101.7	0.6	0.38	0.0	0.00	0.11	0.03	16	219
20	ISL	16.02	16.02	33.181	24.346	357.7	0.072	5.73	101.7	0.6	0.38	0.0	0.00	0.11	0.03	20	
30		16.01	16.01	33.184	24.351	357.6	0.107	5.72	101.5	0.7	0.38	0.0	0.00	0.12	0.03	30	
31		16.01	16.01	33.184	24.351	357.6	0.111	5.72	101.5	0.7	0.38	0.0	0.00	0.12	0.03	31	218
45		16.00	16.00	33.186	24.353	357.8	0.161	5.73	101.6	0.7	0.37	0.0	0.00	0.12	0.03	45	217
50	ISL	16.01	16.00	33.187	24.354	357.9	0.179	5.72	101.5	0.7	0.37	0.0	0.00	0.12	0.03	50	
55		16.00	15.99	33.188	24.357	357.8	0.197	5.72	101.4	0.7	0.38	0.0	0.00	0.13	0.04	55	216
65		15.90	15.89	33.203	24.391	354.8	0.232	5.74	101.6	0.8	0.39	0.0	0.00	0.16	0.07	65	215
75		14.74	14.73	33.171	24.391	333.1	0.267	5.85	101.1	1.7	0.45	0.2	0.05	0.32	0.19	75	214
85		13.10	13.09	32.910	24.757	320.1	0.299	5.92	98.8	2.2	0.57	1.1	0.18	0.29	0.26	85	213
95		12.93	12.92	33.108	24.944	302.6	0.331	5.65	94.1	3.6	0.66	2.9	0.09	0.19	0.19	95	212
100	ISL	12.35	12.34	33.061	25.020	295.4	0.346	5.59	91.9	4.5	0.76	4.7	0.06	0.15	0.16	100	
110		11.06	11.05	32.955	25.176	280.6	0.374	5.46	87.3	6.6	0.98	8.6	0.02	0.09	0.10	110	211
125		10.37	10.36	33.199	25.486	251.3	0.414	5.02	79.2	10.5	1.22	13.2	0.01	0.03	0.04	126	210
144		9.77	9.75	33.375	25.724	228.9	0.460	4.64	72.3	14.4	1.41	16.6	0.01	0.01	0.02	145	209
150	ISL	9.64	9.62	33.439	25.796	222.2	0.473	4.46	69.3	15.8	1.47	17.7	0.01	0.01	0.02	151	
169		9.34	9.32	33.631	25.995	203.6	0.514	3.89	60.1	20.2	1.65	20.8	0.01	0.00	0.02	170	208
199		9.06	9.04	33.818	26.187	185.9	0.572	3.35	51.5	25.1	1.82	23.9	0.01	0.00	0.02	200	207
200	ISL	9.05	9.03	33.824	26.193	185.4	0.574	3.33	51.2	25.3	1.83	24.0	0.01		201		
229		8.68	8.66	33.982	26.375	168.5	0.625	2.82	43.0	31.7	2.03	27.1	0.01		230	206	
250	ISL	8.41	8.38	34.026	26.452	161.6	0.660	2.62	39.7	35.0	2.13	28.5	0.01		251		
269		8.18	8.15	34.041	26.498	157.4	0.690	2.49	37.6	37.6	2.20	29.4	0.01		270	205	
30																	

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
31 54.6 N	124 10.2 W	08/02/03	1923	UTC	4205 m	090	08 kn	010 03 07	1	1017.2 mb	15.1 C	13.1 C	35m	6/8	SC	
0 ISL	15.59	15.59	32.771	24.126	378.0	0.000			0.6	0.40	0.1	0.00	0.16	0.04	0	
2 A	15.59	15.59	32.771	24.126	378.1	0.008			0.6	0.40	0.1	0.00	0.16	0.04	2	223
10 ISL	15.53	15.53	32.766	24.136	377.4	0.038			0.6	0.40	0.0	0.00	0.16	0.05	10	
12	15.51	15.51	32.764	24.139	377.2	0.045			0.6	0.40	0.0	0.00	0.16	0.05	12	222
20 ISL	15.49	15.49	32.763	24.142	377.1	0.075			0.6	0.39	0.0	0.00	0.18	0.05	20	
21 A	15.49	15.49	32.763	24.143	377.1	0.079	5.81	101.7	0.6	0.39	0.0	0.00	0.18	0.05	21	221
30 ISL	15.49	15.49	32.763	24.143	377.3	0.113	5.80	101.6	0.6	0.39	0.0	0.00	0.17	0.05	30	
32	15.49	15.49	32.763	24.143	377.4	0.121	5.80	101.6	0.6	0.39	0.0	0.00	0.17	0.05	32	220
44 A	15.49	15.48	32.762	24.143	377.8	0.166	5.82	101.9	0.6	0.39	0.0	0.00	0.17	0.05	44	219
50 ISL	15.49	15.48	32.762	24.143	377.9	0.189	5.80	101.6	0.6	0.40	0.0	0.00	0.17	0.05	50	
53	15.49	15.48	32.762	24.143	378.0	0.200	5.79	101.4	0.6	0.40	0.0	0.00	0.17	0.05	53	218
62	15.48	15.47	32.762	24.145	378.1	0.234	5.79	101.4	0.6	0.39	0.0	0.00	0.17	0.06	62	217
70 A	15.48	15.47	32.762	24.146	378.3	0.264	5.81	101.7	0.6	0.39	0.0	0.00	0.19	0.05	70	216
75 ISL	15.30	15.29	32.763	24.186	374.6	0.283	5.80	101.2	0.7	0.40	0.1	0.02	0.22	0.11	75	
78	15.05	15.04	32.760	24.238	369.7	0.294	5.80	100.7	0.8	0.41	0.1	0.03	0.25	0.16	78	215
86	13.53	13.52	32.737	24.538	341.1	0.323	5.86	98.6	1.9	0.57	1.8	0.08	0.32	0.22	86	214
95 A	11.95	11.94	32.695	24.811	315.0	0.352	5.96	96.9	3.4	0.76	4.2	0.02	0.22	0.18	95	213
100 ISL	11.16	11.15	32.654	24.923	304.3	0.368	5.94	95.0	4.4	0.84	5.6	0.02	0.16	0.14	100	
107	10.31	10.30	32.615	25.041	293.2	0.389	5.92	92.9	5.7	0.94	7.3	0.02	0.10	0.08	107	212
119	9.87	9.86	32.665	25.153	282.6	0.423	5.81	90.3	7.5	1.05	9.3	0.02	0.06	0.05	119	211
125 ISL	10.02	10.01	32.822	25.251	273.5	0.440	5.58	87.1	8.0	1.05	9.9	0.02	0.05	0.04	126	
132 A	10.20	10.18	33.025	25.379	261.5	0.459	5.29	83.0	8.7	1.06	10.6	0.02	0.04	0.04	133	210
150 ISL	9.39	9.37	33.242	25.683	232.8	0.503	4.91	75.8	13.3	1.30	15.1	0.02	0.01	0.02	151	
151	9.33	9.31	33.252	25.700	231.2	0.505	4.89	75.4	13.6	1.32	15.4	0.02	0.01	0.02	152	209
170	9.24	9.22	33.627	26.008	202.3	0.547	4.11	63.4	19.3	1.54	19.6	0.02	0.01	0.01	171	208
199	8.90	8.88	33.897	26.274	177.6	0.602	3.25	49.8	27.6	1.87	24.8	0.02	0.00	0.01	200	207
200 ISL	8.89	8.87	33.902	26.279	177.1	0.604	3.22	49.3	27.8	1.88	24.9	0.02			201	
229	8.60	8.58	34.002	26.403	165.8	0.653	2.61	39.8	33.8	2.11	28.2	0.02			230	206
250 ISL	8.44	8.41	34.042	26.459	160.8	0.688	2.31	35.1	36.8	2.22	29.7	0.02			251	
268	8.30	8.27	34.062	26.497	157.6	0.716	2.13	32.2	39.0	2.30	30.6	0.02			269	205
300 ISL	7.93	7.90	34.080	26.566	151.3	0.766	1.90	28.5	43.1	2.41	32.1	0.02			302	
319	7.68	7.65	34.084	26.606	147.7	0.794	1.80	26.9	45.8	2.47	32.9	0.02			321	204
379	6.83	6.79	34.092	26.732	136.2	0.879	1.40	20.5	56.4	2.70	36.0	0.01			381	203
400 ISL	6.56	6.52	34.113	26.784	131.3	0.907	1.22	17.7	61.5	2.81	37.2	0.01			402	
438	6.16	6.12	34.159	26.873	123.1	0.956	0.91	13.1	70.3	2.99	39.2	0.01			441	202
500 ISL	5.85	5.81	34.209	26.952	116.2	1.030	0.55	7.9	77.8	3.11	40.5	0.01			503	
511	5.80	5.76	34.218	26.965	115.0	1.043	0.49	7.0	79.1	3.13	40.7	0.01			514	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
33 53.3 N	118 29.2 W	06/02/03	0825	UTC	56 m	340	10 kn	010 03 07	1	1014.9 mb	14.5 C	13.1 C	35m	6/8	SC	
0 ISL	15.48	15.48	33.412	24.643	328.7	0.000	5.89	103.5	1.8	0.36	0.1	0.01	0.46	0.12	0	
1	15.48	15.48	33.412	24.644	328.7	0.003	5.89	103.5	1.8	0.36	0.1	0.01	0.46	0.12	1	207
6	15.47	15.47	33.412	24.646	328.7	0.020	5.90	103.7	1.8	0.36	0.1	0.01	0.50	0.12	6	206
10 ISL	15.48	15.48	33.412	24.644	329.0	0.033	5.90	103.7	1.7	0.36	0.1	0.01	0.48	0.12	10	
11	15.48	15.48	33.412	24.644	329.0	0.036	5.90	103.7	1.7	0.36	0.1	0.01	0.48	0.12	11	205
20 ISL	15.46	15.46	33.409	24.646	329.1	0.066	5.91	103.8	1.7	0.36	0.1	0.01	0.56	0.14	20	
21	15.46	15.46	33.409	24.646	329.1	0.069	5.91	103.8	1.7	0.36	0.1	0.01	0.57	0.14	21	204
30	15.16	15.16	33.388	24.696	324.6	0.098	5.82	101.6	2.4	0.43	0.5	0.06	1.02	0.27	30	203
41	13.90	13.89	33.308	24.902	305.2	0.133	5.14	87.4	6.0	0.83	4.2	0.36	0.72	0.41	41	202
50	12.81	12.80	33.312	25.125	284.2	0.160	4.60	76.5	8.8	1.08	9.0	0.73	0.43	0.32	50	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
33 49.2 N	118 37.8 W	06/02/03	1035	UTC	685 m	340	12 kn	010 03 07	1	1014.7 mb	14.0 C	10.0 C	35m	6/8	SC	
0 ISL	15.61	15.61	33.413	24.615	331.4	0.000	5.84	102.9	2.1	0.36	0.1	0.01	0.36	0.12	0	
1	15.61	15.61	33.413	24.615	331.4	0.003	5.84	102.9	2.1	0.36	0.1	0.01	0.36	0.12	1	220
10	15.62	15.62	33.412	24.613	332.0	0.033	5.85	103.1	2.1	0.36	0.1	0.01	0.32	0.09	10	219
20	15.62	15.62	33.412	24.613	332.2	0.066	5.85	103.1	2.0	0.37	0.1	0.01	0.36	0.11	20	218
30	15.62	15.62	33.411	24.613	332.6	0.100	5.85	103.1	2.1	0.36	0.0	0.01	0.30	0.11	30	217
40	14.60	14.59	33.318	24.763	318.5	0.132	5.79	99.9	3.0	0.47	0.5	0.06	0.56	0.28	40	216
50	13.92	13.91	33.281	24.878	307.9	0.163	5.63	95.8	3.7	0.59	2.1	0.14	0.68	0.31	50	215
59	12.72	12.71	33.238	25.085	288.2	0.190	5.24	86.9	5.7	0.85	6.5	0.12	0.42	0.30	59	214
70	12.38	12.37	33.358													

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
33 39.3 N	118 58.7 W	06/02/03	1448	UTC	708 m	270	07 kn	290	01 06	1	1015.6 mb	14.0 C	11.9 C	19m	1/8	AC
0 ISL	15.26	15.26	33.368	24.658	327.3	0.000	5.94	103.9	2.1	0.38	0.1	0.00	0.26	0.05	0	
2	15.26	15.26	33.368	24.658	327.4	0.007	5.94	103.9	2.1	0.38	0.1	0.00	0.26	0.05	2	220
10	15.26	15.26	33.369	24.659	327.5	0.033	5.92	103.6	2.1	0.38	0.0	0.00	0.27	0.05	10	219
20	15.26	15.26	33.368	24.659	327.9	0.066	5.93	103.7	2.2	0.38	0.0	0.00	0.28	0.07	20	218
30	15.22	15.22	33.364	24.665	327.6	0.098	5.94	103.8	2.2	0.38	0.0	0.00	0.29	0.07	30	217
39	14.15	14.14	33.296	24.841	311.0	0.127	5.77	98.7	3.5	0.54	1.6	0.09	0.67	0.26	39	216
49	12.88	12.87	33.308	25.108	285.8	0.157	5.11	85.1	6.3	0.87	6.8	0.14	0.53	0.30	49	215
50 ISL	12.74	12.73	33.306	25.134	283.4	0.160	5.07	84.2	6.6	0.90	7.3	0.13	0.50	0.29	50	
59	11.71	11.70	33.312	25.334	264.4	0.184	4.75	77.2	9.0	1.12	11.2	0.04	0.26	0.22	59	214
69	11.37	11.36	33.426 D	25.485	250.3	0.210	4.35	70.2	11.5	1.27	13.7	0.02	0.15	0.16	69	213
75 ISL	11.09	11.08	33.479	25.577	241.6	0.225	4.17	66.9	12.9	1.35	15.1	0.02	0.10	0.12	75	
84	10.70	10.69	33.558	25.708	229.4	0.246	3.91	62.3	15.0	1.47	17.0	0.02	0.05	0.08	84	212
99	10.35	10.34	33.723	25.898	211.6	0.279	3.35	53.0	19.0	1.66	20.0	0.02	0.02	0.05	99	211
100 ISL	10.34	10.33	33.732	25.906	210.8	0.281	3.32	52.5	19.2	1.67	20.1	0.02	0.02	0.05	100	
119	10.19	10.18	33.879	26.047	197.9	0.320	2.83	44.6	23.0	1.87	22.4	0.01	0.01	0.04	120	210
125 ISL	10.15	10.14	33.910	26.078	195.1	0.332	2.71	42.7	24.0	1.92	23.0	0.01	0.01	0.04	126	
139	10.05	10.03	33.974	26.146	189.0	0.359	2.44	38.4	26.3	2.01	24.4	0.02	0.02	0.05	140	209
150 ISL	9.95	9.93	34.038	26.213	182.8	0.379	2.22	34.9	28.3	2.09	25.5	0.02	0.02	0.04	151	
169	9.79	9.77	34.139	26.319	173.2	0.413	1.88	29.4	31.4	2.23	27.1	0.01	0.01	0.03	170	208
198	9.65	9.63	34.221	26.406	165.4	0.462	1.58	24.7	34.4	2.37	28.3	0.01	0.00	0.03	199	207
200 ISL	9.63	9.61	34.223	26.411	165.0	0.465	1.57	24.5	34.6	2.38	28.4	0.01			201	
228	9.31	9.28	34.232	26.471	159.8	0.511	1.40	21.7	37.5	2.46	29.5	0.01			229	206
250 ISL	9.07	9.04	34.264	26.535	154.0	0.545	1.21	18.7	40.5	2.55	30.4	0.01			251	
270	8.84	8.81	34.291	26.593	148.8	0.576	1.05	16.1	43.3	2.63	31.2	0.01			272	205
300 ISL	8.43	8.40	34.281	26.649	143.9	0.620	0.96	14.6	47.0	2.70	32.3	0.01			302	
319	8.18	8.15	34.268	26.677	141.4	0.647	0.93	14.1	49.3	2.74	33.0	0.01			321	204
379	7.57	7.53	34.275	26.773	133.0	0.729	0.72	10.7	56.6	2.87	35.1	0.01			381	203
400 ISL	7.44	7.40	34.277	26.793	131.3	0.757	0.68	10.1	58.2	2.90	35.6	0.01			403	
438	7.22	7.18	34.281	26.828	128.5	0.807	0.61	9.0	61.3	2.95	36.3	0.01			442	202
500 ISL	6.74	6.69	34.298	26.908	121.4	0.884	0.45	6.6	69.0	3.07	37.8	0.01			503	
513	6.64	6.59	34.302	26.924	119.9	0.899	0.41	6.0	70.6	3.09	38.1	0.01			517	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
33 29.3 N	119 19.1 W	06/02/03	1900	UTC	1636 m	350	05 kn	260	01 07	1	1017.0 mb	15.9 C	14.0 C	19m	5/8	CU
0 ISL	14.52	14.52	33.342	24.798	314.0	0.000	6.04	104.1	3.5	0.45	0.7	0.03	0.94	0.17	0	
1 A	14.52	14.52	33.342	24.822	312.0	0.031	6.03	103.7	3.5	0.46	0.7	0.04	0.98	0.18	10	
10 ISL	14.40	14.40	33.340	24.828	311.5	0.038	6.03	103.6	3.5	0.46	0.7	0.04	0.99	0.18	12	221
12 A	14.37	14.37	33.340	24.828	311.5	0.038	6.03	103.6	3.5	0.46	0.7	0.04	0.99	0.18	12	220
19	13.48	13.48	33.338	25.011	294.3	0.059	5.55	93.6	5.4	0.68	4.2	0.11	0.73	0.27	19	
20 ISL	13.33	13.33	33.337	25.040	291.5	0.062	5.48	92.2	5.8	0.72	4.8	0.12	0.72	0.28	20	
25 A	12.73	12.73	33.335	25.157	280.5	0.076	5.20	86.4	7.3	0.87	7.2	0.15	0.68	0.32	25	219
30 ISL	12.64	12.64	33.335	25.175	278.9	0.090	5.12	84.9	7.6	0.91	7.8	0.15	0.66	0.35	30	
32	12.61	12.61	33.335	25.181	278.4	0.096	5.11	84.6	7.7	0.92	7.9	0.15	0.65	0.35	32	218
39 A	12.33	12.32	33.331	25.232	273.7	0.115	5.02	82.7	8.4	0.99	8.9	0.15	0.53	0.31	39	217
45	11.56	11.55	33.311	25.361	261.6	0.131	4.77	77.3	10.3	1.15	11.6	0.09	0.33	0.24	45	216
50 ISL	11.38	11.37	33.356	25.429	255.2	0.144	4.62	74.6	11.1	1.21	12.8	0.09	0.28	0.22	50	
52 A	11.35	11.34	33.376	25.450	253.2	0.149	4.57	73.7	11.3	1.23	13.1	0.09	0.27	0.21	52	215
62	10.83	10.82	33.358	25.529	245.9	0.174	4.50	71.8	12.5	1.31	14.4	0.06	0.20	0.17	62	214
72 A	10.38	10.37	33.497	25.716	228.3	0.198	4.04	63.9	16.0	1.50	17.6	0.03	0.07	0.10	72	213
75 ISL	10.38	10.37	33.546	25.754	224.7	0.204	3.90	61.7	16.8	1.54	18.2	0.03	0.06	0.10	75	
86	10.39	10.38	33.677	25.855	215.4	0.229	3.43	54.3	19.1	1.66	19.8	0.02	0.04	0.09	86	212
100	10.32	10.31	33.780	25.947	207.0	0.258	3.08	48.7	21.1	1.77	21.2	0.01	0.02	0.07	101	211
120	9.78	9.77	33.917	26.146	188.4	0.298	2.76	43.2	25.6	1.93	24.0	0.01	0.01	0.06	121	210
125 ISL	9.71	9.70	33.941	26.176	185.6	0.307	2.69	42.0	26.4	1.96	24.5	0.01	0.01	0.05	126	
140	9.57	9.55	34.006	26.250	178.9	0.334	2.47	38.5	28.7	2.05	25.7	0.01	0.00	0.04	141	209
150 ISL	9.52	9.50	34.056	26.298	174.6	0.352	2.26	35.2	30.4	2.13	26.5	0.01	0.00	0.03	151	
170	9.45	9.43	34.144	26.379	167.4	0.386	1.84	28.6	33.6	2.28	28.0	0.01	0.00	0.03	171	208
200	9.22	9.20	34.209	26.467	159.5	0.435	1.52	23.5	37.3	2.42	29.5	0.01	0.00	0.03	201	207
229	9.08	9.05	34.267	26.536	153.6	0.481	1.21	18.7	40.2	2.55	30.5	0.01			230	206
250 ISL	8.86	8.83	34.277	26.579	149.8	0.513	1.10	16.9	42.6	2.61	31.2	0.01			251	
269	8.62	8														

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN	OXY PCT	SIO3	P04	N03	N02	CHL-A ug/l	PHAEAO ug/l	PRES db	
33 19.6 N	119 39.7 W	06/02/03	2307	UTC	79 m	080	03 kn	160 01 08	1	1014.1 mb	16.0	C 13.1 C	13m	2/8	SC	
0 ISL	14.50	14.50	33.321	24.786	315.2	0.000	6.05	104.2	3.5	0.46	0.8	0.06	1.20	0.41	0	
2	14.50	14.50	33.321	24.786	315.2	0.006	6.05	104.2	3.5	0.46	0.8	0.06	1.20	0.41	2 209	
6	14.43	14.43	33.326	24.805	313.6	0.019	6.04	103.9	3.5	0.45	0.8	0.07	1.18	0.42	6 208	
10 ISL	14.30	14.30	33.332	24.837	310.6	0.031	6.06	104.0	3.6	0.45	0.8	0.07	1.13	0.43	10	
11	14.27	14.27	33.333	24.844	310.0	0.034	6.07	104.1	3.6	0.45	0.8	0.07	1.12	0.43	11 207	
20 ISL	14.15	14.15	33.333	24.869	307.8	0.062	6.00	102.6	3.6	0.48	1.1	0.09	1.37	0.53	20	
21	14.15	14.15	33.332	24.868	307.9	0.065	5.99	102.4	3.6	0.48	1.1	0.09	1.40	0.54	21 206	
30	14.08	14.08	33.329	24.881	307.0	0.093	5.93	101.3	3.7	0.49	1.4	0.09	1.39	0.51	30 205	
41	13.91	13.90	33.322	24.911	304.4	0.127	5.84	99.4	4.0	0.53	2.0	0.11	1.01	0.55	41 204	
50	12.97	12.96	33.308	25.090	287.5	0.153	5.24	87.4	6.7	0.83	6.7	0.13	0.32	0.26	50 203	
60	11.41	11.40	33.296	25.377	260.4	0.181	4.76	76.8	10.3	1.17	12.0	0.07	0.14	0.17	60 202	
69	11.13	11.12	33.325	25.450	253.6	0.204	4.62	74.1	11.4	1.24	13.3	0.06	0.10	0.13	69 201	

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN	OXY PCT	SIO3	P04	N03	N02	CHL-A ug/l	PHAEAO ug/l	PRES db	
33 9.4 N	120 0.3 W	07/02/03	0250	UTC	1200 m	00	kn			1014.5 mb	14.0	C 12.0 C				
0 ISL	14.77	14.77	33.003	24.483	344.0	0.000	5.99	103.5	0.7	0.40	0.0	0.00	0.31	0.08	0	
2	14.77	14.77	33.003	24.483	344.1	0.007	5.99	103.5	0.7	0.40	0.0	0.00	0.31	0.08	2 220	
10 ISL	14.75	14.75	33.001	24.486	344.0	0.034	6.00	103.7	0.7	0.40	0.0	0.00	0.33	0.08	10	
12	14.75	14.75	33.001	24.486	344.1	0.041	6.00	103.7	0.7	0.40	0.0	0.00	0.33	0.08	12 219	
20 ISL	14.65	14.65	32.997	24.505	342.5	0.069	5.99	103.3	0.7	0.40	0.0	0.00	0.38	0.10	20	
21	14.64	14.64	32.997	24.507	342.4	0.072	5.99	103.3	0.7	0.40	0.0	0.00	0.39	0.10	21 218	
30 ISL	14.59	14.59	32.998	24.518	341.5	0.103	5.99	103.2	0.7	0.40	0.0	0.00	0.54	0.15	30	
31	14.58	14.58	32.999	24.521	341.2	0.106	5.99	103.1	0.7	0.40	0.0	0.00	0.56	0.16	31 217	
40	14.45	14.44	33.010	24.557	338.0	0.137	5.98	102.7	0.8	0.42	0.1	0.01	0.77	0.22	40 216	
50	14.06	14.05	33.011	24.640	330.4	0.170	5.87	100.0	1.4	0.50	1.1	0.06	0.66	0.28	50 215	
60	13.19	13.18	33.010	24.816	313.9	0.203	5.74	96.0	2.6	0.65	3.1	0.09	0.38	0.24	60 214	
70	12.30	12.29	32.991	24.975	298.9	0.233	5.60	91.9	4.2	0.81	5.6	0.05	0.23	0.19	70 213	
75 ISL	11.75	11.74	33.013	25.095	287.6	0.248	5.45	88.5	5.8	0.93	7.7	0.04	0.17	0.15	75	
85	10.74	10.73	33.102	25.346	263.8	0.275	5.10	81.0	9.4	1.17	12.1	0.02	0.09	0.08	85 212	
100	10.07	10.06	33.288	25.606	239.3	0.313	4.64	72.7	13.7	1.39	15.9	0.01	0.04	0.05	100 211	
119	9.96	9.95	33.428 D	25.734	227.5	0.358	4.19	65.6	16.4	1.52	18.2	0.01	0.02	0.03	120 210	
125 ISL	9.95	9.94	33.508	25.798	221.5	0.371	3.97	62.2	17.6	1.58	19.0	0.01	0.02	0.03	126	
139	9.90	9.88	33.706	25.961	206.4	0.401	3.42	53.5	20.9	1.74	21.1	0.01	0.01	0.04	140 209	
150 ISL	9.82	9.80	33.829	26.071	196.2	0.423	2.99	46.8	23.7	1.87	22.8	0.01	0.01	0.04	151	
169	9.58	9.56	33.983	26.231	181.3	0.459	2.42	37.7	28.2	2.05	25.3	0.01	0.00	0.03	170 208	
199	8.90	8.88	34.064	26.405	165.2	0.511	2.35	36.1	33.2	2.17	27.7	0.01	0.00	0.03	200 207	
200 ISL	8.88	8.86	34.067	26.410	164.7	0.513	2.34	35.9	33.4	2.18	27.8	0.01	0.00	0.03	201	
229	8.48	8.46	34.147	26.535	153.3	0.559	1.86	28.3	39.4	2.39	30.0	0.01	0.00	0.03	230 206	
250 ISL	8.37	8.34	34.177	26.576	149.8	0.591	1.65	25.0	41.7	2.47	30.7	0.01	0.00	0.03	251	
268	8.30	8.27	34.194	26.600	147.8	0.617	1.51	22.9	43.4	2.53	31.2	0.01	0.00	0.03	270 205	
300 ISL	8.00	7.97	34.227	26.672	141.5	0.664	1.19	17.9	48.2	2.67	32.7	0.01	0.00	0.03	302	
318	7.81	7.78	34.242	26.712	137.9	0.689	1.03	15.4	51.0	2.75	33.5	0.01	0.00	0.03	320 204	
378	7.29	7.25	34.268	26.807	129.5	0.769	0.72	10.7	58.7	2.91	35.6	0.01	0.00	0.03	380 203	
400 ISL	7.09	7.05	34.266	26.834	127.2	0.797	0.66	9.7	61.4	2.95	36.3	0.01	0.00	0.03	403	
437	6.77	6.73	34.259	26.872	123.8	0.844	0.59	8.6	65.7	3.01	37.4	0.01	0.00	0.03	440 202	
500 ISL	6.34	6.29	34.259	26.930	118.9	0.920	0.49	7.1	72.2	3.09	39.0	0.01	0.00	0.03	503	
516	6.23	6.18	34.260	26.945	117.6	0.939	0.46	6.6	73.8	3.11	39.4	0.01	0.00	0.03	520 201	

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN	OXY PCT	SIO3	P04	N03	N02	CHL-A ug/l	PHAEAO ug/l	PRES db	
32 59.4 N	120 21.0 W	07/02/03	0712	UTC	719 m	340	06 kn			1014.8 mb	13.9	C 12.0 C				
0 ISL	14.60	14.60	33.055	24.559	336.7	0.000	6.05	104.3	1.4	0.40	0.0	0.00	0.38	0.11	0	
1	14.60	14.60	33.055	24.559	336.7	0.003	6.05	104.3	1.4	0.40	0.0	0.00	0.38	0.11	1 220	
10 ISL	14.41	14.41	33.057	24.601	333.0	0.034	6.06	104.0	1.5	0.41	0.0	0.01	0.62	0.23	10 219	
20	14.34	14.34	33.061	24.619	331.6	0.067	6.01	103.0	1.6	0.42	0.1	0.01	0.96	0.42	20 218	
30	14.34	14.34	33.071	24.627	331.1	0.100	6.06	103.9	1.6	0.41	0.1	0.01	1.00	0.38	30 217	
40	14.20	14.19	33.064	24.652	329.1	0.133	6.01	102.7	1.8	0.44	0.3	0.02	1.01	0.41	40 216	
50	12.86	12.85	32.968	24.848	310.5	0.165	5.75	95.5	3.2	0.68	3.7	0.07	0.40	0.31	50 215	
60	12.22	12.21	32.941	24.951	300.9	0.195	5.66	92.7	4.3	0.79	5.3	0.07	0.28	0.27	60 214	
70	10.88	10.87	33.033	25.267	270.9	0.224	5.27	84.0	8.5	1.11	10.8	0.03	0.12	0.10	70 213	
75 ISL	10.86	10.85	33.126	25.343	263.8	0.237	5.11	81.4	9.5	1.17	12.0	0.03	0.11	0.10	75	
85	10.82	10.81	33.237	25.437	255.1	0.263	4.80	76.5	11.0							

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
32 39.2 N	121 2.0 W	07/02/03	1311	UTC	3799 m	270	03 kn	310 01 07	1	1013.1 mb	14.3	C 12.4 C	5/8	SC		
0 ISL	14.02	14.02	33.095	24.712	322.2	0.000	5.98	101.9	2.1	0.47	0.7	0.04	0.58	0.17	0	
1	14.02	14.02	33.095	24.712	322.2	0.003	5.98	101.9	2.1	0.47	0.7	0.04	0.58	0.17	1 220	
10 ISL	13.97	13.97	33.148	24.763	317.6	0.032	6.03	102.6	2.6	0.49	0.9	0.05	0.62	0.16	10	
11	13.96	13.96	33.158	24.773	316.7	0.035	6.03	102.6	2.7	0.49	0.9	0.05	0.63	0.16	11 219	
20 ISL	14.37	14.37	33.365	24.848	309.9	0.063	5.97	102.6	3.9	0.47	0.7	0.06	0.73	0.36	20	
21	14.42	14.42	33.386	24.853	309.3	0.066	5.96	102.5	4.0	0.47	0.7	0.06	0.74	0.38	21 218	
30	14.38	14.38	33.389	24.865	308.5	0.094	5.91	101.6	4.1	0.48	1.1	0.09	0.74	0.40	30 217	
40	14.31	14.30	33.385	24.876	307.7	0.125	5.80	99.5	4.1	0.51	1.3	0.13	0.55	0.42	40 216	
50	14.23	14.22	33.385	24.894	306.4	0.156	5.84	100.1	4.4	0.53	1.6	0.12	0.50	0.36	50 215	
60	13.95	13.94	33.373	24.943	301.9	0.186	5.68	96.8	5.1	0.60	2.8	0.17	0.35	0.28	60 214	
70	12.41	12.40	33.321	25.210	276.6	0.215	4.98	82.1	8.2	1.00	9.1	0.11	0.15	0.18	70 213	
75 ISL	11.67	11.66	33.289	25.324	265.8	0.229	4.93	80.0	9.4	1.12	11.2	0.07	0.10	0.14	75	
83	10.72	10.71	33.266	25.477	251.3	0.249	4.85	77.1	11.0	1.24	13.5	0.02	0.05	0.10	83 212	
99	10.29	10.28	33.406	25.661	234.1	0.288	4.46	70.3	13.8	1.37	15.9	0.02	0.03	0.06	99 211	
100 ISL	10.28	10.27	33.413	25.668	233.4	0.291	4.44	70.0	13.9	1.38	16.0	0.02	0.03	0.06	100	
119	10.18	10.17	33.540	25.784	222.8	0.334	3.94	62.0	17.5	1.57	18.8	0.02	0.02	0.06	120 210	
125 ISL	10.21	10.20	33.636	25.854	216.3	0.347	3.51	55.3	19.5	1.69	20.2	0.02	0.02	0.06	126	
139	10.27	10.25	33.870	26.027	200.3	0.376	2.57	40.6	24.2	1.95	23.2	0.01	0.01	0.07	140 209	
150 ISL	9.86	9.84	33.900	26.120	191.6	0.398	2.73	42.8	26.0	1.95	24.4	0.01	0.01	0.06	151	
170	9.00	8.98	33.881	26.245	179.8	0.435	3.01	46.2	28.1	1.95	25.7	0.01	0.01	0.05	171 208	
199	8.65	8.63	33.986	26.383	167.2	0.485	2.70	41.2	32.8	2.08	27.8	0.02	0.01	0.04	200 207	
200 ISL	8.64	8.62	33.988	26.386	166.9	0.487	2.70	41.2	32.9	2.08	27.8	0.02			201	
230	8.18	8.16	34.022	26.483	158.1	0.536	2.67	40.3	36.6	2.13	28.9	0.02			231 206	
250 ISL	7.93	7.90	34.033	26.529	154.0	0.567	2.52	37.8	39.4	2.21	30.0	0.02			251	
269	7.69	7.66	34.039	26.569	150.4	0.596	2.32	34.6	42.4	2.30	31.2	0.01			271 205	
300 ISL	7.16	7.13	34.049	26.652	142.7	0.641	1.96	28.9	49.2	2.48	33.5	0.01			302	
319	6.86	6.83	34.056	26.698	138.4	0.668	1.74	25.5	53.4	2.59	34.8	0.01			321 204	
379	6.41	6.38	34.085	26.782	131.1	0.749	1.31	19.0	61.7	2.79	37.2	0.01			381 203	
400 ISL	6.27	6.23	34.112	26.821	127.5	0.776	1.10	15.9	65.5	2.88	38.1	0.01			403	
440	6.01	5.97	34.165	26.897	120.8	0.826	0.72	10.3	72.7	3.03	39.7	0.01			443 202	
500 ISL	5.64	5.60	34.201	26.971	114.1	0.896	0.52	7.4	80.5	3.14	41.1	0.01			503	
512	5.57	5.53	34.208	26.985	112.8	0.910	0.48	6.8	82.1	3.16	41.4	0.01			515 201	

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
32 19.6 N	121 42.6 W	07/02/03	1902	UTC	3997 m	240	08 kn	240 01 07	2	1013.5 mb	15.7	C 12.9 C	22m	8/8	SC	
0 ISL	14.91	14.91	32.902	24.375	354.3	0.000	5.89	102.0	0.6	0.40	0.0	0.00	0.18	0.05	0	
1 A	14.91	14.91	32.902	24.375	354.3	0.004	5.89	102.0	0.6	0.40	0.0	0.00	0.18	0.05	1 221	
10 ISL	14.82	14.82	32.939	24.423	350.0	0.035	5.92	102.4	0.7	0.40	0.0	0.00	0.21	0.06	10	
14 A	14.73	14.73	32.974	24.470	345.7	0.049	5.94	102.6	0.7	0.40	0.0	0.00	0.23	0.06	14 220	
20 ISL	14.54	14.54	33.044	24.564	336.9	0.070	5.98	102.9	1.0	0.40	0.0	0.00	0.34	0.11	20	
21	14.51	14.51	33.054	24.578	335.6	0.073	5.99	103.0	1.1	0.40	0.0	0.00	0.36	0.12	21 219	
29 A	14.48	14.48	33.070	24.597	334.0	0.100	5.99	103.0	1.2	0.40	0.0	0.00	0.50	0.14	29 218	
30 ISL	14.45	14.45	33.069	24.603	333.5	0.103	5.98	102.7	1.3	0.41	0.0	0.01	0.52	0.15	30	
36	13.97	13.96	33.030	24.673	326.9	0.123	5.92	100.7	1.8	0.48	0.9	0.06	0.60	0.21	36 217	
45 A	12.06	12.05	32.827	24.892	306.1	0.151	5.75	93.8	3.5	0.78	4.6	0.06	0.37	0.28	45 216	
50 ISL	11.68	11.67	32.823	24.960	299.8	0.167	5.72	92.6	4.2	0.85	5.7	0.04	0.28	0.26	50	
53	11.54	11.53	32.834	24.994	296.6	0.175	5.70	92.0	4.6	0.87	6.2	0.03	0.24	0.25	53 215	
60 A	11.01	11.00	32.830	25.086	287.9	0.196	5.61	89.5	5.9	0.96	7.9	0.02	0.18	0.15	60 214	
73	10.70	10.69	32.976	25.254	272.2	0.232	5.39	85.5	7.8	1.07	10.3	0.02	0.10	0.10	73 213	
75 ISL	10.66	10.65	33.014	25.291	268.8	0.238	5.34	84.7	8.2	1.09	10.8	0.02	0.09	0.09	75	
83 A	10.54	10.53	33.174	25.437	255.1	0.259	5.08	80.4	10.0	1.19	12.7	0.01	0.05	0.05	83 212	
100	10.34	10.33	33.416	25.660	234.2	0.300	4.37	69.0	14.0	1.41	16.5	0.01	0.02	0.05	100 211	
120	9.64	9.63	33.556	25.887	212.9	0.345	4.09	63.6	18.0	1.55	19.3	0.01	0.01	0.02	121 210	
125 ISL	9.53	9.52	33.593	25.934	208.6	0.356	3.98	61.8	19.0	1.59	20.0	0.01	0.01	0.02	126	
140	9.29	9.27	33.709	26.064	196.5	0.386	3.63	56.1	22.2	1.72	22.1	0.01	0.00	0.03	141 209	
150 ISL	9.17	9.15	33.799	26.154	188.1	0.405	3.38	52.1	24.5	1.80	23.5	0.01	0.00	0.03	151	
170	8.95	8.93	33.957	26.313	173.4	0.441	2.92	44.8	29.2	1.96	25.9	0.01	0.00	0.02	171 208	
199	8.52	8.50	34.054	26.456	160.2	0.490	2.45	37.3	35.6	2.16	28.6	0.01	0.00	0.02	200 207	
200 ISL	8.51	8.49	34.057	26.460	159.9	0.491	2.43	37.0	35.8	2.17	28.7	0.01			201	
229	8.28	8.26	34.110	26.537	153.0	0.537	1.99	30.1	39.9	2.34	30.5	0.01			230 206	
250 ISL	8.07	8.04	34.126	26.581	149.1	0.568	1.82	27.4	42.7	2.43	31.5	0.01			251	
269	7.8															

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

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 23.8 W	08/02/03	0113	UTC	4102 m	340	19 kn	340 02 09	1	1011.5 mb	14.1 C	11.2 C	4/8		SC	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA				ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
0 ISL	15.23	15.23	32.898	24.303	361.2	0.000	5.92	103.2	0.5	0.40	0.1	0.00	0.15	0.05	0	
2	15.23	15.23	32.898	24.303	361.2	0.007	5.92	103.2	0.5	0.40	0.1	0.00	0.15	0.05	2	220
10 ISL	15.23	15.23	32.898	24.303	361.4	0.036	5.92	103.2	0.5	0.40	0.1	0.00	0.15	0.04	10	
16	15.23	15.23	32.898	24.303	361.6	0.058	5.92	103.2	0.5	0.40	0.1	0.00	0.15	0.04	16	219
20 ISL	15.16	15.16	32.900	24.320	360.1	0.072	5.93	103.2	0.5	0.40	0.1	0.00	0.17	0.04	20	
30 ISL	14.97	14.97	32.905	24.365	356.1	0.108	5.96	103.4	0.4	0.40	0.1	0.00	0.22	0.06	30	
31	14.95	14.95	32.906	24.371	355.6	0.112	5.96	103.3	0.4	0.40	0.1	0.00	0.23	0.06	31	218
45	14.92	14.91	32.914	24.384	354.8	0.161	5.94	102.9	0.3	0.40	0.1	0.00	0.23	0.06	45	217
50 ISL	14.86	14.85	32.913	24.396	353.8	0.179	5.95	103.0	0.4	0.41	0.1	0.00	0.30	0.11	50	
55	14.80	14.79	32.912	24.408	352.8	0.197	5.96	103.0	0.4	0.41	0.1	0.01	0.36	0.17	55	216
65	13.13	13.12	32.848	24.703	324.8	0.231	5.89	98.3	1.8	0.60	1.8	0.15	0.34	0.29	65	215
75 ISL	12.19	12.18	32.795	24.844	311.5	0.262	5.83	95.4	3.1	0.75	3.9	0.06	0.21	0.25	75	
76	12.12	12.11	32.790	24.853	310.6	0.266	5.82	95.1	3.2	0.76	4.1	0.05	0.20	0.25	76	214
85	11.31	11.30	32.774	24.990	297.7	0.293	5.78	92.8	4.8	0.87	6.3	0.02	0.15	0.19	85	213
95	10.77	10.76	32.819	25.120	285.4	0.322	5.65	89.7	6.5	0.99	8.5	0.02	0.11	0.14	95	212
100 ISL	10.60	10.59	32.862	25.183	279.5	0.336	5.56	87.9	7.4	1.05	9.6	0.02	0.09	0.11	100	
110	10.31	10.30	32.985	25.329	265.8	0.363	5.33	83.8	9.4	1.17	11.9	0.02	0.06	0.06	110	211
125	9.75	9.74	33.253	25.632	237.2	0.401	4.88	75.9	13.9	1.40	16.2	0.01	0.02	0.03	126	210
145	9.22	9.20	33.536	25.940	208.3	0.446	4.20	64.7	20.1	1.65	20.8	0.01	0.01	0.02	146	209
150 ISL	9.16	9.14	33.581	25.985	204.1	0.456	4.07	62.6	21.1	1.68	21.4	0.01	0.01	0.02	151	
169	9.05	9.03	33.714	26.106	192.9	0.494	3.66	56.2	24.1	1.79	23.3	0.01	0.00	0.02	170	208
200	8.85	8.83	33.910	26.292	175.9	0.551	3.26	49.9	30.1	2.03	26.9	0.01	0.00	0.02	201	207
230	8.45	8.43	34.011	26.433	162.9	0.602	2.45	37.2	35.5	2.17	29.3	0.01			231	206
250 ISL	8.16	8.13	34.036	26.497	157.1	0.634	2.34	35.3	38.5	2.24	30.4	0.01			251	
268	7.88	7.85	34.043	26.544	152.8	0.662	2.25	33.7	41.2	2.30	31.2	0.01			269	205
300 ISL	7.37	7.34	34.053	26.626	145.4	0.709	2.00	29.6	46.9	2.44	32.9	0.01			302	
318	7.11	7.08	34.058	26.666	141.7	0.735	1.84	27.1	50.2	2.52	33.9	0.01			320	204
378	6.52	6.49	34.100	26.779	131.4	0.817	1.22	17.7	61.0	2.79	37.1	0.01			380	203
400 ISL	6.35	6.31	34.121	26.818	127.9	0.846	1.04	15.1	64.8	2.87	38.0	0.01			402	
439	6.09	6.05	34.156	26.879	122.4	0.895	0.79	11.4	71.0	2.99	39.3	0.01			442	202
500 ISL	5.72	5.68	34.189	26.952	116.0	0.967	0.57	8.1	78.8	3.09	40.7	0.01			503	
515	5.63	5.59	34.197	26.969	114.5	0.985	0.52	7.4	80.7	3.12	41.1	0.01			518	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
31 39.6 N	123 4.1 W	08/02/03	0706	UTC	4120 m	070	12 kn	1013.9	mb	14.0 C	11.0 C					
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA				ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
0 ISL	16.01	16.01	33.110	24.293	362.1	0.000	5.75	102.0	0.6	0.40	0.0	0.01	0.17	0.05	0	
1	16.01	16.01	33.110	24.293	362.1	0.004	5.75	102.0	0.6	0.40	0.0	0.01	0.17	0.05	1	220
10 ISL	16.01	16.01	33.109	24.292	362.5	0.036	5.74	101.8	0.6	0.39	0.0	0.01	0.17	0.04	10	
15	16.01	16.01	33.109	24.293	362.6	0.054	5.74	101.8	0.6	0.39	0.0	0.01	0.17	0.04	15	219
20 ISL	16.01	16.01	33.109	24.293	362.8	0.072	5.74	101.8	0.6	0.39	0.0	0.01	0.17	0.04	20	
29	16.01	16.01	33.109	24.293	363.0	0.105	5.74	101.8	0.6	0.39	0.0	0.01	0.17	0.05	29	218
30 ISL	16.01	16.01	33.109	24.293	363.0	0.109	5.74	101.8	0.6	0.39	0.0	0.01	0.17	0.05	30	
45	16.01	16.00	33.108	24.293	363.5	0.163	5.72	101.4	0.6	0.39	0.0	0.01	0.17	0.05	45	217
50 ISL	16.01	16.00	33.108	24.293	363.7	0.181	5.72	101.4	0.6	0.39	0.0	0.01	0.18	0.05	50	
54	16.01	16.00	33.108	24.293	363.8	0.196	5.73	101.6	0.6	0.39	0.0	0.01	0.18	0.05	54	216
64	16.01	16.00	33.109	24.294	364.0	0.232	5.74	101.8	0.6	0.39	0.0	0.01	0.17	0.04	64	215
75	14.99	14.98	33.066	24.487	345.9	0.271	5.84	101.4	1.2	0.43	0.0	0.02	0.29	0.19	75	214
85	13.69	13.68	32.955	24.674	328.2	0.305	5.95	100.5	1.9	0.54	0.6	0.13	0.29	0.18	85	213
94	12.53	12.52	32.861	24.831	313.3	0.334	5.88	96.9	3.1	0.66	2.5	0.16	0.25	0.18	94	212
100 ISL	12.11	12.10	32.842	24.896	307.2	0.353	5.83	95.2	3.6	0.72	3.6	0.12	0.21	0.17	100	
110	11.65	11.64	32.870	25.003	297.1	0.383	5.69	92.1	4.7	0.82	5.6	0.03	0.14	0.14	110	211
125	10.89	10.87	33.039	25.271	271.8	0.426	5.33	84.9	7.6	1.03	9.8	0.02	0.07	0.08	126	210
144	10.26	10.24	33.307	25.589	241.8	0.474	4.80	75.6	12.1	1.29	14.5	0.02	0.02	0.04	145	209
150 ISL	10.03	10.01	33.367	25.675	233.8	0.489	4.65	72.9	13.6	1.36	15.8	0.02	0.02	0.04	151	
169	9.39	9.37	33.530	25.908	211.8	0.531	4.19	64.8	18.4	1.56	19.4	0.02	0.01	0.03	170	208
200	8.94	8.92	33.807	26.197	184.9	0.592	3.40	52.1	25.7	1.83	24.0	0.01	0.00	0.01	201	207
229	8.58	8.56	33.968	26.380	168.0	0.644	3.10	47.2	31.1	1.95	26.3	0.01			230	206
250 ISL	8.28	8.25	34.015	26.463	160.4	0.678	2.80	42.4	35.1	2.08	28.2	0.01			251	
269	8.01	7.98	34.032	26.516	155.5	0.708	2.50	37.6	38.8	2.21	29.9	0.01			270	205
300 ISL	7.58	7.55	34.064	26.604	147.5	0.755	2.06	30.7	45.0	2.40	32.2	0.01			302	
318	7.35	7.32	34.078	26.648	143.5	0.781	1.84	27.3	48.4	2.50	33.3	0.01			320	204
378	6.80	6.76	34.112	26.751	134.3	0.865	1.35	19.7	57.5	2.73</td						

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP	
m	DEG C	DEG C			4030 m	360	06 kn	ml/l	pct	um/l	um/l	um/l	ug/l	ug/l	db		
0 ISL	15.93	15.93	33.089	24.295	361.9	0.000	5.74	101.6	0.5	0.39	0.1	0.00	0.14	0.03	0		
2	15.93	15.93	33.089	24.295	362.0	0.007	5.74	101.6	0.5	0.39	0.1	0.00	0.14	0.03	2	220	
10 ISL	15.92	15.92	33.089	24.297	362.0	0.036	5.74	101.6	0.5	0.39	0.1	0.00	0.14	0.04	10		
15	15.92	15.92	33.089	24.297	362.2	0.054	5.75	101.8	0.5	0.39	0.1	0.00	0.14	0.04	15	219	
20 ISL	15.92	15.92	33.089	24.298	362.3	0.072	5.76	101.9	0.5	0.39	0.1	0.00	0.14	0.04	20		
30 ISL	15.92	15.92	33.089	24.298	362.6	0.109	5.77	102.1	0.5	0.39	0.0	0.00	0.14	0.04	30		
31	15.92	15.92	33.089	24.298	362.6	0.112	5.77	102.1	0.5	0.39	0.0	0.00	0.14	0.04	31	218	
46	15.93	15.92	33.089	24.296	363.2	0.167	5.76	102.0	0.5	0.39	0.1	0.00	0.13	0.04	46	217	
50 ISL	15.93	15.92	33.089	24.296	363.4	0.181	5.75	101.8	0.5	0.39	0.1	0.00	0.14	0.04	50		
55	15.92	15.91	33.087	24.297	363.4	0.199	5.74	101.6	0.5	0.39	0.1	0.00	0.15	0.04	55	216	
65	15.89	15.88	33.084	24.302	363.3	0.236	5.75	101.7	0.6	0.39	0.0	0.00	0.14	0.04	65	215	
75	14.77	14.76	33.082	24.546	340.2	0.271	5.82	100.6	1.0	0.43	0.1	0.01	0.28	0.17	75	214	
85	12.67	12.66	32.829	24.779	318.0	0.304	5.95	98.4	2.6	0.87	U	1.6	0.12	0.28	0.24	85	213
95	11.89	11.88	32.796	24.901	306.5	0.335	5.83	94.8	3.8	0.75	3.9	0.04	0.21	0.25	95	212	
100 ISL	11.55	11.54	32.812	24.976	299.4	0.350	5.74	92.6	4.6	0.82	5.3	0.03	0.17	0.23	100		
109	11.08	11.07	32.881	25.114	286.4	0.377	5.56	88.9	6.1	0.94	7.8	0.02	0.12	0.19	109	211	
125	10.78	10.77	33.105	25.342	265.0	0.421	5.20	82.7	8.5	1.08	10.9	0.01	0.07	0.09	126	210	
145	10.43	10.41	33.313	25.565	244.2	0.472	4.77	75.4	11.4	1.24	13.9	0.01	0.04	0.05	146	209	
150 ISL	10.27	10.25	33.363	25.631	238.0	0.484	4.63	72.9	12.5	1.29	14.9	0.01	0.03	0.05	151		
169	9.65	9.63	33.539	25.873	215.3	0.527	4.12	64.1	17.2	1.49	18.6	0.01	0.02	0.04	170	208	
199	9.18	9.16	33.758	26.121	192.2	0.588	3.59	55.3	23.0	1.71	22.4	0.01	0.00	0.02	200	207	
200 ISL	9.16	9.14	33.765	26.129	191.4	0.590	3.57	55.0	23.2	1.72	22.5	0.01			201		
229	8.74	8.72	33.948	26.339	171.9	0.642	3.02	46.1	30.0	1.94	26.2	0.01			230	206	
250 ISL	8.52	8.49	34.001	26.415	165.1	0.678	2.82	42.9	33.0	2.03	27.7	0.01			251		
270	8.30	8.27	34.020	26.464	160.7	0.710	2.68	40.6	35.6	2.11	28.7	0.01			271	205	
300 ISL	7.81	7.78	34.045	26.556	152.2	0.757	2.35	35.2	41.5	2.28	30.8	0.01			302		
318	7.51	7.48	34.055	26.608	147.5	0.784	2.15	32.0	45.2	2.38	32.1	0.01			320	204	
379	6.77	6.73	34.087	26.736	135.7	0.871	1.57	22.9	56.2	2.66	35.4	0.01			381	203	
400 ISL	6.62	6.58	34.106	26.771	132.6	0.899	1.37	19.9	59.4	2.74	36.3	0.01			402		
438	6.39	6.35	34.140	26.828	127.5	0.948	1.05	15.2	64.9	2.88	37.8	0.01			441	202	
500 ISL	5.90	5.86	34.182	26.924	118.8	1.025	0.72	10.3	74.8	3.04	39.9	0.01			503		
512	5.81	5.77	34.191	26.943	117.1	1.039	0.66	9.4	76.7	3.07	40.3	0.01			515	201	

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C			65 m	340	10 kn	290 01 06	0	1012.9 mb	16.0 C	13.9 C	0/8			
0 ISL	15.78	15.78	33.382	24.554	337.3	0.000	6.01	106.3	1.9	0.32	0.1	0.00	0.33	0.09	0	
2	15.78	15.78	33.382	24.554	337.3	0.007	6.01	106.3	1.9	0.32	0.1	0.00	0.33	0.09	2	207
5	15.69	15.69	33.383	24.575	335.4	0.017	6.04	106.6	2.0	0.31	0.1	0.00	0.35	0.12	5	206
10	15.50	15.50	33.369	24.606	332.6	0.034	6.08	106.9	2.0	0.31	0.1	0.00	0.56	0.21	10	205
20 ISL	14.98	14.98	33.349	24.705	323.5	0.066	5.94	103.3	2.5	0.37	0.5	0.05	1.45	0.60	20	
21	14.91	14.91	33.347	24.719	322.2	0.070	5.93	103.0	2.5	0.38	0.5	0.05	1.53	0.63	21	204
30	13.99	13.99	33.322	24.894	305.7	0.098	5.48	93.4	4.3	0.60	2.4	0.25	1.36	0.58	30	203
40	13.34	13.33	33.329	25.032	292.8	0.128	4.76	80.1	6.8	0.91	7.2	0.57	0.83	0.52	40	202
50	12.95	12.94	33.371	25.143	282.5	0.157	4.48	74.8	8.5	1.07	9.5	0.21	0.41	0.37	50	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C			618 m	200	08 kn	130 01 07	0	1012.9 mb	17.9 C	15.1 C	15m	0/8		
0 ISL	15.96	15.96	33.384	24.515	341.0	0.000	6.04	107.2	1.8	0.30	0.1	0.00	0.41	0.10	0	
1	15.96	15.96	33.384	24.515	341.0	0.003	6.04	107.2	1.8	0.30	0.1	0.00	0.41	0.10	1	220
10	15.65	15.65	33.379	24.581	335.0	0.034	6.09	107.4	1.8	0.30	0.1	0.00	0.43	0.13	10	219
20	15.37	15.37	33.366	24.633	330.3	0.067	5.97	104.7	2.3	0.35	0.1	0.04	0.86	0.38	20	218
30	14.05	14.05	33.301	24.866	308.4	0.099	5.47	93.3	4.5	0.61	2.9	0.45	1.35	0.78	30	217
40	13.41	13.40	33.299	24.995	296.3	0.129	5.13	86.4	5.6	0.78	5.4	0.36	0.89	0.63	40	216
50	12.89	12.88	33.321	25.116	285.1	0.158	4.77	79.5	7.0	0.95	8.0	0.07	0.59	0.54	50	215
60	12.20	12.19	33.420	25.326	265.3	0.186	4.32	71.0	9.7	1.17	11.6	0.02	0.19	0.26	60	214
70	11.68	11.67	33.528	25.508	248.2	0.212	3.86	62.8	12.5	1.36	14.5	0.01	0.09	0.09	70	213
75 ISL	11.62	11.61	33.575	25.556	243.8	0.224	3.68	59.8	13.5	1.43	15.5	0.01	0.06	0.09	75	
85	11.50	11.49	33.619	25.612	238.6	0.248	3.42	55.4	14.9	1.52	16.8	0.01	0.03			

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	um/l	um/l	um/l	um/l	ug/l	ug/l	db	
0 ISL	15.82	15.82	33.386	24.548	337.8	0.000	5.84	103.3	2.0	0.36	0.1	0.00	0.22	0.06	0	
2 A	15.82	15.82	33.386	24.548	337.9	0.007	5.84	103.3	2.0	0.36	0.1	0.00	0.22	0.06	2	218
8	15.81	15.81	33.386	24.550	337.9	0.027	5.83	103.1	1.8	0.36	0.1	0.00	0.21	0.04	8	217
10 ISL	15.80	15.80	33.384	24.551	337.8	0.034	5.83	103.1	1.8	0.36	0.1	0.00	0.22	0.04	10	
16 A	15.76	15.76	33.387	24.563	336.9	0.054	5.83	103.0	1.9	0.36	0.1	0.00	0.24	0.05	16	216
20 ISL	15.63	15.63	33.372	24.580	335.4	0.067	5.85	103.1	1.9	0.37	0.1	0.00	0.30	0.10	20	
25	15.41	15.41	33.347	24.610	332.7	0.084	5.88	103.2	2.0	0.39	0.1	0.00	0.39	0.16	25	215
30 ISL	15.16	15.16	33.321	24.645	329.5	0.101	5.90	103.0	2.2	0.40	0.1	0.00	0.48	0.18	30	
34 A	14.93	14.92	33.296	24.676	326.7	0.114	5.92	102.8	2.3	0.42	0.1	0.01	0.56	0.18	34	214
44	14.19	14.18	33.214	24.770	318.0	0.146	5.94	101.6	2.7	0.49	0.6	0.03	0.76	0.22	44	213
50 ISL	13.15	13.14	33.174	24.951	300.8	0.165	5.55	92.9	4.3	0.71	4.0	0.10	0.57	0.24	50	
54 A	12.51	12.50	33.188	25.087	287.9	0.176	5.21	86.0	5.8	0.88	6.7	0.14	0.40	0.25	54	212
64	12.23	12.22	33.460	25.352	263.0	0.204	4.36	71.7	9.9	1.17	11.6	0.04	0.20	0.19	64	211
73 A	12.04	12.03	33.491	25.412	257.4	0.227	4.18	68.5	10.7	1.23	12.6	0.03	0.16	0.15	73	210
75 ISL	11.99	11.98	33.501	25.429	255.8	0.233	4.14	67.7	11.0	1.25	12.9	0.03	0.15	0.14	75	
88	11.63	11.62	33.566	25.547	244.9	0.265	3.91	63.5	12.8	1.37	14.8	0.02	0.08	0.11	88	209
100 ISL	11.27	11.26	33.600	25.640	236.4	0.294	3.73	60.1	14.4	1.46	16.3	0.02	0.05	0.08	100	
102 A	11.21	11.20	33.606	25.655	234.9	0.299	3.70	59.6	14.7	1.47	16.5	0.02	0.05	0.08	102	208
120	10.86	10.85	33.697	25.789	222.6	0.340	3.34	53.4	17.5	1.62	18.8	0.01	0.02	0.05	121	207
125 ISL	10.72	10.71	33.729	25.839	217.9	0.351	3.25	51.8	18.5	1.66	19.6	0.01	0.02	0.05	126	
140	10.31	10.29	33.836	25.994	203.5	0.382	2.95	46.6	21.8	1.80	21.9	0.00	0.01	0.04	141	206
150 ISL	10.18	10.16	33.925	26.085	194.9	0.402	2.63	41.5	24.3	1.92	23.4	0.00	0.01	0.04	151	
169	10.05	10.03	34.077	26.226	182.0	0.438	2.05	32.3	28.7	2.14	25.8	0.01	0.01	0.05	170	205
198	9.82	9.80	34.179	26.345	171.3	0.489	1.72	27.0	32.4	2.29	27.5	0.00	0.00	0.03	199	204
200 ISL	9.81	9.79	34.183	26.350	170.8	0.493	1.71	26.8	32.5	2.30	27.6	0.00			201	
229	9.66	9.63	34.225	26.409	165.9	0.542	1.51	23.6	34.7	2.38	28.4	0.00			230	203
250 ISL	9.32	9.29	34.268	26.498	157.7	0.576	1.24	19.2	38.5	2.51	29.7	0.01			251	
258	9.19	9.16	34.283	26.531	154.7	0.588	1.15	17.8	39.9	2.55	30.2	0.01			259	202
290	9.12	9.09	34.294	26.552	153.4	0.637	1.12	17.3	40.7	2.57	30.4	0.00			292	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	um/l	um/l	um/l	um/l	ug/l	ug/l	db	
0 ISL	15.81	15.81	33.409	24.568	335.9	0.000	5.83	103.2	2.1	0.37	0.1	0.00	0.25	0.06	0	
2	15.81	15.81	33.409	24.568	336.0	0.007	5.83	103.2	2.1	0.37	0.1	0.00	0.25	0.06	2	220
10 ISL	15.80	15.80	33.411	24.572	335.9	0.034	5.82	103.0	2.0	0.37	0.1	0.00	0.25	0.06	10	
11	15.80	15.80	33.411	24.572	335.9	0.037	5.82	103.0	2.0	0.37	0.1	0.00	0.25	0.06	11	219
20 ISL	15.64	15.64	33.394	24.595	334.0	0.067	5.81	102.4	2.2	0.39	0.2	0.01	0.35	0.09	20	
21	15.61	15.61	33.391	24.599	333.6	0.070	5.81	102.4	2.2	0.39	0.2	0.01	0.37	0.10	21	218
30 ISL	15.13	15.13	33.362	24.683	325.9	0.100	5.80	101.2	2.7	0.43	0.3	0.03	0.58	0.16	30	
31	15.07	15.07	33.359	24.694	324.9	0.103	5.80	101.1	2.8	0.44	0.3	0.03	0.60	0.17	31	217
41	14.50	14.49	33.335	24.798	315.2	0.135	5.56	95.8	3.5	0.55	1.6	0.14	0.61	0.22	41	216
50 ISL	13.94	13.93	33.323	24.906	305.2	0.163	5.36	91.3	4.5	0.68	3.3	0.19	0.53	0.28	50	
51	13.87	13.86	33.322	24.920	303.9	0.166	5.33	90.6	4.6	0.70	3.6	0.19	0.51	0.28	51	215
60	13.06	13.05	33.337	25.095	287.3	0.193	4.92	82.3	6.3	0.89	7.0	0.08	0.31	0.24	60	214
70	12.47	12.46	33.351	25.221	275.5	0.221	4.77	78.8	7.7	1.01	9.1	0.04	0.20	0.23	70	213
75 ISL	12.18	12.17	33.400	25.315	266.7	0.235	4.56	74.9	9.0	1.10	10.7	0.03	0.15	0.19	75	
85	11.69	11.68	33.512	25.494	249.9	0.260	4.12	67.0	11.7	1.29	13.8	0.02	0.08	0.11	85	212
99	11.28	11.28	33.586	25.625	237.7	0.295	3.86	62.3	13.9	1.42	15.8	0.02	0.05	0.09	99	211
100 ISL	11.25	11.24	33.589	25.635	236.8	0.297	3.85	62.0	14.0	1.43	15.9	0.02	0.05	0.09	100	
120	10.61	10.60	33.664	25.807	220.8	0.343	3.56	56.6	17.0	1.57	18.6	0.01	0.02	0.06	121	210
125 ISL	10.55	10.54	33.705	25.849	216.8	0.354	3.45	54.8	18.0	1.62	19.3	0.01	0.02	0.05	126	
139	10.43	10.41	33.825	25.964	206.3	0.383	3.12	49.5	20.8	1.76	21.1	0.01	0.01	0.04	140	209
150 ISL	10.26	10.24	33.891	26.045	198.8	0.406	2.87	45.3	22.9	1.85	22.4	0.01	0.01	0.03	151	
169	9.97	9.95	33.986	26.169	187.4	0.442	2.46	38.6	26.4	2.00	24.5	0.01	0.00	0.03	170	208
199	9.73	9.71	34.135	26.326	173.1	0.496	1.92	30.0	31.5	2.23	27.2	0.01			201	
200 ISL	9.72	9.70	34.138	26.330	172.7	0.498	1.91	29.9	31.7	2.24	27.3	0.01			201	
229	9.45	9.42	34.212	26.433	163.5	0.547	1.57	24.4	35.5	2.39	28.8	0.01			230	206
250 ISL	9.33	9.30	34.237	26.472	160.1	0.581	1.43	22.2	37.2	2.45	29.4	0.01			251	
269	9.22	9.19	34.251	26.501	157.7	0.611	1.33	20.6	38.5	2.49	29.9	0.01			271	205
300 ISL	8.93	8.90	34.283	26.573	151.4	0.659	1.11	17.1	41.8	2.59	30.9	0.01			302	
318	8.73	8.70	34.296	26.615	147.7	0.686	1.00	15.3	44.0	2.65	31.5	0.01			320	204
379	7.86	7.82	34.273	26.729	137.3	0.773	0.84	12.6	51.6</td							

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
32 55.5 N	118 56.2 W	05/02/03	1022	UTC	1753 m	320	09 kn									
0 ISL	15.51	15.51	33.228	24.495	342.8	0.000	5.83	102.4	0.6	0.39	0.1	0.00	0.14	0.03	0	
1	15.51	15.51	33.228	24.495	342.9	0.003	5.83	102.4	0.6	0.39	0.1	0.00	0.14	0.03	1	220
10 ISL	15.49	15.49	33.228	24.500	342.7	0.034	5.87	103.1	0.5	0.39	0.0	0.00	0.15	0.03	10	
11	15.49	15.49	33.228	24.500	342.7	0.038	5.87	103.1	0.5	0.39	0.0	0.00	0.15	0.03	11	219
20	15.49	15.49	33.228	24.500	343.0	0.069	5.83	102.4	0.5	0.39	0.0	0.00	0.15	0.03	20	218
30	15.37	15.37	33.235	24.533	340.2	0.103	5.88	103.0	1.0	0.39	0.0	0.00	0.21	0.05	30	217
40	14.41	14.40	33.256	24.756	319.2	0.136	6.03	103.6	2.2	0.42	0.1	0.02	0.66	0.24	40	216
50	12.83	12.82	33.033	24.905	305.2	0.167	5.78	96.0	3.1	0.67	3.2	0.10	0.69	0.37	50	215
60	12.70	12.69	33.257	25.104	286.5	0.196	5.23	86.7	6.3	0.86	6.9	0.09	0.46	0.34	60	214
69	12.06	12.05	33.224	25.201	277.4	0.222	5.11	83.6	7.5	0.98	8.9	0.04	0.25	0.27	69	213
75 ISL	11.49	11.48	33.224	25.307	267.4	0.238	5.01	81.0	8.8	1.09	10.8	0.03	0.17	0.20	75	
85	10.63	10.62	33.252	25.482	250.8	0.264	4.85	77.0	11.1	1.25	13.7	0.02	0.09	0.10	85	212
100	10.15	10.14	33.313	25.612	238.7	0.301	4.74	74.4	13.1	1.36	15.6	0.02	0.05	0.05	100	211
120	9.90	9.89	33.655	25.921	209.8	0.346	3.79	59.3	18.6	1.58	19.5	0.01	0.01	0.02	121	210
125 ISL	9.93	9.92	33.729	25.974	204.9	0.356	3.54	55.5	20.0	1.66	20.5	0.01	0.01	0.02	126	
139	10.05	10.03	33.906	26.092	194.0	0.384	2.90	45.6	23.6	1.87	22.9	0.01	0.00	0.02	140	209
150 ISL	9.97	9.95	33.998	26.178	186.1	0.405	2.58	40.5	26.1	1.99	24.4	0.01	0.00	0.02	151	
169	9.76	9.74	34.103	26.295	175.3	0.439	2.20	34.4	29.8	2.14	26.3	0.01	0.01	0.02	170	208
200 ISL	9.66	9.64	34.206	26.393	166.7	0.492	1.69	26.4	33.7	2.33	28.1	0.01	0.00	0.02	201	
201	9.66	9.64	34.208	26.395	166.6	0.494	1.68	26.2	33.8	2.33	28.1	0.01	0.00	0.02	202	207
229	9.51	9.48	34.240	26.445	162.4	0.540	1.54	24.0	35.7	2.40	28.7	0.01			230	206
250 ISL	9.30	9.27	34.251	26.488	158.6	0.574	1.48	22.9	37.4	2.44	29.2	0.01			251	
268	9.09	9.06	34.258	26.528	155.1	0.602	1.42	21.9	39.1	2.48	29.8	0.01			270	205
300 ISL	8.78	8.75	34.286	26.599	148.8	0.651	1.15	17.6	43.1	2.60	31.1	0.01			302	
319	8.59	8.56	34.301	26.641	145.2	0.678	0.98	15.0	45.6	2.68	31.9	0.01			321	204
380	7.93	7.89	34.291	26.733	137.0	0.765	0.80	12.0	52.4	2.81	33.9	0.01			382	203
400 ISL	7.72	7.68	34.286	26.760	134.7	0.792	0.76	11.4	54.7	2.85	34.6	0.01			403	
441	7.30	7.26	34.279	26.815	129.8	0.846	0.67	9.9	59.5	2.93	36.0	0.01			444	202
500 ISL	6.80	6.75	34.288	26.892	123.0	0.920	0.51	7.5	66.5	3.03	37.7	0.01			503	
511	6.71	6.66	34.290	26.906	121.8	0.934	0.48	7.0	67.8	3.05	38.0	0.01			514	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
32 39.2 N	119 28.8 W	05/02/03	0451	UTC	1315 m	330	08 kn									
0 ISL	14.65	14.65	33.254	24.702	323.1	0.000	6.04	104.3	1.9	0.40	0.0	0.01	0.48	0.09	0	
1	14.65	14.65	33.254	24.702	323.1	0.003	6.04	104.3	1.9	0.40	0.0	0.01	0.48	0.09	1	220
10	14.63	14.63	33.257	24.709	322.8	0.032	6.03	104.1	1.9	0.40	0.0	0.01	0.47	0.10	10	219
20	14.50	14.50	33.256	24.736	320.5	0.064	6.04	104.0	1.9	0.40	0.0	0.01	0.63	0.17	20	218
30	14.42	14.42	33.250	24.749	319.6	0.096	5.99	103.0	2.0	0.41	0.1	0.02	0.83	0.21	30	217
40	13.97	13.96	33.249	24.842	310.9	0.128	5.78	98.4	3.0	0.53	1.8	0.09	0.70	0.27	40	216
50	12.59	12.58	33.243	25.114	285.2	0.158	5.21	86.2	6.5	0.88	7.4	0.07	0.38	0.26	50	215
60	11.86	11.85	33.257	25.264	271.2	0.186	4.94	80.5	8.4	1.05	10.3	0.04	0.23	0.21	60	214
70	11.30	11.29	33.312	25.409	257.5	0.212	4.66	75.0	10.6	1.21	13.0	0.03	0.14	0.14	70	213
75 ISL	11.02	11.01	33.357	25.495	249.5	0.225	4.50	72.1	12.0	1.29	14.3	0.03	0.10	0.12	75	
85	10.51	10.50	33.456	25.661	233.7	0.249	4.21	66.7	14.6	1.42	16.7	0.02	0.05	0.08	85	212
100 ISL	10.04	10.03	33.575	25.835	217.5	0.283	3.93	61.7	17.4	1.54	18.8	0.02	0.02	0.05	100	
101	10.02	10.01	33.582	25.844	216.7	0.285	3.91	61.3	17.6	1.55	18.9	0.02	0.02	0.05	101	211
120	9.75	9.74	33.727	26.002	202.0	0.325	3.48	54.3	21.1	1.70	21.2	0.02	0.01	0.04	121	210
125 ISL	9.70	9.69	33.784	26.055	197.1	0.335	3.29	51.3	22.5	1.76	22.1	0.02	0.01	0.04	126	
140	9.57	9.55	33.948	26.205	183.2	0.363	2.72	42.3	26.9	1.96	24.6	0.02	0.00	0.04	141	209
150 ISL	9.49	9.47	34.008	26.265	177.7	0.381	2.50	38.9	28.9	2.04	25.6	0.02	0.00	0.04	151	
170	9.32	9.30	34.081	26.350	170.0	0.416	2.19	33.9	32.0	2.17	27.1	0.01	0.00	0.03	171	208
199	9.08	9.06	34.169	26.458	160.3	0.464	1.73	26.7	36.7	2.35	29.1	0.01	0.00	0.03	200	207
200 ISL	9.07	9.05	34.170	26.461	160.0	0.465	1.72	26.5	36.8	2.35	29.1	0.01			201	
229	8.88	8.86	34.194	26.510	155.9	0.511	1.56	23.9	39.2	2.44	30.0	0.01			230	206
250 ISL	8.70	8.67	34.219	26.558	151.6	0.544	1.43	21.9	41.4	2.51	30.6	0.02			251	
269	8.50	8.47	34.241	26.607	147.3	0.572	1.30	19.8	43.7	2.57	31.2	0.02			271	205
300 ISL	8.11	8.08	34.261	26.682	140.6	0.617	1.06	16.0	48.9	2.70	32.8	0.01			302	
319	7.87	7.84	34.268	26.723	136.9	0.643	0.92	13.8	52.1	2.77	33.7	0.01			321	204
378	7.44	7.40	34.268	26.786	131.6	0.722	0.75	11.1	57.4	2.87	35.2	0.01			380	203
400 ISL	7.24	7.20	34.271	26.817	128.9	0.751	0.68	10.1	60.2	2.92	36.0	0.01			403	
438	6.88	6.84	34.279	26.873	123.9	0.799	0.56	8.2	65.4	3.00	37.3	0.01			441	202
50																

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
0 ISL	14.43	14.43	33.257	24.751	318.5	0.000	6.07	104.4	3.4	0.43	0.3	0.03	0.49	0.19	0	
2	14.43	14.43	33.257	24.751	318.5	0.006	6.07	104.4	3.4	0.43	0.3	0.03	0.49	0.19	2	220
10 ISL	14.22	14.22	33.279	24.813	312.9	0.032	6.06	103.8	3.6	0.44	0.5	0.04	0.72	0.30	10	
11	14.19	14.19	33.283	24.822	312.0	0.035	6.06	103.7	3.6	0.44	0.5	0.04	0.76	0.32	11	219
20 ISL	14.11	14.11	33.292	24.846	310.0	0.063	5.99	102.3	3.7	0.46	0.8	0.06	0.98	0.42	20	
21	14.11	14.11	33.292	24.846	310.1	0.066	5.98	102.2	3.7	0.46	0.8	0.06	1.00	0.43	21	218
30 ISL	14.10	14.10	33.297	24.852	309.7	0.094	5.91	100.9	3.9	0.49	1.3	0.07	1.00	0.38	30	
31	14.10	14.10	33.297	24.852	309.7	0.097	5.89	100.6	3.9	0.49	1.3	0.07	1.00	0.38	31	217
40	12.98	12.97	33.174	24.984	297.4	0.124	5.57	92.9	5.3	0.72	4.6	0.09	0.45	0.30	40	216
50	11.94	11.93	33.215	25.216	275.5	0.153	5.05	82.4	8.6	1.01	9.5	0.06	0.20	0.19	50	215
60	11.11	11.10	33.267	25.408	257.3	0.179	4.78	76.6	11.0	1.20	12.8	0.03	0.11	0.15	60	214
70	10.93	10.92	33.378	25.527	246.3	0.205	4.43	70.8	13.0	1.31	14.7	0.03	0.08	0.14	70	213
75 ISL	10.79	10.78	33.434	25.595	239.9	0.217	4.25	67.7	14.1	1.37	15.7	0.03	0.07	0.13	75	
86	10.40	10.39	33.546	25.751	225.3	0.242	3.91	61.8	16.7	1.50	17.9	0.02	0.05	0.09	86	212
100	9.84	9.83	33.651	25.928	208.7	0.273	3.61	56.4	20.5	1.67	20.8	0.02	0.02	0.05	100	211
120	9.77	9.76	33.747	26.015	200.9	0.314	3.30	51.5	22.5	1.77	22.1	0.02	0.01	0.05	121	210
125 ISL	9.76	9.75	33.800	26.058	196.9	0.324	3.11	48.6	23.8	1.83	22.8	0.02	0.01	0.05	126	
139	9.69	9.67	33.951	26.188	184.8	0.350	2.59	40.4	27.6	2.00	24.9	0.01	0.01	0.04	140	209
150 ISL	9.52	9.50	34.007	26.260	178.2	0.370	2.43	37.8	29.6	2.07	26.0	0.01	0.01	0.04	151	
170	9.18	9.16	34.067	26.362	168.8	0.405	2.26	34.9	32.5	2.16	27.4	0.01	0.01	0.03	171	208
200 ISL	9.01	8.99	34.177	26.476	158.6	0.454	1.70	26.2	37.6	2.37	29.5	0.01	0.00	0.03	201	
201	9.01	8.99	34.180	26.478	158.4	0.456	1.68	25.9	37.8	2.38	29.6	0.01	0.00	0.03	202	207
230	8.74	8.72	34.229	26.560	151.2	0.501	1.39	21.3	41.4	2.51	30.7	0.01			231	206
250 ISL	8.40	8.37	34.225	26.609	146.7	0.530	1.33	20.2	44.4	2.57	31.6	0.01			251	
269	8.08	8.05	34.216	26.651	142.9	0.558	1.28	19.3	47.3	2.62	32.5	0.01			271	205
300 ISL	7.84	7.81	34.244	26.708	137.9	0.601	1.02	15.3	51.1	2.73	33.6	0.01			302	
318	7.75	7.72	34.262	26.736	135.5	0.626	0.87	13.0	53.1	2.79	34.2	0.01			320	204
380	7.24	7.20	34.264	26.811	129.1	0.708	0.72	10.6	59.6	2.89	36.0	0.01			382	203
400 ISL	6.98	6.94	34.271	26.853	125.3	0.734	0.62	9.1	63.4	2.96	36.9	0.01			403	
437	6.54	6.50	34.288	26.926	118.6	0.779	0.45	6.5	70.3	3.08	38.5	0.01			440	202
500 ISL	6.25	6.21	34.301	26.974	114.6	0.852	0.37	5.3	74.9	3.12	39.5	0.01			503	
509	6.21	6.16	34.303	26.981	114.0	0.862	0.36	5.2	75.6	3.13	39.6	0.01			512	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
0 ISL	15.04	15.04	33.077	24.482	344.1	0.000	5.90	102.6	0.6	0.41	0.0	0.00	0.19	0.05	0	
1 A	15.04	15.04	33.077	24.482	344.1	0.003	5.90	102.6	0.6	0.41	0.0	0.00	0.19	0.05	1	222
8	14.96	14.96	33.064	24.489	343.6	0.028	5.90	102.4	0.9	0.41	0.0	0.00	0.22	0.06	8	221
10 ISL	14.95	14.95	33.064	24.492	343.5	0.034	5.90	102.4	0.9	0.41	0.0	0.00	0.22	0.06	10	
15 A	14.94	14.94	33.067	24.496	343.2	0.052	5.90	102.4	0.7	0.40	0.0	0.00	0.23	0.07	15	220
20 ISL	14.92	14.92	33.067	24.501	342.9	0.069	5.90	102.3	0.7	0.40	0.0	0.00	0.26	0.08	20	
23	14.91	14.91	33.072	24.507	342.4	0.079	5.90	102.3	0.7	0.40	0.0	0.00	0.30	0.10	23	219
30 ISL	14.76	14.76	33.082	24.547	338.8	0.103	5.97	103.2	0.9	0.42	0.1	0.01	0.49	0.19	30	
31 A	14.72	14.72	33.078	24.552	338.3	0.106	5.98	103.3	0.9	0.42	0.1	0.01	0.52	0.21	31	218
39	14.05	14.04	33.202	24.789	315.9	0.132	5.85	99.8	1.8	0.51	0.7	0.07	0.81	0.54	39	217
48 A	13.23	13.22	33.262	25.003	295.8	0.160	5.52	92.6	4.2	0.74	4.4	0.13	0.62	0.50	48	216
50 ISL	12.93	12.92	33.323	25.110	285.7	0.166	5.29	88.2	5.9	0.86	6.4	0.11	0.53	0.48	50	
56	12.01	12.00	33.505	25.428	255.4	0.182	4.60	75.3	11.1	1.22	12.5	0.05	0.29	0.40	56	215
65 A	11.07	11.06	33.553	25.638	235.6	0.204	4.20	67.4	14.4	1.42	16.2	0.03	0.20	0.31	65	214
75 ISL	10.12	10.11	33.626	25.861	214.6	0.227	3.69	58.0	19.1	1.66	20.4	0.02	0.10	0.13	75	
78	9.90	9.89	33.648	25.915	209.4	0.233	3.56	55.7	20.4	1.72	21.4	0.02	0.07	0.08	78	213
91 A	9.68	9.67	33.710	26.000	201.6	0.260	3.30	51.4	22.4	1.79	22.9	0.01	0.04	0.05	91	212
100 ISL	9.51	9.50	33.766	26.072	194.9	0.277	3.08	47.8	24.2	1.87	24.0	0.01	0.03	0.04	100	
106	9.40	9.39	33.805	26.120	190.4	0.289	2.94	45.6	25.4	1.92	24.8	0.01	0.02	0.04	107	211
120	9.12	9.11	33.882	26.226	180.7	0.315	2.76	42.5	28.2	2.00	26.3	0.01	0.01	0.03	121	210
125 ISL	9.06	9.05	33.900	26.250	178.5	0.324	2.73	42.0	28.8	2.02	26.6	0.01	0.01	0.03	126	
140	8.92	8.91	33.941	26.304	173.6	0.350	2.64	40.5	30.3	2.06	27.2	0.01	0.00	0.03	141	209
150 ISL	8.81	8.79	33.971	26.345	169.9	0.368	2.54	38.9	31.7	2.10	27.8	0.01	0.00	0.03	151	
170	8.61	8.59	34.021	26.416	163.5	0.401	2.35	35.8	34.4	2.18	29.0	0.01	0.00	0.02	171	208
200	8.41	8.39	34.047	26.467	159.1	0.449	2.24	34.0	36.3	2.24	29.8	0.01	0.00	0.02	201	207
229	7.98	7.96	34.054	26.537	152.8	0.495	2.31	34.7	39.9	2.28	30.6	0.01			230	206
250 ISL	7.68	7.66	34.060	26.586	148.4	0.526	2.13	31.8	43.4	2.37	31.8	0.01			251	
269	7.41	7.38	3													

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
31 44.8 N	121 18.8 W	04/02/03	1140	UTC	3649 m	330	05 kn									
0 ISL	15.43	15.43	33.254	24.533	339.2	0.000	5.84	102.5	0.4	0.38	0.1	0.00	0.20	0.05	0	
2	15.43	15.43	33.254	24.533	339.3	0.007	5.84	102.5	0.4	0.38	0.1	0.00	0.20	0.05	2	220
10 ISL	15.43	15.43	33.254	24.533	339.5	0.034	5.84	102.5	0.5	0.38	0.0	0.01	0.20	0.06	10	
11	15.43	15.43	33.254	24.533	339.5	0.037	5.84	102.5	0.5	0.38	0.0	0.01	0.20	0.06	11	219
20 ISL	15.39	15.39	33.251	24.540	339.2	0.068	5.84	102.4	0.5	0.38	0.0	0.01	0.22	0.05	20	
21	15.38	15.38	33.251	24.542	339.0	0.071	5.84	102.3	0.5	0.38	0.0	0.01	0.22	0.05	21	218
30 ISL	15.37	15.37	33.253	24.546	338.9	0.102	5.84	102.3	0.5	0.39	0.0	0.01	0.24	0.08	30	
31	15.37	15.37	33.253	24.546	338.9	0.105	5.84	102.3	0.5	0.39	0.0	0.01	0.24	0.08	31	217
41	15.34	15.33	33.250	24.551	338.8	0.139	5.82	101.9	0.5	0.39	0.0	0.01	0.29	0.10	41	216
50 ISL	13.42	13.41	33.089	24.831	312.2	0.168	5.86	98.6	2.1	0.56	1.6	0.08	0.83	0.51	50	
51	13.18	13.17	33.072	24.866	308.9	0.171	5.86	98.1	2.3	0.59	1.9	0.09	0.88	0.55	51	215
61	11.96	11.95	33.026	25.066	290.0	0.201	5.57	90.8	4.9	0.87	6.4	0.05	0.56	0.46	61	214
71	11.22	11.21	33.073	25.238	273.8	0.230	5.28	84.8	7.5	1.06	9.9	0.02	0.26	0.28	71	213
75 ISL	11.04	11.03	33.126	25.311	266.9	0.240	5.15	82.4	8.6	1.13	11.1	0.02	0.20	0.23	75	
86	10.59	10.58	33.292	25.520	247.2	0.269	4.79	76.0	11.8	1.29	14.3	0.02	0.12	0.12	86	212
100	9.73	9.72	33.448	25.787	222.0	0.302	4.39	68.4	16.1	1.48	18.0	0.02	0.03	0.03	100	211
120	9.34	9.33	33.656	26.014	200.8	0.344	3.70	57.2	21.4	1.71	21.9	0.01	0.01	0.03	121	210
125 ISL	9.24	9.23	33.701	26.065	196.0	0.354	3.58	55.2	22.6	1.75	22.6	0.01	0.01	0.03	126	
140	8.97	8.95	33.819	26.201	183.4	0.382	3.29	50.5	25.9	1.86	24.5	0.01	0.00	0.02	141	209
150 ISL	8.86	8.84	33.882	26.268	177.2	0.400	3.12	47.8	27.8	1.91	25.4	0.01	0.00	0.02	151	
169	8.69	8.67	33.972	26.365	168.3	0.433	2.83	43.2	31.1	2.01	27.0	0.01	0.00	0.02	170	208
200	8.30	8.28	34.039	26.478	158.1	0.484	2.34	35.4	36.9	2.21	29.7	0.01	0.00	0.02	201	207
231	7.79	7.77	34.056	26.567	150.0	0.531	2.12	31.7	42.2	2.34	31.6	0.01			232	206
250 ISL	7.47	7.45	34.048	26.607	146.4	0.560	2.16	32.1	44.7	2.36	32.1	0.01			251	
274	7.13	7.10	34.046	26.653	142.2	0.594	2.20	32.4	47.9	2.39	32.6	0.01			276	205
300 ISL	7.00	6.97	34.093	26.708	137.3	0.630	1.75	25.7	52.4	2.56	34.1	0.01			302	
320	6.93	6.90	34.131	26.748	133.8	0.658	1.36	20.0	56.0	2.70	35.4	0.01			322	204
378	6.33	6.30	34.140	26.835	126.0	0.733	1.07	15.5	64.9	2.85	37.6	0.01			380	203
400 ISL	6.30	6.26	34.178	26.870	123.0	0.760	0.87	12.6	67.5	2.93	38.2	0.01			403	
438	6.26	6.22	34.241	26.925	118.3	0.806	0.53	7.7	71.7	3.05	39.1	0.01			441	202
500 ISL	5.98	5.94	34.296	27.005	111.4	0.877	0.33	4.7	78.6	3.16	40.3	0.01			503	
513	5.92	5.88	34.308	27.022	109.9	0.892	0.29	4.2	80.0	3.18	40.6	0.01			516	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
31 24.7 N	121 59.3 W	04/02/03	0533	UTC	3951 m	030	07 kn									
0 ISL	15.02	15.02	32.927	24.371	354.7	0.000	5.87	101.9	0.6	0.41	0.0	0.00	0.17	0.04	0	
2	15.02	15.02	32.927	24.371	354.8	0.007	5.87	101.9	0.6	0.41	0.0	0.00	0.17	0.04	2	220
10 ISL	14.99	14.99	32.928	24.378	354.3	0.035	5.86	101.7	0.5	0.41	0.0	0.01	0.17	0.05	10	
15	14.96	14.96	32.928	24.385	353.8	0.053	5.86	101.6	0.5	0.41	0.0	0.01	0.17	0.05	15	219
20 ISL	14.94	14.94	32.927	24.389	353.6	0.071	5.86	101.6	0.5	0.41	0.0	0.01	0.17	0.05	20	
30 ISL	14.88	14.88	32.924	24.399	352.9	0.106	5.86	101.5	0.4	0.40	0.0	0.01	0.18	0.05	30	
31	14.87	14.87	32.923	24.401	352.7	0.110	5.86	101.4	0.4	0.40	0.0	0.01	0.18	0.05	31	218
46	14.65	14.64	32.911	24.439	349.5	0.162	5.88	101.3	0.6	0.42	0.1	0.01	0.36	0.15	46	217
50 ISL	14.56	14.55	32.912	24.459	347.7	0.176	5.88	101.1	0.7	0.43	0.1	0.02	0.39	0.18	50	
55	14.40	14.39	32.909	24.491	344.9	0.194	5.88	100.8	0.8	0.45	0.1	0.03	0.42	0.22	55	216
65	13.79	13.78	32.871	24.588	335.8	0.228	5.84	98.8	1.2	0.53	1.0	0.13	0.49	0.26	65	215
75	13.07	13.06	32.830	24.701	325.2	0.261	5.81	96.9	2.1	0.64	2.5	0.10	0.40	0.26	75	214
85	11.23	11.22	32.760	24.993	297.4	0.292	5.71	91.5	4.9	0.90	6.6	0.02	0.20	0.14	85	213
94	10.66	10.65	32.859	25.171	280.6	0.318	5.51	87.3	7.1	1.04	9.4	0.01	0.09	0.08	94	212
100 ISL	10.51	10.50	32.900	25.229	275.2	0.335	5.43	85.7	7.9	1.09	10.4	0.01	0.08	0.06	100	
110	10.40	10.39	32.992	25.319	266.8	0.362	5.29	83.4	9.0	1.14	11.6	0.01	0.05	0.05	110	211
125	10.03	10.02	33.313	25.633	237.3	0.399	4.82	75.5	12.3	1.28	14.6	0.02	0.02	0.02	126	210
145	9.31	9.29	33.432	25.844	217.4	0.445	4.44	68.5	17.7	1.55	19.0	0.01	0.01	0.02	146	209
150 ISL	9.21	9.19	33.494	25.909	211.4	0.456	4.25	65.4	19.2	1.61	20.1	0.01	0.01	0.02	151	
170	8.98	8.96	33.749	26.145	189.3	0.496	3.47	53.2	24.8	1.82	23.7	0.01	0.01	0.02	171	208
199	8.75	8.73	33.927	26.321	173.1	0.548	2.89	44.2	30.1	2.00	26.6	0.01	0.00	0.02	200	207
200 ISL	8.74	8.72	33.931	26.326	172.7	0.550	2.87	43.8	30.3	2.01	26.7	0.01			201	
230	8.31	8.29	34.018	26.460	160.3	0.600	2.49	37.7	36.3	2.17	29.2	0.01			231	206
250 ISL	7.99	7.96	34.042	26.527	154.2	0.631	2.33	35.0	39.9	2.26	30.5	0.01			251	
271	7.67	7.64	34.054	26.583	149.0	0.663	2.17	32.4	43.4	2.34	31.6	0.01			272	205
300 ISL	7.34	7.31	34.069	26.642	143.7	0.706	1.87	27.7	48.0	2.48	33.3	0.01				

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
31 5.0 N	122 39.5 W	03/02/03	2312	UTC	4014 m	350	10 kn	010 05 07	1	1016.5 mb	16.3 C	14.5 C	31m	6/8	CC	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	ug/l	ug/l	ug/l	ug/l	db	ug/l	ug/l	ug/l
0 ISL	16.12	16.12	33.068	24.236	367.6	0.000	5.73	101.8	0.4	0.38	0.1	0.00	0.15	0.03	0	
2	16.12	16.12	33.068	24.236	367.6	0.007	5.73	101.8	0.4	0.38	0.1	0.00	0.15	0.03	2	220
10 ISL	16.05	16.05	33.063	24.248	366.7	0.037	5.74	101.8	0.4	0.38	0.0	0.00	0.15	0.04	10	
16	15.99	15.99	33.059	24.259	365.9	0.059	5.74	101.7	0.4	0.38	0.0	0.00	0.15	0.04	16	219
20 ISL	15.98	15.98	33.059	24.261	365.8	0.073	5.74	101.7	0.5	0.38	0.0	0.00	0.15	0.04	20	
30 ISL	15.97	15.97	33.058	24.263	365.9	0.110	5.74	101.7	0.6	0.38	0.0	0.00	0.16	0.03	30	
31	15.97	15.97	33.058	24.263	365.9	0.114	5.74	101.7	0.6	0.38	0.0	0.00	0.16	0.03	31	218
45	15.95	15.94	33.057	24.267	366.0	0.165	5.73	101.4	0.6	0.38	0.0	0.00	0.17	0.04	45	217
50 ISL	15.95	15.94	33.057	24.267	366.1	0.183	5.74	101.6	0.6	0.38	0.0	0.00	0.17	0.04	50	
60	15.95	15.94	33.056	24.267	366.5	0.220	5.75	101.8	0.5	0.38	0.0	0.00	0.18	0.05	60	216
75	15.93	15.92	33.044	24.263	367.3	0.275	5.74	101.6	0.6	0.39	0.0	0.01	0.21	0.06	75	215
86	14.74	14.73	32.963	24.461	348.6	0.314	5.83	100.7	1.1	0.44	0.0	0.03	0.28	0.20	86	214
96	13.74	13.73	32.937	24.650	330.8	0.348	5.93	100.3	1.8	0.49	0.3	0.14	0.24	0.20	96	213
100 ISL	13.26	13.25	32.884	24.706	325.5	0.361	5.92	99.1	2.1	0.53	0.7	0.15	0.23	0.19	100	
106	12.60	12.59	32.812	24.780	318.5	0.381	5.91	97.5	2.7	0.61	1.6	0.17	0.20	0.18	106	212
116	11.98	11.97	32.820	24.903	306.8	0.412	5.78	94.1	3.7	0.72	4.1	0.04	0.14	0.17	116	211
125	12.75	12.73	33.205	25.055	292.8	0.439	5.48	90.9	4.3	0.69	4.3	0.08	0.13	0.11	126	210
140	11.75	11.73	33.266	25.293	270.3	0.481	5.09	82.7	7.2	0.97	8.9	0.03	0.10	0.11	141	209
150 ISL	11.12	11.10	33.392	25.506	250.2	0.507	4.59	73.7	10.8	1.21	12.8	0.02	0.07	0.09	151	
164	10.33	10.31	33.585	25.795	222.8	0.540	3.90	61.6	16.3	1.51	18.0	0.01	0.03	0.05	165	208
194	9.13	9.11	33.765	26.134	190.9	0.602	3.48	53.6	23.7	1.77	23.0	0.01	0.00	0.03	195	207
200 ISL	9.05	9.03	33.799	26.173	187.2	0.614	3.39	52.1	24.7	1.81	23.6	0.01			201	
230	8.86	8.84	33.936	26.311	174.7	0.668	2.95	45.2	29.2	1.96	26.1	0.01			231	206
250 ISL	8.52	8.49	33.993	26.409	165.7	0.702	2.75	41.8	33.1	2.06	27.7	0.01			251	
269	8.16	8.13	34.028	26.491	158.0	0.733	2.58	38.9	37.0	2.15	29.1	0.01			270	205
300 ISL	7.64	7.61	34.053	26.587	149.2	0.780	2.19	32.6	43.4	2.33	31.6	0.01			302	
319	7.35	7.32	34.058	26.633	145.0	0.808	1.95	28.9	47.2	2.44	33.0	0.01			321	204
378	6.65	6.62	34.076	26.743	135.0	0.891	1.46	21.3	57.2	2.69	36.0	0.01			380	203
400 ISL	6.46	6.42	34.088	26.778	131.8	0.920	1.28	18.6	60.7	2.77	37.0	0.01			402	
437	6.19	6.15	34.116	26.835	126.7	0.968	1.00	14.4	66.6	2.89	38.5	0.01			440	202
500 ISL	5.82	5.78	34.192	26.942	117.1	1.045	0.59	8.4	76.7	3.07	40.3	0.01			503	
514	5.74	5.70	34.209	26.966	115.0	1.061	0.50	7.1	78.9	3.11	40.7	0.01			517	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
30 45.3 N	123 20.0 W	03/02/03	1741	UTC	4029 m	070	12 kn	350 08 08	1	1018.4 mb	15.8 C	14.8 C	28m	3/8	ST	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	ug/l	ug/l	ug/l	ug/l	db	ug/l	ug/l	ug/l
0 ISL	15.79	15.79	33.010	24.265	364.8	0.000	5.80	102.3	0.6	0.39	0.1	0.00	0.15	0.04	0	
2 A	15.79	15.79	33.010	24.265	364.8	0.007	5.80	102.3	0.6	0.39	0.1	0.00	0.15	0.04	2	222
10 ISL	15.78	15.78	33.010	24.268	364.8	0.036	5.77	101.8	0.6	0.39	0.1	0.00	0.16	0.04	10	
17 A	15.77	15.77	33.010	24.270	364.8	0.062	5.75	101.4	0.5	0.39	0.0	0.00	0.16	0.04	17	221
20 ISL	15.77	15.77	33.010	24.270	364.9	0.073	5.75	101.4	0.5	0.39	0.0	0.00	0.16	0.04	20	
27	15.77	15.77	33.009	24.270	365.1	0.099	5.76	101.6	0.5	0.39	0.0	0.00	0.15	0.04	27	220
30 ISL	15.77	15.77	33.009	24.270	365.2	0.109	5.76	101.6	0.5	0.39	0.0	0.00	0.15	0.04	30	
35 A	15.77	15.76	33.009	24.270	365.4	0.128	5.76	101.6	0.5	0.39	0.0	0.00	0.16	0.04	35	219
47	15.77	15.76	33.010	24.271	365.6	0.172	5.76	101.6	0.4	0.40	0.0	0.00	0.16	0.04	47	218
50 ISL	15.77	15.76	33.010	24.271	365.7	0.183	5.76	101.6	0.4	0.40	0.0	0.00	0.16	0.04	50	
57 A	15.77	15.76	33.009	24.271	366.0	0.208	5.76	101.6	0.3	0.39	0.0	0.00	0.15	0.05	57	217
66	15.67	15.66	33.007	24.292	364.2	0.241	5.78	101.7	0.2	0.39	0.0	0.00	0.16	0.06	66	216
75 ISL	15.25	15.24	33.095	24.453	349.2	0.273	5.81	101.4	0.7	0.41	0.1	0.02	0.22	0.12	75	
77 A	15.16	15.15	33.134	24.502	344.5	0.280	5.82	101.5	0.9	0.42	0.1	0.03	0.23	0.14	77	215
86	12.87	12.86	32.865	24.768	319.1	0.310	5.95	98.8	2.0	0.56	1.0	0.19	0.19	0.21	86	214
95	12.04	12.03	32.781	24.861	310.3	0.338	5.86	95.6	2.8	0.69	3.1	0.06	0.17	0.23	95	213
100 ISL	11.74	11.73	32.786	24.921	304.7	0.354	5.79	93.8	3.3	0.74	4.3	0.05	0.15	0.20	100	
106 A	11.51	11.50	32.813	24.984	298.8	0.372	5.71	92.1	4.0	0.80	5.6	0.03	0.12	0.15	106	212
116	11.33	11.33	32.845 D	25.040	293.7	0.401									116	211
125	11.09	11.07	32.913	25.138	284.5	0.427	5.53	88.4	5.4	0.94	8.2	0.02	0.07	0.09	126	210
144	10.51	10.49	33.183	25.450	255.1	0.479	5.10	80.7	9.1	1.18	12.7	0.01	0.03	0.03	145	209
150 ISL	10.32	10.30	33.246	25.532	247.5	0.494	4.97	78.3	10.2	1.23	13.7	0.01	0.02	0.03	151	
170	9.74	9.72	33.430	25.773	224.8	0.541	4.53	70.5	14.2	1.39	16.7	0.01	0.01	0.02	171	208
199	9.23	9.21	33.699	26.067	197.4	0.602	3.76	58.0	20.7	1.68	21.5	0.01	0.01	0.02	200	207
200 ISL	9.22	9.20	33.707	26.074	196.7	0.604	3									

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
					m	010	26 kn			1018.9 mb	14.1 C	13.1 C				
30 25.4 N	123 59.4 W	03/02/03	0726	UTC	4221 m											
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN	OXY	SI03	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C					ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
0 ISL	17.03	17.03	33.287	24.194	371.6	0.000	5.63	102.0	0.8	0.36	0.1	0.01	0.12	0.03	0	
2	17.03	17.03	33.287	24.194	371.6	0.007	5.63	102.0	0.8	0.36	0.1	0.01	0.12	0.03	2	220
10 ISL	17.03	17.03	33.291	24.197	371.6	0.037	5.64	102.1	0.8	0.36	0.1	0.01	0.11	0.03	10	
17	17.03	17.03	33.294	24.200	371.6	0.063	5.64	102.1	0.8	0.36	0.1	0.01	0.11	0.03	17	219
20 ISL	17.03	17.03	33.293	24.199	371.7	0.074	5.64	102.1	0.8	0.36	0.1	0.01	0.11	0.03	20	
30 ISL	17.04	17.04	33.290	24.195	372.5	0.112	5.63	102.0	0.8	0.36	0.0	0.01	0.12	0.03	30	
32	17.04	17.03	33.289	24.194	372.6	0.119	5.63	102.0	0.8	0.36	0.0	0.01	0.12	0.03	32	218
47	17.04	17.03	33.288	24.194	373.1	0.175	5.63	102.0	0.8	0.36	0.0	0.01	0.11	0.03	47	217
50 ISL	16.96	16.95	33.273	24.201	372.5	0.186	5.64	102.0	0.7	0.36	0.0	0.01	0.12	0.04	50	
56	16.81	16.80	33.244	24.214	371.5	0.208	5.65	101.8	0.6	0.37	0.0	0.01	0.14	0.05	56	216
64	15.44	15.43	33.034	24.364	357.3	0.238	5.85	102.5	0.7	0.42	0.0	0.01	0.26	0.19	64	215
74	14.32	14.31	32.942	24.533	341.3	0.272	5.96	102.0	1.4	0.47	0.1	0.03	0.35	0.25	74	214
75 ISL	14.17	14.16	32.929	24.555	339.3	0.276	5.96	101.7	1.5	0.48	0.1	0.04	0.35	0.25	75	
83	13.03	13.02	32.843	24.719	323.7	0.302	5.98	99.6	2.2	0.56	0.9	0.14	0.29	0.26	83	213
96	11.92	11.91	32.856	24.942	302.6	0.343	5.74	93.4	3.7	0.71	4.1	0.06	0.18	0.22	96	212
100 ISL	11.72	11.71	32.891	25.006	296.6	0.355	5.66	91.7	4.3	0.76	5.1	0.04	0.15	0.19	100	
109	11.39	11.38	32.983	25.138	284.2	0.381	5.48	88.2	5.6	0.87	7.2	0.02	0.10	0.12	109	211
124	10.94	10.93	33.094	25.305	268.6	0.423	5.31	84.7	7.5	1.01	9.9	0.02	0.06	0.06	125	210
125 ISL	10.90	10.88	33.107	25.323	266.9	0.425	5.31	84.7	7.7	1.02	10.1	0.02	0.06	0.06	126	
146	10.06	10.04	33.388	25.686	232.6	0.478	5.30	83.1	12.7	1.26	14.7	0.01	0.02	0.03	147	209
150 ISL	9.94	9.92	33.432	25.741	227.5	0.487	5.25	82.1	13.8	1.32	15.7	0.01	0.02	0.03	151	
174	9.40	9.38	33.650	26.000	203.2	0.539	4.71	72.9	20.4	1.64	21.0	0.01	0.00	0.01	175	208
200	9.06	9.04	33.825	26.192	185.4	0.589	3.80	58.4	25.6	1.83	24.1	0.01	0.00	0.01	201	207
231	8.71	8.69	33.962	26.355	170.5	0.644	2.94	44.9	31.0	2.00	26.9	0.01			232	206
250 ISL	8.41	8.38	34.003	26.433	163.3	0.676	2.79	42.3	33.8	2.06	27.8	0.01			251	
266	8.14	8.11	34.022	26.489	158.1	0.702	2.75	41.5	36.3	2.10	28.5	0.01			267	205
300 ISL	7.54	7.51	34.036	26.588	149.0	0.754	2.44	36.3	42.9	2.28	30.8	0.01			302	
320	7.20	7.17	34.036	26.636	144.6	0.783	2.24	33.1	47.0	2.39	32.2	0.01			322	204
377	6.46	6.43	34.047	26.745	134.5	0.863	1.82	26.4	57.0	2.59	35.2	0.01			379	203
400 ISL	6.26	6.22	34.059	26.781	131.4	0.894	1.60	23.1	61.1	2.68	36.4	0.01			402	
437	5.99	5.95	34.084	26.835	126.5	0.941	1.23	17.6	68.0	2.83	38.1	0.01			440	202
500 ISL	5.44	5.40	34.146	26.952	115.7	1.018	0.75	10.6	81.0	3.04	40.7	0.01			503	
505	5.40	5.36	34.151	26.961	114.9	1.023	0.71	10.0	82.0	3.06	40.9	0.01			508	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
					m	350	04 kn			1016.0 mb	15.0 C	15.0 C		8/8	ST	
32 57.7 N	117 18.3 W	30/01/03	2218	UTC	59 m											
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN	OXY	SI03	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C					ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
0 ISL	15.67	15.67	33.364	24.564	336.3	0.000	6.17	108.8	3.4	0.31	0.0	0.00	0.99	0.12	0	
2	15.67	15.67	33.364	24.564	336.3	0.007	6.17	108.8	3.4	0.31	0.0	0.00	0.99	0.12	2	207
6	15.60	15.60	33.364	24.580	334.9	0.020	6.18	108.9	3.3	0.31	0.0	0.00	0.93	0.17	6	206
10 ISL	15.38	15.38	33.360	24.626	330.7	0.033	6.15	107.9	3.3	0.31	0.0	0.00	0.96	0.21	10	
11	15.29	15.29	33.358	24.644	329.0	0.037	6.14	107.5	3.3	0.31	0.0	0.00	0.98	0.22	11	205
20 ISL	13.81	13.81	33.296	24.911	303.8	0.065	5.33	90.5	5.3	0.67	3.4	0.01	1.16	0.60	20	
21	13.64	13.64	33.290	24.941	300.9	0.068	5.23	88.5	5.5	0.71	3.8	0.01	1.17	0.64	21	204
30 ISL	13.36	13.36	33.295	25.002	295.4	0.095	5.08	85.5	6.0	0.79	5.2	0.01	0.90	0.69	30	
31	13.36	13.36	33.298	25.004	295.2	0.098	5.07	85.3	6.0	0.79	5.3	0.01	0.86	0.70	31	203
41	12.77	12.76	33.365	25.173	279.4	0.127	4.61	76.6	8.1	0.99	8.6	0.01	0.47	0.40	41	202
50 ISL	12.65	12.64	33.398	25.223	274.9	0.152	4.36	72.3	9.2	1.09	10.0	0.01	0.33	0.32	50	
51	12.64	12.63	33.402	25.228	274.4	0.154	4.33	71.8	9.3	1.10	10.1	0.01	0.31	0.31	51	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
					m	330	05 kn			1016.4 mb	15.0 C	14.1 C		8/8	ST	
32 54.7 N	117 23.6 W	31/01/03	0107	UTC	604 m											
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN	OXY	SI03	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C					ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
0 ISL	15.91	15.91	33.397	24.536	339.0	0.000	5.89	104.4	2.7	0.34	0.0	0.00	0.21	0.05	0	
2	15.91	15.91	33.397	24.536	339.0	0.007	5.89	104.4	2.7	0.34	0.0	0.00	0.21	0.05	2	220
10 ISL	15.82	15.82	33.398	24.557	337.2	0.034	5.89	104.2	2.6	0.34	0.0	0.00	0.21	0.04	10	
11	15.80	15.80	33.397	24.561	336.9	0.037	5.89	104.2	2.6	0.34	0.0	0.00	0.21	0.04	11	219
20 ISL	15.56	15.56	33.373	24.596	333.8	0.067	5.93	104.4	2.9	0.34	0.0	0.00	0.28	0.10	20	
21	15.51	15.51	33.369	24.604	333.1	0.071	5.93	104.3	3.0	0.34	0.0	0.00	0.2			

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP	
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	um/l	um/l	um/l	um/l	ug/l	ug/l	db		
32 50.9 N	117 31.9 W	31/01/03	0439	UTC	843 m	020	02 kn										
0 ISL	15.80	15.80	33.394	24.558	336.8	0.000	5.95	105.3	2.6	0.32	0.1	0.00	0.23	0.05	0		
2	15.80	15.80	33.394	24.558	336.9	0.007	5.95	105.3	2.6	0.32	0.1	0.00	0.23	0.05	2	221	
10	15.78	15.78	33.391	24.561	336.9	0.034	5.98	105.7	2.7	0.32	0.1	0.00	0.25	0.05	10	220	
20	15.40	15.40	33.366	24.626	331.0	0.067	6.00	105.3	2.9	0.32	0.0	0.00	0.32	0.09	20	219	
30	14.86	14.86	33.345	24.728	321.5	0.100	6.03	104.6	3.6	0.34	0.0	0.01	0.62	0.26	30	218	
40	13.54	13.53	33.289	24.961	299.6	0.131	5.30	89.5	5.3	0.71	4.0	0.11	0.88	0.59	40	217	
50	12.76	12.75	33.349	25.163	280.6	0.160	4.78	79.4	7.5	0.97	8.0	0.05	0.46	0.34	50	216	
60	12.32	12.31	33.435	25.315	266.3	0.187	4.40	72.5	9.5	1.11	10.8	0.03	0.20	0.21	60	214	
60	12.32	12.31	33.435	25.315	266.3	0.187	4.40	72.5	9.6	1.11	10.8	0.03	0.20	0.23	60	215	
70	11.91	11.90	33.497	25.441	254.6	0.213	4.10	67.0	11.5	1.24	13.0	0.02	0.12	0.14	70	213	
75 ISL	11.75	11.74	33.536	25.501	249.0	0.226	3.96	64.5	12.5	1.30	14.0	0.02	0.09	0.11	75		
85	11.46	11.45	33.624	25.623	237.6	0.250	3.68	59.6	14.5	1.43	15.8	0.01	0.03	0.07	85	212	
100	11.06	11.05	33.765 D	25.806	220.5	0.284										100	211
120	10.84	10.83	33.926	25.971	205.3	0.327	2.57	41.1	22.3	1.88	21.8	0.01	0.00	0.04	121	210	
125 ISL	10.82	10.80	33.947	25.991	203.5	0.337	2.50	40.0	22.8	1.91	22.2	0.01	0.00	0.04	126		
140	10.71	10.69	33.994	26.047	198.5	0.367	2.32	37.0	24.4	1.98	23.2	0.01	0.00	0.04	141	209	
150 ISL	10.48	10.46	34.034	26.119	191.9	0.387	2.19	34.8	26.3	2.04	24.3	0.01	0.00	0.04	151		
169	10.05	10.03	34.115	26.256	179.2	0.422	1.91	30.1	30.0	2.17	26.3	0.01	0.00	0.03	170	208	
199	10.00	9.98	34.238	26.361	169.9	0.475	1.42	22.4	33.8	2.37	27.9	0.01	0.00	0.03	200	207	
200 ISL	9.99	9.97	34.239	26.364	169.6	0.476	1.42	22.3	33.9	2.37	27.9	0.01			201		
229	9.70	9.67	34.253	26.424	164.5	0.525	1.36	21.3	35.6	2.41	28.7	0.01			230	206	
250 ISL	9.57	9.54	34.271	26.460	161.4	0.559	1.28	20.0	36.9	2.46	29.1	0.01			251		
268	9.47	9.44	34.285	26.487	159.2	0.588	1.21	18.8	38.2	2.50	29.4	0.01			270	205	
300 ISL	9.19	9.16	34.298	26.544	154.4	0.638	1.10	17.0	40.8	2.57	30.2	0.01			302		
318	8.99	8.96	34.301	26.578	151.3	0.665	1.04	16.0	42.5	2.61	30.8	0.01			320	204	
377	8.18	8.14	34.304	26.706	139.7	0.751	0.79	11.9	50.3	2.77	33.1	0.01			379	203	
400 ISL	7.84	7.80	34.293	26.748	135.9	0.783	0.74	11.1	53.6	2.82	34.1	0.01			403		
437	7.33	7.29	34.277	26.809	130.3	0.832	0.66	9.8	59.0	2.89	35.6	0.01			440	202	
500 ISL	6.73	6.68	34.298	26.909	121.3	0.911	0.43	6.3	68.7	3.04	37.8	0.01			503		
515	6.59	6.54	34.304	26.932	119.1	0.930	0.38	5.5	71.0	3.07	38.3	0.01			518	201	

RV DAVID STARR JORDAN

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STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	um/l	um/l	um/l	um/l	ug/l	ug/l	db	
32 40.9 N	117 52.5 W	31/01/03	0853	UTC	621 m	320	11 kn									
0 ISL	15.82	15.82	33.368	24.534	339.2	0.000	5.93	104.9	2.1	0.34	0.0	0.00	0.18	0.06	0	
2	15.82	15.82	33.368	24.534	339.2	0.007	5.93	104.9	2.1	0.34	0.0	0.00	0.18	0.06	2	220
10 ISL	15.81	15.81	33.368	24.536	339.2	0.034	5.95	105.3	2.1	0.32	0.0	0.00	0.17	0.06	10	
12	15.81	15.81	33.368	24.536	339.3	0.041	5.96	105.4	2.1	0.32	0.0	0.00	0.17	0.06	12	219
20 ISL	15.39	15.39	33.351	24.617	331.8	0.068	6.03	105.8	2.3	0.34	0.0	0.01	0.21	0.09	20	
21	15.32	15.32	33.348	24.630	330.6	0.071	6.03	105.6	2.4	0.35	0.0	0.01	0.22	0.10	21	218
30 ISL	14.52	14.52	33.311	24.775	317.1	0.100	5.82	100.3	3.2	0.45	0.4	0.07	0.47	0.22	30	
32	14.30	14.30	33.303	24.815	313.3	0.106	5.77	99.0	3.4	0.47	0.5	0.08	0.52	0.25	32	217
40	13.19	13.18	33.295	25.036	292.4	0.131	5.08	85.2	4.3	0.81	5.8	0.30	0.58	0.29	40	216
50	12.42	12.41	33.341	25.223	274.9	0.159	4.71	77.7	8.4	1.02	9.5	0.05	0.50	0.36	50	215
60	11.92	11.91	33.423	25.381	260.0	0.186	4.34	70.9	10.6	1.18	12.0	0.03	0.23	0.22	60	214
70	11.73	11.72	33.526	25.497	249.2	0.211	3.94	64.1	12.8	1.32	14.0	0.02	0.14	0.15	70	213
75 ISL	11.62	11.61	33.560	25.544	244.9	0.223	3.84	62.4	13.5	1.36	14.7	0.02	0.10	0.12	75	
85	11.33	11.32	33.626	25.649	235.1	0.247	3.64	58.8	15.1	1.45	16.1	0.02	0.05	0.08	85	212
99	10.74	10.73	33.772	25.868	214.5	0.279	3.07	49.0	19.8	1.70	19.8	0.02	0.02	0.06	99	211
100 ISL	10.72	10.71	33.780	25.878	213.6	0.281	3.04	48.5	20.1	1.71	20.0	0.02	0.02	0.06	100	
119	10.46	10.45	33.903	26.019	200.6	0.320	2.59	41.1	23.9	1.91	22.4	0.01	0.01	0.06	120	210
125 ISL	10.41	10.40	33.939	26.056	197.2	0.332	2.47	39.2	24.9	1.96	23.1	0.01	0.01	0.05	126	
140	10.29	10.27	34.021	26.141	189.5	0.361	2.19	34.7	27.2	2.07	24.6	0.01	0.01	0.04	141	209
150 ISL	10.20	10.18	34.071	26.196	184.5	0.380	2.03	32.1	28.7	2.14	25.4	0.01	0.01	0.03	151	
169	10.04	10.02	34.149	26.284	176.5	0.414	1.79	28.2	31.3	2.24	26.7	0.01	0.01	0.03	170	208
199	9.81	9.79	34.220	26.379	168.1	0.466	1.54	24.1	34.3	2.35	28.0	0.01			200	207
200 ISL	9.80	9.78	34.222	26.382	167.8	0.468	1.53	24.0	34.4	2.35	28.0	0.01			201	
228	9.59	9.56	34.274	26.458	161.1	0.514	1.33	20.8	37.0	2.46	28.9	0.01			229	206
250 ISL	9.41	9.38	34.293	26.503	157.2	0.549	1.22	19.0	38.8	2.52	29.5	0.01			251	
268	9.25	9.22	34.300	26.535	154.6	0.577	1.15	17.8	40.3	2.56	30.0	0.01			270	205
300 ISL	8.98	8.95	34.311	26.587	150.1	0.626	1.03	15.9	42.8	2.63	30.8	0.01			302	
318	8.78	8.75	34.311	26.619	147.3	0.652	0.97	14.9	44.7	2.67	31.3	0.01			320	204

RV DAVID STARR JORDAN

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STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
32	30.7 N	118 12.8 W	31/01/03	1246	UTC	1658 m	360	06 kn		1016.0 mb	17.2	C 16.2 C				
0	ISL	15.85	15.85	33.414	24.563	336.4	0.000	5.88	104.1	2.8	0.34	0.1	0.00	0.18	0.04	0
2		15.85	15.85	33.414	24.563	336.5	0.007	5.88	104.1	2.8	0.34	0.1	0.00	0.18	0.04	2 220
10		15.84	15.84	33.407	24.560	337.0	0.034	5.85	103.6	2.8	0.32	0.1	0.00	0.18	0.04	10 219
20		15.76	15.76	33.409	24.580	335.4	0.067	5.85	103.4	2.8	0.33	0.1	0.00	0.20	0.06	20 218
30		15.29	15.29	33.370	24.654	328.6	0.100	5.90	103.3	3.2	0.34	0.1	0.00	0.28	0.10	30 217
40		14.32	14.31	33.321	24.825	312.6	0.133	5.66	97.1	4.3	0.48	1.1	0.13	0.59	0.25	40 216
50		13.86	13.85	33.307	24.910	304.7	0.163	5.43	92.3	5.0	0.61	2.7	0.20	0.58	0.29	50 215
60		13.14	13.13	33.314	25.061	290.6	0.193	5.05	84.6	6.4	0.84	6.0	0.12	0.72	0.36	60 214
70		12.72	12.71	33.334	25.160	281.4	0.222	4.82	80.0	7.5	0.93	7.9	0.06	0.52	0.34	70 213
75	ISL	12.51	12.50	33.368	25.227	275.1	0.236	4.68	77.4	8.2	1.00	9.0	0.04	0.39	0.31	75
84		12.15	12.14	33.448	25.358	262.9	0.260	4.38	71.9	10.0	1.14	11.3	0.02	0.19	0.23	84 212
99		11.63	11.62	33.589	25.565	243.5	0.298	3.64	59.1	14.4	1.42	15.6	0.01	0.07	0.12	99 211
100	ISL	11.61	11.60	33.595	25.574	242.7	0.300	3.61	58.6	14.6	1.43	15.8	0.01	0.07	0.11	100
119		11.21	11.20	33.715	25.740	227.2	0.345	3.12	50.3	18.1	1.63	18.5	0.01	0.02	0.05	120 210
125	ISL	11.03	11.01	33.776	25.820	219.8	0.358	2.98	47.8	19.6	1.71	19.6	0.01	0.02	0.05	126
138		10.63	10.61	33.906	25.993	203.6	0.386	2.72	43.3	22.9	1.87	21.9	0.01	0.01	0.04	139 209
150	ISL	10.32	10.30	33.978	26.103	193.3	0.410	2.52	39.9	25.6	1.97	23.5	0.01	0.01	0.03	151
168		9.97	9.95	34.049	26.218	182.7	0.444	2.27	35.7	28.9	2.07	25.2	0.01	0.01	0.03	169 208
199		9.80	9.78	34.131	26.311	174.5	0.499	1.95	30.5	31.8	2.21	26.7	0.02	0.00	0.03	200 207
200	ISL	9.79	9.77	34.135	26.316	174.1	0.501	1.94	30.4	31.9	2.22	26.8	0.02			201
228		9.56	9.53	34.233	26.431	163.7	0.548	1.57	24.5	35.7	2.38	28.5	0.01			229 206
250	ISL	9.43	9.40	34.271	26.483	159.2	0.583	1.38	21.5	37.6	2.46	29.3	0.01			251
268		9.30	9.27	34.285	26.515	156.5	0.612	1.26	19.5	39.2	2.51	29.8	0.01			270 205
300	ISL	8.79	8.76	34.295	26.605	148.3	0.661	1.07	16.4	43.7	2.62	31.3	0.01			302
318		8.48	8.45	34.296	26.654	143.8	0.687	0.98	14.9	46.4	2.68	32.1	0.01			320 204
377		7.98	7.94	34.306	26.738	136.6	0.770	0.78	11.7	52.6	2.81	33.7	0.01			379 203
400	ISL	7.69	7.65	34.301	26.776	133.1	0.801	0.71	10.6	56.0	2.87	34.7	0.01			403
438		7.20	7.16	34.293	26.840	127.3	0.850	0.60	8.9	61.7	2.96	36.3	0.01			441 202
500	ISL	6.71	6.66	34.306	26.918	120.4	0.927	0.45	6.6	69.0	3.07	38.2	0.01			503
515		6.59	6.54	34.309	26.937	118.8	0.945	0.41	6.0	70.8	3.10	38.6	0.01			518 201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
32	21.0 N	118 33.4 W	31/01/03	1803	UTC	1328 m	010	06 kn	300 01 05	1	1016.0 mb	18.0	C 17.5 C	34m	7/8	CS
0	ISL	16.15	16.15	33.418	24.498	342.6	0.000	5.79	103.2	2.8	0.35	0.0	0.00	0.19	0.04	0
2	A	16.15	16.15	33.418	24.498	342.7	0.007	5.79	103.2	2.8	0.35	0.0	0.00	0.19	0.04	2 222
10	ISL	16.10	16.10	33.413	24.506	342.2	0.034	5.78	102.9	2.8	0.35	0.0	0.00	0.20	0.04	10
11		16.09	16.09	33.412	24.507	342.0	0.038	5.78	102.8	2.8	0.35	0.0	0.00	0.20	0.04	11 221
20	ISL	16.04	16.04	33.406	24.514	341.7	0.068	5.80	103.1	2.7	0.35	0.0	0.01	0.22	0.05	20
21	A	16.03	16.03	33.407	24.517	341.4	0.072	5.80	103.1	2.7	0.35	0.0	0.01	0.22	0.05	21 220
30	ISL	15.68	15.68	33.356	24.557	337.9	0.102	5.84	103.0	2.8	0.37	0.0	0.01	0.30	0.10	30
32		15.60	15.60	33.345	24.566	337.1	0.109	5.85	103.0	2.8	0.37	0.0	0.01	0.32	0.11	32 219
44	A	15.48	15.47	33.339	24.589	335.3	0.150	5.89	103.5	2.8	0.37	0.1	0.01	0.43	0.15	44 218
50	ISL	14.82	14.81	33.291	24.696	325.2	0.169	5.83	101.0	3.3	0.43	0.2	0.03	0.74	0.22	50
51		14.69	14.68	33.281	24.716	323.3	0.173	5.82	100.6	3.4	0.44	0.2	0.03	0.79	0.23	51 217
59		13.69	13.68	33.202	24.864	309.4	0.198	5.69	96.3	4.4	0.58	1.8	0.08	0.77	0.35	59 216
68	A	13.12	13.11	33.181	24.963	300.2	0.225	5.50	92.0	5.4	0.70	3.7	0.11	0.67	0.41	68 215
75	ISL	12.68	12.67	33.240	25.095	287.7	0.246	5.17	85.7	7.0	0.86	6.4	0.08	0.47	0.38	75
80		12.44	12.43	33.305	25.192	278.6	0.260	4.89	80.7	8.2	0.97	8.4	0.05	0.33	0.34	80 214
92	A	12.44	12.43	33.469	25.319	266.8	0.293	4.32	71.3	10.4	1.13	10.8	0.03	0.20	0.22	92 213
100	ISL	11.96	11.95	33.494	25.430	256.4	0.314	4.19	68.5	11.8	1.22	12.6	0.02	0.12	0.15	100
105		11.58	11.57	33.503	25.508	249.0	0.326	4.14	67.1	12.7	1.28	13.7	0.02	0.08	0.11	105 212
116		10.87	10.86	33.581	25.697	231.2	0.353	3.95	63.1	15.3	1.41	16.3	0.02	0.03	0.05	117 211
125	ISL	10.66	10.65	33.635	25.776	223.9	0.373	3.77	60.0	16.7	1.48	17.5	0.02	0.02	0.04	126
130	A	10.59	10.57	33.668	25.814	220.4	0.384	3.66	58.2	17.6	1.52	18.1	0.02	0.02	0.04	131 210
144		10.10	10.08	33.812	26.011	201.9	0.414	3.24	51.0	22.0	1.74	21.3	0.02	0.01	0.04	145 209
150	ISL	10.06	10.04	33.851	26.048	198.4	0.426	3.16	49.7	22.8	1.77	21.9	0.02	0.01	0.04	151
170		9.91	9.89	33.916	26.124	191.6	0.465	2.91	45.6	24.8	1.86	23.1	0.02	0.00	0.03	171 208
200		9.71	9.69	34.131	26.326	173.1	0.520	2.00	31.3	32.2	2.32	26.9	0.02	0.00	0.02	201 207
229		8.85	8.83	34.106	26.446	161.9	0.568	2.17	33.3	36.2	2.21	28.6	0.01			230 206
250	ISL	8.61	8.58	34.148	26.517	155.5	0.601	1.91	29.1	39.6	2.32	29.8	0.01			251
269	</td															

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
32	10.8 N	118 53.4 W	31/01/03	2111	UTC	1459 m	020	10 kn	310 02 07	1	1014.3 mb	19.5 C	18.0 C	27m	2/8	CI
0	ISL	15.20	15.20	33.244	24.576	335.2	0.000	5.95	103.9	2.5	0.39	0.0	0.00	0.18	0.03	0
1		15.20	15.20	33.244	24.576	335.2	0.003	5.95	103.9	2.5	0.39	0.0	0.00	0.18	0.03	1 220
10	ISL	15.11	15.11	33.280	24.623	330.9	0.033	5.96	103.9	2.6	0.38	0.0	0.00	0.20	0.03	10
11		15.09	15.09	33.285	24.632	330.2	0.037	5.96	103.9	2.6	0.38	0.0	0.00	0.20	0.03	11 219
20		14.98	14.98	33.281	24.653	328.4	0.066	5.97	103.8	2.6	0.38	0.0	0.00	0.22	0.04	20 218
30		14.55	14.55	33.252	24.723	322.0	0.099	6.06	104.4	2.5	0.39	0.0	0.00	0.27	0.08	30 217
41		14.32	14.31	33.242	24.764	318.4	0.134	6.02	103.3	2.7	0.44	0.2	0.05	0.68	0.22	41 216
50		13.67	13.66	33.189	24.858	309.7	0.162	5.78	97.8	3.8	0.57	2.2	0.20	0.60	0.31	50 215
60		12.52	12.51	33.105	25.021	294.3	0.192	5.50	90.8	5.7	0.78	5.6	0.08	0.35	0.27	60 214
70		11.97	11.96	33.132	25.146	282.6	0.221	5.30	86.5	7.2	0.92	7.9	0.04	0.20	0.23	70 213
75	ISL	11.85	11.84	33.185	25.210	276.6	0.235	5.12	83.4	8.2	0.99	9.0	0.04	0.17	0.21	75
85		11.53	11.52	33.297	25.356	262.9	0.262	4.77	77.2	10.5	1.13	11.6	0.03	0.13	0.15	85 212
100		10.08	10.07	33.375	25.672	233.0	0.299	4.54	71.2	15.2	1.42	16.6	0.02	0.04	0.05	100 211
121		9.35	9.34	33.553	25.932	208.6	0.346	4.10	63.4	20.0	1.60	20.0	0.02	0.01	0.03	122 210
125	ISL	9.25	9.24	33.590	25.977	204.4	0.354	4.02	62.0	20.9	1.63	20.6	0.02	0.01	0.03	126
141		8.93	8.91	33.735	26.141	189.0	0.386	3.70	56.7	24.6	1.74	22.7	0.01	0.00	0.01	142 209
150	ISL	8.84	8.82	33.809	26.214	182.3	0.402	3.45	52.8	26.8	1.83	24.0	0.01	0.00	0.01	151
170		8.73	8.71	33.936	26.330	171.6	0.438	2.96	45.2	30.9	2.01	26.3	0.01	0.00	0.01	171 208
200		8.58	8.56	33.997	26.402	165.4	0.488	2.75	41.9	33.6	2.06	27.5	0.01	0.00	0.01	201 207
230		8.20	8.18	34.043	26.496	156.9	0.537	2.60	39.3	38.0	2.15	28.9	0.01			231 206
250	ISL	8.28	8.25	34.113	26.539	153.2	0.568	2.16	32.7	40.5	2.29	29.9	0.01			251
268		8.39	8.36	34.179	26.575	150.3	0.595	1.70	25.8	42.7	2.43	30.7	0.01			270 205
300	ISL	8.24	8.21	34.249	26.653	143.4	0.642	1.18	17.9	47.6	2.63	32.2	0.01			302
319		8.07	8.04	34.273	26.698	139.4	0.669	0.97	14.6	50.4	2.72	33.0	0.01			321 204
377		7.54	7.50	34.275	26.777	132.5	0.748	0.77	11.5	56.6	2.84	34.8	0.01			379 203
400	ISL	7.33	7.29	34.275	26.807	129.9	0.778	0.71	10.5	59.2	2.89	35.5	0.01			403
437		7.01	6.97	34.277	26.854	125.8	0.825	0.61	9.0	63.6	2.96	36.5	0.01			440 202
500	ISL	6.56	6.51	34.301	26.934	118.7	0.902	0.42	6.1	71.2	3.07	38.4	0.01			503
516		6.45	6.40	34.307	26.953	117.0	0.921	0.37	5.4	73.1	3.10	38.9	0.01			519 201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
32	0.8 N	119 13.8 W	01/02/03	0121	UTC	1579 m	340	08 kn	330 02 07	1	1013.9 mb	17.5 C	16.9 C	3/8	CS	
0	ISL	16.28	16.28	33.160	24.270	364.3	0.000	5.75	102.5	0.8	0.37	0.1	0.00	0.11	0.02	0
2		16.28	16.28	33.160	24.270	364.4	0.007	5.75	102.5	0.8	0.37	0.1	0.00	0.11	0.02	2 220
10	ISL	16.11	16.11	33.169	24.316	360.2	0.036	5.75	102.2	0.9	0.38	0.0	0.00	0.12	0.02	10
15		15.98	15.98	33.177	24.352	357.0	0.054	5.75	101.9	0.9	0.38	0.0	0.00	0.13	0.02	15 219
20		15.95	15.95	33.184	24.364	356.0	0.072	5.75	101.9	0.9	0.38	0.0	0.00	0.14	0.02	20
30	ISL	15.91	15.91	33.188	24.376	355.1	0.108	5.76	102.0	0.8	0.37	0.0	0.00	0.15	0.03	30
31		15.91	15.91	33.188	24.376	355.1	0.111	5.76	102.0	0.8	0.37	0.0	0.00	0.15	0.03	31 218
45		15.67	15.66	33.159	24.408	352.5	0.161	5.78	101.8	0.6	0.38	0.0	0.01	0.16	0.03	45 217
50	ISL	15.58	15.57	33.164	24.432	350.4	0.178	5.79	101.8	0.7	0.39	0.0	0.01	0.19	0.04	50
56		15.48	15.47	33.170	24.459	348.0	0.199	5.83	102.3	0.8	0.41	0.0	0.01	0.23	0.06	56 216
64		14.38	14.37	33.091	24.635	331.3	0.226	5.94	101.9	1.4	0.44	0.1	0.01	0.48	0.28	64 215
75		13.15	13.14	32.959	24.785	317.2	0.262	5.89	98.4	2.6	0.59	1.8	0.11	0.51	0.40	75 214
85		12.41	12.40	33.038	24.991	297.8	0.293	5.66	93.2	4.2	0.72	4.4	0.05	0.29	0.30	85 213
95		10.91	10.90	33.058	25.282	270.1	0.321	5.26	83.9	8.2	1.07	10.5	0.02	0.11	0.12	95 212
100	ISL	10.60	10.59	33.132	25.394	259.5	0.334	5.07	80.3	9.9	1.18	12.4	0.02	0.09	0.10	100
109		10.33	10.32	33.289	25.563	243.6	0.357	4.76	75.0	12.7	1.31	14.9	0.02	0.05	0.06	109 211
124		9.65	9.64	33.478	25.824	219.0	0.392	4.28	66.5	16.8	1.50	18.4	0.01	0.01	0.03	125 210
125	ISL	9.64	9.63	33.486	25.832	218.2	0.394	4.26	66.2	16.9	1.51	18.5	0.01	0.01	0.03	126
145		9.50	9.48	33.587	25.934	208.9	0.437	3.96	61.4	19.3	1.59	20.0	0.01	0.01	0.02	146 209
150	ISL	9.41	9.39	33.639	25.990	203.7	0.447	3.81	59.0	20.7	1.64	20.9	0.01	0.01	0.02	151
169		9.02	9.00	33.834	26.205	183.6	0.484	3.26	50.1	26.3	1.83	24.3	0.01	0.00	0.02	170 208
199		8.63	8.61	33.948	26.356	169.7	0.537	2.96	45.1	30.6	1.96	26.4	0.01	0.00	0.02	200 207
200	ISL	8.62	8.60	33.951	26.360	169.4	0.538	2.94	44.8	30.8	1.97	26.5	0.01			201
228		8.23	8.21	34.029	26.481	158.3	0.584	2.43	36.7	37.2	2.18	29.4	0.01			229 206
250	ISL	7.98	7.95	34.055	26.539	153.1	0.619	2.25	33.8	40.5	2.27	30.5	0.01			251
268		7.78	7.75	34.064	26.575	149.8	0.646	2.15	32.2	42.9	2.33	31.2	0.01			269 205
300	ISL	7.35	7.32	34.080	26.650	143.1	0.693	1.84	27.3	48.6	2.49	33.0	0.01			302
319		7.11	7.08	34.092	26.693	139.1	0.720	1.64	24.2	52.1	2.58	34.1	0.01			321 204
378		6.76	6.73	34.165	26.799											

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
31 51.1 N	119 34.1 W	01/02/03	0529	UTC	1990 m	340	09 kn			1014.9 mb	16.9 C	16.5 C				
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA				ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
0 ISL	16.18	16.18	33.191	24.317	359.9	0.000	5.75	102.4	1.0	0.37	0.0	0.00	0.11	0.02	0	
2	16.18	16.18	33.191	24.317	359.9	0.007	5.75	102.4	1.0	0.37	0.0	0.00	0.11	0.02	2	220
10 ISL	16.10	16.10	33.184	24.330	358.9	0.036	5.76	102.4	1.0	0.36	0.0	0.00	0.11	0.02	10	
16	16.02	33.177	24.343	357.9	0.057	5.76	102.2	1.0	0.36	0.0	0.00	0.11	0.02	16	219	
20 ISL	16.00	16.00	33.178	24.348	357.5	0.072	5.76	102.2	1.0	0.36	0.0	0.00	0.11	0.02	20	
30 ISL	15.96	15.96	33.181	24.360	356.7	0.107	5.76	102.1	0.9	0.36	0.0	0.00	0.14	0.03	30	
31	15.96	15.96	33.181	24.360	356.7	0.111	5.76	102.1	0.9	0.36	0.0	0.00	0.14	0.03	31	218
46	15.48	15.47	33.197	24.480	345.7	0.164	5.84	102.5	0.8	0.38	0.0	0.00	0.24	0.07	46	217
50 ISL	15.39	15.38	33.199	24.501	343.8	0.178	5.85	102.5	0.9	0.39	0.0	0.00	0.25	0.10	50	
56	15.01	15.00	33.169	24.561	338.3	0.198	5.87	102.0	1.3	0.40	0.0	0.00	0.29	0.16	56	216
65	13.30	13.29	33.008	24.793	316.3	0.227	5.81	97.4	2.5	0.61	2.2	0.14	0.49	0.32	65	215
75	11.63	11.62	32.975	25.087	288.2	0.258	5.59	90.5	5.8	0.87	6.9	0.05	0.23	0.20	75	214
85	10.86	10.85	33.076	25.304	267.7	0.285	5.26	83.8	8.7	1.09	10.9	0.03	0.14	0.16	85	213
94	11.34	11.33	33.375	25.452	254.0	0.309	4.77	76.9	9.5	1.07	11.2	0.02	0.09	0.11	94	212
100 ISL	11.24	11.23	33.428	25.511	248.5	0.324	4.60	74.0	10.4	1.13	12.2	0.02	0.07	0.09	100	
109	10.86	10.85	33.437	25.586	241.5	0.346	4.45	71.0	11.9	1.24	13.9	0.02	0.06	0.08	109	211
124	10.42	10.41	33.572	25.768	224.5	0.381	4.17	66.0	14.6	1.35	15.9	0.02	0.02	0.04	125	210
125 ISL	10.39	10.38	33.581	25.781	223.4	0.383	4.15	65.6	14.8	1.36	16.1	0.02	0.02	0.04	126	
144	9.94	9.92	33.746	25.986	204.1	0.424	3.75	58.8	18.9	1.54	19.0	0.02	0.01	0.02	145	209
150 ISL	9.80	9.78	33.784	26.039	199.2	0.436	3.75	58.6	19.6	1.55	19.4	0.02	0.01	0.02	151	
169	9.47	9.45	33.887	26.174	186.7	0.473	3.76	58.4	21.8	1.57	20.4	0.01	0.00	0.02	170	208
199	9.39	9.37	34.034	26.303	175.1	0.527	2.79	43.3	28.3	1.94	24.9	0.01	0.00	0.02	200	207
200 ISL	9.37	9.35	34.035	26.307	174.7	0.529	2.79	43.3	28.4	1.94	25.0	0.01			201	
229	8.77	8.75	34.043	26.409	165.4	0.578	2.77	42.4	32.4	2.01	26.7	0.01			230	206
250 ISL	8.38	8.35	34.052	26.476	159.2	0.612	2.48	37.6	36.4	2.15	28.8	0.01			251	
268	8.06	8.03	34.058	26.529	154.3	0.640	2.18	32.8	40.1	2.28	30.7	0.01			269	205
300 ISL	7.46	7.43	34.059	26.618	146.2	0.688	1.92	28.5	46.4	2.43	32.9	0.01			302	
321	7.12	7.09	34.061	26.667	141.6	0.719	1.81	26.7	50.3	2.50	33.9	0.01			323	204
378	6.63	6.60	34.093	26.759	133.4	0.797	1.50	21.8	58.3	2.67	35.7	0.01			380	203
400 ISL	6.44	6.40	34.107	26.795	130.1	0.826	1.31	19.0	62.0	2.75	36.7	0.01			402	
437	6.17	6.13	34.141	26.857	124.6	0.873	0.97	14.0	68.2	2.89	38.3	0.01			440	202
500 ISL	5.97	5.93	34.245	26.966	115.1	0.949	0.47	6.7	77.1	3.09	40.1	0.01			503	
510	5.94	5.90	34.261	26.982	113.6	0.960	0.39	5.6	78.5	3.12	40.4	0.01			513	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

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 14.4 W	01/02/03	1153	UTC	3937 m	340	11 kn			1015.2 mb	15.0 C	14.9 C				
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA				ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
0 ISL	16.43	16.43	33.275	24.324	359.2	0.000	5.69	101.8	1.1	0.37	0.0	0.00	0.11	0.02	0	
2	16.43	16.43	33.275	24.324	359.2	0.007	5.69	101.8	1.1	0.37	0.0	0.00	0.11	0.02	2	220
10 ISL	16.42	16.42	33.278	24.329	359.0	0.036	5.71	102.2	1.2	0.37	0.0	0.00	0.11	0.01	10	
15	16.41	16.41	33.280	24.333	358.8	0.054	5.72	102.3	1.2	0.37	0.0	0.00	0.12	0.01	15	219
20 ISL	16.13	16.13	33.221	24.352	357.2	0.072	5.76	102.4	1.1	0.38	0.0	0.00	0.13	0.01	20	
29	15.54	15.54	33.103	24.393	353.4	0.104	5.84	102.6	0.9	0.39	0.0	0.00	0.15	0.03	29	218
30 ISL	15.50	15.50	33.098	24.398	353.0	0.107	5.84	102.5	0.9	0.39	0.0	0.00	0.15	0.03	30	
45	14.96	14.95	33.022	24.458	347.7	0.160	5.92	102.7	0.9	0.40	0.0	0.00	0.24	0.07	45	217
50 ISL	14.11	14.10	32.956	24.587	335.5	0.177	5.98	101.9	1.7	0.46	0.2	0.03	0.28	0.13	50	
54	13.41	13.40	32.908	24.693	325.5	0.190	6.01	101.0	2.3	0.52	0.5	0.06	0.32	0.17	54	216
64	12.42	12.41	32.829	24.826	312.9	0.222	5.97	98.2	3.2	0.63	1.9	0.16	0.40	0.22	64	215
74	11.87	11.86	32.961	25.032	293.5	0.252	5.66	92.1	5.3	0.81	5.5	0.07	0.33	0.22	74	214
75 ISL	11.80	11.79	32.963	25.047	292.1	0.255	5.64	91.6	5.5	0.83	5.8	0.06	0.31	0.22	75	
84	11.14	11.13	32.977	25.178	279.8	0.281	5.44	87.1	7.2	0.99	8.8	0.03	0.17	0.15	84	213
95	10.43	10.42	33.125	25.417	257.1	0.311	5.14	81.1	10.2	1.17	12.5	0.02	0.06	0.05	95	212
100 ISL	10.28	10.27	33.213	25.512	248.2	0.323	4.93	77.6	11.8	1.26	14.1	0.02	0.05	0.05	100	
110	10.08	10.07	33.383	25.678	232.6	0.347	4.50	70.6	15.1	1.43	16.9	0.02	0.04	0.05	110	211
125 ISL	9.69	9.68	33.539	25.865	215.1	0.381	4.01	62.4	19.0	1.61	19.9	0.01	0.02	0.04	126	
126	9.67	9.66	33.547	25.875	214.2	0.383	3.98	61.9	19.2	1.62	20.1	0.01	0.02	0.04	127	210
146	9.34	9.32	33.707	26.054	197.5	0.424	3.46	53.5	23.4	1.78	22.9	0.02	0.01	0.03	147	209
150 ISL	9.29	9.27	33.741	26.089	194.3	0.432	3.34	51.6	24.3	1.81	23.5	0.02	0.01	0.03	151	
170	9.04	9.02	33.890	26.246	179.8	0.469	2.81	43.2	28.8	1.97	26.1	0.02	0.01	0.03	171	208
200	8.62	8.60	34.006	26.403	165.3	0.521	2.43	37.0	34.0	2.14	28.6	0.01	0.00	0.03	201	207
229	8.24	8.22	34.054	26.499	156.6	0.568	2.21	33.4	38.5	2.26	30.2	0.01			230	206
250 ISL	7.93</td															

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

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 54.7 W	01/02/03	1830	UTC	3825 m	340	10 kn	310 03 06	2	1017.0 mb	15.0 C	14.9 C	24m	8/8	ST	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	db	
0 ISL	15.43	15.43	33.180	24.476	344.7	0.000	5.87	102.9	0.8	0.38	0.0	0.00	0.16	0.03	0	
2 A	15.43	15.43	33.180	24.476	344.7	0.007	5.87	102.9	0.8	0.38	0.0	0.00	0.16	0.03	2 222	
10 ISL	15.42	15.42	33.180	24.479	344.7	0.034	5.88	103.1	0.8	0.38	0.0	0.00	0.17	0.03	10	
15 A	15.41	15.41	33.181	24.482	344.6	0.052	5.89	103.2	0.8	0.38	0.0	0.00	0.17	0.03	15 221	
20 ISL	15.41	15.41	33.187	24.486	344.3	0.069	5.90	103.4	0.8	0.38	0.0	0.00	0.19	0.04	20	
30 A	15.38	15.38	33.200	24.503	343.0	0.103	5.92	103.7	0.8	0.37	0.0	0.00	0.23	0.05	30 220	
39	15.31	15.30	33.201	24.520	341.7	0.134	5.97	104.4	0.8	0.38	0.0	0.00	0.27	0.06	39 219	
48 A	14.32	14.31	33.151	24.694	325.3	0.164	6.41	109.9	1.5	0.43	0.1	0.04	0.54	0.27	48 218	
50 ISL	14.24	14.23	33.152	24.712	323.7	0.171	6.30	107.8	1.6	0.44	0.2	0.07	0.54	0.27	50	
56	14.02	14.01	33.153	24.758	319.4	0.190	5.89	100.3	2.0	0.48	0.7	0.17	0.55	0.26	56 217	
65 A	13.26	13.25	33.111	24.880	307.9	0.218	5.74	96.2	3.2	0.62	2.7	0.22	0.28	0.21	65 216	
74	12.24	12.23	33.025	25.013	295.4	0.245	5.63	92.3	4.7	0.79	5.5	0.05	0.17	0.19	74 215	
75 ISL	12.11	12.10	33.009	25.025	294.3	0.248	5.62	91.9	4.9	0.81	5.8	0.05	0.16	0.19	75	
83	11.22	11.21	32.905	25.108	286.5	0.271	5.53	88.7	6.3	0.97	7.8	0.03	0.14	0.14	83 214	
91 A	10.78	10.77	32.909	25.189	278.9	0.294	5.48	87.0	7.5	1.03	9.4	0.03	0.11	0.09	91 213	
100 ISL	10.41	10.40	33.037	25.352	263.4	0.318	5.28	83.3	9.5	1.15	11.8	0.02	0.06	0.06	100	
101	10.38	10.37	33.056	25.372	261.5	0.321	5.25	82.7	9.7	1.16	12.1	0.02	0.05	0.06	101 212	
111	10.18	10.17	33.236	25.547	245.1	0.346	4.96	77.9	11.9	1.28	14.3	0.02	0.02	0.03	111 211	
125 ISL	9.80	9.79	33.372	25.717	229.2	0.380	4.58	71.4	15.3	1.44	17.3	0.02	0.01	0.02	125	
126	9.77	9.76	33.380	25.728	228.2	0.382	4.55	70.9	15.6	1.45	17.5	0.02	0.01	0.02	127 210	
145	9.31	9.29	33.629	25.998	202.8	0.423	3.91	60.4	20.9	1.65	21.1	0.02	0.01	0.02	146 209	
150 ISL	9.27	9.25	33.680	26.044	198.5	0.433	3.74	57.7	22.2	1.70	22.0	0.02	0.01	0.02	151	
170	9.12	9.10	33.820	26.178	186.2	0.471	3.12	48.0	26.4	1.88	24.8	0.02	0.00	0.02	171 208	
200 ISL	9.45	9.43	34.083	26.332	172.4	0.525	2.44	37.9	30.2	2.09	26.2	0.02	0.00	0.02	201	
201	9.46	9.44	34.089	26.335	172.2	0.527	2.43	37.8	30.3	2.09	26.2	0.02	0.02	0.02	202 207	
229	8.66	8.64	34.046	26.428	163.5	0.574	3.12	47.6	31.6	1.91	25.5	0.02	0.02	0.02	230 206	
250 ISL	8.52	8.49	34.096	26.490	158.0	0.608	2.63	40.0	35.4	2.09	27.4	0.02	0.00	0.02	251	
268	8.47	8.44	34.145	26.536	154.0	0.636	2.03	30.9	39.4	2.31	29.5	0.02	0.00	0.02	269 205	
300 ISL	7.83	7.80	34.126	26.617	146.5	0.684	1.93	28.9	45.1	2.43	31.4	0.02	0.02	0.02	302	
319	7.42	7.39	34.106	26.661	142.4	0.711	1.87	27.7	48.3	2.47	32.3	0.02	0.02	0.02	321 204	
380	6.87	6.83	34.165	26.784	131.3	0.795	1.17	17.1	58.9	2.77	35.7	0.01	0.01	0.01	382 203	
400 ISL	6.71	6.67	34.181	26.818	128.3	0.821	1.00	14.6	62.1	2.84	36.6	0.01	0.01	0.01	402	
436	6.44	6.40	34.206	26.874	123.3	0.866	0.74	10.7	67.5	2.95	38.0	0.01	0.01	0.01	439 202	
500 ISL	6.06	6.02	34.249	26.957	115.9	0.943	0.48	6.9	75.7	3.09	39.6	0.01	0.01	0.01	503	
511	6.00	5.96	34.256	26.971	114.8	0.955	0.43	6.2	77.1	3.11	39.9	0.01	0.01	0.01	514 201	

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
30 51.0 N	121 35.2 W	02/02/03	0057	UTC	4085 m	010	24 kn	350 05 06	2	1016.2 mb	15.2 C	14.8 C	24m	8/8	SC	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA	ml/l	PCT	uM/l	uM/l	uM/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	db	
0 ISL	15.31	15.31	33.130	24.464	345.8	0.000	5.88	102.8	0.8	0.39	0.0	0.00	0.18	0.04	0	
2	15.31	15.31	33.130	24.464	345.9	0.007	5.88	102.8	0.8	0.39	0.0	0.00	0.18	0.04	2 220	
10 ISL	15.32	15.32	33.131	24.463	346.2	0.035	5.87	102.7	0.8	0.39	0.0	0.00	0.18	0.03	10	
15	15.32	15.32	33.132	24.464	346.3	0.052	5.87	102.7	0.8	0.39	0.0	0.00	0.18	0.03	15 219	
20 ISL	15.29	15.29	33.129	24.468	346.0	0.069	5.88	102.8	0.8	0.39	0.0	0.00	0.19	0.04	20	
30 ISL	15.23	15.23	33.123	24.477	345.5	0.104	5.89	102.8	0.9	0.38	0.0	0.01	0.23	0.05	30	
31	15.22	15.22	33.122	24.478	345.4	0.107	5.89	102.8	0.9	0.38	0.0	0.01	0.24	0.05	31 218	
46	14.64	14.63	33.035	24.537	340.2	0.159	5.88	101.4	1.0	0.42	0.2	0.03	0.44	0.16	46 217	
50 ISL	14.58	14.57	33.041	24.554	338.7	0.172	5.88	101.3	1.1	0.42	0.2	0.03	0.44	0.17	50	
55	14.50	14.49	33.063	24.588	335.6	0.189	5.89	101.3	1.2	0.42	0.2	0.04	0.43	0.19	55 216	
64	14.23	14.22	33.128	24.696	325.6	0.219	5.81	99.4	1.5	0.47	0.4	0.17	0.58	0.34	64 215	
73	13.97	13.96	33.143	24.761	319.6	0.248	5.86	99.7	2.2	0.51	0.9	0.16	0.36	0.20	73 214	
75 ISL	13.55	13.54	33.082	24.800	315.9	0.254	5.84	98.5	2.6	0.56	1.6	0.14	0.32	0.18	75	
85	11.33	11.32	32.819	25.021	294.8	0.285	5.70	91.6	5.1	0.83	6.0	0.02	0.16	0.14	85 213	
95	10.74	10.73	32.892	25.182	279.5	0.313	5.52	87.6	7.2	1.01	9.2	0.02	0.09	0.09	95 212	
100 ISL	10.58	10.58	32.966	25.266	271.6	0.327	5.41	85.6	8.1	1.07	10.4	0.02	0.07	0.07	100	
110	10.41	10.40	33.137	25.431	256.2	0.354	5.14	81.1	10.0	1.17	12.6	0.01	0.04	0.04	110 211	
125	10.19	10.18	33.368	25.649	235.8	0.391	4.61	72.5	13.6	1.35	15.6	0.02	0.03	0.04	126 210	
144	9.40	9.38	33.601	25.962	206.3	0.433	3.95	61.1	19.9	1.61	20.4	0.01	0.01	0.02	145 209	
150 ISL	9.36	9.34	33.657	26.012	201.6	0.445	3.80	58.8	21.0	1.65	21.2	0.01	0.01	0.02	151	
169	9.22	9.20	33.770	26.123	191.4	0.482	3.44	53.1	23.6	1.74	22.8	0.01	0.00	0.02	170 208	
198	8.96	8.94	33.986	26.334	171.9	0.535	3.01	46.2	29.2	1.91	25.3	0.01	0.00	0.01	199 207	

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP	
m	DEG C	DEG C		THETA			ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db		
30 31.0 N	122 15.5 W	02/02/03	0708	UTC	4212 m	350	21 kn										
0 ISL	16.68	16.68	33.326	24.305	360.9	0.000	5.67	102.0	1.1	0.36	0.0	0.00	0.11	0.02	0		
1	16.68	16.68	33.326	24.305	361.0	0.004	5.67	102.0	1.1	0.36	0.0	0.00	0.11	0.02	1	219	
10 ISL	16.68	16.68	33.326	24.306	361.2	0.036	5.66	101.8	1.0	0.36	0.0	0.00	0.12	0.03	10		
15	16.68	16.68	33.326	24.306	361.4	0.054	5.65	101.7	1.0	0.36	0.0	0.00	0.12	0.03	15	218	
20 ISL	16.69	16.69	33.328	24.305	361.6	0.072	5.65	101.7	1.0	0.36	0.0	0.00	0.12	0.03	20		
29	16.71	16.71	33.330	24.303	362.2	0.105	5.66	101.9	1.1	0.36	0.0	0.00	0.11	0.03	29	217	
30 ISL	16.71	16.71	33.331	24.303	362.1	0.108	5.66	101.9	1.1	0.36	0.0	0.00	0.11	0.03	30		
46	16.65	16.64	33.340	24.325	360.6	0.166	5.67	102.0	1.0	0.35	0.0	0.00	0.13	0.03	46	216	
50 ISL	16.23	16.22	33.293	24.385	354.9	0.181	5.76	102.7	1.1	0.36	0.0	0.00	0.17	0.06	50		
54	15.75	15.74	33.240	24.453	348.6	0.195	5.85	103.3	1.2	0.38	0.0	0.00	0.22	0.10	54	215	
65	14.52	14.51	33.118	24.627	332.2	0.232	5.90	101.5	1.8	0.46	0.2	0.03	0.36	0.19	65	214	
75 ISL	13.28	13.27	33.027	24.812	314.7	0.264	5.82	97.6	2.9	0.58	1.8	0.11	0.34	0.19	75		
76	13.15	13.14	33.021	24.833	312.7	0.268	5.81	97.1	3.1	0.60	2.1	0.12	0.34	0.19	76	213	
85	11.86	11.85	33.033	25.090	288.3	0.295	5.54	90.1	5.4	0.85	6.4	0.06	0.24	0.17	85	212	
94	11.35	11.34	33.124	25.255	272.8	0.320	5.23	84.2	7.5	1.00	9.3	0.03	0.16	0.19	94	211	
100 ISL	11.14	11.13	33.212	25.361	262.7	0.336	5.02	80.5	8.9	1.09	11.0	0.03	0.13	0.16	100		
109	10.87	10.86	33.348	25.515	248.3	0.359	4.69	74.8	11.1	1.22	13.3	0.02	0.10	0.09	109	210	
125	10.27	10.26	33.527	25.759	225.4	0.397	4.12	65.0	15.8	1.46	17.2	0.01	0.05	0.06	126	209	
145	10.49	10.47	33.799	25.934	209.3	0.440	3.14	49.8	20.2	1.70	20.7	0.01	0.04	0.05	146	208	
150 ISL	10.30	10.28	33.808	25.974	205.6	0.451	3.18	50.3	21.1	1.72	21.2	0.01	0.03	0.04	151		
171	9.31	9.29	33.798	26.131	190.8	0.492	3.34	51.6	24.5	1.78	23.2	0.01	0.00	0.02	172	207	
199	8.84	8.82	33.933	26.312	174.1	0.543	2.85	43.6	30.2	1.99	26.6	0.01	0.00	0.03	200	206	
200 ISL	8.82	8.80	33.937	26.318	173.5	0.545	2.84	43.5	30.4	1.99	26.7	0.01			201		
229	8.42	8.40	34.029	26.452	161.1	0.594	2.66	40.4	35.2	2.09	28.1	0.01			230	205	
250 ISL	8.21	8.18	34.079	26.523	154.7	0.627	2.50	37.8	38.0	2.17	29.0	0.01			251		
268	8.05	8.02	34.107 D	26.569	150.6	0.654										269	220
300 ISL	7.70	7.67	34.114	26.627	145.5	0.702	2.06	30.8	45.3	2.39	31.4	0.01			302		
318	7.47	7.44	34.109	26.656	142.9	0.728	1.89	28.1	48.1	2.47	32.3	0.01			320	204	
379	6.50	6.47	34.119	26.797	129.8	0.811	1.30	18.9	61.4	2.76	36.4	0.01			381	203	
400 ISL	6.36	6.32	34.140	26.832	126.6	0.838	1.10	15.9	64.8	2.84	37.3	0.01			402		
437	6.20	6.16	34.179	26.884	122.1	0.884	0.81	11.7	70.2	2.96	38.5	0.01			440	202	
500 ISL	5.72	5.68	34.203	26.963	115.0	0.958	0.57	8.1	79.9	3.10	40.5	0.01			503		
509	5.65	5.61	34.207	26.975	113.9	0.969	0.54	7.7	81.3	3.12	40.8	0.01			512	201	

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/L	uM/L	uM/L	uM/L	ug/l	ug/l	db	
30 10.9 N	122 55.5 W	02/02/03	1751	UTC	3754 m	020	19 kn	350 10 08	1	1019.0 mb	16.0	C 15.0 C	27m	7/8	CU	
0 ISL	16.56	16.56	33.266	24.287	362.7	0.000	5.66	101.6	1.0	0.38	0.1	0.01	0.11	0.03	0	
2 A	16.56	16.56	33.266	24.287	362.7	0.007	5.66	101.6	1.0	0.38	0.1	0.01	0.11	0.03	2	222
10 ISL	16.55	16.55	33.266	24.290	362.7	0.036	5.66	101.5	1.1	0.37	0.1	0.00	0.12	0.02	10	
17 A	16.55	16.55	33.266	24.290	362.9	0.062	5.66	101.5	1.1	0.37	0.1	0.00	0.12	0.02	17	221
20 ISL	16.55	16.55	33.267	24.291	363.0	0.073	5.66	101.5	1.1	0.37	0.1	0.00	0.12	0.02	20	
26	16.55	16.55	33.267	24.291	363.1	0.094	5.66	101.5	1.0	0.37	0.0	0.00	0.11	0.02	26	220
30 ISL	16.56	16.56	33.267	24.289	363.5	0.109	5.66	101.6	0.9	0.37	0.0	0.00	0.11	0.02	30	
34 A	16.56	16.55	33.267	24.289	363.6	0.123	5.67	101.7	0.9	0.37	0.0	0.00	0.12	0.02	34	219
45	16.55	16.54	33.273	24.297	363.2	0.163	5.67	101.7	0.9	0.36	0.0	0.00	0.13	0.03	45	218
50 ISL	16.53	16.52	33.281	24.307	362.4	0.182	5.67	101.7	0.9	0.37	0.0	0.01	0.14	0.04	50	
54 A	16.52	16.51	33.287	24.314	361.8	0.196	5.68	101.8	1.0	0.37	0.0	0.01	0.15	0.04	54	217
65	16.06	16.05	33.312	24.439	350.3	0.235	5.72	101.6	1.3	0.37	0.0	0.00	0.25	0.11	65	216
73 A	14.95	14.94	33.210	24.606	334.5	0.263	5.87	101.9	2.0	0.44	0.2	0.03	0.33	0.23	73	215
75 ISL	14.55	14.54	33.170	24.661	329.3	0.269	5.86	100.9	2.3	0.48	0.6	0.05	0.33	0.22	75	
84	13.02	13.01	33.076	24.902	306.4	0.298	5.72	95.4	3.8	0.65	2.7	0.13	0.33	0.19	84	214
93	12.81	12.80	33.219	25.054	292.1	0.325	5.50	91.4	5.0	0.76	4.4	0.13	0.29	0.17	93	213
100 ISL	11.99	11.98	33.178	25.179	280.2	0.345	5.33	87.0	6.5	0.91	7.3	0.08	0.23	0.15	100	
102 A	11.76	11.75	33.172	25.217	276.6	0.350	5.26	85.5	7.0	0.96	8.2	0.06	0.21	0.15	102	212
114	11.93	11.92	33.515	25.452	254.6	0.382	4.48	73.2	10.1	1.17	11.6	0.04	0.14	0.14	114	211
124	10.15	10.14	33.353	25.644	236.2	0.407	4.61	72.4	13.6	1.36	15.8	0.02	0.04	0.05	125	210
125 ISL	10.12	10.11	33.365	25.658	234.9	0.409	4.60	72.2	13.9	1.37	16.1	0.02	0.04	0.05	126	
146	9.51	9.49	33.527	25.886	213.5	0.456	4.13	64.0	18.3	1.56	19.5	0.01	0.01	0.04	147	209
150 ISL	9.43	9.41	33.561	25.926	209.8	0.465	4.01	62.1	19.3	1.60	20.2	0.01	0.01	0.04	151	
169	9.21	9.19	33.735	26.097	193.9	0.503	3.42	52.7	23.9	1.79	23.3	0.01	0.00	0.02	170	208
199	9.32	9.30	34.068	26.341	171.5	0.558										

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE
DEPTH	TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
0 ISL	16.69	16.69	33.218	24.220	369.0	0.000	5.68	102.1	0.8	0.39	0.0	0.00	0.11	0.02	0	
2	16.69	16.69	33.218	24.220	369.1	0.007	5.68	102.1	0.8	0.39	0.0	0.00	0.11	0.02	2	220
10 ISL	16.68	16.68	33.213	24.219	369.5	0.037	5.68	102.1	0.8	0.39	0.0	0.01	0.12	0.03	10	
16	16.67	16.67	33.209	24.219	369.7	0.059	5.68	102.1	0.7	0.39	0.0	0.01	0.13	0.03	16	219
20 ISL	16.63	16.63	33.201	24.222	369.6	0.074	5.68	102.0	0.7	0.39	0.0	0.01	0.13	0.03	20	
30 ISL	16.51	16.51	33.173	24.228	369.3	0.111	5.69	101.9	0.6	0.39	0.0	0.01	0.13	0.03	30	
31	16.49	16.49	33.170	24.231	369.1	0.115	5.69	101.9	0.6	0.39	0.0	0.01	0.13	0.03	31	218
46	16.25	16.24	33.118	24.246	368.0	0.170	5.74	102.3	0.5	0.39	0.0	0.01	0.18	0.05	46	217
50 ISL	16.27	16.26	33.142	24.260	366.8	0.184	5.72	102.0	0.6	0.39	0.0	0.01	0.19	0.05	50	
57	16.35	16.34	33.197	24.284	364.8	0.210	5.69	101.6	0.7	0.39	0.0	0.01	0.21	0.06	57	216
65	16.40	16.39	33.245	24.310	362.6	0.239	5.71	102.1	0.7	0.39	0.0	0.01	0.22	0.09	65	215
75 ISL	15.42	15.41	33.215	24.508	344.0	0.275	5.90	103.4	1.1	0.40	0.0	0.01	0.25	0.16	75	
76	15.29	15.28	33.210	24.532	341.6	0.278	5.92	103.5	1.2	0.40	0.0	0.01	0.25	0.17	76	214
86	14.36	14.35	33.174	24.704	325.4	0.311	5.87	100.7	1.7	0.46	0.3	0.06	0.28	0.22	86	213
95	13.39	13.38	33.078	24.830	313.6	0.340	5.80	97.5	2.1	0.55	1.3	0.11	0.26	0.20	95	212
100 ISL	13.09	13.08	33.059	24.875	309.3	0.356	5.76	96.2	2.2	0.58	1.8	0.10	0.23	0.19	100	
111	12.58	12.57	33.058	24.974	300.1	0.389	5.65	93.3	2.8	0.67	3.5	0.05	0.16	0.16	111	211
125	11.62	11.60	33.088	25.178	280.8	0.430	5.43	87.9	4.7	0.89	7.1	0.03	0.09	0.09	125	210
144	10.73	10.71	33.352	25.543	246.3	0.480	5.11	81.3	7.3	1.00	9.7	0.02	0.04	0.04	145	209
150 ISL	10.42	10.40	33.410	25.643	237.0	0.494	4.87	77.0	9.4	1.13	11.8	0.02	0.03	0.03	151	
170	9.54	9.52	33.575	25.919	210.9	0.539	4.07	63.2	16.8	1.59	18.8	0.02	0.01	0.01	171	208
198	9.01	8.99	33.819	26.195	185.1	0.595	3.61	55.4	22.7	1.81	22.5	0.01	0.00	0.01	199	207
200 ISL	8.99	8.97	33.831	26.208	183.9	0.598	3.58	55.0	23.2	1.82	22.7	0.01			201	
229	8.69	8.67	33.952	26.350	170.9	0.650	3.20	48.8	29.9	2.00	25.4	0.01			230	206
250 ISL	8.29	8.26	34.000	26.449	161.7	0.685	2.96	44.8	34.7	2.13	27.3	0.01			251	
269	7.89	7.86	34.024	26.528	154.4	0.715	2.77	41.5	38.9	2.25	28.9	0.01			270	205
300 ISL	7.36	7.33	34.033	26.611	146.7	0.761	2.55	37.8	44.6	2.39	30.8	0.01			302	
318	7.10	7.07	34.031	26.646	143.5	0.787	2.42	35.6	47.7	2.47	31.8	0.01			320	204
379	6.49	6.46	34.061	26.752	133.9	0.872	1.63	23.7	58.6	2.82	35.7	0.01			381	203
400 ISL	6.26	6.22	34.072	26.791	130.4	0.900	1.43	20.6	62.9	2.91	36.8	0.01			402	
437	5.88	5.84	34.095	26.857	124.3	0.947	1.15	16.5	70.4	3.05	38.6	0.01			440	202
500 ISL	5.39	5.35	34.139	26.952	115.6	1.023	0.78	11.0	81.7	3.23	40.8	0.01			503	
514	5.28	5.24	34.149	26.973	113.7	1.039	0.70	9.9	84.2	3.27	41.3	0.01			517	201

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 23.3 N	122 15.9 W	14/02/03	1719 UTC	15 m		1223 - 1813 PST	1223 PST	1813 PST	305.3 mg C/m ²

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	LIGHT	UPTAKE			
m	DEG C	THETA	ml/l	PCT	um/l	um/l	um/l	um/l	um/l	ug/l	ug/l	PCT	(mg C/m ³)			
2	14.14	33.062	24.661	6.01	102.6	1.1	0.43	0.1	0.01	1.71	0.37	81. A	7.3	6.7	7.0	0.10
9	14.14	33.067	24.666	6.01	102.6	1.1	0.42	0.1	0.01	0.93	0.23	40.	14.1	12.9	13.5	0.11
19	14.13	33.062	24.664	6.01	102.6	1.0	0.42	0.1	0.01	0.97	0.25	14.	8.1	8.4	8.3	0.11
30	14.12	33.063	24.667	6.01	102.5	1.2	0.42	0.2	0.01	0.63	0.28	4.6	4.3	3.9	4.1	0.09
42	13.35	33.104	24.856	5.54	93.1	3.0	0.63	3.3	0.06	0.44	0.31	1.4	1.2	1.3	1.3	0.07
50	12.20	33.165	25.128	5.24	86.0	6.6	0.97	8.5	0.05	0.25	0.20					
57	11.42	33.219	25.315	4.90	79.1	9.5	1.18	12.0	0.03	0.17	0.16	0.29	0.02	0.03	0.03	0.05

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 23.4 N	124 19.4 W	13/02/03	1906 UTC	20 m		1231 - 1821 PST	1231 PST	1821 PST	185.4 mg C/m ²

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	LIGHT	UPTAKE			
m	DEG C	THETA	ml/l	PCT	um/l	um/l	um/l	um/l	um/l	ug/l	ug/l	PCT	(mg C/m ³)			
2	14.76	32.862	24.376	5.93	102.4	0.5	0.42	0.0	0.00	0.21	0.05	86. A	2.7	2.9	2.8	0.08
13	14.70	32.871	24.396	5.95	102.6	0.4	0.41	0.0	0.00	0.23	0.04	37.	3.0	3.0	3.0	0.11
19	14.64	32.894	24.427	5.93	102.2	0.4	0.41	0.0	0.00	0.25	0.05					
26	14.54	32.937	24.482													
33	14.15	33.103	24.692	6.09	104.0	0.7	0.44	0.0	0.01	0.82	0.34					
41	13.84	33.143	24.787	5.93	100.7	1.4	0.52	0.8	0.10	1.07	0.40	4.3	4.6	4.6	4.6	0.10
47	13.16	33.165	24.942	5.55	92.9	3.2	0.74	4.3	0.07	0.51	0.28					
54	11.92	33.163	25.179	5.10	83.2	7.0	1.08	9.9	0.05	0.26	0.20	1.6	0.65	0.66	0.65	0.04
65	10.90	33.230	25.417	4.77	76.1	10.8	1.31	14.1	0.05	0.16	0.12					
76	10.37	33.347	25.600	4.47	70.6	13.9	1.48	17.1	0.05	0.09	0.07	0.29	0.01	0.02	0.02	0.03

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 49.6 N	121 48.3 W	12/02/03	1736 UTC	15 m		1220 - 1815 PST	1221 PST	1815 PST	180.4 mg C/m ²

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	LIGHT	UPTAKE			
m	DEG C	THETA	ml/l	PCT	um/l	um/l	um/l	um/l	um/l	ug/l	ug/l	PCT	(mg C/m ³)			
2	14.30	32.978	24.563	6.03	103.2	0.8	0.41	0.1	0.01	0.43	0.10	81. A	3.2	3.4	3.3	0.09
10	14.28	32.978	24.568	5.98	102.3	0.7	0.41	0.1	0.01	0.42	0.10	36.	6.8	6.9	6.8	0.09
19	14.28	32.979	24.569	5.97	102.2	0.5	0.41	0.1	0.01	0.41	0.11	14.	5.3	5.4	5.3	0.10
30	14.27	32.980	24.572	5.98	102.3	0.4	0.41	0.1	0.01	0.45	0.10	4.6	2.8	2.7	2.8	0.08
41	14.18	32.989	24.598	5.95	101.6	0.5	0.43	0.4	0.03	0.48	0.13	1.5	1.3	1.4	1.3	0.06
50	12.21	32.937	24.949	5.69	93.2	3.0	0.75	4.7	0.14	0.44	0.29					
58	11.33	32.933	25.109	5.53	88.9	5.1	0.92	7.7	0.05	0.27	0.27	0.26	0.10	0.11	0.10	0.05

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 13.3 N	119 24.7 W	10/02/03	1805 UTC	21 m		1212 - 1802 PST	1212 PST	1802 PST	228.7 mg C/m ²

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	LIGHT	UPTAKE			
m	DEG C	THETA	ml/l	PCT	um/l	um/l	um/l	um/l	um/l	ug/l	ug/l	PCT	(mg C/m ³)			
1	15.10	33.387	24.708	5.90	102.9	2.2	0.37	0.0	0.01	0.53	0.13	93. A	10.1	9.4	9.8	0.09
5	15.06	33.388	24.717	5.94	103.5	2.1	0.37	0.0	0.01	0.51	0.13					
12	15.06	33.389	24.718	5.90	102.8	2.1	0.37	0.0	0.01	0.50	B 0.14	42.	10.4		10.4	0.09
19	15.05	33.388	24.720	5.91	103.0	2.2	0.37	0.0	0.01	0.55	0.16					
26	15.05	33.388	24.720	5.90	102.8	2.1	0.37	0.0	0.01	0.60	0.18	15.	4.8	5.2	5.0	0.07

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

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 14.5 N	121 26.3 W	09/02/03	1846 UTC	25 m		1220 - 1810 PST	1220 PST	1812 PST	185.8 mg C/m ²

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	S103	P04	N03	N02	CHL-A	PHAEAO	LIGHT	UPTAKE			
m	DEG C	THETA	ml/l	PCT	um/l	um/l	um/l	um/l	um/l	ug/l	ug/l	PCT	(mg C/m ³)			
1	14.85	33.013	24.474	5.91	102.3	0.5	0.40	0.1	0.00	0.25	0.05	94. A	1.8	1.7	1.8	0.09
16	14.76	33.013	24.493	5.91	102.1					0.25	0.07	37.	3.2	3.1	3.1	0.10
31	14.75	33.014	24.497	5.93	102.5	0.6	0.40	0.1	0.00	0.28	0.07	15.	2.7	3.1	2.9	0.11
40	14.76	33.017	24.497	5.90	102.0	0.6	0.40	0.1	0.00	0.33	0.10					
50	14.47	32.998	24.544	5.87	100.8	0.9	0.45	0.5	0.04	0.54	0.22	4.6	3.1	3.1	3.1	0.06
60	12.81	32.869	24.782	5.79	96.0	2.4	0.67	3.0	0.09	0.39	0.28					
68	11.71	32.826	24.957	5.71	92.5	4.2	0.84	5.9	0.03	0.23	0.25	1.5	0.70	0.82	0.76	0.04
77	11.06	32.814	25.065	5.64	90.1	5.6	0.95	7.6	0.02	0.17	0.17					
86	10.66	32.936	25.230	5.42	85.9	7.8	1.08	10.3	0.02	0.09	0.11					
95	10.37	33.050	25.369	5.23	82.4	9.6	1.17	12.3	0.01	0.06	0.07	0.29	0.02	0.02	0.02	0.03

A) INCUBATION LIGHT INTENSITIES WERE 94, 41, 15, 4.5, 1.6, 0.30 PERCENT RESPECTIVELY.

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 54.6 N	124 10.2 W	08/02/03	1923 UTC	35 m		1231 - 1819 PST	1231 PST	1819 PST	155.4 mg C/m ²

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	P04	N03	N02	chl-a	PHAE0	LIGHT	UPTAKE	(mg C/m ³)		
m	DEG C	THETA	ml/l	pct	um/l	um/l	um/l	um/l	um/l	ug/l	ug/l	pct	1	2	mean	dark
2	15.59	32.771	24.126			0.6	0.40	0.1	0.00	0.16	0.04	92. A	1.4	1.4	1.4	0.06
12	15.51	32.764	24.139			0.6	0.40	0.0	0.00	0.16	0.05					
21	15.49	32.763	24.143	5.81	101.7	0.6	0.39	0.0	0.00	0.18	0.05	40.	2.2	2.2	2.2	0.07
32	15.49	32.763	24.143	5.80	101.6	0.6	0.39	0.0	0.00	0.17	0.05					
44	15.49	32.762	24.143	5.82	101.9	0.6	0.39	0.0	0.00	0.17	0.05	15.	1.6	1.7	1.7	0.06
53	15.49	32.762	24.143	5.79	101.4	0.6	0.40	0.0	0.00	0.17	0.05					
62	15.48	32.762	24.145	5.79	101.4	0.6	0.39	0.0	0.00	0.17	0.06					
70	15.48	32.762	24.146	5.81	101.7	0.6	0.39	0.0	0.00	0.19	0.05	4.6	0.94	0.93	0.93	0.05
78	15.05	32.760	24.238	5.80	100.7	0.8	0.41	0.1	0.03	0.25	0.16					
86	13.53	32.737	24.538	5.86	98.6	1.9	0.57	1.8	0.08	0.32	0.22					
95	11.95	32.695	24.811	5.96	96.9	3.4	0.76	4.2	0.02	0.22	0.18	1.6	1.2	0.60	0.89	0.04
107	10.31	32.615	25.041	5.92	92.9	5.7	0.94	7.3	0.02	0.10	0.08					
119	9.87	32.665	25.153	5.81	90.3	7.5	1.05	9.3	0.02	0.06	0.05					
132	10.20	33.025	25.379	5.29	83.0	8.7	1.06	10.6	0.02	0.04	0.04	0.31	0.02	0.00	0.01	0.04

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 29.3 N	119 19.1 W	06/02/03	1900 UTC	19 m		1210 - 1805 PST	1211 PST	1805 PST	514.6 mg C/m ²

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	P04	N03	N02	chl-a	PHAE0	LIGHT	UPTAKE	(mg C/m ³)		
m	DEG C	THETA	ml/l	pct	um/l	um/l	um/l	um/l	um/l	ug/l	ug/l	pct	1	2	mean	dark
1	14.52	33.342	24.798	6.04	104.1	3.5	0.45	0.7	0.03	0.94	0.17	92. A	15.9	16.4	16.2	0.11
12	14.37	33.340	24.828	6.03	103.6	3.5	0.46	0.7	0.04	0.99	0.18	38.	20.3	19.3	19.8	0.14
19	13.48	33.338	25.011	5.55	93.6	5.4	0.68	4.2	0.11	0.73	0.27					
25	12.73	33.335	25.157	5.20	86.4	7.3	0.87	7.2	0.15	0.68	0.32	13.	8.2	8.3	8.2	0.10
32	12.61	33.335	25.181	5.11	84.6	7.7	0.92	7.9	0.15	0.65	0.35					
39	12.33	33.331	25.232	5.02	82.7	8.4	0.99	8.9	0.15	0.53	0.31	4.3	3.5	3.5	3.5	0.07
45	11.56	33.311	25.361	4.77	77.3	10.3	1.15	11.6	0.09	0.33	0.24					
52	11.35	33.376	25.450	4.57	73.7	11.3	1.23	13.1	0.09	0.27	0.21	1.5	0.81	0.85	0.83	0.06
62	10.83	33.358	25.529	4.50	71.8	12.5	1.31	14.4	0.06	0.20	0.17					
72	10.38	33.497	25.716	4.04	63.9	16.0	1.50	17.6	0.03	0.07	0.10	0.30	0.01	0.02	0.01	0.04

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 19.6 N	121 42.6 W	07/02/03	1902 UTC	22 m		1220 - 1820 PST	1221 PST	1820 PST	162.3 mg C/m ²

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	P04	N03	N02	chl-a	PHAE0	LIGHT	UPTAKE	(mg C/m ³)		
m	DEG C	THETA	ml/l	pct	um/l	um/l	um/l	um/l	um/l	ug/l	ug/l	pct	1	2	mean	dark
1	14.91	32.902	24.375	5.89	102.0	0.6	0.40	0.0	0.00	0.18	0.05	93. A	2.2	2.3	2.3	0.09
14	14.73	32.974	24.470	5.94	102.6	0.7	0.40	0.0	0.00	0.23	0.06	38.	3.7	3.4	3.5	0.15
21	14.51	33.054	24.578	5.99	103.0	1.1	0.40	0.0	0.00	0.36	0.12					
29	14.48	33.070	24.597	5.99	103.0	1.2	0.40	0.0	0.00	0.50	0.14	13.	4.4	4.4	4.4	0.12
36	13.97	33.030	24.673	5.92	100.7	1.8	0.48	0.9	0.06	0.60	0.21					
45	12.06	32.827	24.892	5.75	93.8	3.5	0.78	4.6	0.06	0.37	0.28	4.3	1.4	1.4	1.4	0.06
53	11.54	32.834	24.994	5.70	92.0	4.6	0.87	6.2	0.03	0.24	0.25					
60	11.01	32.830	25.086	5.61	89.5	5.9	0.96	7.9	0.02	0.18	0.15	1.5	0.31	0.32	0.32	0.07
73	10.70	32.976	25.254	5.39	85.5	7.8	1.07	10.3	0.02	0.10	0.10					
83	10.54	33.174	25.437	5.08	80.4	10.0	1.19	12.7	0.01	0.05	0.05	0.31	0.01	0.01	0.01	0.04

RV DAVID STARR JORDAN

CALCOFI CRUISE 0302

STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 15.2 N	118 14.7 W	05/02/03	1838 UTC	27 m		1207 - 1802 PST	1207 PST	1802 PST	170.9 mg C/m ²

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	P04	N03	N02	chl-a	PHAE0	LIGHT	UPTAKE	(mg C/m ³)		
m	DEG C	THETA	ml/l	pct	um/l	um/l	um/l	um/l	um/l	ug/l	ug/l	pct	1	2	mean	dark
2	15.82	33.386	24.548	5.84	103.3	2.0	0.36	0.1	0.00	0.22	0.06	89. A	1.3	1.3	1.3	0.06
8	15.81	33.386	24.550	5.83	103.1	1.8	0.36	0.1	0.00	0.21	0.04					
16	15.76	33.387	24.563	5.83	103.0	1.9	0.36	0.1	0.00	0.24	0.05	40.	2.7	2.7	2.7	0.06
25	15.41	33.347	24.610	5.88	103.2	2.0	0.39	0.1	0.00	0.39	0.16					
34	14.93	33.296	24.676	5.92	102.8	2.3	0.42	0.1	0.01	0.56	0.18	14.	4.1	4.5	4.3	0.07
44	14.19	33.214	24.770	5.94	101.6	2.7	0.49	0.6	0.03	0.76	0.22					
54	12.51	33.188	25.087	5.21	86.0	5.8	0.88	6.7	0.14	0.40	0.25	4.6	1.4	1.4	1.4	0.04
64	12.23	33.460	25.352	4.36	71.7	9.9	1.17	11.6	0.04	0.20	0.19					
73	12.04	33.491	25.412	4.18	68.5	10.7	1.23	12.6	0.03	0.16	0.15	1.6	0.26	0.31	0.29	0.04
88	11.63	33.566	25.547	3.91	63.5	12.8	1.37	14.8	0.02	0.08	0.11					
102	11.21	33.606	25.655	3.70	59.6	14.7	1.47	16.5	0.02	0.05	0.08	0.30	0.00	0.01	0.00	0.03

A) INCUBATION LIGHT INTENSITIES WERE 94, 41, 15, 4.5, 1.6, 0.30 PERCENT RESPECTIVELY.

RV DAVID STARR JORDAN CALCOFI CRUISE 0302 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE							
32 5.7 N	120 38.6 W	04/02/03	1808 UTC	24 m		1215 - 1800 PST	1217 PST	1800 PST	217.1 mg C/m2							
DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	S103 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/l	PHAE0 ug/l	LIGHT PCT	1	2	MEAN	DARK
1	15.04	33.077	24.482	5.90	102.6	0.6	0.41	0.0	0.00	0.19	0.05	94. A	2.7	2.3	2.5	0.05
8	14.96	33.064	24.489	5.90	102.4	0.9	0.41	0.0	0.00	0.22	0.06					
15	14.94	33.067	24.496	5.90	102.4	0.7	0.40	0.0	0.00	0.23	0.07	38.	3.5	3.4	3.4	0.08
23	14.91	33.072	24.507	5.90	102.3	0.7	0.40	0.0	0.00	0.30	0.10					
31	14.72	33.078	24.552	5.98	103.3	0.9	0.42	0.1	0.01	0.52	0.21	14.	4.9	5.2	5.0	0.06
39	14.05	33.202	24.789	5.85	99.8	1.8	0.51	0.7	0.07	0.81	0.54					
48	13.23	33.262	25.003	5.52	92.6	4.2	0.74	4.4	0.13	0.62	0.50	4.6	2.8	3.0	2.9	0.04
56	12.01	33.505	25.428	4.60	75.3	11.1	1.22	12.5	0.05	0.29	0.40					
65	11.07	33.553	25.638	4.20	67.4	14.4	1.42	16.2	0.03	0.20	0.31	1.6	0.67	0.65	0.66	0.02
78	9.90	33.648	25.915	3.56	55.7	20.4	1.72	21.4	0.02	0.07	0.08					
91	9.68	33.710	26.000	3.30	51.4	22.4	1.79	22.9	0.01	0.04	0.05	0.30	0.01	0.01	0.01	0.02

RV DAVID STARR JORDAN CALCOFI CRUISE 0302 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE							
30 45.3 N	123 20.0 W	03/02/03	1741 UTC	28 m		1225 - 1810 PST	1227 PST	1814 PST	102.1 mg C/m2							
DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	S103 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/l	PHAE0 ug/l	LIGHT PCT	1	2	MEAN	DARK
2	15.79	33.010	24.265	5.80	102.3	0.6	0.39	0.1	0.00	0.15	0.04	90. A	0.72	0.52	0.62	0.03
17	15.77	33.010	24.270	5.75	101.4	0.5	0.39	0.0	0.00	0.16	0.04	39.	2.1	2.1	2.1	0.04
27	15.77	33.009	24.270	5.76	101.6	0.5	0.39	0.0	0.00	0.15	0.04					
35	15.77	33.009	24.270	5.76	101.6	0.5	0.39	0.0	0.00	0.16	0.04	15.	1.5	1.6	1.5	0.04
47	15.77	33.010	24.271	5.76	101.6	0.4	0.40	0.0	0.00	0.16	0.04					
57	15.77	33.009	24.271	5.76	101.6	0.3	0.39	0.0	0.00	0.15	0.05	4.4	0.79	0.78	0.79	0.03
66	15.67	33.007	24.292	5.78	101.7	0.2	0.39	0.0	0.00	0.16	0.06					
77	15.16	33.134	24.502	5.82	101.5	0.9	0.42	0.1	0.03	0.23	0.14	1.5	0.58	0.63	0.60	0.02
86	12.87	32.865	24.768	5.95	98.8	2.0	0.56	1.0	0.19	0.19	0.21					
95	12.04	32.781	24.861	5.86	95.6	2.8	0.69	3.1	0.06	0.17	0.23					
106	11.51	32.813	24.984	5.71	92.1	4.0	0.80	5.6	0.03	0.12	0.15	0.30	0.04	0.00	0.02	0.02

RV DAVID STARR JORDAN CALCOFI CRUISE 0302 STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE							
32 21.0 N	118 33.4 W	31/01/03	1803 UTC	34 m		1205 - 1759 PST	1207 PST	1759 PST	334.6 mg C/m2							
DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	S103 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/l	PHAE0 ug/l	LIGHT PCT	1	2	MEAN	DARK
2	16.15	33.418	24.498	5.79	103.2	2.8	0.35	0.0	0.00	0.19	0.04	91. A	3.1	3.2	3.2	0.05
11	16.09	33.412	24.507	5.78	102.8	2.8	0.35	0.0	0.00	0.20	0.04					
21	16.03	33.407	24.517	5.80	103.1	2.7	0.35	0.0	0.01	0.22	0.05	39.	4.0	4.5	4.2	0.06
32	15.60	33.345	24.566	5.85	103.0	2.8	0.37	0.0	0.01	0.32	0.11					
44	15.48	33.339	24.589	5.89	103.5	2.8	0.37	0.1	0.01	0.43	0.15	14.	4.5	4.7	4.6	0.06
51	14.69	33.281	24.716	5.82	100.6	3.4	0.44	0.2	0.03	0.79	0.23					
59	13.69	33.202	24.864	5.69	96.3	4.4	0.58	1.8	0.08	0.77	0.35					
68	13.12	33.181	24.963	5.50	92.0	5.4	0.70	3.7	0.11	0.67	0.41	4.6	3.5	3.3	3.4	0.03
80	12.44	33.305	25.192	4.89	80.7	8.2	0.97	8.4	0.05	0.33	0.34					
92	12.44	33.469	25.319	4.32	71.3	10.4	1.13	10.8	0.03	0.20	0.22	1.6	0.66	0.60	0.63	0.02
105	11.58	33.503	25.508	4.14	67.1	12.7	1.28	13.7	0.02	0.08	0.11					
116	10.87	33.581	25.697	3.95	63.1	15.3	1.41	16.3	0.02	0.03	0.05					
130	10.59	33.668	25.814	3.66	58.2	17.6	1.52	18.1	0.02	0.02	0.04	0.28	0.01	0.02	0.02	0.00

RV DAVID STARR JORDAN CALCOFI CRUISE 0302 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE							
31 11.1 N	120 54.7 W	01/02/03	1830 UTC	24 m		1215 - 1802 PST	1218 PST	1802 PST	127.8 mg C/m2							
DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	S103 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/l	PHAE0 ug/l	LIGHT PCT	1	2	MEAN	DARK
2	15.43	33.180	24.476	5.87	102.9	0.8	0.38	0.0	0.00	0.16	0.03	88. A	2.2	2.3	2.2	0.07
15	15.41	33.181	24.482	5.89	103.2	0.8	0.38	0.0	0.00	0.17	0.03	38.	2.3	2.3	2.3	0.07
30	15.38	33.200	24.503	5.92	103.7	0.8	0.37	0.0	0.00	0.23	0.05	15.	1.5	1.5	1.5	0.06
39	15.31	33.201	24.520	5.97	104.4	0.8	0.38	0.0	0.00	0.27	0.06					
48	14.32	33.151	24.694	6.41	109.9	1.5	0.43	0.1	0.04	0.54	0.27	4.6	2.2	2.3	2.3	0.04
56	14.02	33.153	24.758	5.89	100.3	2.0	0.48	0.7	0.17	0.55	0.26					
65	13.26	33.111	24.881	5.74	96.2	3.2	0.62	2.7	0.22	0.28	0.21	1.6	0.56	0.51	0.54	0.04
74	12.24	33.025	25.013	5.63	92.3	4.7	0.79	5.5	0.05	0.17	0.19					
83	11.22	32.905	25.108	5.53	88.7	6.3	0.97	7.8	0.03	0.14	0.14					
91	10.78	32.909	25.189	5.48	87.0	7.5	1.03	9.4	0.03	0.11	0.09	0.30	0.02	0.02	0.02	0.01

RV DAVID STARR JORDAN CALCOFI CRUISE 0302 STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE							
30 10.9 N	122 55.5 W	02/02/03	1751 UTC	27 m		1225 - 1816 PST	1226 PST	1816 PST	96.5 mg C/m2							
DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	S103 uM/L	P04 uM/L	N03 uM/L	N02 uM/L	CHL-A ug/l	PHAE0 ug/l	LIGHT PCT	1	2	MEAN	DARK
2	16.56	33.266	24.287	5.66	101.6	1.0	0.38	0.1	0.01	0.11	0.03	89. A	0.95	1.0	0.97	0.03
17	16.55	33.266	24.290	5.66	101.5	1.1	0.37	0.1	0.00	0.12	0.02	38.	1.9	1.9	1.9	0.04
26	16.55	33.267	24.291	5.66	101.5	1.0	0.37	0.0	0.00	0.11	0.02					

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MACROZOOPLANKTON BIOMASS
Net Mesh Size: 0.505mm

Line	Sta.	Latitude N	Longitude W	Mo/Day	Date	Time (PST)	Water Volume	Max. Tow Depth (m)	Volume per	
					Start	End	Strained (m ³)		1000 m ³ Total (cm ³)	Strained Small (cm ³)
77	49	35 04.7	120 46.6	02/15	0233	0239	135	56	74	74
77	51	35 00.7	120 55.5	02/15	0003	0025	498	210	108	108
77	55	34 54.6	121 13.6	02/14	2021	2043	516	209	29	29
77	60	34 43.4	121 34.0	02/14	1558	1620	496	209	22	22
77	70	34 23.2	122 15.4	02/14	0827	0849	473	210	38	38
77	80	34 03.6	122 56.4	02/14	0106	0127	482	213	37	37
77	90	33 43.8	123 39.4	02/13	1830	1852	495	213	30	30
77	100	33 23.2	124 19.9	02/13	1209	1231	500	211	16	16
80	51	34 27.6	120 33.1	02/11	0446	0453	184	64	120	120
80	60	34 09.0	121 09.0	02/24	1548	1610	471	208	32	32
80	70	33 49.2	121 49.8	02/12	0833	0854	509	211	26	26
80	80	33 27.7	122 31.3	02/12	1700	1722	508	210	8	8
80	90	33 08.7	123 13.	02/12	2313	2334	477	213	42	42
80	100	32 49.5	123 54.3	02/13	0544	0605	450	212	73	73
82	47	34 16.3	120 01.0	02/10	2355	0017	437	220	43	43
83	40.6	34 14.0	119 24.4	02/10	0929	0932	62	20	32	32
83	42	34 11.2	119 30.7	02/10	0759	0809	222	101	77	77
83	51	33 53.1	120 09.2	02/10	0158	0208	230	96	74	74
83	55	33 44.6	120 26.0	02/09	2228	2250	466	214	32	32
83	60	33 34.8	120 46.6	02/09	1807	1828	458	210	52	52
83	70	33 14.6	121 25.4	02/09	1148	1209	449	213	33	33
83	80	32 55.5	122 07.0	02/09	0558	0620	468	210	53	53
83	90	32 35.0	122 47.6	02/09	0020	0042	472	212	32	32
83	100	32 15.3	123 29.4	02/08	1823	1845	454	210	46	46
83	110	31 55.2	124 09.8	02/08	1221	1243	453	216	29	29
87	33	33 53.5	118 29.0	02/06	0107	0112	118	49	42	42
87	35	33 49.6	118 37.5	02/06	0343	0404	448	210	47	47
87	40	33 39.3	118 59.7	02/06	0806	0828	435	214	37	37
87	45	33 29.1	119 18.7	02/06	1212	1233	437	213	39	39
87	50	33 20.3	119 38.8	02/06	1555	1604	166	67	54	54
87	55	33 09.1	119 58.8	02/06	2005	2027	469	214	34	34
87	60	32 58.9	120 20.6	02/07	0025	0046	443	214	68	68
87	70	32 38.3	121 02.2	02/07	0610	0631	470	209	53	53
87	80	32 19.0	121 42.1	02/07	1211	1233	472	210	25	25
87	90	31 59.7	122 24.7	02/07	1814	1836	489	223	27	27
87	100	31 40.2	123 04.8	02/08	0007	0029	475	213	40	40
87	110	31 19.7	123 44.5	02/08	0605	0627	458	213	46	46
90	28	33 29.1	117 47.2	02/05	1816	1838	463	211	136	125
90	30	33 25.1	117 54.7	02/05	1532	1553	459	211	20	20
90	35	33 15.2	118 14.8	02/05	1143	1204	455	210	20	20
90	37	33 11.2	118 23.1	02/05	0854	0916	438	214	50	50
90	45	32 55.8	118 57.0	02/05	0327	0348	454	212	24	24
90	53	32 38.4	119 29.0	02/04	2207	2229	463	211	67	67
90	60	32 25.3	119 57.1	02/04	1715	1737	449	210	51	51
90	70	32 05.5	120 39.2	02/04	1119	1141	466	211	26	26
90	80	31 45.0	121 19.2	02/04	0441	0502	462	210	37	37
90	90	31 24.6	121 58.8	02/03	2234	2256	460	216	46	46
90	100	31 05.2	122 39.3	02/03	1622	1643	474	210	40	40
90	110	30 45.8	123 20.5	02/03	0824	0846	473	212	19	19
90	120	30 25.9	123 59.5	02/03	0047	0108	490	212	27	27
93	26.7	32 57.9	117 19.1	01/30	1519	1541	478	209	33	33
93	28	32 54.6	117 23.8	01/30	1832	1854	461	211	28	28
93	30	32 50.6	117 32.3	01/30	2200	2222	476	211	67	67
93	35	32 41.1	117 53.3	01/31	0205	0227	467	213	47	47
93	40	32 31.0	118 12.7	01/31	0555	0616	461	210	46	46
93	45	32 21.1	118 34.0	01/31	0855	0917	452	210	35	35
93	50	32 10.5	118 53.3	01/31	1426	1448	472	228	17	17
93	55	32 00.9	119 14.1	01/31	1829	1850	466	209	28	28
93	60	31 51.3	119 34.2	01/31	2239	2301	451	214	38	38
93	70	31 31.6	120 14.7	02/01	0502	0524	476	212	92	92
93	80	31 11.6	120 54.4	02/01	1136	1158	434	215	16	16
93	90	30 51.2	121 35.3	02/01	1803	1825	501	222	26	26
93	100	30 31.1	122 16.0	02/02	0022	0043	519	206	42	42
93	110	30 11.4	122 56.2	02/02	0829	0851	497	217	22	22
93	120	29 51.0	123 35.9	02/02	1705	1727	477	217	19	19

FIGURES

Avifauna Observations

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- 1a. Cassin's Auklet distribution.
- 1b. Black-vented Shearwater distribution.
- 1c. Common Murre distribution.
- 1d. Unidentified Gull distribution.
- 1e. Northern Fulmar distribution.
- 1f. Black-legged Kittiwake distribution.

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