UNIVERSITY OF CALIFORNIA, SAN DIEGO SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

CalCOFI Cruise 9101
8 January – 23 January 1991

CalCOFI Cruise 9103
26 February – 11 March 1991

SIO Reference 91-22
15 August 1991

UNIVERSITY OF CALIFORNIA, SAN DIEGO

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093-0227

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Approved for distribution:

Edward A. Frieman, Director

CONTENTS

INTRODUCTION

The data in this report were collected during Cruises 9101* and 9103 of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the NOAA ship *David Starr Jordan.* The CalCOFI program was organized in the late 1940s to study the causes of variations in population size of fishes of importance to the State of California. It is carried out by NOAA's National Marine Fisheries Service Southwest Fisheries Science Center, the California Department of Fish and Game, and the Marine Life Research Group (MLRG) at Scripps Institution of Oceanography (SIO). MLRG contributes to this program by investigations of the physical, chemical and biological structure of the California Current. Data from CalCOFI Cruises 9101 and 9103 were collected and processed by personnel of the Marine: Life Research Group and the Southwest Fisheries Science Center. Volunteers and other SIO staff members also assisted in the collection of data and chemical analyses at sea.

In addition to the usual horizontal maps of characteristics at the surface and at 200 m, vertical sections of various properties measured on CalCOFI line 90 appear in this report.

STANDARD PROCEDURES

Hydrographic Cast Data

The hydrographic casts usually consisted of 20 three-liter plastic (PVC) bottles lowered to a maximum sampling depth of 500 meters, bottom depth permitting. Temperature, salinity, oxygen and nutrients were determined at sea for all depths sampled. Chlorophyll-a and phaeopigments were determined at sea from the top 14 depths. A special near-bottom cast was done in the Santa Barbara Basin on each cruise.

Paired protected reversing thermometers read by two observers were used to determine temperatures which were then recorded to hundredths of a degree Celsius. The temperatures are reported relative to the International Practical Temperature Scale of 1968 (IPTS-68). The new International Temperature Scale of 1990 (ITS-90) differs from the IPTS-68 by less than 0.01° C over oceanic temperature ranges, so the distinction between the two scales is of marginal significance for temperatures listed to the nearest hundredth of a degree. Most sampling bottles used below a depth of about 75 meters were equipped with unprotected thermometers for determination of the depth of sampling, using the Saunders (1981) pressure-to-depth conversion technique.

Salinity samples were analyzed at sea using inductive-type salinometers standardized with substandard seawater. Periodic checks on the concentration of the substandard were made by comparison with IAPSO Standard Seawater batch P-78. Salinity values have been calculated from the algorithms for the Practical Salinity Scale, 1978 (UNESCO, 1981a) and were reported to three decimal places, provided that accepted standards were met. If only one determination per sample was obtained, or there was doubt concerning the accuracy of the analytical results, the salinities were reported to two decimal places.

Dissolved oxygen was determined 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).

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

Chlorophyll-a and phaeopigments were measured with a fluorometric technique (Yentsch and Menzel, 1963; Holm-Hansen *et al.,* 1965) from subsamples filtered onto GF/F filters. The pigments were extracted with a cold extraction technique in 90% acetone (Venrick and Hayward, 1984) and the fluoresence determined before and after acidification with a fluorometer.

Evaluation of the data involved comparisons with adjacent stations and consideration of the variation of a property as a function of density or depth and the relationships with other properties (Klein, 1973). Estimates of precision of the standard techniques are given in SIO, 1991.

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

Primary Production

Primary productivity casts were taken each clay shortly before local apparent noon (LAN). Primary production was estimated from 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 with 5-liter Niskin bottles attached to the hydrowire. The Niskin bottles were equipped with epoxy-coated springs and silicone-rubber O-rings. Where the productivity casts occurred at non-standard CalCOFI sampling locations, additional hydrographic bottles were added to extend the observations to 200 m. Triplicate samples (two light and one dark control) were drawn from each productivity sample depth into 250 ml polycarbonate incubation bottles. Samples were innoculated with 10uCi of C as NaHCO3 (200 ul of 50 uCi/ml stock) prepared in a 0.3g/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 HA millipore filters and placed in scintillation vials. One half ml of 10% HC1 was added to each sample. The sample was then allowed to sit, without a cap, at room temperature for 12 hours (after Lean and Burnison, 1979). Following this, 10 ml of scintillation fluor were added to each sample and the samples were returned to SIO where the radioactivity was determined with a scintillation counter. Temperature, salinity, oxygen, nutrients, chlorophyll-a, and phaeopigments were determined for all depths.

Macrozooplankton Net Tows

Macrozooplankton was sampled with a 71-cm mouth diameter paired net (bongo net) equipped with 0.505-mm plankton mesh. Bottom depth permitting, the nets were towed obliquely from 210 m 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).

TABULATED DATA

Hydrographic Cast Data

The reported hydrographic cast time is the Coordinated Universal Time (UTC) of the messenger release. 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, taken on most daylight stations, are also reported.

Observed and interpolated standard depth data from hydrographic casts have been interspersed and are presented together sequentially by depth. Interpolated or extrapolated standard level data are noted by the footnote "ISL" printed after the depth. Density-related parameters have been calculated from the International Equation of State of Seawater 1980 (UNESCO, 1981, b). Computed values of potential temperature, sigma-theta, specific volume anomaly (SVA), dynamic height or geopotential anomaly, ;and pressure are included with both observed and interpolated standard depth levels.

Primary Production

In addition to the normal hydrographic data, 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, the dark uptake, chlorophyll-a and phaeopigments. 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 that the shallowest value continues to the surface and that negative values (when dark uptake exceeds light uptake) are zero. The uptake data have been presented to two significant digits (values <1.00) or one decimal (values >1.00). The higher production values may not warrant all of the digits presented. Incubation time, LAN, and civil twilight are given in local Pacific Standard Time (PST); to convert to UTC, add eight hours to the PST time. Incubation light intensities are listed in a footnote at the bottom of each page.

Macrozooplankton Data

Macrozooplankton biomass volumes are tabulated as total biomass volume ($cm^3/1000\ m^3$ 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.

ISL: After depth values indicates interpolated or extrapolated standard level.

U: Uncertain value. Values which are not used in interpolation because they seem to be in error without apparent reason.

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PERSONNEL

CalCOFI Cruise 9101

SHIP'S CAPTAIN

Gary Michael Albertson, RV *David Starr Jordan*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participation (Leg)
Griffith, David A. (in charge)	Fishery Biologist, NMFS	I, II
Abramenkoff, Dimitry N.	Fishery Biologist, NMFS	I, II
Bos, David L.	Staff Research Associate, SIO	I, II
Dotson, Ronald C.	Fishery Biologist, NMFS	I, II
Gripp, Sherry L.	Staff Research Associate, SIO	I,II
Gruber, Dennis W.	Marine Technician, SIO	I, II
Manion, Susan M.	Fishery Biologist, NMFS	I, II
Mullin, Michael M.	Director of MLRG, Professor, SIO	I, II
Renger, Edward H.	Staff Research Associate, SIO	I, II
Schwabe, Beverly J.	Student, Cal State, Fullerton	I
Veit, Richard R.	Post Doctoral Fellow, University of Washington	I,II
Wilkinson, James R.	Staff Research Associate, SIO	I,II

Leg I: San Diego to Dana Point, CA 8-14 Jan., 1991

Leg II: Dana Point to San Diego, CA 14-23 Jan., 1991

FIGURES

Cruise 9101

1. CalCOFI Cruise 9101, track and station positions.

2. Horizontal distribution of dynamic height anomaly (0 over 500 m). 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.

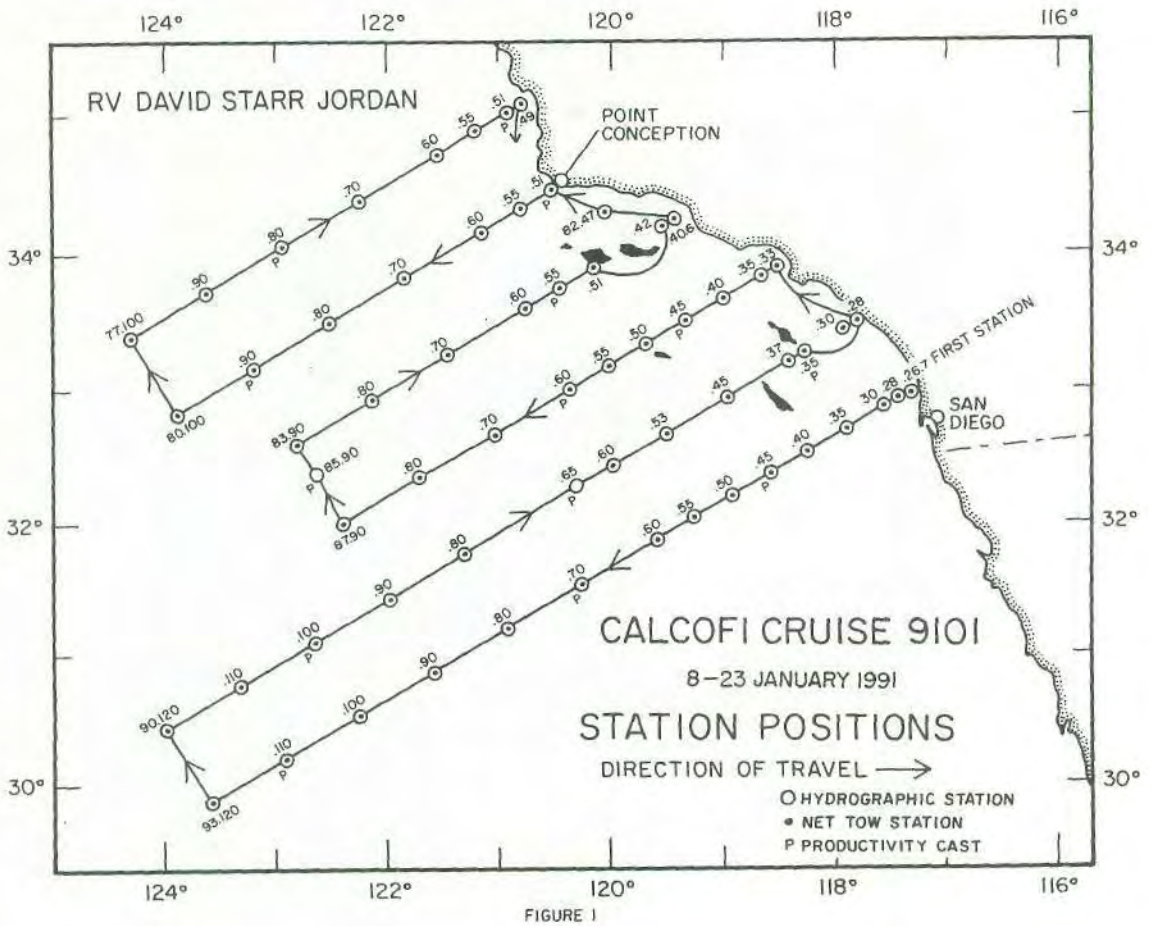

FIGURE 1

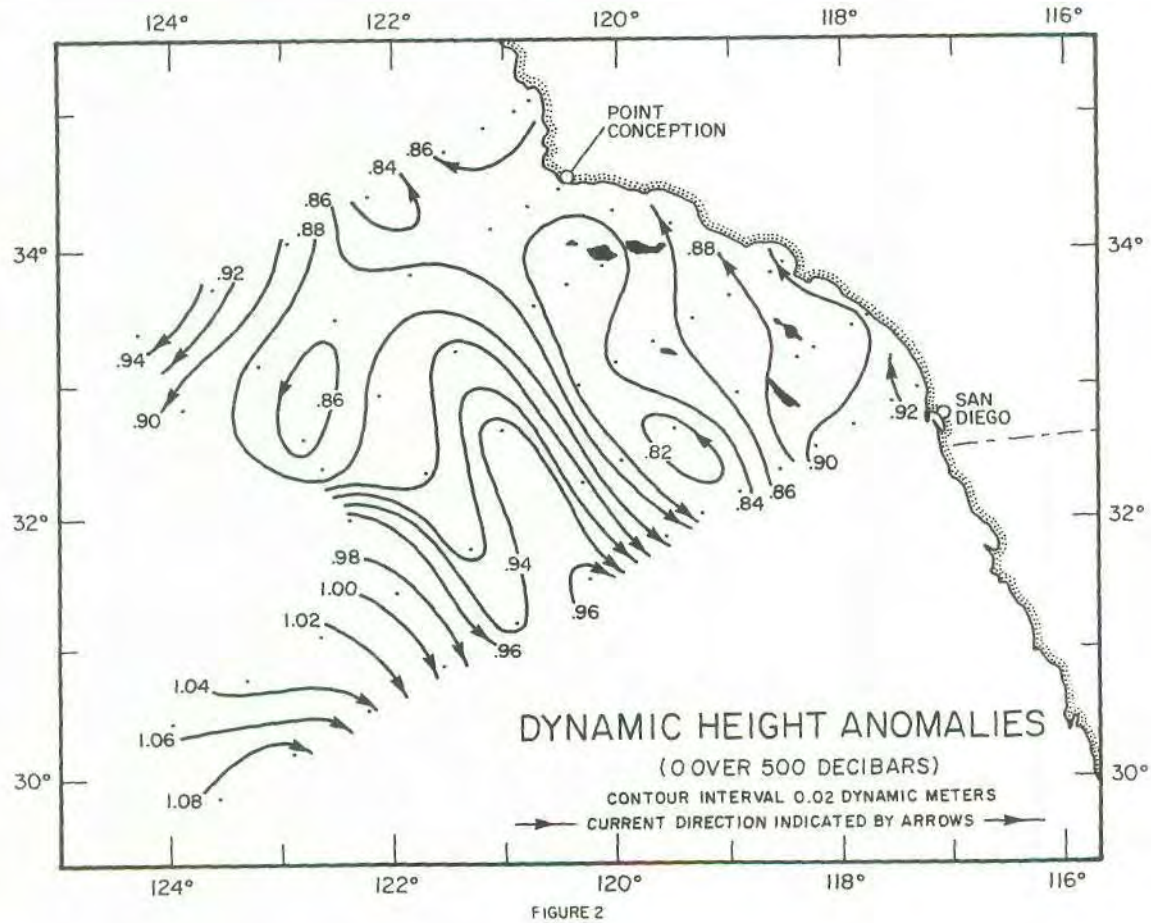

FIGURE 2

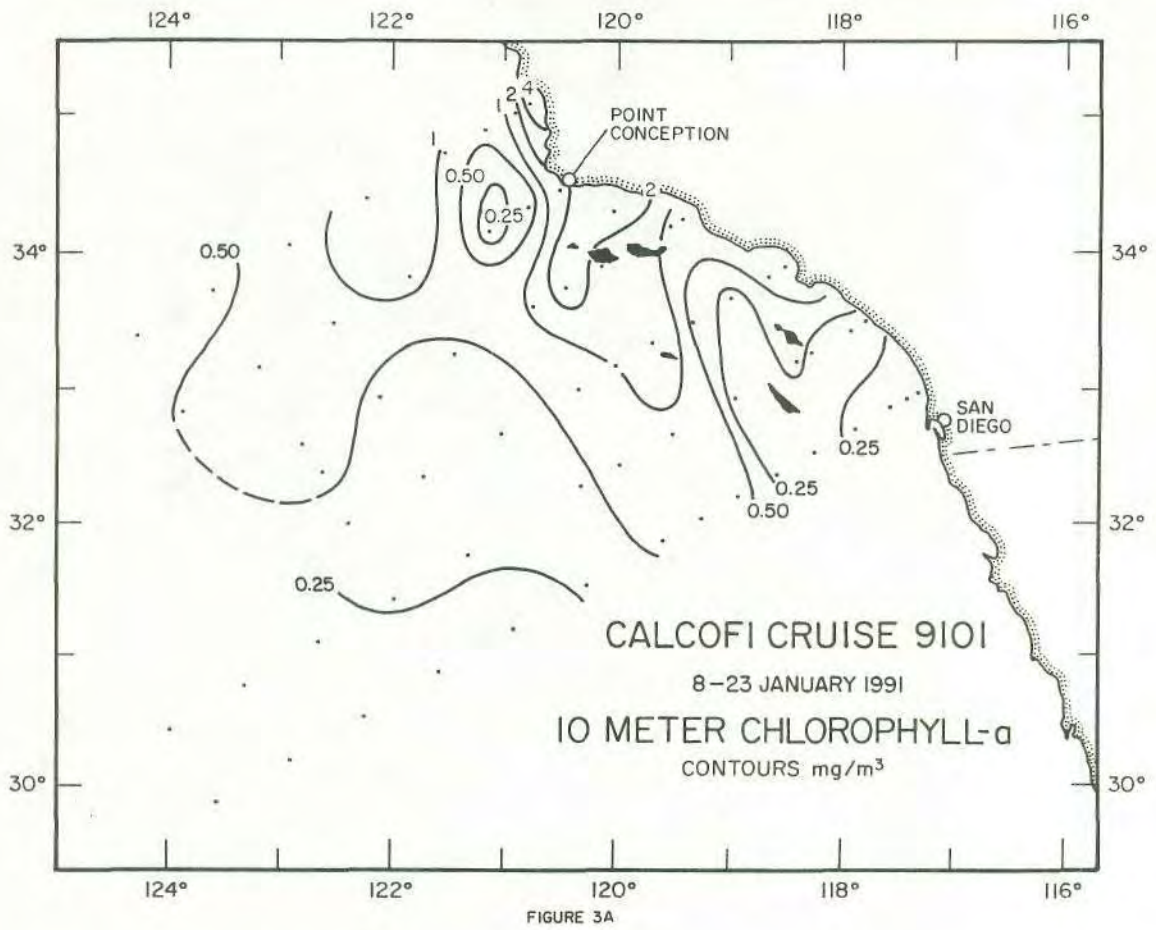

FIGURE 3A

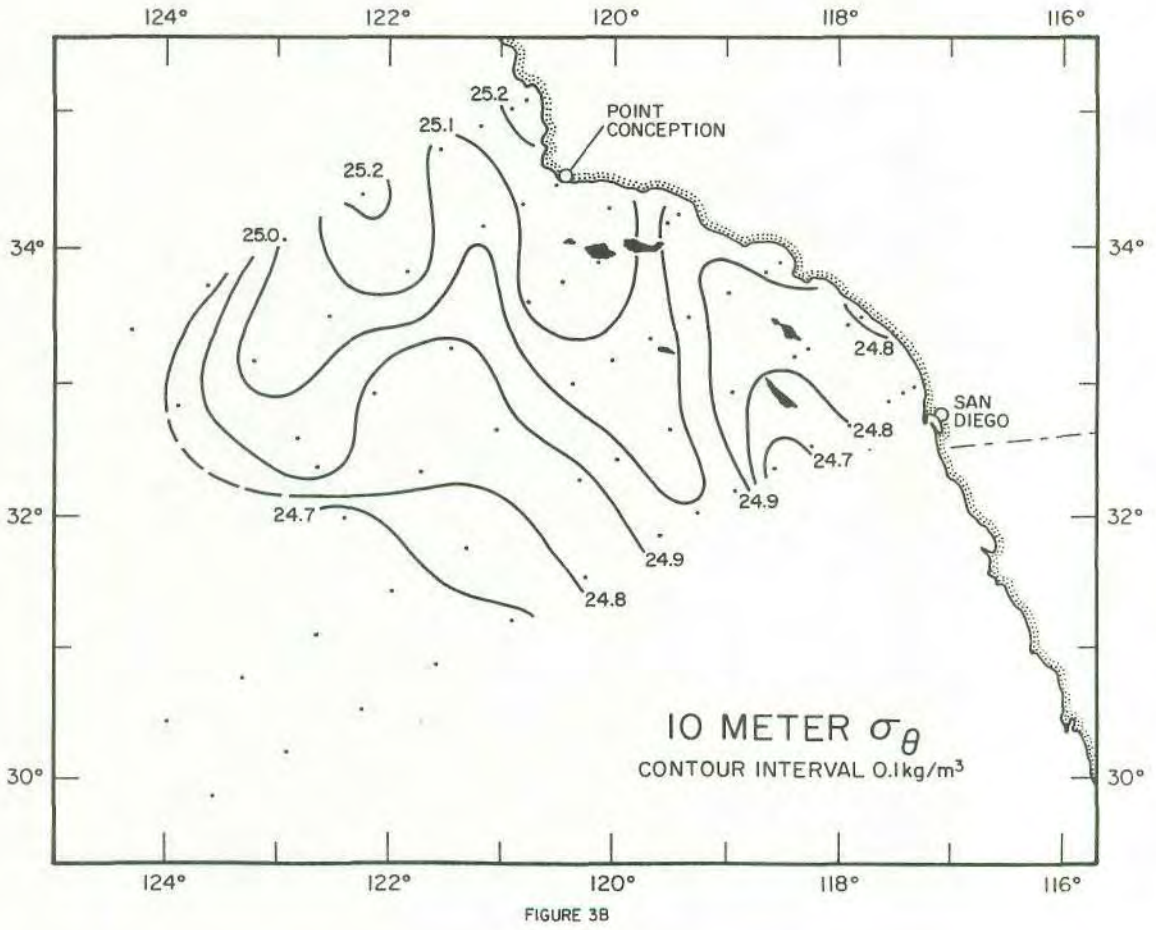

FIGURE 3B

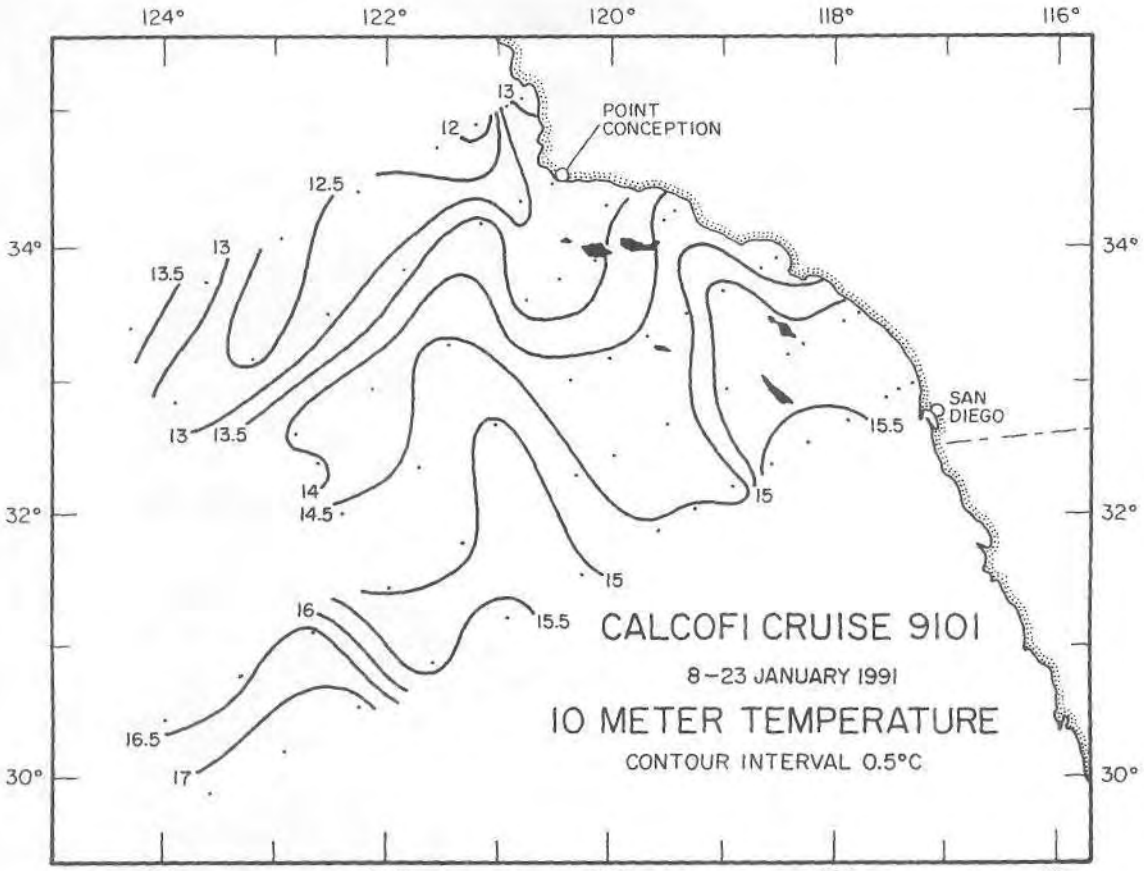

FIGURE 3C

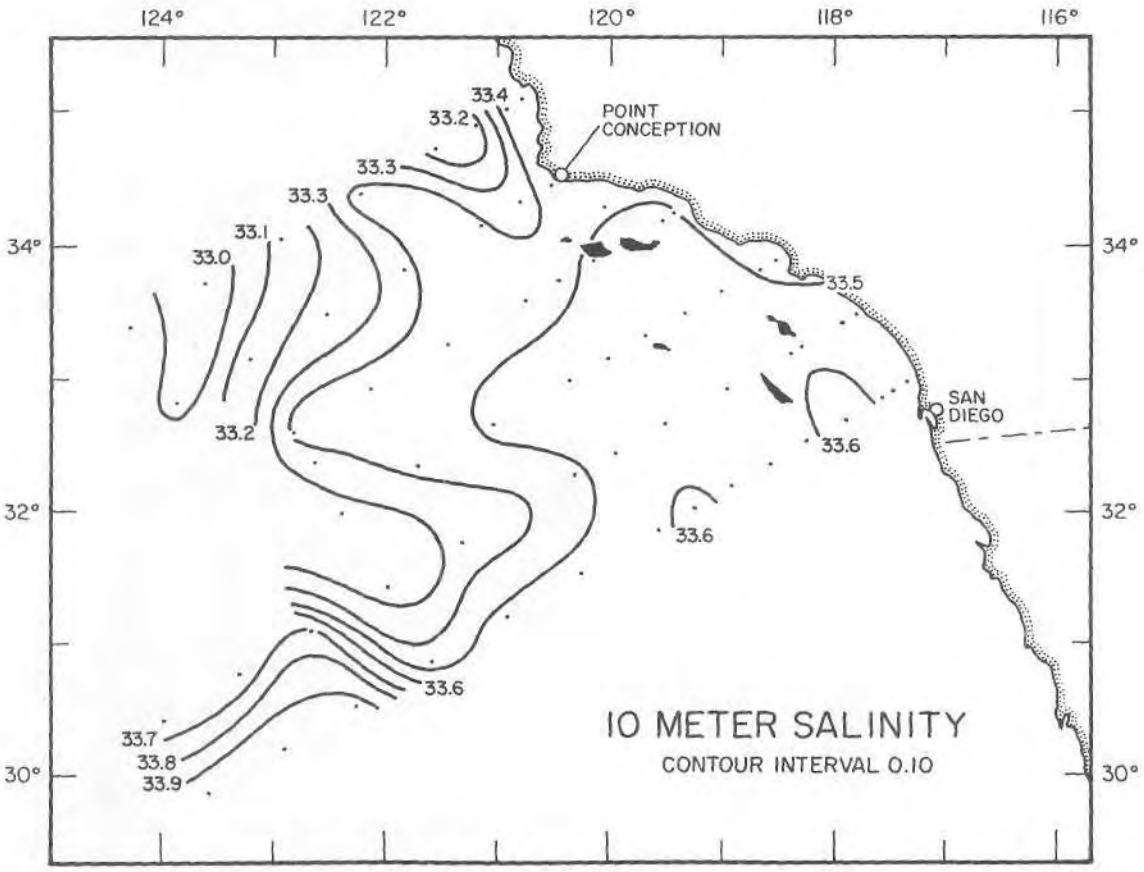

FIGURE 3D

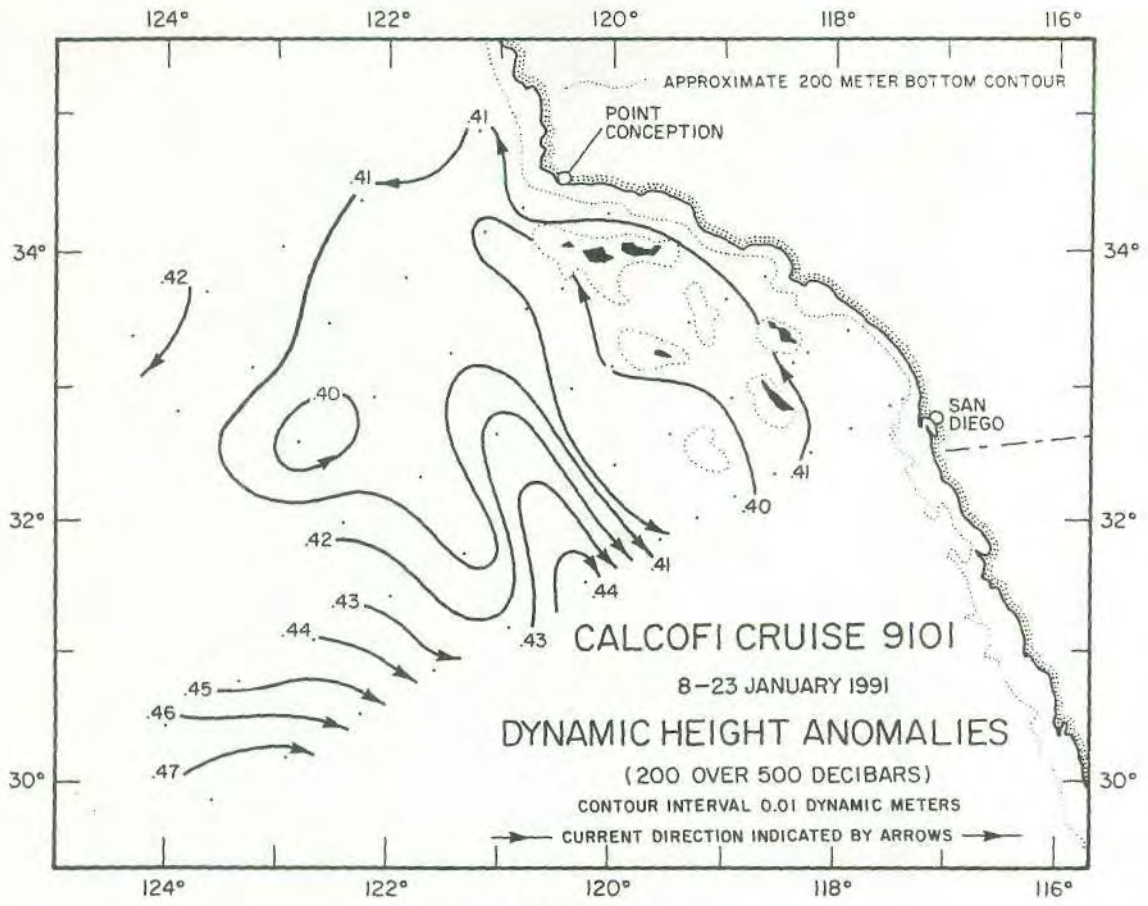

FIGURE 4A

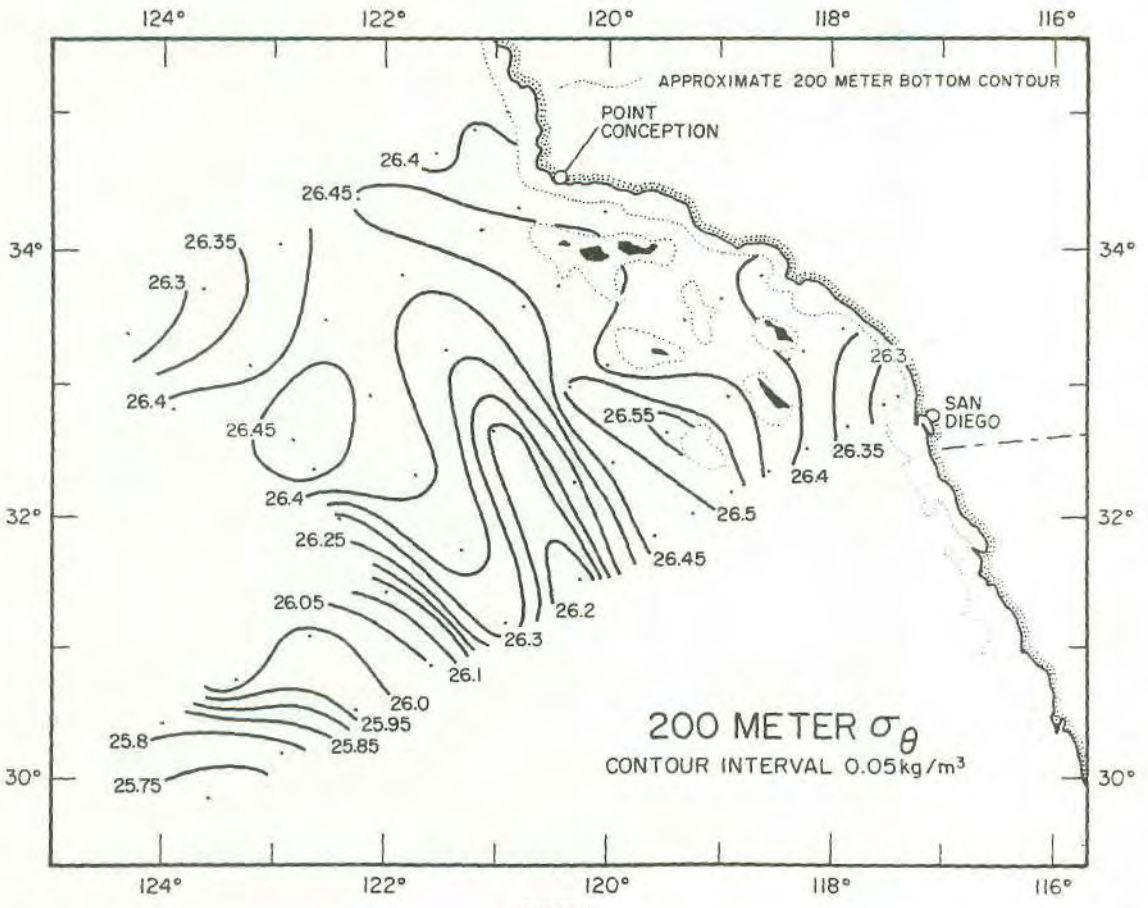

FIGURE 4B

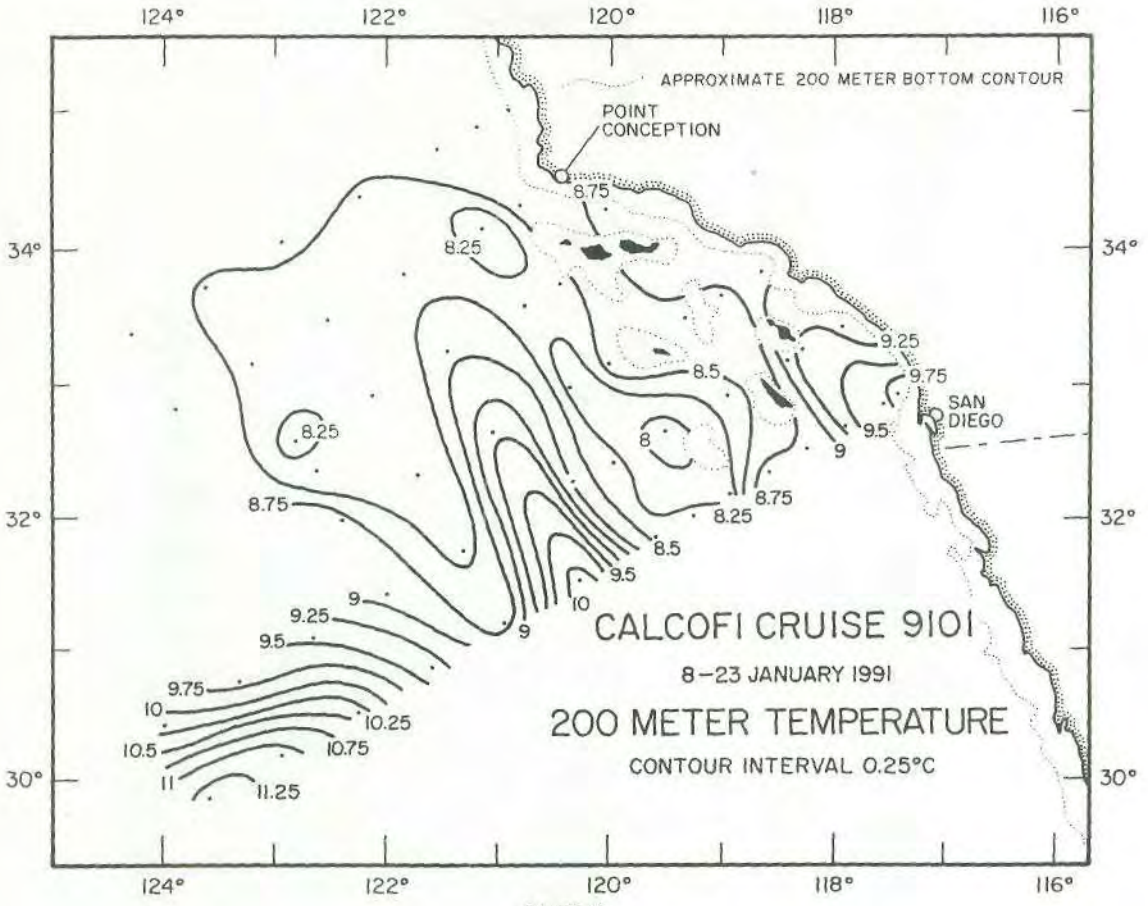

FIGURE 4C

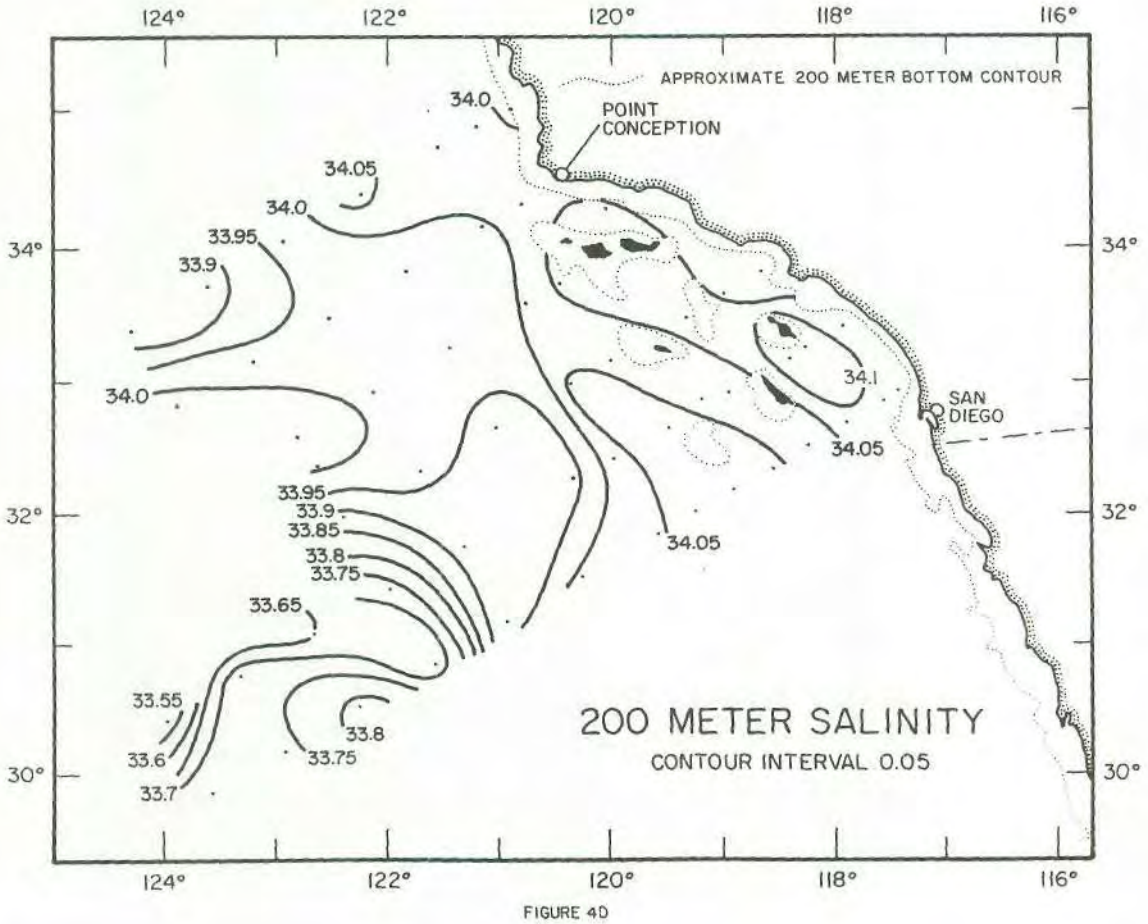

FIGURE 4D

CALCOFI CRUISE 9101

12-15 JANUARY 1991

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

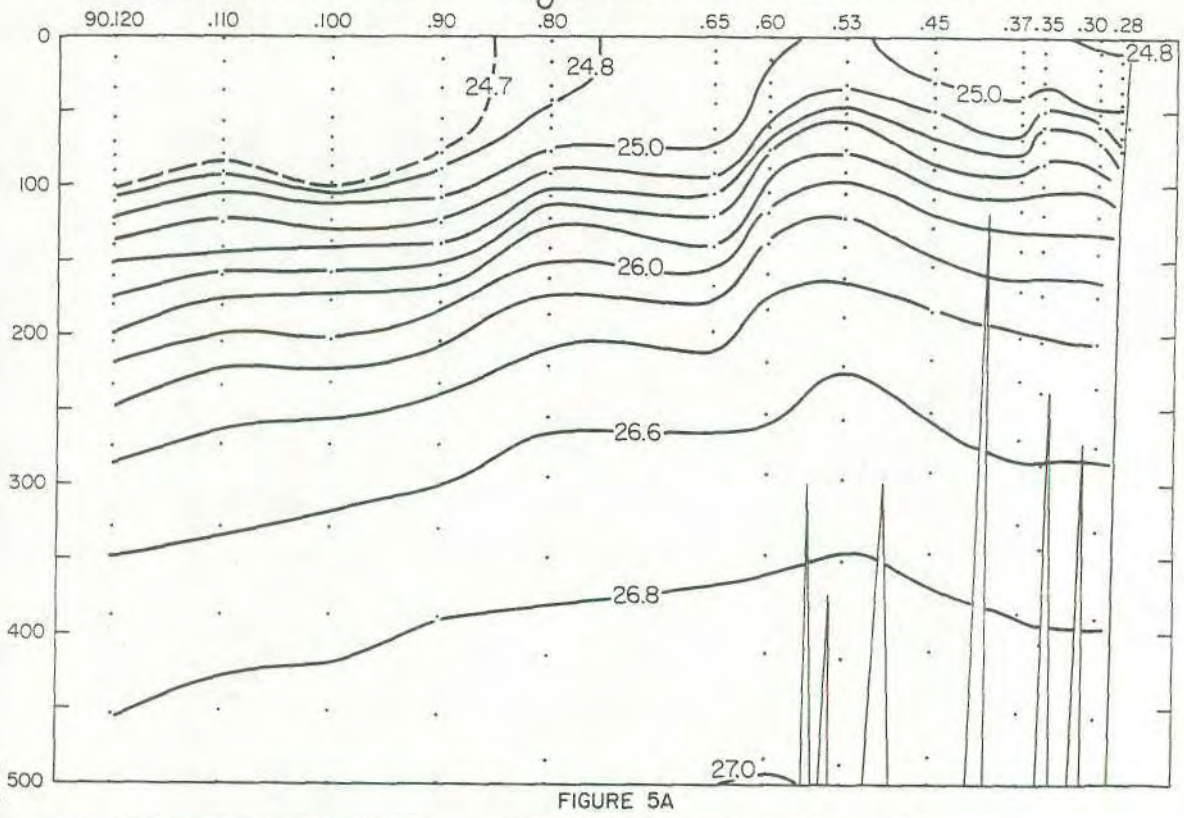

FIGURE 5A

TEMPERATURE (°C) ALONG CALCOFI LINE 90

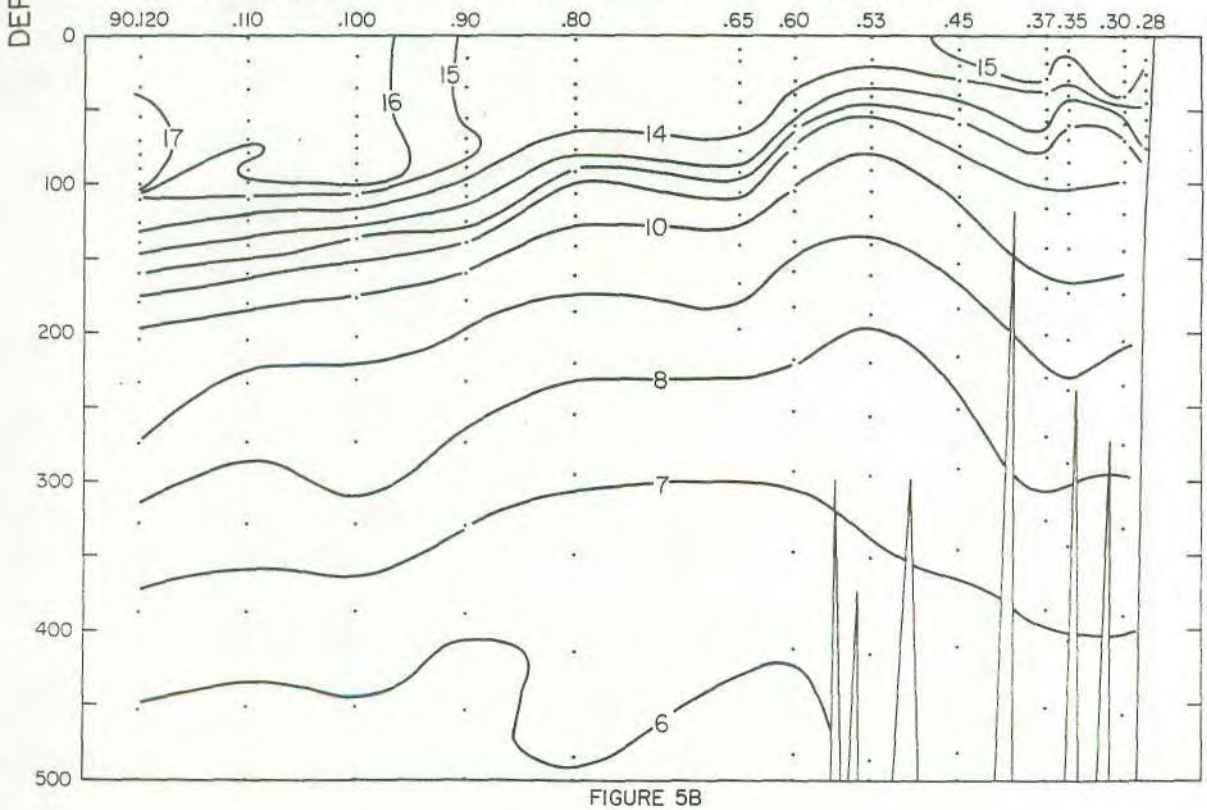

FIGURE 5B

CALCOFI CRUISE 9101

12-15 JANUARY 1991

SALINITY ALONG CALCOFI LINE 90

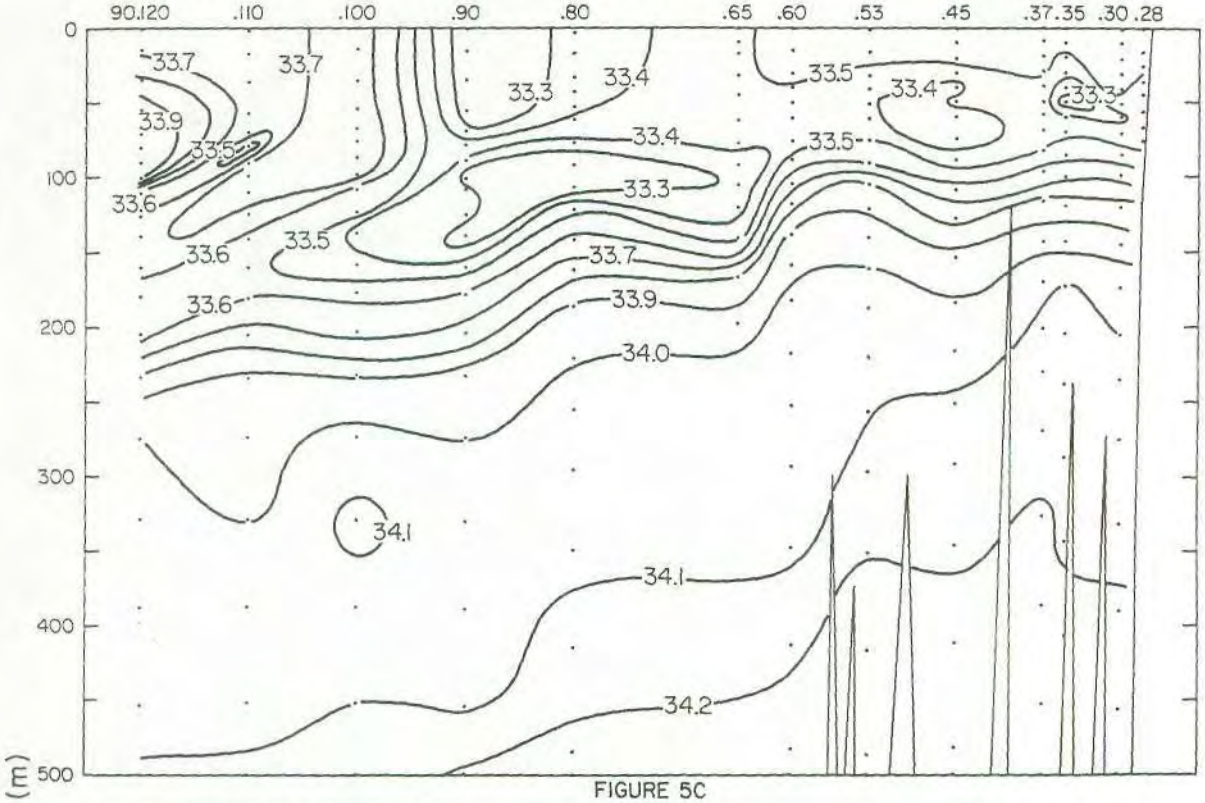

FIGURE 5C

SILICATE (μM/l) ALONG CALCOFI LINE 90

DEPTH (m)

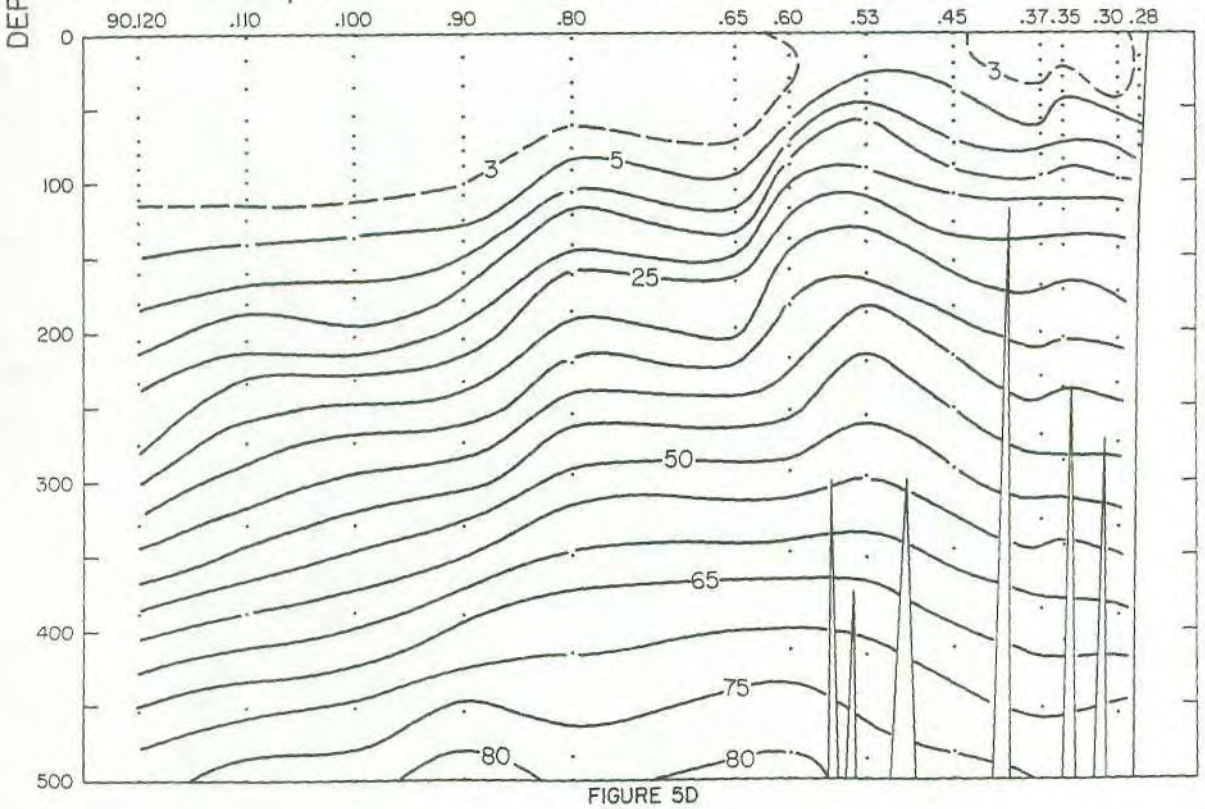

FIGURE 5D

CALCOFI CRUISE 9101
12-15 JANUARY 1991

NITRATE (μM/l) ALONG CALCOFI LINE 90

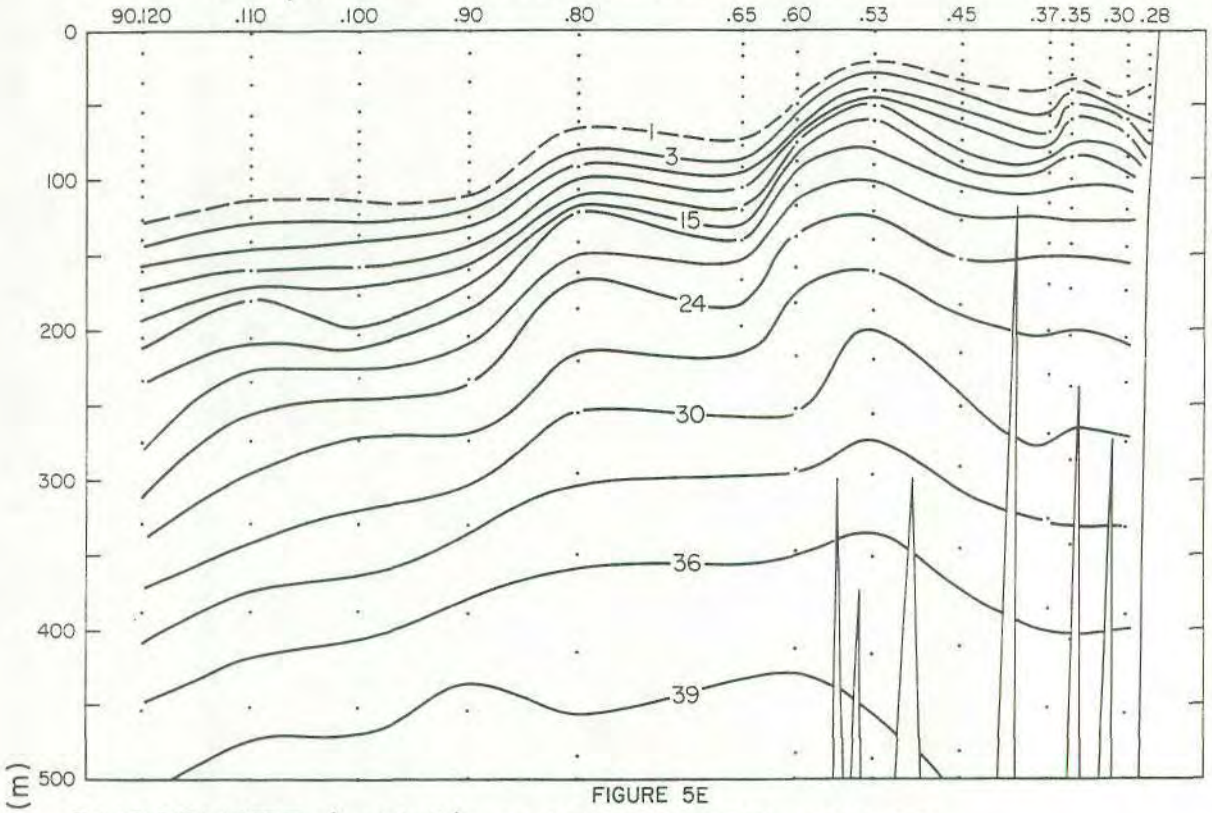

FIGURE 5E

PHOSPHATE (μM/l) ALONG CALCOFI LINE 90

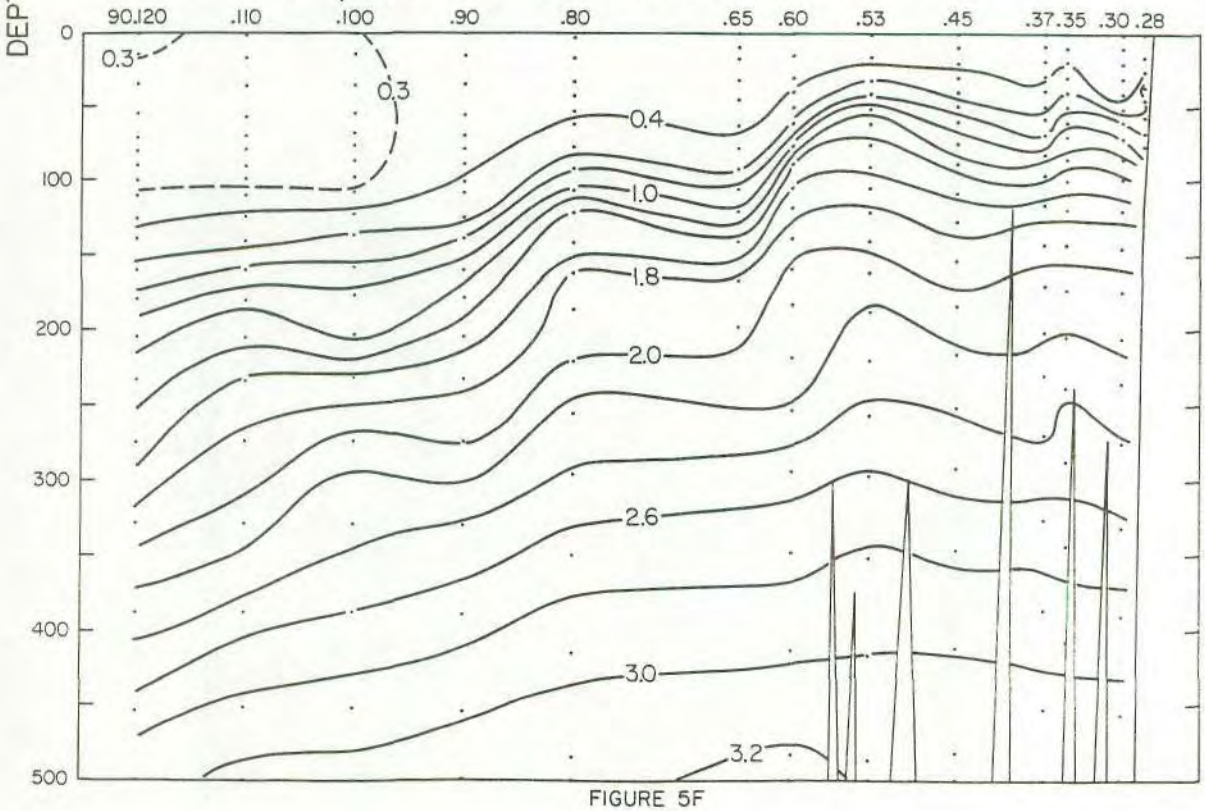

FIGURE 5F

CALCOFI CRUISE 9101

12-15 JANUARY 1991

CHLOROPHYLL-a ($\mu g/l$) ALONG CALCOFI LINE 90

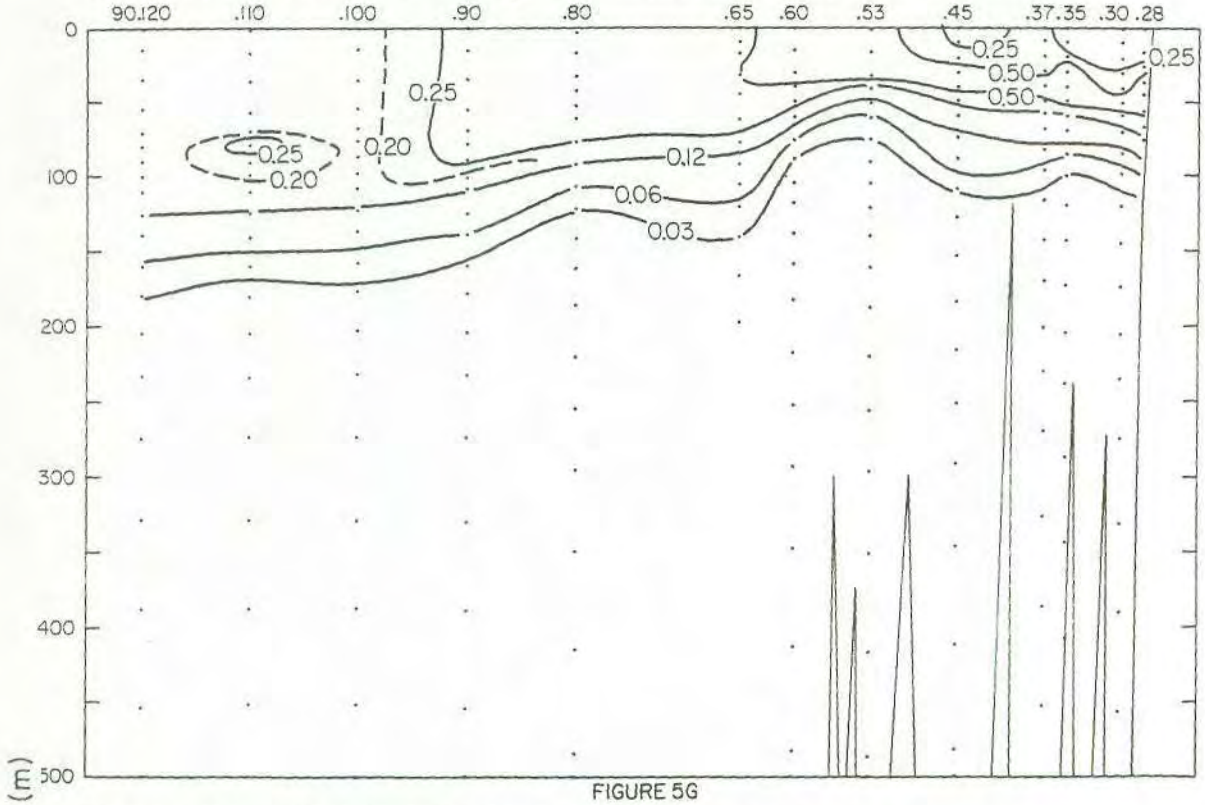

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

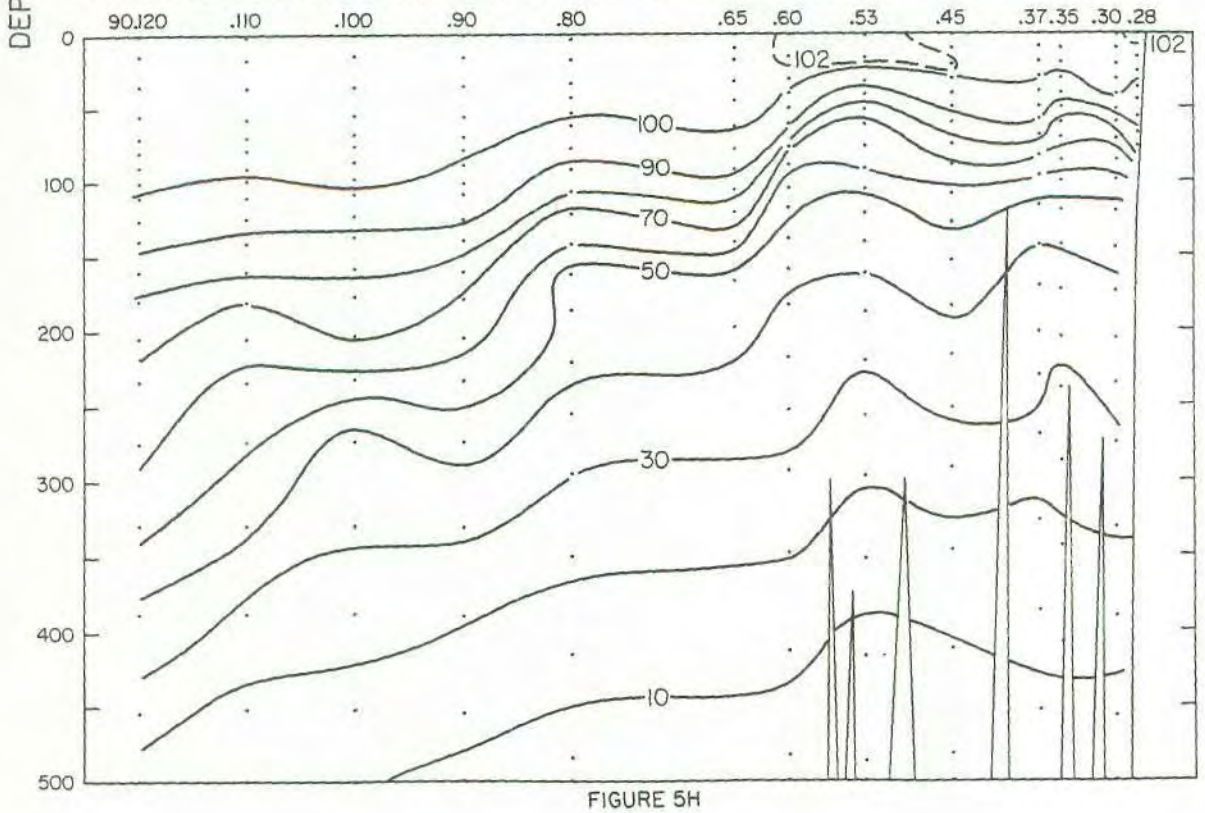

FIGURE 5H

CALCOFI CRUISE 9101
12-15 JANUARY 1991

OXYGEN (ml/l) ALONG CALCOFI LINE 90

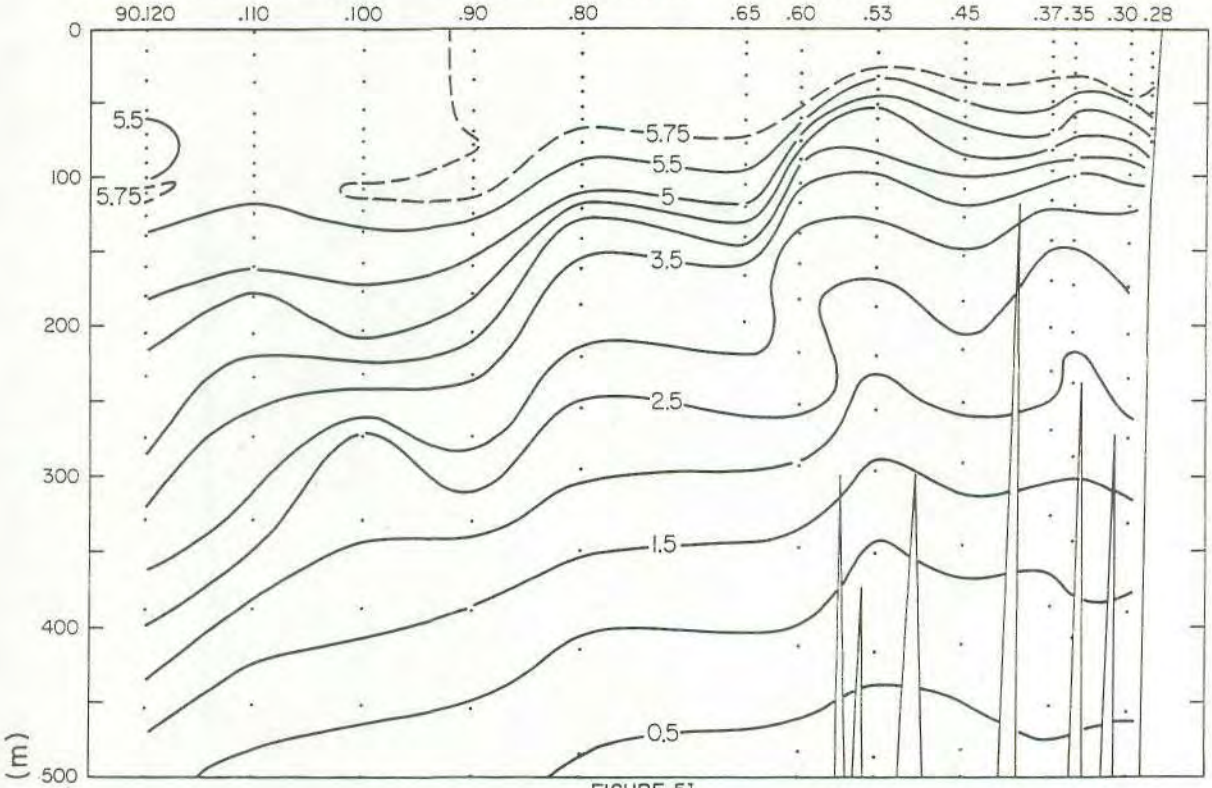

FIGURE 5I

NITRITE (μM/l) ALONG CALCOFI LINE 90

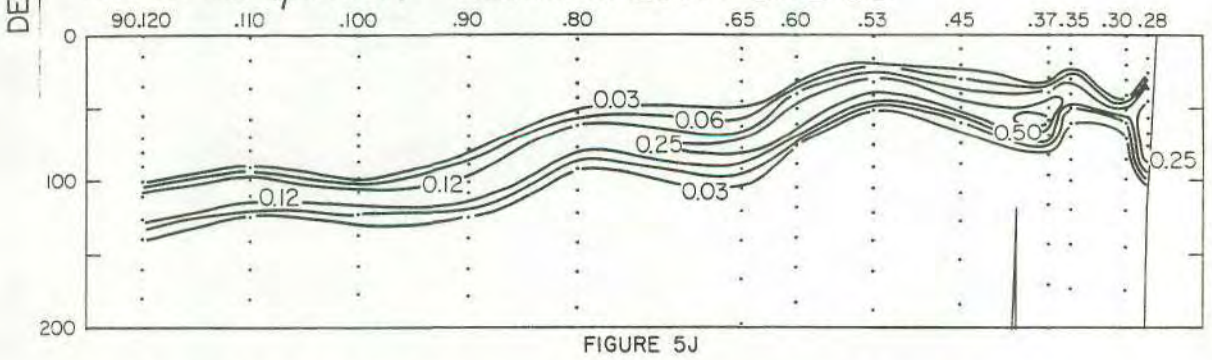

FIGURE 5J

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

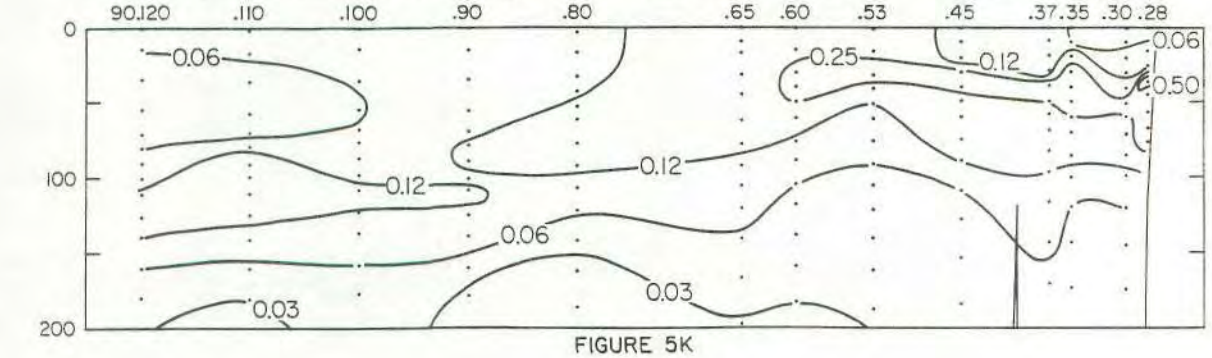

FIGURE 5K

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	MIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
35 5.4 N	120 46.5 W	22/01/91	2103 UTC	65 *m*	280	10 kn	270 01 04	0	1019.9 mb	16.0 C	12.5 C	07m 04	0/8	

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
1	0	12.88	12.88	33.499	25.254	270.6	0.000	6.37	106.2	3.5	0.43	1.1	0.13	3.95	0.64	0
1	10	12.68	12.68	33.496	25.292	267.3	0.027	6.29	104.5	3.6	0.44	1.1	0.13	4.94	0.98	10
1	20	12.67	12.67	33.496	25.294	267.3	0.054	6.13	101.8	3.7	0.46	1.5	0.15	4.27	0.85	20
1	30	12.66	12.66	33.497	25.297	267.3	0.080	6.11	101.4	3.7	0.47	1.6	0.16	4.36	0.79	30
1	40	12.65	12.64	33.495	25.297	267.5	0.107	6.05	100.4	3.8	0.51	1.9	0.18	4.01	0.82	40
1	50	12.60	12.59	33.498	25.310	266.6	0.134	5.95	98.6	4.4	0.54	2.1	0.19	3.11	0.72	50
1	60	12.19	12.18	33.519	25.405	257.8	0.160	5.06	83.2	10.3	0.97	7.1	0.37	1.69	0.84	60

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
35 1.3 N	120 55.1 W	22/01/91	1810 UTC	234 m	050	03 kn	310 01 05	0	1022.1 mb	13.7 C	10.2 C	17m 04	0/8	

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	13.10	13.10	33.489	25.203	275.4	0.000	6.03	101.0	3.9	0.52	1.5	0.17	0.89	0.32	0
1	1	13.10	13.10	33.489	25.203	275.4	0.003	6.03	101.0	3.9	0.52	1.5	0.17	0.89	0.32	1
	10 ISL	13.00	13.00	33.486	25.221	274.0	0.027	6.03	100.8	3.9	0.52	1.5	0.18	1.09	0.36	10
1	11	12.99	12.99	33.486	25.223	273.8	0.030	6.03	100.8	3.9	0.52	1.5	0.18	1.11	0.37	11
	20 ISL	12.95	12.95	33.486	25.231	273.3	0.055	5.99	100.0	3.9	0.53	1.6	0.18	1.05	0.43	20
1	21	12.95	12.95	33.486	25.231	273.3	0.058	5.99	100.0	3.9	0.53	1.6	0.18	1.04	0.44	21
	30 ISL	12.93	12.93	33.485	25.235	273.2	0.082	5.97	99.6	3.9	0.53	1.7	0.20	0.87	0.42	30
1	31	12.93	12.93	33.485	25.235	273.3	0.085	5.97	99.6	3.9	0.53	1.7	0.20	0.85	0.42	31
1	41	12.93	12.92	33.485	25.235	273.5	0.112	5.93	99.0	4.0	0.54	1.9	0.22	0.74	0.51	41
	50 ISL	12.89	12.88	33.486	25.244	272.9	0.137	5.88	98.1	4.3	0.56	2.2	0.25	0.58	0.40	50
1	51	12.88	12.87	33.486	25.246	272.7	0.140	5.87	97.9	4.3	0.56	2.2	0.25	0.57	0.39	51
1	61	12.29	12.28	33.476	25.353	262.8	0.166	5.29	87.1	7.2	0.83	6.2	0.30	0.68	0.44	61
1	72	12.06	12.05	33.484	25.403	258.3	0.195	4.99	81.8	8.7	0.93	8.2	0.23	0.44	0.41	72
	75 ISL	11.93	11.92	33.490	25.432	255.6	0.203	4.88	79.7	9.4	0.98	9.0	0.20	0.40	0.38	75
1	84	11.45	11.44	33.511	25.537	245.7	0.225	4.53	73.3	11.7	1.14	11.6	0.10	0.32	0.29	84
	100 ISL	10.47	10.46	33.549	25.741	226.5	0.263	4.01	63.5	16.5	1.43	16.5	0.03	0.15	0.20	101
1	104	10.26	10.25	33.561	25.787	222.2	0.272	3.90	61.5	17.6	1.49	17.6	0.03	0.12	0.19	105
1	124	10.06	10.05	33.648	25.889	212.9	0.316	3.62	56.9	20.1	1.61	19.6	0.02	0.08	0.20	125
	125 ISL	10.05	10.04	33.655	25.896	212.3	0.318	3.60	56.5	20.3	1.62	19.7	0.02	0.08	0.20	126
1	145	9.79	9.77	33.790	26.046	198.5	0.359	3.18	49.7	24.2	1.78	22.2	0 03	0.07	0.15	146
	150 ISL	9.69	9.67	33.814	26.081	195.2	0.369	3.11	48.5	25.1	1.81	22.7	0.03	0.06	0.15	151
1	175	9.16	9.14	33.907	26.240	180.4	0.416	2.82	43.5	30.0	1.97	25.2	0.05	0.04	0.17	176
	200 ISL	8.69	8.67	33.984	26.375	168.0	0.459	2.46	37.6	36.3	2.15	27.5	0.07	0.04	0.18	201
1	205	8.59	8.57	34.000	26.403	165.4	0.467	2.39	36.4	37.6	2.19	28.0	0.07	0.04	0.18	206

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 53.3 N	121 11.9 W	22/01/91	1449 UTC	560 m	030	10 kn			1021.8 mb	13.6 C	9.8 C			

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 UM/1	NO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	12.01	12.01	33.143	25.146	280.9	0.000	6.19	101.1	4.4	0.57	2.0	0.15	0.74	0.28	0
1	2	12.01	12.01	33.143	25.146	280.9	0.006	6.19	101.1	4.4	0.57	2.0	0.15	0.74	0.28	2
	10 ISL	11.98	11.98	33.141	25.150	280.7	0.028	6.18	100.9	4.4	0.56	2.0	0.15	0.72	0.27	10
1	12	11.97	11.97	33.140	25.151	280.7	0.034	6.18	100.9	4.4	0.56	2.0	0.15	0.72	0.27	12
	20 ISL	11.97	11.97	33.141	25.152	280.8	0.056	6.20	101.2	4.2	0.56	2.0	0.15	0.72	0.26	20
1	22	11.97	11.97	33.141	25.152	280.8	0.062	6.20	101.2	4.2	0.56	2.0	0.15	0.72	0.26	22
	30 ISL	11.98	11.98	33.141	25.151	281.2	0.084	6.18	100.9	4.2	0.56	2.0	0.15	0.68	0.27	30
1	31	11.98	11.98	33.141	25.151	281.2	0.087	6.18	100.9	4.2	0.56	2.0	0.15	0.68	0.27	31
1	40	11.99	11.98	33.146	25.153	281.2	0.112	6.18	100.9	4.2	0.56	2.0	0.16	0.68	0.27	40
1	50	12.00	11.99	33.162	25.164	280.4	0.140	6.16	100.6	4.3	0.57	2.1	0.17	0.65	0.27	50
1	61	12.05	12.04	33.203	25.186	278.6	0.171	6.11	99.9	4.3	0.57	2.3	0.18	0.61	0.31	61
1	71	11.96	11.95	33.234	25.227	274.9	0.199	5.96	97.3	5.1	0.64	3.4	0.20	0.42	0.27	71
	75 ISL	11.60	11.59	33.237	25.297	268.4	0.210	5.74	93.0	6.5	0.77	5.4	0.18	0.32	0.23	75
1	85	10.64	10.63	33.280	25.502	248.9	0.236	5.06	80.3	11.0	1.13	11.3	0.10	0.10	0.14	85
1	99	10.32	10.31	33.482	25.715	229.0	0.269	4.20	66.3	16.0	1.41	16.3	0.04	0.04	0.10	100
	100 ISL	10.30	10.29	33.493	25.727	227.8	0.271	4.16	65.6	16.3	1.43	16.6	0.04	0.04	0.10	101
1	119	9.94	9.93	33.665	25.922	209.6	0.313	3.58	56.1	20.7	1.65	20.1	0.03	0.03	0.14	120
	125 ISL	9.84	9.83	33.704	25.970	205.2	0.325	3.45	53.9	21.9	1.71	20.9	0.03	0.02	0.13	126
1	145	9.50	9.48	33.812	26.110	192.2	0.365	3.09	48.0	25.7	1.86	23.3	0.03	0.01	0.09	146
	150 ISL	9.41	9.39	33.841	26.148	188.8	0.375	3.01	46.7	26.7	1.89	23.9	0.03	0.01	0.08	151
1	174	9.00	8.98	33.960	26.307	174.0	0.418	2.67	41.0	31.3	2.04	26.3	0.02	0.01	0.07	175
	200 ISL	8.64	8.62	34.021	26.412	164.5	0.462	2.46	37.5	35.3	2.16	28.0	0.02	0.01	0.07	201
1	206	8.56	8.54	34.030	26.431	162.7	0.472	2.42	36.8	36.2	2.18	28.3	0.02	0.01	0.07	207
1	235	8.11	8.09	34.082	26.540	152.7	0.518	2.11	31.8	42.1	2.33	30.3	0.02			236
	250 ISL	7.97	7.94	34.097	26.573	149.8	0.540	1.99	29.9	44.2	2.39	31.0	0.02			251
1	276	7.77	7.74	34.113	26.615	146.2	0.579	1.81	27.1	47.3	2.48	32.0	0.02			278
	300 ISL	7.55	7.52	34.130	26.661	142.2	0.613	1.60	23.8	50.8	2.57	33.1	0.02			302
1	334	7.23	7.20	34.151	26.723	136.6	0.661	1.31	19.4	55.9	2.70	34.6	0.02			336
1	394	6.72	6.68	34.173	26.810	128.9	0.741	0.97	14.2	64.3	2.88	36.9	0.02			397
	400 ISL	6.69	6.65	34.176	26.817	128.3	0.748	0.94	13.7	64.9	2.89	37.1	0.02			403
1	457	6.40	6.36	34.204	26.878	123.2	0.820	0.70	10.1	70.4	3.01	38.5	0.02			460
	500 ISL	6.06	6.02	34.224	26.938	117.8	0.872	0.55	7.9	76.6	3.10	39.7	0.02			503
1	526	5.86	5.81	34.237	26.973	114.6	0.902	0.46	6.6	80.3	3.15	40.4	0.02			530

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYI'E
34 43.4 N	121 32.9 W	22/01/91	1042 UTC	875 •	030 10 kn			1021.9 mb	13.0 C	10.4 C		

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN Bl/1	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 UM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	12.23	12.23	33.121	25.087	286.5	0.000	6.33	103.9	4.1	0.50	1.0	0.08	0.96	0.27	0
1	1		12.23	12.23	33.121	25.087	286.5	0.003	6.33	103.9	4.1	0.50	1.0	0.08	0.96	0.27	1
	10	ISL	12.18	12.18	33.115	25.092	286.2	0.029	6.33	103.8	4.2	0.51	1.1	0.09	0.97	0.28	3.0
1	16		12.12	12.12	33.110	25.100	285.7	0.046	6.33	103.6	4.2	0.52	1.3	0.09	0.97	0.29	16
	20	ISL	12.09	12.09	33.108	25.104	285.4	0.057	6.30	103.1	4.3	0.53	1.5	0.10	0.95	0.29	20
	30	ISL	12.01	12.01	33.109	25.120	284.1	0.086	6.21	101.4	4.6	0.57	2.0	0.14	0.81	0.29	30
1	31		12.00	12.00	33.109	25.122	283.9	0.089	6.20	101.2	4.6	0.57	2.1	0.15	0.79	0.29	31
1	41		11.95	11.94	33.118	25.139	282.6	0.117	6.09	99.3	4.8	0.61	2.6	0.20	0.48	0.23	41
	50	ISL	11.64	11.63	33.136	25.210	276.0	0.142	5.84	94.6	5.7	0.73	4.6	0.18	0.16	0.13	50
1	51		11.59	11.58	33.138	25.221	275.0	0.145	5.81	94.1	5.8	0.75	4.9	0.18	0.13	0.12	51
1	61		10.87	10.86	33.152	25.361	261.8	0.172	5.61	89.4	7.8	0.90	7.4	0.15	0.11	0.11	61
1	71		10.55	10.54	33.134	25.403	258.0	0.198	5.52	87.4	9.0	0.99	8.9	0.09	0.09	0.11	71
	75	ISL	10.24	10.23	33.147	25.467	252.0	0.208	5.30	83.3	10.6	1.12	11.1	0.06	0.07	0.10	75
1	80		9.87	9.86	33.186	25.559	243.2	0.220	4.97	77.5	12.8	1.28	13.9	0.03	0.05	0.08	80
1	95		9.89	9.88	33.465	25.774	223.2	0.255	4.20	65.7	16.6	1.46	16.8	0.03	0.04	0.08	95
	100	ISL	9.96	9.95	33.541	25.822	218.8	0.266	3.98	62.3	17.9	1.52	17.8	0.03	0.04	0.08	101
1	110		10.06	10.05	33.664	25.901	211.5	0.288	3.61	56.7	20.3	1.63	19.7	0.03	0.03	0.08	111
1	125		9.84	9.83	33.756	26.010	201.4	0.319	3.28	51.3	213.0	1.75	21.6	0.06	0.02	0.07	126
1	150		9.48	9.46	33.893	26.177	186.0	0.367	2.85	44.3	1:7.5	1.92	24.2	0.08	0.02	0.07	151
1	175		9.02	9.00	33.960	26.304	174.3	0.412	2.67	41.1	30.9	2.03	25.9	0.06	0.01	0.06	176
	200	ISL	8.72	8.70	34.019	26.397	165.8	0.455	2.49	38.0	34.4	2.11	27.2	0.06	0.01	0.06	201
1	205		8.67	8.65	34.029	26.413	164.5	0.463	2.46	37.5	35.1	2.13	27.5	0.06	0.01	0.06	236
1	234		8.30	8.28	34.075	26.506	156.0	0.509	2.30	34.8	39.2	2.25	29.1	0.02			235
	250	ISL	8.09	8.06	34.094	26.553	151.8	0.534	2.14	32.2	42.3	2.33	30.2	0.02			252
1	274		7.81	7.78	34.115	26.611	146.6	0.570	1.89	28.3	46.6	2.45	31.6	0.02			276
	300	ISL	7.70	7.67	34.127	26.637	144.5	0.608	1.76	26.3	48.5	2.50	32.2	0.02			302
1	329		7.55	7.52	34.129	26.660	142.7	0.649	1.65	24.6	50.6	2.55	32.8	0.02			331
1	388		6.54	6.50	34.122	26.794	130.2	0.730	1.19	17.3	63.4	2.82	36.8	0.02			391
	400	ISL	6.51	6.47	34.134	26.807	129.1	0.745	1.12	16.3	l>4.6	2.85	37.2	0.02			403
1	454		6.39	6.35	34.173	26.855	125.3	0.814	0.83	12.0	(S8.6	2.97	38.2	0.02			457
	500	ISL	6.17	6.13	34.228	26.927	118.9	0.870	0.57	8.2	74.6	3.09	39.3	0.02			503
1	524		6.06	6.01	34.257	26.964	115.6	0.898	0.44	6.3	77.7	3.15	39.8	0.02			528

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 23.3 N	122 14.8 W	22/01/91	0414 UTC	4012 •	030 12 kn			1020.8 mb	12.8 C	11.3 C		

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/l	OXYGEN	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	12.78	12.78	33.425	25.217	274.1	0.000	6.16	102.5	4.3	0.51	1.1	0.14	1.27	0.55	0
1	1		12.78	12.78	33.425	25.217	274.1	0.003	6.16	102.5	4.3	0.51	1.1	0.14	1.27	0.55	1
	10	ISL	12.79	12.79	33.424	25.214	274.6	0.027	6.16	102.5	4.3	0.50	1.1	0.14	1.26	0.52	10
1	15		12.79	12.79	33.424	25.214	274.7	0.041	6.16	102.5	4.3	0.50	1.1	0.14	1.26	0.50	15
	20	ISL	12.78	12.78	33.424	25.217	274.7	0.055	6.14	102.1	4.2	0.50	1.1	0.14	1.24	0.54	20
1	30		12.77	12.77	33.425	25.219	274.7	0.082	6.10	101.4	4.1	0.51	1.2	0:16	1.12	0.58	30
1	40		12.76	12.75	33.425	25.222	274.7	0.110	6.05	100.6	4.3	0.52	1.4	0.18	0.85	0.47	40
1	50		11.63	11.62	33.477	25.477	250.6	0.136	4.65	75.5	10.9	1.12	10.9	0.09	0.13	0.20	50
1	61		11.17	11.16	33.503	25.581	240.9	0.163	4.31	69.3	13.3	1.27	13.5	0.06	0.11	0.19	61
1	71		10.58	10.57	33.550	25.722	227.7	0.187	4.02	63.8	16.1	1.44	16.4	0.04	0.06	0.13	71
	75	ISL	10.39	10.38	33.574	25.774	222.8	0.196	3.88	61.4	17.4	1.51	17.5	0.03	0.05	0.13	75
1	81		10.13	10.12	33.611	25.847	216.0	0.209	3.72	58.5	19.2	1.60	19.0	0.02	0.04	0.12	81
1	95		9.64	9.63	33.668	25.974	204.2	0.238	3.84	59.8	22.1	1.74	21.4	0.02	0.02	0.10	95
	100	ISL	9.59	9.58	33.696	26.004	201.4	0.248	3.65	56.8	23.0	1.78	22.0	0.02	0.02	0.10	101
1	110		9.52	9.51	33.758	26.064	195.9	0.268	3.20	49.7	24.7	1.84	23.0	0.02	0.02	0.09	111
1	125		9.25	9.24	33.860	26.188	184.4	0.297	2.93	45.3	28.0	1.95	24.8	0.02	0.01	0.08	126
	150	ISL	8.98	8.96	33.943	26.297	174.5	0.342	2.75	42.2	30.9	2.03	26.1	0.02	0.01	0.08	151
1	151		8.97	8.95	33.945	26.300	174.2	0.343	2.75	42.2	31.0	2.03	26.1	0.02	0.01	0.08	152
1	176		8.65	8.63	34.015	26.405	164.7	0.386	2.58	39.4	34.4	2.13	27.2	0.02	0.01	0.08	177
	200	ISL	8.44	8.42	34.068	26.479	158.0	0.424	2.29	34.8	38.3	2.26	28.8	0.02	0.01	0.05	201
1	206		8.40	8.38	34.078	26.493	156.8	0.434	2.21	33.5	39.2	2.29	29.2	0.02	0.01	0.04	207
1	236		8.14	8.12	34.105	26.554	151.5	0.480	1.98	29.9	42.7	2.36	30.5	0.02			237
	250	ISL	8.00	7.97	34.111	26.580	149.2	0.501	1.89	28.4	44.6	2.41	31.2	0.02			252
1	276		7.72	7.69	34.116	26.625	145.2	0.539	1.73	25.8	48.4	2.52	32.4	0.02			278
	300	ISL	7.50	7.47	34.128	26.666	141.6	0.574	1.56	23.2	51.8	2.61	33.4	0.02			302
1	332		7.14	7.11	34.132	26.720	136.8	0.618	1.38	20.3	56.4	2.71	34.8	0.01			334
1	392		6.08	6.05	34.062	26.806	128.7	0.698	1.38	19.8	66.3	2.82	37.6	0.02			395
	400	ISL	6.00	5.97	34.063	26.817	127.7	0.708	1.35	19.4	67.5	2.84	37.9	0.02			403
1	458		5.61	5.57	34.099	26.894	120.8	0.780	1.06	15.1	76.1	3.00	39.9	0.02			461
	500	ISL	5.38	5.34	34.142	26.956	115.3	0.830	0.75	10.6	82.3	3.11	41.1	0.02			504
1	528		5.22	5.18	34.171	26.998	111.5	0.862	0.54	7.6	86.4	3.18	41.9	0.02			532

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 3.3 N	122 56.5 W	21/01/91	2043 UTC	4114 m	060 08 kn	050 03 05	1	1018.1 mb	14.9 C	11.9 C	13B 03	1/8	CU

CAST	DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRESS
	n		DEG C	DEG C	PSS 78	THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db
	0	ISL	12.49	12.49	33.126	25.041	290.8	0.000	6.25	103.1	3.8	0.49	0.7	0.10	0.75	0.22	0
1	1		12.49	12.49	33.126	25.041	290.8	0.003	6.25	103.1	3.8	0.49	0.7	0.10	0.75	0.22	1
	10	ISL	12.42	12.42	33.129	25.057	289.6	0.029	6.25	103.0	3.8	0.49	0.7	0.10	0.74	0.24	10
1	16		12.37	12.37	33.132	25.069	288.6	0.046	6.24	102.7	3.8	0.49	0.7	0.10	0.72	0.25	16
	20	ISL	12.38	12.38	33.134	25.069	288.7	0.058	6.24	102.7	3.8	0.49	0.7	0.11	0.70	0.25	20
	30	ISL	12.39	12.39	33.140	25.072	288.7	0.087	6.23	102.6	3.8	0.49	0.7	0.12	0.65	0.24	30
1	31		12.39	12.39	33.141	25.073	288.6	0.090	6.23	102.6	3.8	0.49	0.7	0.12	0.64	0.24	31
1	40		12.41	12.40	33.147	25.074	288.7	0.116	6.20	102.1	3.8	0.49	0.7	0.12	0.62	0.23	40
1	50		12.45	12.44	33.179	25.091	287.4	0.144	6.14	101.3	3.9	0.51	0.9	0.23	0.39	0.22	50
1	60		12.37	12.36	33.246	25.159	281.2	0.173	5.93	97.7	4.3	0.58	2.1	0.39	0.17	0.17	60
1	70		12.77	12.76	33.445	25.236	274.2	0.201	5.73	95.3	4.7	0.64	2.9	0.73	0.10	0.17	70
	75	ISL	12.66	12.65	33.441	25.255	272.5	0.214	5.65	93.7	5.3	0.70	3.8	0.150	0.09	0.16	75
1	79		12.42	12.41	33.409	25.276	270.5	0.225	5.57	91.9	6.0	0.76	4.9	0.44	0.08	0.15	79
1	94		10.44	10.43	33.264	25.524	247.0	0.264	4.87	77.0	11.9	1.21	12.9	0.03	0.05	0.11	94
	100	ISL	9.89	9.88	33.267	25.620	237.9	0.279	4.82	75.2	13.3	1.29	14.4	0.03	0.04	0.08	100
1	109		9.39	9.38	33.327	25.748	225.8	0.299	4.74	73.2	15.1	1.37	16.0	0.02	0.03	0.05	110
1	124		9.53	9.52	33.558	25.907	211.1	0.332	3.99	61.9	19.3	1.59	19.4	0.03	0.02	0.04	125
	125	ISL	9.52	9.51	33.568	25.916	210.2	0.334	3.96	61.4	19.5	1.60	19.6	0.03	0.02	0.04	126
1	149		9.20	9.18	33.734	26.098	193.4	0.383	3.46	53.3	24.4	1.78	22.7	0.02	0.01	0.03	150
	150	ISL	9.19	9.17	33.741	26.105	192.7	0.385	3.44	53.0	24.6	1.79	22.8	0.02	0.01	0.03	151
1	174		8.98	8.96	33.893	26.258	178.7	0.429	2.96	45.5	29.1	1.95	25.3	0.02	0.01	0.03	175
	200	ISL	8.63	8.61	33.967	26.371	168.3	0.474	2.87	43.7	32.4	2.02	26.6	0.02	0.01	0.03	201
1	205		8.56	8.54	33.974	26.387	166.9	0.483	2.85	43.4	32.9	2.03	26.8	0.02	0.01	0.03	206
1	234		8.24	8.22	34.008	26.463	160.1	0.530	2.75	41.6	36.2	2.10	28.0	0.02			235
	250	ISL	8.08	8.05	34.037	26.510	155.9	0.555	2.54	38.2	39.2	2.19	29.1	0.02			251
1	274		7.87	7.84	34.081	26.576	150.0	0.592	2.15	32.2	44.0	2.35	30.8	0.02			276
	300	ISL	7.72	7.69	34.118	26.627	145.5	0.631	1.82	27.2	47.7	2.48	32.1	0.02			302
1	330		7.55	7.52	34.149	26.676	141.2	0.674	1.49	22.2	51.7	2.61	33.4	0.02			332
1	389		6.91	6.87	34.174	26.786	131.4	0.754	1.00	14.7	61.8	2.84	36.3	0.02			392
	400	ISL	6.78	6.74	34.169	26.799	130.1	0.768	0.97	14.2	63.3	2.86	36.7	0.02			403
1	454		6.24	6.20	34.159	26.863	124.4	0.837	0.86	12.4	70.1	2.97	38.5	0.02			457
	500	ISL	6.08	6.04	34.224	26.935	118.0	0.893	0.57	8.2	75.6	3.10	39.6	0.02			503
1	523		6.00	5.95	34.257	26.972	114.8	0.920	0.42	6.0	78.4	3.16	40.1	0.02			527

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 43.3 N	123 38.0 W	21/01/91	1439 UTC	4261 m	360 08 km			1015.8 mb	12.7 C	10.3 C			

CAST	DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRESS
	m		DEG C	DEG C	PSS 78	THETA		ml/l		PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db
	0	ISL	13.33	13.33	32.941	24.733	320.2	0.000	6.08	102.0	2.2	0.42	0.1	0.01	0.46	0.14	0
1	2		13.33	13.33	32.941	24.733	320.2	0.006	6.08	102.0	2.2	0.42	0.1	0.01	0.46	0.14	2
	10	ISL	13.31	13.31	32.936	24.734	320.4	0.032	6.08	101.9	2.2	0.42	0.0	0.01	0.45	0.14	10
1	11		13.31	13.31	32.935	24.733	320.5	0.035	6.08	101.9	2.2	0.42	0.0	0.01	0.45	0.14	11
	20	ISL	13.30	13.30	32.934	24.734	320.6	0.064	6.09	102.1	2.0	0.42	0.0	0.01	0.44	0.14	20
1	22		13.30	13.30	32.934	24.734	320.6	0.070	6.09	102.1	2.0	0.42	0.0	0.01	0.44	0.14	22
	30	ISL	13.31	13.31	32.934	24.733	321.0	0.096	6.08	101.9	2.2	0.42	0.0	0.01	0.45	0.14	30
1	32		13.31	13.31	32.934	24.733	321.1	0.103	6.08	101.9	2.2	0.42	0.0	0.01	0.45	0.14	32
1	42		13.35	13.34	32.944	24.733	321.3	0.135	6.08	102.0	2.2	0.42	0.0	0.01	0.46	0.13	42
	50	ISL	13.12	13.11	32.931	24.769	318.1	0.160	6.06	101.2	2.3	0.44	0.2	0.06	0.40	0.14	50
1	52		13.03	13.02	32.925	24.782	316.9	0.167	6.06	101.0	2.3	0.45	0.3	0.08	0.38	0.14	52
1	62		12.34	12.33	32.876	24.878	307.9	0.198	5.97	98.0	3.1	0.57	2.0	0.18	0.22	0.15	62
1	72		11.85	11.84	32.932	25.013	295.2	0.228	5.86	95.3	4.4	0.69	3.8	0.04	0.15	0.13	72
	75	ISL	11.67	11.66	32.931	25.046	292.2	0.237	5.84	94.6	4.8	0.72	4.3	0.04	0.13	0.12	75
1	85		11.04	11.03	32.915	25.147	282.7	0.266	5.77	92.2	6.1	0.84	6.2	0.02	0.08	0.10	85
	100	ISL	10.07	10.06	32.934	25.330	265.5	0.307	5.55	86.8	8.9	1.05	9.8	0.02	0.04	0.07	100
1	101		10.01	10.00	32.939	25.344	264.2	0.309	5.53	86.4	9.1	1.06	10.1	0.02	0.04	0.07	101
1	122		9.31	9.30	33.186	25.651	235.2	0.362	4.91	75.6	14.5	1.38	15.7	0.02	0.02	0.04	123
	125	ISL	9.28	9.27	33.213	25.677	232.8	0.369	4.84	74.5	15.0	1.41	16.1	0.02	0.02	0.04	126
1	146		9.18	9.16	33.392	25.833	218.4	0.416	4.45	68.4	17.7	1.52	18.3	0.02	0.01	0.03	147
	150	ISL	9.12	9.10	33.436	25.877	214.3	0.425	4.39	67.4	18.3	1.53	18.7	0.02	0.01	0.03	151
1	177		8.68	8.66	33.722	26.171	186.9	0.479	4.01	61.1	23.2	1.62	21.2	0.02	0.01	0.02	178
	200	ISL	8.47	8.45	33.878	26.326	172.5	0.520	3.57	54.2	28.1	1.79	23.9	0.02	0.00	0.02	201
1	207		8.41	8.39	33.911	26.361	169.3	0.532	3.44	52.2	29.6	1.84	24.7	0.02	0.00	0.02	208
1	236		8.10	8.08	33.976	26.459	160.4	0.580	3.10	46.7	34.4	1.99	26.9	0.02			237
	250	ISL	7.93	7.90	33.995	26.499	156.8	0.602	2.91	43.7	37.0	2.07	28.0	0.02			251
1	275		7.62	7.59	34.014	26.559	151.4	0.641	2.58	38.4	41.8	2.21	29.9	0.02			277
	300	ISL	7.28	7.25	34.021	26.613	146.5	0.678	2.37	35.0	46.1	2.32	31.5	0.02			302
1	332		6.84	6.81	34.020	26.673	141.0	0.724	2.13	31.2	51.9	2.44	33.3	0.02			334
1	391		6.06	6.03	34.018	26.774	131.7	0.804	1.56	22.4	65.0	2.72	37.0	0.02			393
	400	ISL	6.00	5.97	34.028	26.789	130.3	0.816	1.47	21.1	66.5	2.76	37.4	0.02			403
1	457		5.70	5.66	34.103	26.886	121.6	0.888	0.93	13.2	75.2	2.97	39.7	0.02			460
	500	ISL	5.43	5.39	34.138	26.947	116.1	0.939	0.70	9.9	81.6	3.07	40.9	0.02			503
1	526		5.27	5.23	34.160	26.983	112.9	0.969	0.56	7.9	85.5	3.13	41.6	0.02			530

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 23.2 N	124 19.4 W	21/01/91	0805 UTC	3693 m	320 13 kn			1016.5 mb	12.6 C	10.4 C			

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
1	0	13.80	13.80	33.025	24.703	323.0	0.000	6.07	102.9	2.7	0.42	0.0	0.00	0.33	0.10	0
	10 ISL	13.81	13.81	33.025	24.701	323.5	0.032	6.04	102.4	2.7	0.42	0.0	0.00	0.34	0.09	10
1	15	13.81	13.81	33.025	24.702	323.6	0.049	6.02	102.0	2.7	0.42	0.0	0.00	0.34	0.09	15
	20 ISL	13.63	13.63	32.991	24.712	322.7	0.065	6.05	102.2	2.7	0.42	0.0	0.00	0.39	0.11	20
1	30	13.22	13.22	32.914	24.735	320.8	0.097	6.13	102.6	2.7	0.43	0.0	0.00	0.51	0.16	30
1	40	13.03	13.02	32.872	24.741	320.5	0.129	6.16	102.6	2.7	0.44	0.0	0.01	0.64	0.22	40
1	50	13.02	13.01	32.867	24.739	320.9	0.161	6.13	102.1	2.7	0.44	0.0	0.02	0.55	0.21	50
1	60	12.97	12.96	32.930	24.798	315.6	0.193	6.07	101.0	2.9	0.50	0.5	0.08	0.38	0.18	60
1	70	12.52	12.51	32.973	24.919	304.3	0.224	5.91	97.5	3.7	0.60	2.2	0.15	0.16	0.11	70
	75 ISL	12.28	12.27	32.972	24.964	300.1	0.239	5.91	97.0	4.2	0.65	3.0	0.09	0.11	0.10	75
1	79	12.07	12.06	32.966	24.999	296.8	0.251	5.92	96.7	4.6	0.69	3.7	0.03	0.09	0.09	79
1	94	11.06	11.05	32.953	25.174	280.4	0.294	5.69	91.0	6.7	0.85	6.5	0.02	0.07	0.08	94
	100 ISL	10.64	10.63	32.963	25.255	272.7	0.311	5.60	88.7	7.9	0.93	8.0	0.02	0.06	0.07	100
1	109	10.12	10.11	33.013	25.383	260.6	0.335	5.45	85.4	9.5	1.05	10.2	0.02	0.04	0.06	110
1	124	9.84	9.83	33.222	25.593	240.9	0.372	5.08	79.2	11.1	1.17	12.5	0.02	0.03	0.04	125
	125 ISL	9.82	9.81	33.234	25.606	239.7	0.375	5.04	78.5	11.4	1.18	12.7	0.02	0.03	0.04	126
1	149	9.40	9.38	33.491	25.876	214.5	0.429	4.22	65.3	18.3	1.53	18.6	0.02	0.01	0.03	150
	150 ISL	9.37	9.35	33.500	25.888	213.4	0.431	4.20	64.9	18.5	1.54	18.8	0.02	0.01	0.03	151
1	174	8.82	8.80	33.689	26.123	191.4	0.480	3.83	58.5	23.6	1.70	21.8	0.02	0.00	0.02	175
	200 ISL	8.63	8.61	33.853	26.281	176.8	0.528	3.06	46.6	30.4	1.96	25.9	0.02	0.00	0.02	201
1	204	8.61	8.59	33.873	26.300	175.1	0.535	2.96	45.1	31.3	2.00	26.4	0.02	0.00	0.02	205
1	233	8.09	8.07	33.964	26.451	161.1	0.584	3.04	45.8	34.8	2.03	27.2	0.02			234
	250 ISL	7.92	7.89	33.988	26.495	157.2	0.611	2.93	43.9	37.0	2.08	28.0	0.02			251
1	273	7.73	7.70	34.006	26.537	153.5	0.646	2.68	40.0	40.4	2.18	29.4	0.01			275
	300 ISL	7.42	7.39	34.031	26.601	147.7	0.687	2.33	34.6	45.6	2.34	31.3	0.01			302
1	329	7.07	7.04	34.054	26.668	141.5	0.729	1.96	28.8	51.4	2.51	33.3	0.01			331
1	388	6.47	6.43	34.074	26.765	132.8	0.810	1.44	20.9	61.2	2.74	36.3	0.02			390
	400 ISL	6.34	6.30	34.076	26.784	131.1	0.826	1.36	19.7	63.3	2.78	36.9	0.02			403
1	453	5.84	5.80	34.092	26.860	124.2	0.893	1.03	14.7	72.2	2.94	39.1	0.02			456
	500 ISL	5.54	5.50	34.131	26.928	118.0	0.950	0.77	10.9	79.4	3.07	40.2	0.02			503
1	523	5.39	5.35	34.151	26.962	115.0	0.977	0.64	9.1	82.9	3.14	40.8	0.02			527

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 27.0 N	120 31.4 W	19/01/91	1817 UTC	72 m	350 05 kn	310 02 05	1	1019.3 mb	13.0 C	10.9 C	09m 05	7/8	CB

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	13.26	13.26	33.483	25.167	278.9	0.000	5.79	97.3	4.7	0.57	1.4	0.23	1.71	0.55	0
1	1	13.26	13.26	33.483	25.167	278.9	0.003	5.79	97.3	4.7	0.57	1.4	0.23	1.71	0.55	1
	10 ISL	13.25	13.25	33.482	25.168	279.0	0.028	5.78	97.1	4.6	0.56	1.3	0.23	1.18	0.51	10
1	11	13.25	13.25	33.482	25.168	279.1	0.031	5.78	97.1	4.6	0.56	1.3	0.23	1.11	0.50	11
1	20	13.25	13.25	33.480	25.167	279.4	0.056	5.76	96.8	4.6	0.57	1.4	0.24	1.09	0.47	20
	30 ISL	13.25	13.25	33.479	25.166	279.8	0.084	5.75	96.6	4.8	0.58	1.5	0.26	1.05	0.46	30
1	31	13.25	13.25	33.479	25.166	279.8	0.087	5.75	96.6	4.8	0.58	1.5	0.26	1.04	0.46	31
1	40	13.22	13.21	33.477	25.171	279.6	0.112	5.74	96.4	4.7	0.59	1.9	0.31	1.00	0.47	40
	50 ISL	12.94	12.93	33.477	25.227	274.5	0.139	5.53	92.3	5.4	0.69	3.4	0.57	0.73	0.39	50
1	51	12.91	12.90	33.477	25.233	274.0	0.142	5.51	91.9	5.5	0.70	3.5	0.60	0.70	0.38	51

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 19.0 N	120 48.1 W	19/01/91	2135 UTC	762 -	340 14 kn	330 04 07	1	1017.6 mb	12.9 C	11.0 C	10m 04	7/8	CB

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	12.89	12.89	33.359	25.144	281.0	0.000	6.18	103.0	4.0	0.47	0.6	0.10	1.51	0.41	0
1	2	12.89	12.89	33.359	25.144	281.1	0.006	6.18	103.0	4.0	0.47	0.6	0.10	1.51	0.41	2
	10 ISL	12.88	12.88	33.359	25.146	281.1	0.028	6.16	102.6	4.0	0.46	0.6	0.10	1.47	0.40	10
1	12	12.88	12.88	33.359	25.146	281.2	0.034	6.16	102.6	4.0	0.46	0.6	0.10	1.46	0.40	12
	20 ISL	12.86	12.86	33.359	25.150	281.0	0.056	6.17	102.8	3.9	0.47	0.6	0.10	1.47	0.42	20
1	22	12.86	12.86	33.359	25.151	281.0	0.062	6.17	102.8	3.9	0.47	0.6	0.10	1.47	0.42	22
	30 ISL	12.84	12.84	33.362	25.157	280.6	0.084	6.10	101.5	3.9	0.49	0.8	0.15	1.27	0.41	30
1	32	12.83	12.83	33.364	25.161	280.3	0.090	6.08	101.2	3.9	0.49	0.8	0.17	1.20	0.41	32
1	42	12.82	12.81	33.400	25.191	277.7	0.118	6.06	100.9	3.8	0.49	1.0	0.28	0.77	0.37	42
	50 ISL	12.36	12.35	33.383	25.267	270.7	0.140	5.71	94.1	5.5	0.64	3.5	0.24	0.39	0.29	50
1	52	12.15	12.14	33.375	25.301	267.5	0.145	5.56	91.2	5.9	0.71	4.7	0.23	0.30	0.26	52
1	60	10.64	10.63	33.361	25.564	242.4	0.166	4.64	73.7	12.2	1.21	13.0	0.04	0.09	0.14	60
1	71	10.29	10.28	33.468	25.708	229.0	0.191	4.21	66.4	15.7	1.41	16.2	0.03	0.08	0.12	71
	75 ISL	10.28	10.27	33.530	25.759	224.3	0.201	4.01	63.3	17.0	1.47	17.2	0.03	0.07	0.13	75
1	85	10.25	10.24	33.662	25.867	214.2	0.222	3.55	56.0	20.0	1.60	19.1	0.02	0.05	0.16	85
1	100	10.05	10.04	33.736	25.959	205.8	0.254	3.30	51.9	22.5	1.71	20.7	0.02	0.05	0.14	101
1	120	9.70	9.69	33.842	26.101	192.7	0.294	2.99	46.7	26.5	1.85	23.0	0.02	0.05	0.13	12:1
	125 ISL	9.62	9.61	33.860	26.128	190.2	0.303	2.94	45.8	27.2	1.88	23.5	0.02	0.04	0.13	126
1	146	9.28	9.26	33.917	26.228	181.0	0.342	2.78	43.0	29.6	1.97	25.1	0.02	0.02	0.11	147
	150 ISL	9.22	9.20	33.926	26.245	179.5	0.350	2.75	42.5	30.1	1.99	25.4	0.02	0.02	0.11	1511
1	176	8.86	8.84	33.978	26.343	170.6	0.395	2.59	39.7	33.5	2.09	26.8	0.02	0.02	0.09	177
	200 ISL	8.53	8.51	34.023	26.430	162.7	0.435	2.54	38.6	36.2	2.14	27.7	0.01	0.02	0.14	201
1	206	8.46	8.44	34.032	26.448	161.1	0.445	2.52	38.3	36.9	2.15	27.9	0.01	0.02	0.15	207
1	236	8.17	8.15	34.066	26.519	154.8	0.492	2.24	33.8	41.3	2.28	29.5	0.01			237
	250 ISL	8.07	8.04	34.077	26.543	152.8	0.514	2.14	32.2	42.8	2.33	30.1	0.01			2*2
1	276	7.90	7.87	34.096	26.583	149.3	0.553	1.96	29.4	45.6	2.41	31.0	0.01			278
	300 ISL	7.72	7.69	34.118	26.627	145.5	0.588	1.74	26.0	48.7	2.50	32.1	0.01			302
1	332	7.45	7.42	34.147	26.689	140.0	0.634	1.43	21.2	53.4	2.64	33.5	0.01			334
1	392	6.88	6.84	34.187	26.800	130.0	0.715	0.91	13.3	64.1	2.90	36.0	0.00			395
	400 ISL	6.82	6.78	34.191	26.811	129.0	0.725	0.86	12.6	65.4	2.93	36.2	0.00			403
1	458	6.44	6.40	34.219	26.885	122.6	0.798	0.56	8.1	73.6	3.08	37.6	0.01			461
	500 ISL	6.14	6.10	34.239	26.939	117.7	0.849	0.46	6.6	77.4	3.13	39.1	0.00			503
1	527	5.94	5.89	34.252	26.975	114.5	0.880	0.40	5.7	79.9	3.17	40.0	0.00			5211

RV DAVID STARR JORDAN | CALCOFI CRUISE 9101 | STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 9.0 N	121 9.0 W	20/01/91	0153 UTC	n	340 13 kn	320 03 07	0	1017.9 mb	13.1 C	11.4 C		0/8

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEIH nl/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	13.73	13.73	33.410	25.015	293.3	0.000	6.02	102.1	3.6	0.43	0.4	0.03	0.96	0.23	0
1	1		13.73	13.73	33.410	25.015	293.4	0.003	6.02	102.1	3.6	0.43	0.4	0.03	0.96	0.23	1
	10	ISL	13.72	13.72	33.410	25.017	293.4	0.029'	6.05	102.6	3.5	0.43	0.4	0.03	0.95	0.22	10
1	16		13.70	13.70	33.408	25.020	293.3	0.047	6.06	102.7	3.5	0.43	0.4	0.03	0.93	0.22	16
	20	ISL	13.68	13.68	33.407	25.023	293.1	0.059	6.04	102.4	3.5	0.43	0.4	0.03	0.92	0.22	20
1	30		13.63	13.63	33.403	25.031	292.7	0.088	5.99	101.4	3.5	0.44	0.5	0.05	0.88	0.25	30
1	40		13.27	13.26	33.383	25.088	287.4	0.117	5.98	100.5	3.8	0.47	0.9	0.08	0.79	0,31	40
1	50		12.13	12.12	33.296	25.243	272.9	0.145	5.48	89.8	6.2	0.76	5.4	0.09	0.24	0.17	50
1	60		11.46	11.45	33.274	25.351	262.9	0.172	5.21	84.2	7.9	0.93	8.4	0.04	0.16	0.16	60
1	69		10.63	10.62	33.288	25.510	247.8	0.195	4.99	79.2	10.3	1.09	11.3	0.02	0.09	0.11	69
	75	ISL	10.46	10.45	33.324	25.567	242.5	0.209	4.83	76.4	11.5	1.17	12.7	0.01	0.07	0.10	75
1	79		10.43	10.42	33.351	25.593	240.1	0.219	4.72	74.6	12.2	1.22	13.4	0.01	0.07	0.09	79
1	94		10.16	10.15	33.426	25.698	230.4	0.254	4.41	69.3	14.7	1.35	15.7	0.01	0.05	0.08	94
	100	ISL	10.05	10.04	33.459	25.743	226.3	0.268	4.28	67.1	15.8	1.41	16.6	0.01	0.04	0.08	101
1	109		9.88	9.87	33.518	25.818	219.4	0.288	4.06	63.5	17.8	1.50	18.1	0.01	0.03	0.07	110
1	124		9.58	9.57	33.666	25.983	203.9	0.320	3.54	55.0	22.4	1.71	21.5	0.01	0.01	0.05	125
	125	ISL	9.57	9.56	33.675	25.991	203.1	0.322	3.51	54.5	22.7	1.72	21.7	0.01	0.01	0.05	126
1	148		9.29	9.27	33.833	26.161	187.4	0.367	2.97	45.9	27.5	1.91	24.6	0.00	0.01	0.06	149
	150	ISL	9.23	9.21	33.843	26.178	185.8	0.371	2.97	45.9	27.9	1.92	24.8	0.00	0.01	0.06	151
1	172		8.59	8.57	33.924	26.343	170.5	0.410	2.95	44.9	31.5	1.98	26.4	0.01	0.03	0.04	173
	200	ISL	8.13	8.11	33.976	26.454	160.3	0.456	2.94	44.3	35.3	2.03	27.4	0.01	0.00	0.05	201
1	203		8.09	8.07	33.980	26.463	159.5	0.461	2.94	44.3	35.7	2.04	27.5	0.01	0.00	0.05	204
1	231		7.67	7.65	34.028	26.562	150.3	0.504	2.59	38.6	42.0	2.20	29.7	0.01			232
	250	ISL	7.58	7.56	34.056	26.597	147.3	0.532	2.29	34.1	45.0	2.30	30.9	0.01			251
1	273		7.51	7.48	34.083	26.629	144.7	0.566	1.95	29.0	48.2	2.42	32.1	0.01			275
	300	ISL	7.23	7.20	34.096	26.679	140.2	0.605	1.69	25.0	52.8	2.54	33.6	0.01			302
1	329		6.88	6.85	34.106	26.735	135.1	0.644	1.46	21.4	58.0	2.67	35.2	0.00			331
1	388		6.38	6.35	34.162	26.846	125.1	0.721	0.88	12.7	68.1	2.92	37.9	0.00			391
	400	ISL	6.35	6.31	34.176	26.861	123.8	0.736	0.80	11.6	69.3	2.95	38.2	0.00			403
1	454		6.25	6.21	34.234	26.921	118.9	0.802	0.55	7.9	74.0	3.06	39.0	0.00			457
	500	ISL	6.01	5.97	34.267	26.978	114.0	0.855	0.41	5.9	80.2	3.14	40.0	0.00			503
1	525		5.88	5.83	34.285	27.009	1.11.2	0.883	0.33	4.7	83.6	3.18	40.5	0.00			529

RV DAVID STARR JORDAN | CALCOFI CRUISE 9101 | STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 49.0 N	121 50.6 W	20/01/91	0816 UTC	3622 n	330 05 kn			1018.8 mb	13.6 C	11.9 C		

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PCI4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	13.16	13.16	33.382	25.108	284.4	0.000	6.18	103.6	3.8	0.45	0.3	0.05	1.21	0.35	0
1	1		13.16	13.16	33,382	25.108	284.5	0.003	6.18	103.6	3.8	0.45	0.3	0.05	1.21	0.35	1
	10	ISL	13.12	13.12	33.377	25.113	284.3	0.028	6.18	103.5	3.7	0.44	0.3	0.05	1.22	0.35	10
1	11		13.11	13.11	33.376	25.114	284.2	0.031	6.18	103.5	3.7	0.44	0.3	0.05	1.22	0.35	11
	20	ISL	12.35	12.35	33.251	25.166	279.5	0.057	6.10	100.4	4.5	0.57	2.1	0.20	0.99	0.36	20
1	21		12.27	12.27	33.238	25.171	279.0	0.059	6.09	100.1	4.6	0.58	2.3	0.22	0.96	0.36	21
	30	ISL	12.33	12.33	33.256	25.174	279.0	0.085	6.07	99.9	4.4	0.58	2.2	0.22	0.92	0.38	30
1	31		12.34	12.34	33.258	25.173	279.1	0.087	6.07	99.9	4.4	0.58	2.2	0.22	0.92	0.38	31
1	41		12.48	12.47	33.313	25.189	277.8	0.115	6.03	99.6	4.3	0.56	2.0	0.21	0.77	0.37	41
	50	ISL	12.47	12.46	33.313	25.191	277.8	0.140	6.02	99.4	4.4	0.57	2.1	0.24	0.67	0.34	50
1	51		12.47	12.46	33.313	25.191	277.9	0.143	6.02	99.4	4.4	0.57	2.1	0.24	0.66	0.34	51
1	61		12.48	12.47	33.318	25.194	277.9	0.171	6.03	99.6	4.2	0.56	2.0	0.23	0.54	0.29	61
1	71		11.86	11.85	33.226	25.240	273.7	0.198	5.85	95.3	5.4	0.70	4.2	0.20	0.25	0.20	71
	75	ISL	11.59	11.58	33.249	25.308	26 7.3	0.209	5.55	89.9	6.9	0.83	6.4	0.15	0.18	0.18	75
1	85		10.99	10.98	33.361	25.503	248.8	0.235	4.71	75.4	11.3	1.16	12.1	0.03	0.08	0.14	85
1	100		10.55	10.54	33.503	25.692	231.3	0.271	4.10	65.0	15.6	1.39	16.0	0.02	0.05	0.12	100
1	120		9.67	9.66	33.609	25.923	209.5	0.315	3.70	57.6	20.8	1.63	20.3	0.02	0.02	0.09	121
	125	ISL	9.60	9.59	33.650	25.967	205.4	0.325	3.58	55.7	21.8	1.68	21.0	0.02	0.02	0.09	126
1	145		9.43	9.41	33.801	26.113	192.0	0.365	3.15	48.8	25.3	1.82	23.2	0.02	0.01	0.07	1*6
	150	ISL	9.32	9.30	33.818	26.144	189.1	0.375	3.11	48.1	26.1	1.84	23.7	0.02	0.01	0.06	151
1	175		8.72	8.70	33.879	26.287	175.8	0.420	2.97	45.3	29.9	1.95	26.0	0.02	0.01	0.04	176
	200	ISL	8.40	8.38	33.977	26.414	16 4.2	0.463	2.66	40.3	34.7	2.08	28.0	0.02	0.01	0.03	201
1	205		8.35	8.33	33.994	26.435	162.3	0.471	2.61	39.5	35.6	2.10	28.3	0.02	0.01	0.03	206
1	234		7.88	7.86	34.021	26.526	153.9	0.517	2.64	39.6	39.8	2.15	29.1	0.01			235
	250	ISL	7.64	7.62	34.032	26.570	149.9	0.541	2.49	37.1	43.0	2.23	30.1	0.01			251
1	275		7.30	7.27	34.047	26.630	144.5	0.578	2,16	32.0	48.2	2.37	32.0	0.01			277
	300	ISL	7.07	7.04	34.067	26.678	140.2	0.613	1.84	27.1	52.6	2.50	33.5	0.01			302
1	330		6.82	6.79	34.086	26.728	135.8	0.655	1,51	22.1	57.6	2.64	35.1	0.01			332
1	390		6.04	6.01	34.081	26.826	126.7	0.734	1,21	17.4	68.6	2.82	38.1	0.01			393
	400	ISL	5.97	5.94	34.090	26.842	125.3	0.746	1.13	16.2	70.1	2.85	38.4	0.01			403
1	456		5.71	5.67	34.161	26.931	117.4	0.814	0,70	10.0	78.1	3.02	39.9	0.00			459
	500	ISL	5.54	5.50	34.213	26.993	112.0	0.865	0 50	7.1	84.1	3.13	40.7	0.01			503
1	527		5.43	5.39	34.245	27.031	108.5	0.894	0.37	5.2	87.8	3.19	41.2	0.01			531

RV DAVID STARR JORDAN | CALCOFI CRUISE 9101 | STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 29.0 N	122 32.0 W	20/01/91	1428 UTC	3966 -	340 12 kn			1019.2 ob	12.2 C	11.1 C		

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN »1/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	12.98	12.98	33.246	25.039	291.1	0.000	6.11	101.9	3.7	0.47	0.8	0.08	0.83	0.26	0
1	1		12.98	12.98	33.246	25.039	291.1	0.003	6.11	101.9	3.7	0.47	0.8	0.08	0.83	0.26	1
	10	ISL	12.92	12.92	33.239	25.046	290.7	0.029	6.12	102.0	3.8	0.47	0.8	0.08	0.84	0.24	10
1	11		12.91	12.91	33.237	25.046	290.7	0.032	6.12	102.0	3.8	0.47	0.8	0.08	0.84	0.24	II
	20	ISL	12.76	12.76	33.230	25.070	288.6	0.058	6.17	102.5	3.8	0.48	1.0	0.10	0.91	0.27	20
1	21		12.74	12.74	33.230	25.074	288.3	0.061	6.17	102.4	3.8	0.48	1.0	0.10	0.92	0.27	21
1	30		12.74	12.74	33.258	25.096	286.4	0.087	6.15	102.1	3.8	0.49	1.1	0.11	0.96	0.31	30
1	41		12.62	12.61	33.305	25.156	281.0	0.118	6.10	101.0	4.1	0.51	1.3	0.18	0.85	0.40	41
	50	ISL	12.45	12.44	33.283	25.172	279.7	0.143	6.04	99.7	4.4	0.56	1.8	0.25	0.60	0.32	50
1	51		12.43	12.42	33.280	25.174	279.6	0.146	6.03	99.5	4.4	0.56	1.9	0.26	0.57	0.31	51
1	61		12.45	12.44	33.304	25.189	278.4	0.174	6.02	99.4	4.5	0.57	2.1	0.25	0.51	0.29	61
1	72		12.33	12.32	33.289	25.200	277.6	0.205	5.95	97.9	4.8	0.61	2.7	0.24	0.39	0.24	72
	75	ISL	11.73	11.72	33.249	25.282	269.8	0.213	5.74	93.3	6.8	0.77	5.4	0.19	0.31	0.21	75
1	86		9.44	9.43	33.175	25.621	237.4	0.241	4.89	75.5	14.7	1.37	15.7	0.02	0.03	0.09	£6
1	100		9.24	9.23	33.320	25.767	223.8	0.273	4.50	69.3	17.9	1.51	18.2	0.01	0.02	0.07	100
1	121		9.67	9.66	33.601	25.917	210,1	0.318	3.73	58.1	20.8	1.64	20.2	0.01	0.02	0.07	122
	125	ISL	9.59	9.58	33.636	25.958	206.3	0.327	3.64	56.6	21.7	1.67	20.8	0.01	0.02	0.07	126
1	146		9.00	8.98	33.776	26.162	187.2	0.368	3.28	50.4	26.6	1.84	24.0	0.01	0.01	0.04	147
	150	ISL	8.95	8.93	33.802	26.191	184.5	0.376	3.20	49.1	27.3	1.87	24.4	0.01	0.01	0.04	151
1	177		8.72	8.70	33.938	26.334	171.4	0.424	2.83	43.2	31.4	1.99	26.3	0.01	0.01	0.04	178
	200	ISL	8.31	8.29	33.973	26.424	163.1	0.462	2.86	43.3	34.3	2.02	27.4	0.01	0.00	0.03	201
1	207		8.19	8.17	33.980	26.448	161.0	0.473	2.87	43.3	35.3	2.04	27.7	0.01	0.00	0.03	208
1	236		8.04	8.02	34.063	26.536	153.1	0.519	2.26	34.0	41.6	2.26	30.1	0.01			237
	250	ISL	7.94	7.91	34.085	26.568	150.3	0.540	2.09	31.4	43.8	2.33	30.8	0.01			251
1	275		7.72	7.69	34.105	26.616	146.0	0.577	1.88	28.1	47.2	2.42	31.7	0.01			277
	300	ISL	7.42	7.39	34.107	26.661	142.0	0.613	1.72	25.5	50.9	2.51	33.0	0.01			302
1	331		7.05	7.02	34.109	26.714	137.2	0.657	1.52	22.4	55.8	2.62	34.6	0.01			333
1	391		6.60	6.56	34.171	26.825	127.4	0.736	0.91	13.3	66.5	2.87	37.3	0.01			394
	400	ISL	6.44	6.40	34.162	26.839	126.1	0.747	0.90	13.1	68.5	2.89	37.8	0.01			403
1	456		5.52	5.48	34.119	26.920	118.2	0.816	0.84	11.9	79.3	3.00	40.5	0.01			459
	500	ISL	5.55	5.51	34.186	26.970	114.1	0.867	0.59	8.4	82.2	3.09	41.1	0.01			503
1	525		5.56	5.52	34.224	26.999	111.7	0.895	0.45	6.4	83.9	3.14	41.4	0.01			529

RV DAVID STARR JORDAN | CALCOFI CRUISE 9101 | STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTIOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 9.0 N	123 13.2 W	20/01/91	2029 UTC	4231 -	330 04 k.n	320 03 07	0	1018.5 mb	13.4 C	11.1 C	13a 04	0/8

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT m1/1	OXYGEN	OXY PCT	SIO3 ULM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PREJIS dl»
	0	ISL	12.59	12.59	33.186	25.069	288.2	0.000	6.23	103.1	4.3	0.51	1.2	0.15	0.81	0.26	0
1	3		12.59	12.59	33.186	25.069	288.3	0.009	6.23	103.1	4.3	0.51	1.2	0.15	0.81	0.26	3
	10	ISL	12.50	12.50	33.185	25.085	286.9	0.029	6.24	103.0	4.2	0.51	1.2	0.15	0.90	0.29	10
1	18		12.37	12.37	33.185	25.110	284.7	0.052	6.24	102.7	4.1	0.51	1.2	0.15	0.99	0.33	18
	20	ISL	12.37	12.37	33.185	25.111	284.7	0.057	6.24	102.7	4.1	0.51	1.2	0.15	0.99	0.33	20
	30	ISL	12.36	12.36	33.187	25.114	284.6	0.086	6.22	102.4	4.1	0.51	1.3	0.16	0.90	0.35	210
1	33		12.36	12.36	33.187	25.114	284.7	0.094	6.21	102.2	4.1	0.51	1.3	0.16	0.85	0.35	33
1	42		12.39	12.38	33.204	25.122	284.2	0.120	6.15	101.3	4.1	0.53	1.5	0.21	0.66	0.32	412
	50	ISL	12.40	12.39	33.224	25.136	283.1	0.143	6.07	100.0	4.2	0.54	1.7	0.31	0.40	0.23	50
1	52		12.40	12.39	33.233	25.143	282.5	0.148	6.04	99.5	4.2	0.54	1.7	0.33	0.33	0.21	*V>2*
1	62		12.18	12.17	33.273	25.216	275.8	0.176	5.76	94.5	5.1	0.66	3.7	0.28	0.11	0.13	112
1	71		12.05	12.04	33.332	25.286	269.3	0.201	5.52	90.3	6.1	0.76	5.5	0.14	0.07	0.11	71
	75	ISL	11.61	11.60	33.272	25.322	266.0	0.211	5.43	88.0	7.1	0.85	7.1	0.09	0.06	0.11	75
1	81		10.84	10.83	33.176	25.386	259.9	0.227	5.29	84.3	9.0	1.01	9.8	0.04	0.06	0.11	III
1	96		9.60	9.59	33.238	25.645	235.4	0.264	4.83	74.9	13.8	1.32	15.2	0.01	0.03	0.08	<»6
	100	ISL	9.64	9.63	33.295	25.683	231.9	0.274	4.67	72.5	14.7	1.37	15.9	0.01	0.03	0.08	100
1	110		9.75	9.74	33.412	25.756	225.1	0.297	4.33	67.4	16.7	1.45	17.2	0.01	0.04	0.09	11.1
1	125		9.29	9.28	33.488	25.891	212.6	0.329	4.18	64.5	19.3	1.54	19.2	0.01	0.01	0.05	*VA6*
1	150		9.15	9.13	33.776	26.139	189.5	0.380	3.26	50.2	26.0	1.81	23.7	0.01	0.01	0.04	151
1	175		8.94	8.92	33.947	26.306	174.1	0.425	2.75	42.2	31.2	2.07	26.2	0.01	0.00	0.04	176
	200	ISL	8.49	8.47	33.964	26.390	166.5	0.468	2.73	41.5	34.0	2.06	27.6	0.00	0.00	0.03	201
1	204		8.41	8.39	33.963	26.401	165.4	0.474	2.73	41.4	34.4	2.06	27.8	0.00	0.00	0.03	205
1	233		8.12	8.10	34.044	26.509	155.7	0.521	2.42	36.5	39.6	2.19	29.3	0.01			2:i4
	250	ISL	7.97	7.94	34.068	26.550	152.0	0.547	2.24	33.7	42.4	2.27	30.2	0.01			2!>1
1	273		7.77	7.74	34.086	26.594	148.1	0.582	2.02	30.2	45.9	2.38	31.4	0.01			275
	300	ISL	7.50	7.47	34.097	26.642	143.9	0.621	1.83	27.2	49.8	2.47	32.6	0.01			302
1	327		7.25	7.22	34.108	26.686	140.0	0.659	1.64	24.2	53.8	2.55	33.7	0.00			339
1	386		6.88	6.84	34.180	26.794	130.4	0.739	0.97	14.2	63.4	2.82	36.4	0.00			388
	400	ISL	6.79	6.75	34.190	26.815	128.7	0.757	0.88	12.9	65.2	2.86	36.9	0.00			403
1	451		6.45	6.41	34.219	26.883	122.7	0.821	0.64	9.3	71.5	2.99	38.3	0.00			454
	500	ISL	6.09	6.05	34.249	26.954	116.3	0.880	0.48	6.9	77.8	3.09	39.6	0.00			503
1	520		5.95	5.90	34.261	26.981	113.9	0.903	0.41	5.9	80.4	3.13	40.2	0.00			524

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 49.0 N	123 54.4 W	21/01/91	0158 UTC	4093 •	360 12 Xn	330 03 07	1	1016.7 mb	12.3 C	10.8 C		6/8 SC

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN al/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	12.88	12.88	32.976	24.849	309.1	0.000	6.14	102.1	3.3	0.48	0.5	0.08	0.51	0.17	0
1	2	12.88	12.88	32.976	24.849	309.2	0.006	6.14	102.1	3.3	0.48	0.5	0.08	0.51	0.17	2
	10 ISL	12.85	12.85	32.990	24.867	307.7	0.031	6.15	102.2	3.4	0.48	0.6	0.07	0.59	0.19	10
1	17	12.82	12.82	33.035	24.907	304.0	0.052	6.15	102.1	3.5	0.49	0.8	0.07	0.69	0.20	17
	20 ISL	12.71	12.71	33.054	24.943	300.7	0.061	6.19	102.6	3.6	0.49	0.8	0.07	0.74	0.23	20
	30 ISL	12.37	12.37	33.109	25.052	290.6	0.091	6.29	103.5	4.1	0.49	0.9	0.09	0.86	0.33	30
1	31	12.34	12.34	33.114	25.062	289.7	0.094	6.30	103.6	4.1	0.49	0.9	0.09	0.87	0.34	31
1	41	12.30	12.29	33.121	25.075	288.7	0.123	6.23	102.4	4.1	0.51	1.2	0.13	0.88	0.35	41
	50 ISL	12.35	12.34	33.176	25.108	285.7	0.149	6.19	101.9	4.0	0.51	1.1	0.16	0.79	0.32	50
1	51	12.36	12.35	33.183	25.112	285.5	0.151	6.18	101.7	4.0	0.51	1.1	0.16	0.78	0.32	51
1	61	12.42	12.41	33.212	25.123	284.6	0.180	6.08	100.2	4.1	0.53	1.2	0.22	0.36	0.20	61
1	71	12.47	12.46	33.326	25.202	277.4	0.208	5.84	96.4	4.7	0.62	2.6	0.56	0.17	0.15	71
	75 ISL	12.00	11.99	33.313	25.281	269.9	0.219	5.62	91.9	6.1	0.75	5.0	0.34	0.12	0.13	75
1	79	11.44	11.43	33.292	25.369	261.6	0.230	5.38	86.9	7.7	0.90	7.6	0.08	0.08	0.11	79
1	95	9.94	9.93	33.290	25.629	236.9	0.269	4.75	74.2	13.2	1.29	14.4	0.02	0.05	0.07	95
	100 ISL	9.95	9.94	33.368	25.688	231.4	0.281	4.51	70.5	14.9	1.37	15.8	0.02	0.04	0.07	100
1	U0	9.98	9.97	33.498	25.785	222.5	0.304	4.10	64.2	17.7	1.50	17.9	0.01	0.03	0.06	111
1	125	9.64	9.63	33.578	25.904	211.4	0.336	3.85	59.9	19.9	1.60	19.8	0.01	0.02	0.05	126
1	150	9.37	9.35	33.828	26.144	189.1	0.386	3.09	47.9	26.3	1.86	23.8	0.01	0.01	0.02	151
1	174	8.96	8.94	33.936	26.295	175.2	0.430	2.79	42.8	30.5	1.99	26.0	0.01	0.01	0.03	175
	200 ISL	8.62	8.60	34.042	26.431	162.6	0.474	2.40	36.6	36.2	2.16	28.1	0.01	0.01	0.02	201
1	204	8.58	8.56	34.056	26.448	161.1	0.481	2.34	35.6	37.0	2.19	28.4	0.01	0.01	0.02	205
1	234	8.28	8.26	34.103	26.531	153.6	0.528	2.03	30.7	41.4	2.33	30.0	0.01			235
	250 ISL	8.12	8.09	34.118	26.567	150.5	0.552	1.90	28.7	43.6	2.39	30.7	0.01			251
1	275	7.88	7.85	34.135	26.617	146.1	0.589	1.72	25.8	46.8	2.48	31.8	0.01			277
	300 ISL	7.72	7.69	34.154	26.655	142.8	0.625	1.50	22.4	49.9	2.57	32.8	0.01			302
1	331	7.52	7.49	34.174	26.700	139.0	0.669	1.25	18.6	53.7	2.68	34.0	0.01			333
1	390	6.95	6.91	34.189	26.792	130.8	0.749	0.96.	14.1	61.8	2.84	36.2	0.01			392
	400 ISL	6.85	6.81	34.192	26.808	129.3	0.762	0.92	13.5	63.3	2.87	36.6	0.01			403
1	456	6.38	6.34	34.218	26.891	121.9	0.832	0.68	9.9	71.3	3.02	38.6	0.01			459
	500 ISL	6.20	6.16	34.259	26.947	117.0	0.884	0.47	6.8	75.8	3.11	39.4	0.01			503
1	524	6.10	6.05	34.281	26.978	114.4	0.912	0.36	5.2	78.3	3.16	39.9	0.01			528

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 16.5 N	120 1.5 W	19/01/91	1350 UTC	574 m	230 05 kn			1019.1 mb	12.3 C	10.8 C		

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 uM/l	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	13.67	13.67	33.493	25.091	286.1	0.000	6.27	106.3	2.6	0.37	0.0	0.01	1.35	0.49	0
1	1 A	13.67	13.67	33.493	25.091	286.1	0.003	6.27	106.3	2.6	0.37	0.0	0.01	1.35	0.49	1
1	10	13.33	13.33	33.490	25.158	280.0	0.028	6.33	106.6	2.9	0.37	0.0	0.01	2.55	0.90	10
1	20	13.12	13.12	33.486	25.197	276.5	0.056	6.21	104.1	3.6	0.43	0.5	0.06	5.14	1.37	20
1	30	12.84	12.84	33.492	25.258	271.0	0.084	5.73	95.5	5.4	0.60	2.8	0.18	3.30	1.61	30
1	40	12.38	12.37	33.488	25.344	263.1	0.110	4.97	82.0	8.2	0.89	7.5	0.21	0.50	0.44	40
1	49	12.17	12.16	33.495	25.390	258.9	0.134	4.77	78.4	9.6	1.00	9.1	0.10	0.32	0.39	49
	50 ISL	12.10	12.09	33.499	25.406	257.4	0.136	4.72	77.4	9.9	1.02	9.4	0.09	0.30	0.37	50
1	60	11.38	11.37	33.556	25.584	240.6	0.161	4.21	68.0	13.3	1.25	13.1	0.05	0.12	0.21	60
1	70	10.92	10.91	33.599	25.701	229.7	0.185	3.95	63.2	16.2	1.39	15.7	0.03	0.10	0.18	70
	75 ISL	10.75	10.74	33.631	25.756	224.6	0.196	3.79	60.4	17.5	1.46	16.8	0.03	0.09	0.19	75
1	83	10.53	10.52	33.681	25.833	217.4	0.214	3.56	56.5	19.3	1.56	18.3	0.03	0.08	0.21	83
1	99	10.27	10.26	33.746	25.929	208.6	0.248	3.32	52.4	21.4	1.67	20.0	0.02	0.04	0.15	100
	100 ISL	10.25	10.24	33.752	25.938	207.9	0.250	3.30	52.1	21.6	1.68	20.1	0.02	0.04	0.15	101
1	118	9.93	9.92	33.852	26.070	195.6	0.286	2.96	46.4	25.0	1.82	22.4	0.02	0.03	0.13	119
	125 ISL	9.76	9.75	33.880	26.120	190.9	0.300	2.87	44.8	26.5	1.87	23.2	0.02	0.03	0.12	126
1	139	9.45	9.43	33.926	26.208	182.9	0.326	2.70	41.9	29.3	1.97	24.6	0.02	0.02	0.11	140
	150 ISL	9.32	9.30	33.959	26.255	178.6	0.346	2.57	39.8	30.9	2.03	25.5	0.02	0.02	0.10	151
1	168	9.16	9.14	34.008	26.319	172.8	0.377	2.32	35.8	33.6	2.12	26.8	0.01	0.02	0.09	169
1	197	8.82	8.80	34.082	26.431	162.7	0.426	1.76	27.0	39.6	2.34	29.2	0.02	0.02	0.09	198
	200 ISL	8.78	8.76	34.083	26.438	162.0	0.431	1.77	27.1	39.8	2.34	29.3	0.02			201
1	227	8.44	8.42	34.088	26.495	157.0	0.474	1.86	28.3	41.7	2.37	30.0	0.01			228
	250 ISL	8.33	8.30	34.131	26.546	152.6	0.510	1.43	21.7	46.5	2.53	31.5	0.02			252
1	267	8.26	8.23	34.166	26.584	149.2	0.535	1.05	15.9	50.5	2.67	32.6	0.02			269
	300 ISL	7.92	7.89	34.182	26.648	143.6	0.584	0.85	12.8	55.8	2.80	33.6	0.01			302
1	318	7.70	7.67	34.184	26.682	140.6	0.609	0.81	12.1	58.6	2.85	33.9	0.01			320
1	376	7.13	7.09	34.214	26.787	131.2	0.688	0.44	6.5	71.1	3.09	34.4	0.02			378
	400 ISL	6.91	6.87	34.223	26.824	127.8	0.719	0.31	4.5	77.2	3.19	33.8	0.02			403
1	437	6.65	6.61	34.232	26.867	124.2	0.766	0.16	2.3	86.8	3.35	32.1	0.02			440
	500 ISL	6.50	6.45	34.239	26.893	122.5	0.843	0.07	1.0	101.3	3 58	26.9	0.01			504
1	506	6.50	6.45	34.239	26.893	122.6	0.851	0.07	1.0	102.7	3.60	26.3	0.01			510
1	527	6.46	6.41	34.241	26.900	122.2	0.877	0.06	0.9	108.0	3.71	23.8	0.01			531
1	547	6.45	6.40	34.242	26.902	122.3	0.901	0.03	0.4	115.1	3.97	20.0	0.03			551
1	557	6.45	6.40	34.243	26.903	122.3	0.913	0.03	0.4	115.8	4.10	19.6	0.04			561
1	567	6.45	6.40	34.243	26.903	122.5	0.925	0.03	0.4	116.3	4.00	19.5	0.02			571
1	572	6.45	6.40	34.243	26.904	122.5	0.932	0.02	0.3	117.0	3.93	19.6	0.02			576
1	576	6.45	6.40	34.239	26.900	122.9	0.936	0.03	0.4	116.7	3.93	19.5	0.02			580

A) SANTA BARBARA BASIN STATION.

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 13.5 N	119 24.7 W	19/01/91	0910 UTC	33 •	080 06 kn			1020.3 mb	13.1 C	12.1 C		

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 UM/1	1?04 UM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	14.25	14.25	33.500	24.977	297.0	0.000	5.92	101.6	3.2	0.42	0.3	0.04	0.74	0.28	13
1	1	14.25	14.25	33.500	24.977	297.0	0.003	5.92	101.6	3.2	0.42	0.3	0.04	0.74	0.28	L
	10 ISL	14.22	14.22	33.501	24.984	296.6	0.030	5.91	101.3	3.2	0.42	0.3	0.05	0.83	0.38	10
1	11	14.21	14.21	33.501	24.986	296.4	0.033	5.91	101.3	3.2	0.42	0.3	0.05	0.85	0.40	11
	20 ISL	14.12	14.12	33.490	24.997	295.7	0.059	5.91	101.1	3.2	0.42	0.3	0.06	0.94	0.45	3!0
1	21	14.11	14.11	33.488	24.997	295.6	0.062	5.91	101.1	3.2	0.42	0.3	0.06	0.95	0.45	2X
	30 ISL	14.00	14.00	33.488	25.021	293.7	0.089	5.78	98.6	2.7	0.50	0.8	0.11	0.96	0.48	:-10
1	31	13.99	13.99	33.488	25.023	293.5	0.092	5.76	98.3	2.6	0.51	0.9	0.11	0.96	0.48	:il

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOriOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 10.7 N	119 30.5 W	19/01/91	0647 UTC	113 -	290 06 k.11			1020.5 ab	13.8 C	13.0 C		

CAST	DEPTH -	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN »1/1	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 *MM/1*	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	14.36	14.36	33.509	24.5»60	298.5	0.000	5.91	101.6	3.1	0.40	0.2	0.03	0.79	0.32	0
1	1	14.36	14.36	33.509	24.960	298.6	0.003	5.91	101.6	3.1	0.40	0.2	0.03	0.79	0.32	1
1	10	14.28	14.28	33.502	24.972	297.7	0.030	5.89	101.1	3.1	0.40	0.3	0.04	0.91	0.46	LO
	20 ISL	14.08	14.08	33.513	25.023	293.2	0.059	5.78	98.8	3.9	0.47	1.1	0.08	0.89	0.40	20
1	21	14.06	14.06	33.514	25.028	292.7	0.062	5.77	98.6	4.0	0.48	1.2	0.08	0.89	0.39	21
1	30	14.05	14.05	33.513	25.029	292.8	0.089	5.79	98.9	3.7	0.47	1.1	0.07	0.88	0.43	10
1	40	13.93	13.92	33.505	25.048	291.3	0.118	5.81	99.0	3.8	0.47	1.2	0.08	0.90	0.47	40
1	49	13.28	13.27	33.486	25.166	280.3	0.144	5.42	91.1	5.4	0.67	3.8	0.24	0.53	0.34	49
	50 ISL	13.21	13.20	33.483	25.178	279.2	0.146	5.39	90.5	5.5	0.69	4.0	0.25	0.50	0.33	50
1	59	12.68	12.67	33.463	25.267	270.9	0.171	5.15	85.5	6.7	0.82	5.9	0.32	0.35	0.29	59
1	69	12.37	12.36	33.465	25.329	265.2	0.198	4.95	81.6	8.2	0.93	7.7	0.21	0.31	0.25	69
	75 ISL	11.75	11.74	33.494	25.469	252.1	0.213	4.58	74.6	10.8	1.11	10.7	0.12	0.21	0.20	75
1	83	10.91	10.90	33.550	25.665	233.5	0.233	4.07	65.1	14.5	1.36	14.8	0.03	0.07	0.14	83
1	99	10.66	10.65	33.629	25.771	223.7	0.269	3.77	60.0	17.1	1.50	16.9	0.03	0.08	0.15	99

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 52.7 N	120 7.9 W	19/01/91	0046 UTC	94 -	300 06 k.n	290 01 08 0		1019.6 mb	15.5 C	14.1 C	14B 04	0/8

CAST	DEPTH -	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN al/1	OXY PCT	SIO3 uM/l	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	13.52	13.52	33.507	25.133	282.1	0.000	5.87	99.2	4.4	0.53	1.6	0.09	1.71	0.55	*0*
1	1	13.52	13.52	33.507	25.133	282.1	0.003	5.87	99.2	4.4	0.53	1.6	0.09	1.71	0.55	*1*
	10 ISL	13.48	13.48	33.506	25.140	281.7	0.028	5.87	99.1	4.4	0.52	1.6	0.09	1.62	0.57	10
1	11	13.48	13.48	33.506	25.140	281.7	0.031	5.87	99.1	4.4	0.52	1.6	0.09	1.60	0.57	11
	20 ISL	13.30	13.30	33.512	25.182	278.0	0.056	5.74	96.6	5.2	0.58	2.4	0.10	1.47	0.57	20
1	21	13.27	13.27	33.513	25.188	277.4	0.059	5.71	96.0	5.3	0.59	2.6	0.10	1.45	0.57	21
	30 ISL	12.75	12.75	33.519	25.296	267.4	0.083	5.35	89.0	7.3	0.76	5.1	0.14	1.35	0.55	30
1	31	12.69	12.69	33.520	25.309	266.2	0.086	5.31	88.2	7.6	0.78	5.4	0.14	1.33	0.55	31.
1	42	12.25	12.24	33.541	25.410	256.8	0.115	4.98	82.0	9.8	0.94	7.9	0.15	0.96	0.52	42
1	50	11.42	11.41	33.576	25.593	239.6	0.135	4.36	70.5	13.8	1.23	12.5	0.13	0.48	0.34	50
1	60	10.84	10.83	33.624	25.734	226.3	0.158	3.95	63.1	16.9	1.42	15.8	0.09	0.30	0.21	60
1	70	10.70	10.69	33.651	25.780	222.2	0.181	3.82	60.9	18.1	1.48	16.7	0.08	0.21	0.23	70
	75 ISL	10.66	10.65	33.656	25.791	221.2	0.192	3.79	60.3	18.3	1.49	16.9	0.08	0.22	0.25	75
1	79	10.62	10.61	33.662	25.803	220.2	0.200	3.76	59.8	18.6	1.51	17.2	0.08	0.22	0.26	79
1	89	10.39	10.38	33.715	25.88*	212.7	0.222	3.54	56.0	20.8	1.62	18.7	0.07	0.13	0.20	89

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 43.7 N	120 26.7 W	18/01/91	2040 UTC	1423 m	320 10 kn	300 02 08 0		1022.0 mb	15.7 C	14.2 C	11a 04	0/8

CAST	DEPTH -	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN «1/1	OXY PCT	SIO3 uM/1	PO4 UM/1	NO3 UM/1	NO2 uM/1	CHL-A ug/X	PHAEO ug/1	PRESS db
	0 ISL	13.38	13.38	33.467	25.130	282.4	0.000	6.15	103.6	3.8	0.44	0.7	0.07	2.28	0.58	0
1	1	13.38	13.38	33.467	25.130	282.4	0.003	6.15	103.6	3.8	0.44	0.7	0.07	2.28	0.58	1
	10 ISL	13.27	13.27	33.469	25.154	280.4	0.028	6.13	103.0	3.7	0.45	0.8	0.08	3.12	0.83	10
1	16	13.18	13.18	33.472	25.175	278.6	0.045	6.09	102.2	3.6	0.45	0.8	0.08	3.75	1.02	16
	20 ISL	13.16	13.16	33.473	25.179	278.2	0.056	6.05	101.5	3.7	0.47	1.0	0.09	3.64	0.99	20
	30 ISL	13.11	13.11	33.475	25.191	277.4	0.084	5.93	99.3	4.0	0.51	1.7	0.13	3.17	0.88	30
1	31	13.11	13.11	33.475	25.191	277.4	0.087	5.92	99.2	4.0	0.52	1.8	0.13	3.11	0.87	31
1	41	13.05	13.04	33.471	25.200	276.8	0.114	5.85	97.9	4.5	0.56	2.3	0.15	3.13	1.04	41
	50 ISL	11.91	11.90	33.417	25.378	260.0	0.138	5.15	84.1	8.6	0.90	8.1	0.13	1.30	0.70	50
1	51	11.77	11.76	33.413	25.401	257.8	0.141	5.06	82.4	9.1	0.94	8.8	0.13	1.08	0.65	51
1	61	11.14	11.13	33.436	25.535	245.3	0.166	4.64	74.5	12.0	1.14	12.3	0.07	0.41	0.52	61
1	71	10.56	10.55	33.496	25.684	231.3	0.190	4.25	67.4	15.1	1.33	15.3	0.03	0.23	0.24	71
	75 ISL	10.35	10.34	33.539	25.754	224.8	0.199	4.09	64.6	16.5	1.41	16.7	0.02	0.16	0.17	75
1	80	10.12	10.11	33.594	25.836	217.0	0.210	3.90	61.3	18.2	1.50	18.2	0.02	0.10	0.12	80
1	95	9.82	9.81	33.702	25.971	204.5	0.242	3.58	56.0	21.1	1.62	20.3	0.02	0.12	0.18	95
	100 ISL	9.75	9.74	33.734	26.007	201.1	0.252	3.48	54.3	22.0	1.66	20.9	0.02	0.09	0.15	101
1	110	9.62	9.61	33.790	26.073	195.1	0.272	3.31	51.5	23.6	1.73	22.0	0.01	0.03	0.07	111
1	125	9.40	9.39	33.857	26.161	186.9	0.300	3.13	48.5	26.1	1.82	23.4	0.01	0.01	0.07	126
1	150	9.00	8.98	33.939	26.290	175.1	0.346	2.87	44.1	30.8	1.96	25.4	0.01	0.01	0.05	151
1	175	8.60	8.58	34.022	26.418	163.4	0.388	2.56	39.0	35.6	2.10	27.3	0.01	0.01	0.05	176
	200 ISL	8.35	8.33	34.070	26.494	156.5	0.428	2.34	35.5	38.7	2.21	28.6	0.01	0.01	0.05	201
1	206	8.30	8.28	34.079	26.509	155.2	0.437	2.29	34.7	39.5	2.24	28.9	0.01	0.01	0.05	207
1	235	7.99	7.97	34.124	26.591	147.8	0.481	1.90	28.6	45.3	2.41	30.8	0.02			236
	250 ISL	7.83	7.81	34.138	26.626	144.7	0.503	1.73	25.9	47.9	2.48	31.7	0.02			252
1	275	7.59	7.56	34.156	26.675	140.4	0.539	1.49	22.2	51.6	2.59	33.0	0.01			277
	300 ISL	7.47	7.44	34.178	26.710	137.5	0.574	1.30	19.3	54.3	2.67	33.8	0.01			302
1	331	7.33	7.30	34.201	26.748	134.3	0.616	1.11	16.4	57.3	2.75	34.6	0.01			333
1	390	6.78	6.74	34.217	26.837	126.4	0.693	0.80	11.7	65.1	2.91	36.8	0.01			393
	400 ISL	6.73	6.69	34.221	26.847	125.6	0.705	0.76	11.1	65.9	2.93	37.0	0.01			403
1	456	6.54	6.50	34.250	26.896	121.6	0.774	0.58	8.4	70.2	3.04	37.9	0.01			459
	500 ISL	6.29	6.24	34.274	26.948	117.1	0.827	0.44	6.4	75.0	3.12	38.9	0.01			503
1	526	6.15	6.10	34.289	26.978	114.5	0.857	0.36	5.2	77.8	3.16	39.5	0.01			530

RV DAVID STARR JORDAN CALCOFI CRUISE 9101

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 34.7 N	120 45.4 W	18/01/91	1630 UTC	1522 B	290 07 kn	290 03 09	0	1023.0 ab	13.7 C	1L2.8 C	13B 04	0/8

CAST	DEPTH -	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN »l/l	OXY PCT	SIO3 uM/l	PO4 UM/1	NO3 UM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/l	PRESS db
	0 ISL	13.29	13.29	33.466	25.147	280.7	0.000	6.02	101.2	3.8	0,47	1.3	0.08	1.18	0.59	0
1	1	13.29	13.29	33.466	25.147	280.7	0.003	6.02	101.2	3.8	0.47	1.3	0.08	1.18	0.59	1
	10 ISL	13.28	13.28	33.466	25.150	280.8	0.028	6.00	100.9	3.9	0.47	1.3	0.08	1.21	0.54	10
1	15	13.27	13.27	33.466	25.152	280.7	0.042	5.98	100.5	3.9	0.47	1.3	0.08	1.22	0.51	15
	20 ISL	13.26	13.26	33.465	25.153	280.7	0.056	5.96	100.2	3.9	0.48	1.4	0.09	1.18	0.52	20
1	30	13.24	13.24	33.464	25.157	280.7	0.084	5.92	99.4	3.9	0.49	1.6	0.10	1.06	0.53	30
1	40	13.23	13.22	33.464	25.159	280.7	0.112	5.91	99.2	4.0	0.49	1.7	0.10	0.98	0.45	40
1	50	13.16	13.15	33.457	25.168	280.2	0.140	5.84	97.9	4.3	0.52	2.0	0.11	0.72	0.42	50
1	61	12.01	12.00	33.436	25.375	260.6	0.170	5.09	83.3	8.6	0.90	8.2	0.10	0.29	0.26	61
1	72	10.97	10.96	33.468	25.590	240.3	0.198	4.42	70.7	13.0	1.23	13.6	0.04	0.10	0.14	72
	75 ISL	10.74	10.73	33.476	25.637	235.9	0.205	4.33	69.0	14.0	1.30	14.6	0.03	0.09	0.13	75
1	80	10.40	10.39	33.493	25.709	229.1	0.216	4.20	66.4	15.7	1.39	16.1	0.03	0.08	0.12	80
1	95	9.73	9.72	33.610	25.914	209.9	0.249	3.74	58.3	20.7	1.62	20.0	0.02	0.04	0.11	95
	100 ISL	9.65	9.64	33.632	25.944	207.1	0.260	3.66	57.0	21.4	1.65	20.6	0.02	0.03	0.10	101
1	111	9.54	9.53	33.680	26.000	202.0	0.282	3.51	54.5	22.8	1.71	21.5	0.02	0.02	0.08	112
1	125	9.29	9.28	33.783	26.121	190.7	0.310	3.23	49.9	26.0	1.82	23.3	0.03	0.01	0.08	126
1	150	8.90	8.88	33.913	26.286	175.5	0.356	2.90	44.5	30.7	1.96	25.5	0.01	0.01	0.06	151
1	176	8.75	8.73	33.975	26.358	169.1	0.400	2.74	41.9	33.3	2.04	26.5	0.01	0.01	0.06	177
	200 ISL	8.49	8.47	34.011	26.427	163.0	0.440	2.62	39.8	35.9	2.11	27.5	0.01	0.01	0.05	201
1	207	8.40	8.38	34.019	26.447	161.2	0.452	2.58	39.1	36.8	2.13	27.9	0.01	0.01	0.05	208
1	235	7.95	7.93	34.052	26.540	152.6	0.495	2.33	35.0	42.2	2.26	29.7	0.01			236
	250 ISL	7.78	7.76	34.072	26.581	148.9	0.518	2.15	32.2	44.9	2.34	30.6	0.01			251
1	276	7.55	7.52	34.103	26.639	143.8	0.556	1.83	27.2	49.1	2.47	32.0	0.01			278
	300 ISL	7.36	7.33	34.120	26.680	140.2	0.590	1.62	24.0	52.5	2.56	33.1	0.01	I		302
1	331	7.14	7.11	34.141	26.727	136.1	0.633	1.38	20.3	56.6	2.67	34.4	0.01			333
1	391	6.82	6.78	34.209	26.825	127.5	0.712	0.84	12.3	64.9	2.90	36.7	0.01			394
	400 ISL	6.74	6.70	34.208	26.835	126.7	0.724	0.81	11.8	66.0	2.92	37.0	0.01			403
1	455	6.25	6.21	34.194	26.889	121.9	0.792	0.69	10.0	72.2	3.01	38.6	0.01			458
	500 ISL	6.09	6.05	34.230	26.938	117.7	0.846	0.52	7.5	76.3	3.09	39.4	0.01	]		503
1	526	5.99	5.94	34.251	26.968	115.2	0.876	0.42	6.0	78.7	3.14	39.9	0.01	I		530

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 14.6 N	121 26.6 W	18/01/91	1020 UTC	3794 -	310 09 kn			1022.3 mb	14.2 C	12.7 C		

CAST	DEPTH -	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN «1/1	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	14.60	14.60	33.481	24.888	305.4	0.000	5.89	101.8	3.0	0.39	0.0	0.00	0.41	0.13	0
1	1	14.60	14.60	33.481	24.888	305.4	0.003	5.89	101.8	3.0	0.39	0.0	0.00	0.41	0.13	1
	10 ISL	14.62	14.62	33.480	24.883	306.2	0.031	5.89	101.8	2.9	0.38	0.0	0.00	0.41	0.13	10
1	16	14.63	14.63	33.479	24.880	306.6	0.049	5.88	101.6	2.8	0.3)8	0.0	0.00	0.41	0.13	16
	20 ISL	14.63	14.63	33.479	24.880	306.7	0.061	5.88	101.6	2.8	0.31.8	0.0	0.00	0.42	0.13	20
	30 ISL	14.61	14.61	33.478	24.884	306.6	0.092	5.87	101.4	2.7	0.38	0.0	0.00	0.44	0.15	30
1	31	14.61	14.61	33.478	24.884	306.7	0.095	5.87	101.4	2.7	0.38	0.0	0.00	0.44	0.15	31
1	41	14.61	14.60	33.474	24.882	307.2	0.126	5.85	101.1	2.7	0.37	0.0	0.00	0.45	0.17	41
	50 ISL	14.61	14.60	33.475	24.883	307.4	0.153	5.85	101.1	2.7	0 38	0.0	0.00	0.45	0.16	50
1	51	14.61	14.60	33.475	24.883	307.5	0.156	5.85	101.1	2.7	0.38	0.0	0.00	0.45	0.16	51
1	61	14.59	14.58	33.479	24.890	307.0	0.187	5.85	101.0	2.7	0.38	0.0	0.01	0.44	0.16	61
1	71	14.58	14.57	33.478	24.892	307.2	0.218	5.83	100.7	2.7	0.38	0.1	0.01	0.40	0.15	71
	75 ISL	14.17	14.16	33.446	24.954	301.3	0.230	5.77	98.8	3.1	0.43	0.8	0.02	0.32	0.14	75
1	80	13.52	13.51	33.405	25.056	291.6	0.245	5.67	95.7	3.7	0.52	1.9	0.04	0.22	0.13	80
1	95	11.62	11.61	33.394	25.415	257.6	0.286	5.28	85.7	6.4	0.79	6.7	0.02	0.10	0.11	95
	100 ISL	11.41	11.40	33.411	25.467	252.7	0.299	5.26	85.0	6.7	0.81	7.2	0.02	0.08	0.10	100
1	110	11.11	11.10	33.452	25.553	244.7	0.324	5.16	82.8	8.0	0.87	8.5	0.01	0.06	0.07	111
1	125	9.91	9.90	33.515	25.810	220.4	0.359	4.46	69.3	15.0	1 3 0	15.6	0.00	0.02	0.04	126
1	150	9.43	9.41	33.680	26.019	201.0	0.411	3.70	57.3	21.8	1.66	21.0	0.00	0.01	0.03	151
1	175	8.86	8.84	33.877	26.264	178.0	0.459	3.13	47.'i	28.9	1.89	24.8	0.00	0.00	0.02	176
	200 ISL	8.65	8.63	33.968	26.368	168.6	0.502	2.70	41.2	33.1	2.05	27.0	0.00	0.00	0.03	201
1	205	8.61	8.59	33.978	26.383	167.3	0.510	2.64	40.2	33.8	2.08	27.3	0.00	0.00	0.03	206
1	235	8.07	8.05	34.044	26.516	154.9	0.559	2.45	36.9	39.9	2.21	29.2	0.00			236
	250 ISL	7.79	7.77	34.050	26.563	150.7	0.582	2.42	36.2	42.6	2.25	29.9	0.00			251
1	275	7.35	7.32	34.043	26.620	145.4	0.619	2.38	35.2	46.8	2.32	31.0	0.00			277
	300 ISL	6.96	6.93	34.036	26.669	141.0	0.654	2.26	33.2	51.2	2.40	32.2	0.00			302
1	330	6.55	6.52	34.031	26.720	136.3	0.696	2.07	30.1	56.4	2.51	33.8	0.00			332
1	389	6.00	5.97	34.054	26.810	128.2	0.774	1.56	22.4	66.7	2.74	36.8	0.00			391
	400 ISL	6.00	5.97	34.075	26.826	126.8	0.788	1.41	20.2	68.2	2.80	37.3	0.00			403
1	454	5.99	5.95	34.175	26.907	119.9	0.855	0.69	9.9	74.8	31.05	39.4	0.01			457
	500 ISL	5.82	5.78	34.236	26.977	113.8	0.908	0.47	6.7	80.1	31.14	40.3	0.01			503
1	523	5.74	5.70	34.267	27.012	110.7	0.934	0.36	5.1	82.8	3.19	40.7	0.01			527

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 54.7 N	122 7.6 W	18/01/91	0418 UTC	4170 -	340 05 kn			1022.2 nb	14.5 C	12.5 C		

CAST	DEPTH -		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN «1/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.49	14.49	33.418	24.863	307.8	0.000	5.94	102.4	3.2	0.40	0.0	0.00	0.48	0.13	0
1	1		14.49	14.49	33.418	24.863	307.9	0.003	5.94	102.4	3.2	0.40	0.0	0.00	0.48	0.13	1
	10	ISL	14.44	14.44	33.418	24.874	307.1	0.031	5.95	102.4	3.1	0.39	0.0	0.00	0.48	0.13	10
1	15		14.40	14.40	33.418	24.882	306.4	0.046	5.95	102.3	3.0	0.39	0.0	0.00	0.48	0.14	15
	20	ISL	14.38	14.38	33.417	24.886	306.2	0.061	5.94	102.1	3.0	0.39	0.0	0.00	0.50	0.15	20
1	30		14.35	14.35	33.415	24.891	306.0	0.092	5.93	101.9	3.0	0.39	0.0	0.00	0.56	0.17	30
1	41		14.35	14.34	33.414	24.890	306.4	0.126	5.93	101.9	3.0	0.39	0.0	0.01	0.61	0.20	II
1	50		14.35	14.34	33.414	24.891	306.6	0.153	5.92	101.7	3.0	0.39	0.0	0.01	0.57	0.18	150
1	60		14.04	14.03	33.385	24.933	302.8	0.184	5.89	100.5	3.2	0.42	0.3	0.06	0.42	0.16	60
1	70		13.52	13.51	33.336	25.002	296.5	0.214	5.82	98.2	3.4	0.48	1.0	0.18	0.23	0.13	70
	75	ISL	12.74	12.73	33.262	25.100	287.2	0.228	5.68	94.3	4.5	0.61	3.0	0.12	0.17	0.12	75
1	79		12.07	12.06	33.216	25.193	278.4	0.240	5.53	90.5	5.7	0.74	5.1	0.06	0.13	0.12	79
1	95		10.81	10.80	33.379	25.549	244.7	0.281	4.53	72.2	13.3	1.29	14.4	0.02	0.10	0.12	95
	100	ISL	10.41	10.40	33.389	25.627	237.4	0.294	4.56	72.1	14.1	1.31	14.8	0.01	0.08	0.10	100
1	110		9.74	9.73	33.396	25.745	226.2	0.317	4.62	71.9	14.8	1.34	15.6	0.01	0.04	0.06	111
1	125		9.36	9.35	33.452	25.851	216.3	0.350	4.57	70.6	16.2	1.39	16.6	0.01	0.02	0.05	126
1	150		9.16	9.14	33.779	26.140	189.5	0.401	3.21	49.5	26.5	1.85	23.9	0.01	0.01	0.03	151
1	175		8.87	8.85	33.946	26.317	173.1	0.446	2.71	41.5	32.1	2.03	26.7	0.01	0.00	0.03	176
	200	ISL	8.40	8.38	33.980	26.416	164.0	0.488	2.91	44.1	34.0	2.02	26.9	0.01	0.00	0.03	201
1	205		8.29	8.27	33.980	26.433	162.4	0.496	2.97	44.9	34.4	2.01	26.9	0.01	0.00	0.03	206
1	234		7.73	7.71	34.019	26.547	151.9	0.542	2.71	40.5	40.9	2.16	29.1	0.01			235
	250	ISL	7.55	7.53	34.035	26.535	148.4	0.566	2.48	36.9	43.9	2.26	30.3	0.01			251
1	274		7.36	7.33	34.055	26.628	144.7	0.601	2.13	31.6	48.1	2.40	32.0	0.01			276
	300	ISL	7.16	7.13	34.077	26.674	140.6	0.638	1.84	27.1	52.2	2.52	33.4	0.01			302
1	332		6.91	6.88	34.102	26.728	135.8	0.682	1.54	22.6	57.2	2.66	34.9	0.01			334
1	389		6.40	6.37	34.136	26.823	127.3	0.757	1.01	14.6	66.9	2.89	37.6	0.01			391
	400	ISL	6.26	6.22	34.135	26.841	125.7	0.771	0.95	13.7	68.9	2.92	38.1	0.01			403
1	456		5.63	5.59	34.136	26.921	118.3	0.840	0.74	10.5	78.5	3.06	40.2	0.01			459
	500	ISL	5.44	5.40	34.178	26.977	113.3	0.890	0.55	7.8	83.9	3.14	41.0	0.01			503
1	524		5.33	5.29	34.201	27.009	110.5	0.917	0.45	6.4	86.9	3.18	41.5	0.01			528

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 34.8 N	122 48.7 W	17/01/91	2155 UTC	4040 a	340 07 kn	340 02 05	1	1022.9 mb	16.0 C	13.5 C	19»	03 2/8 CI

CAST	DEPTH -		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN «1/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.36	14.36	33.429	24.899	304.4	0.000	5.95	102.3	3.2	0.44	0.4	0.04	0.61	0.17	0
1	1		14.36	14.36	33.429	24.899	304.4	0.003	5.95	102.3	3.2	0.44	0.4	0.04	0.61	0.17	1
	10	ISL	14.22	14.22	33.432	24.931	301.6	0.030	5.96	102.1	3.2	0.43	0.4	0.04	0.63	0.19	10
1	16		14.10	14.10	33.434	24.957	299.3	0.048	5.96	101.9	3.2	0.43	0.4	0.04	0.66	0.21	16
	20	ISL	14.09	14.09	33.434	24.960	299.2	0.060	5.96	101.9	3.2	0.43	0.4	0.04	0.67	0.22	20
	30	ISL	14.06	14.06	33.434	24.966	298.8	0.090	5.95	101.6	3.2	0.43	0.4	0.04	0.71	0.23	30
1	31		14.06	14.06	33.434	24.966	298.9	0.093	5.95	101.6	3.2	0.43	0.4	0.04	0.71	0.23	31
1	41		14.06	14.05	33.437	24.969	298.9	0.123	5.94	101.5	3.0	0.43	0.4	0.04	0.77	0.24	41
1	49		14.06	14.05	33.438	24.970	299.0	0.147	5.90	100.8	3.0	0.43	0.4	0.04	0.71	0.24	49
	50	ISL	14.06	14.05	33.438	24.970	299.1	0.150	5.90	100.8	3.0	0.43	0.4	0.04	0.70	0.24	50
1	59		14.03	14.02	33.441	24.979	298.5	0.177	5.89	100.5	3.0	0.44	0.6	0.04	0.61	0.21	59
1	69		12.03	12.02	33.306	25.270	270.8	0.205	5.35	87.5	7.0	0.82	6.7	0.08	0.13	0.14	69
	75	ISL	10.94	10.93	33.315	25.476	251.2	0.221	4.92	78.6	10.6	1.10	11.4	0.04	0.10	0.11	75
1	78		10.48	10.47	33.338	25.575	241.8	0.228	4.71	74.5	12.5	1.23	13.6	0.01	0.08	0.10	78
1	94		9.80	9.79	33.555	25.85S	215.1	0.265	3.89	60.7	19.2	1.57	19.4	0.01	0.03	0.06	94
	100	ISL	9.66	9.65	33.608	25.924	209.0	0.278	3.72	57.9	20.8	1.64	20.5	0.01	0.02	0.05	100
1	109		9.50	9.49	33.685	26.010	201.0	0.296	3.50	54.3	23.0	1.73	21.9	0.00	0.01	0.04	110
1	124		9.15	9.14	33.865	26.208	182.5	0.325	2.92	45.0	28.6	1.93	25.2	0.00	0.01	0.04	125
	125	ISL	9.13	9.12	33.871	26.216	181.7	0.327	2.91	44.8	28.8	1.94	25.3	0.00	0.01	0.04	126
1	148		8.84	8.82	33.935	26.312	173.0	0.367	2.70	41.3	31.9	2.04	26.9	0.00	0.01	0.04	149
	150	ISL	8.81	8.79	33.940	26.321	172.2	0.371	2.69	41.2	32.2	2.05	27.0	0.00	0.01	0.04	151
1	174		8.48	8.46	33.994	26.415	163.6	0.411	2.56	38.9	35.2	2.11	28.1	0.00	0.00	0.03	175
	200	ISL	8.18	8.16	34.033	26.491	156.8	0.453	2.40	36.2	38.6	2.20	29.3	0.00	0.00	0.03	201
1	204		8.14	8.12	34.037	26.500	156.0	0.459	2.38	35.9	39.1	2.21	29.5	0.00	0.00	0.03	205
1	233		7.81	7.79	34.053	26.562	150.5	0.504	2.33	34.9	42.9	2.29	30.3	0.00			234
	250	ISL	7.61	7.59	34.061	26.597	147.3	0.529	2.23	33.2	45.3	2.35	31.0	0.00			251
1	273		7.34	7.31	34.069	26.642	143.3	0.562	2.06	30.5	48.9	2.43	32.2	0.00			275
	300	ISL	7.02	6.99	34.076	26.692	138.8	0.600	1.82	26.8	53.6	2.54	33.7	0.00			302
1	328		6.68	6.65	34.083	26.744	134.1	0.639	1.55	22.6	58.8	2.66	35.3	0.00			330
1	387		6.00	5.97	34.108	26.852	124.2	0.715	1.05	15.1	70.6	2.90	38.5	0.00			389
	400	ISL	5.90	5.87	34.119	26.873	122.3	0.731	0.95	13.6	72.8	2.94	39.0	0.00			403
1	455		5.57	5.53	34.172	26.956	114.8	0.796	0.61	8.7	81.3	3.10	40.6	0.00			458
	500	ISL	5.32	5.28	34.216	27.021	109.0	0.846	0.45	6.4	87.4	3.18	41.6	0.00			503
1	526		5.17	5.13	34.241	27.059	105.6	0.874	0.36	5.1	90.9	3.22	42.1	0.00			530

RV DAVID STARR JORDAN | CALCOFI CRUISE 9101 | STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/POREL	CLD AMT TYPE
33 53.4 N	118 29.5 W	15/01/91	0928 UTC	55 m	360 06 kn			1021.9 mb	15.2 C	14.2 C		

CAST	DEPTH -	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/1	OXYGEN	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	14.33	14.33	33.436	24.910	303.3	0.000	5.87	100.8	3.7	0.52	0.3	0.05	0.85	0.30	0
1	2	14.33	14.33	33.436	24.910	303.3	0.006	5.87	100.8	3.7	0.52	0.3	0.05	0.85	0.30	2
	10 ISL	14.33	14.33	33.443	24.916	303.0	0.030	5.87	100.8	3.7	0.51	0.3	0.05	0.90	0.33	10
1	12	14.33	14.33	33.446	24.918	302.9	0.036	5.87	100.8	3.7	0.51	0.3	0.05	0.91	0.34	12
	20 ISL	14.27	14.27	33.439	24.926	302.4	0.061	5.84	100.2	3.5	0.51	0.4	0.06	0.85	0.36	20
1	22	14.26	14.26	33.439	24.928	302.3	0.067	5.83	100.0	3.5	0.51	0.4	0.06	0.82	0.36	22
	30 ISL	14.01	14.01	33.412	24.959	299.5	0.091	5.72	97.6	4.0	0.61	0.8	0.14	0.70	0.34	30
1	32	13.94	13.94	33.408	24.971	298.4	0.097	5.68	96.8	4.2	0.64	0.9	0.17	0.66	0.34	32
1	42	13.71	13.70	33.451	25.052	291.0	0.126	5.46	92.6	4.9	0.67	1.7	0.26	0.31	0.24	42
	50 ISL	13.35	13.34	33.465	25.136	283.2	0.149	5.41	91.1	5.1	0.71	2.7	0.44	0.22	0.23	50
1	52	13.26	13.25	33.469	25.157	281.2	0.155	5.40	90.7	5.2	0.72	2.9	0.49	0.20	0.23	52

RV DAVID STARR JORDAN | CALCOFI CRUISE 9101 | STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 49.3 N	118 37.9 W	15/01/91	1150 UTC	727 n	230 04 kn			1021.5 mb	15.0 C	14.0 C		

CAST	DEPTH -	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT m1/1	OXYGEN	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	14.47	14.47	33.486	24.919	302.4	0.000	5.94	102.4	2.5	0.41	0.0	0.00	0.67	0.29	0
1	1	14.47	14.47	33.486	24.919	302.5	0.003	5.94	102.4	2.5	0.41	0.0	0.00	0.67	0.29	1
1	10	14.48	14.48	33.482	24.914	303.2	0.030	5.93	102.2	2.5	0.39	0.0	0.01	0.74	0.28	10
1	20	14.45	14.45	33.477	24.917	303.2	0.061	5.95	102.5	2.7	0.39	0.0	0.02	0.90	0.33	20
	30 ISL	14.41	14.41	33.472	24.922	303.1	0.091	5.93	102.0	2.9	0.40	0.1	0.03	0.94	0.34	30
1	31	14.41	14.41	33.471	24.921	303.1	0.094	5.93	102.0	2.9	0.40	0.1	0.03	0.94	0.34	31
1	41	14.33	14.32	33.470	24.938	301.9	0.124	5.89	101.2	2.9	0.42	0.1	0.05	0.87	0.37	41
1	50	13.77	13.76	33.443	25.034	293.0	0.151	5.55	94.2	4.0	0.61	1.3	0.27	0.30	0.24	50
1	61	12.96	12.95	33.404	25.167	280.5	0.183	5.36	89.5	5.0	0.74	3.5	0.32	0.21	0.19	61
1	71	11.78	11.77	33.330	25.336	264.6	0.210	5.06	82.3	7.3	0.93	7.4	0.05	0.17	0.22	71
	75 ISL	11.51	11.50	33.321	25.378	260.6	0.220	5.01	81.1	7.9	0.98	8.3	0.04	0.15	0.21	75
1	85	11.16	11.15	33.360	25.472	251.8	0.246	4.80	77.1	9.6	1.09	10.4	0.02	0.10	0.17	85
1	100	11.20	11.19	33.610	25.660	234.4	0.282	3.82	61.5	14.5	1.41	15.2	0.01	0.05	0.13	100
1	120	10.72	10.71	33.755	25.859	215.9	0.327	3.27	52.1	19.6	1.68	19.1	0.01	0.04	0.11	121
	125 ISL	10.63	10.62	33.782	25.896	212.5	0.338	3.18	50.6	20.5	1.74	19.8	0.01	0.04	0.10	126
1	144	10.29	10.27	33.870	26.024	200.7	0.377	2.93	46.3	23.4	1.94	22.0	0.01	0.02	0.07	145
	150 ISL	10.14	10.12	33.899	26.072	196.2	0.389	2.87	45.2	24.5	1.97	22.7	0.01	0.02	0.07	151
1	175	9.46	9.44	33.995	26.261	178.6	0.436	2.71	42.1	29.1	2.04	25.0	0.01	0.01	0.06	176
	200 ISL	8.90	8.88	34.032	26.380	167.6	0.479	2.64	40.5	33.2	2.13	26.7	0.00	0.01	0.06	201
1	206	8.79	8.77	34.037	26.401	165.7	0.489	2.62	40.1	34.1	2.15	27.0	0.00	0.01	0.06	207
1	235	8.40	8.38	34.074	26.490	157.6	0.536	2.42	36.7	38.3	2.25	28.6	0.00			236
	250 ISL	8.24	8.21	34.092	26.529	154.1	0.560	2.27	34.3	40.6	2.32	29.4	0.00			251
1	274	8.03	8.00	34.118	26.581	149.5	0.596	1.99	29.9	44.4	2.44	30.7	0.00			276
	300 ISL	7.81	7.78	34.144	26.634	144.8	0.634	1.70	25.5	48.4	2.57	32.1	0.00			302
1	330	7.58	7.55	34.173	26.691	139.9	0.677	1.37	20.4	52.9	2.72	33.7	0.00			332
1	395	7.13	7.09	34.236	26.804	129.9	0.765	0.79	11.7	62.7	2.99	36.1	0.00			398
	400 ISL	7.10	7.06	34.238	26.810	129.4	0.771	0.76	11.2	63.4	3.01	36.3	0.00			403
1	456			34.278			0.842	0.49	7.2	70.1	3.15	37.9	0.00			459
	500 ISL	6.52	6.48	34.293	26.932	118.8	0.895	0.39	5.7	74.6	3.23	38.6	0.00			503
1	525	6.38	6.33	34.307	26.963	116.2	0.924	0.33	4.8	77.1	3.27	39.0	0.00			529

RV DAVID STARR JORDAN | CALCOFI CRUISE 9101 | STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 39.4 N	118 58.6 W	15/01/91	1553 UTC	89S n	310 06 kn	270 03 07 0		1020.8 mb	16.3 C	14.7 C	26B 02	0/8

CAST	DEPTH -	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN »1/1	OXY PCT	SIO3 UM/1	PO4 uH/1	NO3 UM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
1	0	15.26	15.26	33.566	24.811	312.8	0.000	5.78	101.3	2.6		0.1	0.01	0.20	0.06	0
1	10	15.26	15.26	33.573	24.816	312.6	0.031	5.79	101.4	2.5	0.36	0.1	0.00	0.21	0.07	10
	20 ISL	15.24	15.24	33.574	24.822	312.4	0.063	5.78	101.2	2.5	0.36	0.1	0.00	0.25	0.09	20
1	21	15.24	15.24	33.574	24.822	312.4	0.066	5.78	101.2	2.5	0.36	0.1	0.00	0.26	0.09	21
1	30	14.96	14.96	33.543	24.859	309.1	0.094	5.85	101.8	2.5	0.36	0.1	0.00	0.34	0.12	30
1	41	14.24	14.23	33.519	24.995	296.5	0.127	5.84	100.2	2.6	0.42	0.4	0.06	0.63	0.32	41
	50 ISL	13.73	13.72	33.487	25.076	289.0	0.153	5.68	96.4	3.5	0.52	1.6	0.15	0.52	0.27	50
1	51	13.66	13.65	33.481	25.086	288.1	0.156	5.65	95.7	3.7	0.54	1.8	0.16	0.50	0.26	51
1	61	12.28	12.27	33.356	25.261	271.4	0.184	5.20	85.5	6.9	0.84	6.5	0.12	0.29	0.20	61
1	71	11.61	11.60	33.356	25.387	259.7	0.211	4.91	79.6	9.0	1.03	9.4	0.05	0.24	0.20	71
	75 ISL	11.38	11.37	33.370	25.440	254.7	0.221	4.80	77.5	9.8	1.10	10.4	0.04	0.21	0.19	75
1	85	10.89	10.88	33.429	25.574	242.1	0.246	4.51	72.0	12.1	1.25	13.0	0.03	0.12	0.15	85
	100 ISL	10.26	10.25	33.568	25.792	221.6	0.281	4.00	63.1	16.8	1.49	17.2	0.02	0.04	0.08	100
1	102	10.19	10.18	33.589	25.820	219.0	0.285	3.93	61.9	17.5	1.52	17.7	0.02	0.03	0.07	102
1	121	9.80	9.79	33.771	26.029	199.6	0.325	3.41	53.3	22.6	1.75	21.3	0.01	0.01	0.05	122
	125 ISL	9.74	9.73	33.791	26.054	197.2	0.333	3.35	52.3	23.2	1.78	21.7	0.01	0.01	0.05	126
1	146	9.50	9.48	33.860	26.148	188.7	0.373	3.18	49.4	25.6	1.88	23.1	0.01	0.01	0.04	147
	150 ISL	9.46	9.44	33.874	26.166	187.1	0.381	3.16	49.0	26.0	1.89	23.3	0.01	0.01	0.04	151
1	176	9.16	9.14	33.961	26.282	176.5	0.428	2.94	45.4	29.6	2.00	24.9	0.01	0.00	0.03	177
	200 ISL	8.70	8.68	34.037	26.415	164.2	0.469	2.50	38.2	36.0	2.21	27.3	0.02	0.01	0.06	201
1	207	8.57	8.55	34.056	26.450	161.0	0.480	2.37	36.1	37.8	2.27	28.0	0.02	0.01	0.07	208
1	236	8.27	8.25	34.102	26.532	153.6	0.526	2.14	32.4	41.6	2.38	29.6	0.02			237
	250 ISL	8.17	8.14	34.117	26.559	151.2	0.547	2.03	30.6	43.2	2.44	30.2	0.02			251
1	276	7.98	7.95	34.140	26.606	147.2	0.586	1.80	27.1	46.5	2.57	31.2	0.01			278
	300 ISL	7.71	7.68	34.161	26.662	142.2	0.621	1.54	23.0	50.8	2.68	32.7	0.01			302
1	331	7.37	7.34	34.189	26.733	135.7	0.664	1.20	17.8	56.3	2.82	34.5	0.01			333
1	391	7.04	7.00	34.237	26.817	128.5	0.743	0.77	11.3	63.4	3.02	36.4	0.01			394
	400 ISL	7.00	6.96	34.245	26.829	127.5	0.755	0.72	10.6	64.5	3.05	36.6	0.01			403
1	458	6.68	6.64	34.291	26.910	120.5	0.826	0.45	6.6	71.9	3.21	38.0	0.00			461
	500 ISL	6.35	6.30	34.312	26.970	115.1	0.876	0.34	4.9	78.3	3.29	38.8	0.00			503
1	525	6.16	6.11	34.326	27.006	111.9	0.904	0.27	3.9	82.1	3.33	39.2	0.00			529

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 29.4 N	119 19.0 W	15/01/91	2017 UTC	1636 a	290 15 kn	310 04 06	0	1019.9 mb	17.6 C	15.0 C	20B 03	0/8

CAST	DEPTH -	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN Ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	14.49	14.49	33.536	24.954	299.2	0.000	5.95	102.6	2.1	0.35	0.1	0.00	0.31	0.11	0
1	1	14.49	14.49	33.536	24.954	299.2	0.003	5.95	102.6	2.1	0.35	0.1	0.00	0.31	0.11	1
	10 ISL	14.49	14.49	33.535	24.953	299.5	0.030	5.95	102.6	2.1	0.35	0.1	0.00	0.30	0.11	10
1	11	14.49	14.49	33.535	24.953	299.5	0.033	5.95	102.6	2.1	0.35	0.1	0.00	0.30	0.11	11
	20 ISL	14.45	14.45	33.534	24.961	299.1	0.060	5.96	102.7	2.0	0.34	0.0	0.00	0.31	0.11	20
1	21	14.44	14.44	33.534	24.963	298.9	0.063	5.96	102.7	2.0	0.34	0.0	0.00	0.31	0.11	21
	30 ISL	14.19	14.19	33.519	25.005	295.2	0.090	6.01	103.0	1.8	0.35	0.0	0.00	0.44	0.20	30
1	31	14.15	14.15	33.517	25.011	294.6	0.093	6.02	103.1	1.8	0.35	0.0	0.00	0.45	0.22	31
1	40	13.49	13.48	33.484	25.122	284.3	0.119	5.68	95.9	3.5	0.53	1.9	0.12	0.95	0.44	40
1	50	12.72	12.71	33.447	25.247	272.6	0.146	5.26	87.4	5.9	0.76	5.3	0.22	0.83	0.40	50
1	60	12.30	12.29	33.500	25.369	261.2	0.173	4.94	81.4	8.6	0.93	7.8	0.45	0.79	0.46	60
1	70	11.31	11.30	33.445	25.511	247.8	0.199	4.60	74.2	11.0	1.13	11.7	0.07	0.31	0.45	70
	75 ISL	11.08	11.07	33.450	25.556	243.6	0.211	4.49	72.0	11.8	1.19	12.8	0.06	0.26	0.37	75
1	83	10.85	10.84	33.481	25.622	237.5	0.230	4.33	69.1	13.1	1.28	14.0	0.04	0.19	0.23	83
1	99	10.31	10.30	33.580	25.793	221.5	0.267	3.93	62.0	17.1	1.49	17.2	0.03	0.10	0.16	99
	100 ISL	10.29	10.28	33.588	25.803	220.7	0.269	3.90	61.5	17.4	1.50	17.4	0.03	0.10	0.15	100
1	119	9.95	9.94	33.734	25.974	204.7	0.309	3.45	54.1	23.1	1.69	20.5	0.02	0.04	0.08	120
	125 ISL	9.87	9.86	33.771	26.017	200.8	0.322	3.34	52.3	23.SI	1.74	21.2	0.02	0.04	0.08	126
1	144	9.60	9.58	33.871	26.140	189.4	0.359	3.07	47.8	25.9	1.86	23.0	0.01	0.05	0.09	145
	150 ISL	9.49	9.47	33.898	26.179	185.8	0.370	3.01	46.8	26.9	1.89	23.6	0.01	0.05	0.08	151
1	174	9.05	9.03	33.986	26.319	172.9	0.413	2.81	43.2	31.1	2.02	25.5	0.01	0.02	0.06	175
	200 ISL	8.75	8.73	34.054	26.420	163.7	0.457	2.53	38.7	35.0	2.15	27.0	0.01	0.01	0.07	201
1	205	8.69	8.67	34.063	26.437	162.2	0.465	2.48	37.9	35.8	2.17	27.3	0.01	0.01	0.07	206
1	234	8.17	8.15	34.087	26.535	153.2	0.511	2.21	33.4	41.5	2.59 U	29.4	0.01			235
	250 ISL	8.02	7.99	34.114	26.579	149.3	0.535	1.98	29.8	44.5	2.44	30.4	0.01			251
1	275	7.85	7.82	34.157	26.638	144.0	0.571	1.62	24.3	48.7	2.58	31.8	0.01			277
	300 ISL	7.66	7.63	34.179	26.683	140.1	0.607	1.39	20.7	52.0	2.68	32.9	0.01			302
1	331	7.44	7.41	34.197	26.729	136.1	0.650	1.16	17.2	55.7	2.79	34.0	0.00			333
1	390	7.13	7.09	34.245	26.811	129.1	0.728	0.76	11.2	63.0	2.98	35.8	0.00			393
	400 ISL	7.06	7.02	34.252	26.827	127.8	0.741	0.70	10.3	64.4	3.01	36.1	0.00			403
1	456	6.67	6.63	34.286	26.907	120.7	0.810	0.45	6.6	71.9	3.13	37.6	0.00			459
	500 ISL	6.38	6.33	34.305	26.961	116.0	0.863	0.36	5.2	76.9	3.21	38.4	0.00			503
1	526	6.21	6.16	34.317	26.992	113.2	0.892	0.30	4.3	79.9	3.26	38.9	0.00			530

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 19.4 N	119 39.7 W	16/01/91	0208 UTC	74 -	360 24 kn			1015.7 mb	13.9 C	12.8 C		

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN Ml/1	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 UM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	14.01	14.01	33.541	25.058	289.2	0.000	5.88	100.4							0
1	5	14.01	14.01	33.541	25.058	289.3	0.014	5.88	100.4	3.2	0.43	0.8	0.03	1.41	0.73	5
	10 ISL	14.01	14.01	33.542	25.059	289.4	0.029	5.88	100.4	3.2	0.43	0.8	0.03	1.38	0.61	10
1	16	14.01	14.01	33.544	25.061	289.4	0.046	5.88	100.4	3.1	0.42	0.8	0.03	1.35	0.46	16
	20 ISL	14.00	14.00	33.544	25.063	289.3	0.058	5.88	100.4	3.1	0.41	0.8	0.03	1.34	0.45	20
1	25	14.00	14.00	33.544	25.063	289.4	0.072	5.88	100.4	3.1	0.41	0.8	0.03	1.33	0.44	25
	30 ISL	14.01	14.01	33.541	25.059	290.0	0.087	5.86	100.1	3.1	0.42	0.9	0.04	1.28	0.44	30
1	34	14.01	14.01	33.538	25.057	290.3	0.098	5.83	99.5	3.1	0.44	1.1	0.05	1.24	0.44	34
1	44	13.79	13.78	33.534	25.100	286.5	0.127	5.75	97.7	3.5	0.47	1.6	0.07	1.23	0.44	44
	50 ISL	13.55	13.54	33.526	25.143	282.6	0.144	5.61	94.9	4.3	0.55	2.7	0.11	1.15	0.43	50
1	56	13.06	13.05	33.525	25.240	273.4	0.161	5.46	91.4	5.1	0.62	3.7	0.15	0.96	0.43	56
1	65	11.51	11.50	33.579	25.579	241.3	0.184	4.40	71.3	13.1	1.16	12.0	0.19	0.41	0.45	65

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 9.4 N	120 0.4 W	16/01/91	1530 UTC	1195 M	340 14 kn	340 05 07	0	1019.1 Mb	14.5 C	12.5 C	14M 04	0/8

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN Ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 UM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	14.04	14.04	33.543	25.054	289.6	0.000	5.80	99.1	3.1	0.43	0.6	0.05	0.94	0.33	0
1	1	14.04	14.04	33.543	25.054	289.7	0.003	5.80	99.1	3.1	0.43	0.6	0.05	0.94	0.33	1
	10 ISL	14.04	14.04	33.543	25.054	289.9	0.029	5.81	99.3	3.1	0.43	0.5	0.05	1.00	0.39	10
1	15	14.04	14.04	33.543	25.054	290.0	0.043	5.81	99.3	3.1	0.43	0.5	0.05	1.03	0.43	15
	20 ISL	14.04	14.04	33.543	25.054	290.2	0.058	5.81	99.3	3.1	0.43	0.5	0.05	1.01	0.40	20
	30 ISL	14.04	14.04	33.543	25.054	290.4	0.087	5.81	99.3	3.1	0.42	0.5	0.05	0.94	0.35	30
1	31	14.04	14.04	33.543	25.055	290.5	0.090	5.81	99.3	3.1	0.42	0.5	0.05	0.93	0.35	31
1	41	13.69	13.68	33.517	25.107	285.7	0.119	5.54	94.0	4.7	0.57	3.1	0.12	0.88	0.41	41
1	50	12.02	12.01	33.447	25.381	259.8	0.143	4.87	79.7	8.9	0.95	8.8	0.19	0.39	0.32	50
1	61	11.76	11.75	33.488	25.462	252.3	0.171	4.64	75.6	10.9	1.07	10.6	0.16	0.31	0.29	61
1	75	10.95	10.94	33.518	25.633	236.3	0.206	4.26	68.2	14.3	1.29	14.3	0.06	0.23	0.25	75
1	90	10.47	10.46	33.532	25.728	227.6	0.240	4.10	64.9	15.7	1.40	16.2	0.02	0.18	0.20	90
	100 ISL	10.22	10.21	33.603	25.826	218.4	0.263	3.84	60.5	18.0	1.51	18.0	0.01	0.16	0.17	101
1	105	10.11	10.10	33.642	25.875	213.8	0.274	3.71	58.3	19.2	1.56	18.9	0.01	0.15	0.16	106
1	120	9.90	9.89	33.702	25.958	206.3	0.305	3.54	55.4	21.2	1.66	20.2	0.01	0.09	0.11	121
	125 ISL	9.80	9.79	33.743	26.007	201.7	0.315	3.43	53.6	22.4	1.71	20.9	0.01	0.08	0.13	126
1	141	9.44	9.42	33.879	26.173	186.2	0.346	3.08	47.8	26.4	1.86	23.4	0.01	0.07	0.20	142
	150 ISL	9.27	9.25	33.927	26.238	180.2	0.363	2.95	45.6	28.4	1.92	24.4	0.01	0.05	0.15	151
1	160	9.09	9.07	33.965	26.297	174.8	0.381	2.85	43.9	30.3	1.98	25.3	0.01	0.03	0.08	161
1	185	8.71	8.69	34.004	26.387	166.6	0.423	2.77	42.3	33.5	2.04	26.3	0.00	0.02	0.08	186
	200 ISL	8.56	8.54	34.030	26.431	162.6	0.448	2.67	40.6	35.4	2.09	27.0	0.00	0.02	0.08	201
1	219	8.36	8.34	34.064	26.489	157.4	0.478	2.45	37.1	38.7	2.20	28.2	0.00	0.02	0.08	220
	250 ISL	7.81	7.79	34.124	26.618	145.5	0.525	1.78	26.7	48.0	2.50	31.4	0.00			251
1	254	7.74	7.71	34.131	26.634	144.1	0.531	1.70	25.4	49.2	2.54	31.8	0.00			256
1	294	7.57	7.54	34.153	26.676	140.6	0.588	1.48	22.0	52.6	2.63	32.9	0.00			296
	300 ISL	7.54	7.51	34.157	26.683	140.0	0.596	1.44	21.4	53.2	2.65	33.1	0.00			302
1	349	7.23	7.20	34.191	26.755	133.9	0.664	1.09	16.1	59.1	2.80	34.8	0.01			351
	400 ISL	6.87	6.83	34.230	26.835	126.8	0.730	0.83	12.2	65.9	2.96	36.5	0.01			403
1	414	6.76	6.72	34.239	26.857	124.8	0.748	0.77	11.3	67.8	3.01	37.0	0.01			417
1	484	6.19	6.15	34.261	26.950	116.5	0.832	0.46	6.6							487
	500 ISL	6.09	6.05	34.269	26.969	114.8	0.851	0.43	6.2							503
1	564	5.71	5.66	34.304	27.045	108.1	0.922	0.31	4.4							568

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 59.4 N	120 20.9 W	16/01/91	1948 UTC	613 B	350 16 kn	350 05 07	0	1021.1 Bb	14.7 C	13.1 C	14« 04	0/8

CAST	DEPTH m	DEG	TEMP C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/1	OXYGEN	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO uq/1	PRESS db
	0	ISL	14.15	14.15	33.548	25.035	291.5	0.000	5.91	101.2	3.5	0.41	0.5	0.05	0.96	0.33	0
1	2		14.15	14.15	33.548	25.035	291.5	0.006	5.91	101.2	3.5	0.41	0.5	0.05	0.96	0.33	2
	10	ISL	14.14	14.14	33.548	25.037	291.5	0.029	5.90	101.0	3.5	0.41	0.5	0.05	0.97	0.34	10
1	18		14.13	14.13	33.548	25.039	291.5	0.052	5.89	100.8	3.5	0.40	0.5	0.05	0.99	0.35	18
	20	ISL	14.13	14.13	33.548	25.039	291.6	0.058	5.89	100.8	3.5	0.40	0.5	0.05	0.99	0.35	20
	30	ISL	14.12	14.12	33.548	25.042	291.7	0.087	5.88	100.6	3.5	0.40	0.5	0.05	0.98	0.33	30
1	33		14.12	14.12	33.548	25.042	291.7	0.096	5.88	100.6	3.5	0.40	0.5	0.05	0.98	0.33	33
1	42		14.11	14.10	33.549	25.045	291.7	0.122	5.86	100.3	3.5	0.40	0.5	0.05	0.98	0.33	42
	50	ISL	14.04	14.03	33.539	25.052	291.3	0.146	5.85	99.9	3.6	0.41	0.6	0.06	0.91	0.30	50
1	53		14.02	14.01	33.535	25.053	291.2	0.155	5.85	99.9	3.6	0.42	0.7	0.07	0.88	0.29	53
1	62		11.86	11.85	33.314	25.308	267.0	0.180	5.26	85.7	7.6	0.87	7.4	0.14	0.11	0.16	62
	75	ISL	11.23	11.22	33.353	25.454	253.3	0.213	4.91	79.0	10.0	1.07	10.6	0.05	0.07	0.10	75
1	76		11.18	11.17	33.350	25.461	252.7	0.216	4.89	78.6	10.1	1.07	10.7	0.04	0.07	0.10	76
1	92		10.38	10.37	33.422	25.658	234.2	0.255	4.44	70.1	14.1	1.32	14.8	0.03	0.04	0.07	92
	100	ISL	9.88	9.87	33.575	25.862	215.0	0.273	3.92	61.3	19.0	1.55	18.6	0.02	0.03	0.06	100
1	105		9.60	9.59	33.676	25.987	203.1	0.283	3.60	56.0	22.1	1.69	20.8	0.02	0.02	0.05	106
1	121		9.23	9.22	33.812	26.154	187.6	0.315	3.21	49.6	26.5	1.86	23.5	0.01	0.01	0.04	122
	125	ISL	9.15	9.14	33.840	26.188	184.3	0.322	3.14	48.4	27.2	1.90	24.0	0.01	0.01	0.04	126
1	141		8.86	8.84	33.934	26.308	173.2	0.351	2.90	44.4	29.8	2.01	25.7	0.01	0.01	0.04	142
	150	ISL	8.75	8.73	33.971	26.355	169.0	0.366	2.80	42.8	31.9	2.05	26.2	0.01	0.01	0.04	151
1	161		8.64	8.62	34.005	26.398	165.0	0.384	2.70	41.2	34.5	2.10	26.7	0.01	0.01	0.04	162
1	187		8.33	8.31	34.051	26.482	157.4	0.426	2.45	37.1	38.6	2.23	28.3	0.01	0.00	0.04	188
	200	ISL	8.19	8.17	34.059	26.510	155.0	0.447	2.37	35.8	40.2	2.27	28.8	0.01	0.00	0.04	201
1	219		8.01	7.99	34.070	26.546	151.9	0.476	2.24	33.7	42.6	2.33	29.6	0.01	0.00	0.03	220
	250	ISL	7.76	7.74	34.124	26.625	144.8	0.522	1.77	26.5	48.2	2.53	31.7	0.01			251
1	255		7.72	7.69	34.132	26.637	143.7	0.529	1.69	25.3	49.2	2.56	32.1	0.01			257
1	296		7.20	7.17	34.140	26.718	136.4	0.586	1.42	21.0	56.2	2.73	34.1	0.01			298
	300	ISL	7.17	7.14	34.144	26.725	135.8	0.592	1.38	20.4	56.9	2.75	34.3	0.01			302
1	350		6.82	6.79	34.199	26.817	127.7	0.658	0.87	12.7	64.8	2.95	36.5	0.01			352
	400	ISL	6.50	6.46	34.209	26.868	123.4	0.721	0.73	10.6	69.8	3.05	37.7	0.01			403
1	416		6.40	6.36	34.210	26.882	122.2	0.740	0.72	10.4	71.1	3.07	38.0	0.01			419
1	486		6.05	6.01	34.253	26.962	115.3	0.823	0.46	6.6	78.4	3.19	39.5	0.01			489
	500	ISL	5.99	5.95	34.261	26.976	114.1	0.839	0.44	6.3	79.7	3.21	39.7	0.01			503
1	567		5.69	5.64	34.301	27.045	108.1	0.914	0.32	4.6	85.8	3.29	40.7	0.01			571

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 39.4 N	121 2.0 W	17/01/91	0247 UTC	3824 m	360 14 kn			1021.8 mb	14.2 C	12.0 C		

CAST	DEPTH -	DEG	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A uq/1	PHAEO uq/1	PRESS db
	0	ISL	15.01	15.01	33.532	24.839	310.1	0.000	5.82	101.4	2.7	0.37	0.0	0.00	0.37	0.12	0
1	1		15.01	15.01	33.532	24.839	310.1	0.003	5.82	101.4	2.7	0.37	0.0	0.00	0.37	0.12	1
	10	ISL	15.01	15.01	33.532	24.839	310.4	0.031	5.82	101.4	2.7	0.37	0.0	0.00	0.37	0.12	10
1	16		15.01	15.01	33.532	24.839	310.5	0.050	5.82	101.4	2.7	0.37	0.0	0.00	0.37	0.12	16
	20	ISL	15.01	15.01	33.532	24.840	310.6	0.062	5.82	101.4	2.7	0.36	0.0	0.00	0.37	0.12	20
1	30		15.01	15.01	33.532	24.840	310.9	0.093	5.81	101.2	2.7	0.35	0.1	0.01	0.36	0.12	30
1	41		15.00	14.99	33.530	24.841	311.1	0.127	5.81	101.2	2.5	0.35	0.1	0.00	0.38	0.12	41
	50	ISL	14.98	14.97	33.527	24.843	311.2	0.155	5.79	100.8	2.5	0.35	0.0	0.00	0.40	0.13	50
1	51		14.98	14.97	33.527	24.843	311.2	0.158	5.79	100.8	2.5	0.35	0.0	0.00	0.40	0.13	51
1	60		14.97	14.96	33.528	24.846	311.2	0.186	5.80	101.0	2.6	0.35	0.0	0.00	0.40	0.13	60
	75	ISL	14.89	14.88	33.518	24.857	310.7	0.233	5.78	100.4	2.6	0.35	0.0	0.02	0.38	0.14	75
1	76		14.88	14.87	33.517	24.858	310.6	0.236	5.78	100.4	2.6	0.35	0.0	0.02	0.38	0.14	76
1	88		12.84	12.83	33.346	25.146	283.2	0.272	5.60	93.2	4.6	0.59	3.2	0.10	0.10	0.11	88
	100	ISL	11.86	11.85	33.280	25.283	270.4	0.305	5.44	88.6	6.1	0.75	5.7	0.05	0.09	0.10	100
1	104		11.66	11.65	33.274	25.315	267.3	0.316	5.38	87.3	6.6	0.79	6.5	0.02	0.09	0.10	104
1	119		10.70	10.69	33.329	25.530	247.0	0.354	5.08	80.8	9.1	0.98	10.1	0.01	0.05	0.10	120
	125	ISL	10.46	10.45	33.374	25.607	239.8	0.369	4.89	77.3	10.7	1.07	11.7	0.01	0.04	0.09	126
1	139		10.09	10.07	33.499	25.768	224.8	0.402	4.41	69.2	14.7	1.29	15.3	0.01	0.02	0.05	140
	150	ISL	9.90	9.88	33.602	25.880	214.3	0.426	4.04	63.2	17.8	1.44	17.7	0.00	0.01	0.04	151
1	159		9.80	9.78	33.682	25.960	206.9	0.445	3.76	58.7	20.1	1.55	19.4	0.00	0.01	0.04	160
1	184		9.59	9.57	33.837	26.116	192.6	0.495	3.26	50.7	24 .6	1.75	22.3	0.00	0.00	0.03	185
	200	ISL	9.24	9.22	33.912	26.232	181.8	0.525	3.22	49.7	27.3	1.82	23.6	0.00	0.00	0.03	201
1	218		8.83	8.81	33.975	26.346	171.1	0.556	3.17	48.5	30.0	1.87	24.7	0.00	0.00	0.02	219
	250	ISL	8.44	8.41	34.025	26.446	162.1	0.610	2.96	44.9	34.1	1.98	26.4	0.00			251
1	254		8.40	8.37	34.027	26.454	161.4	0.616	2.93	44.4	34.7	1.99	26.6	0.00			255
1	294		7.62	7.59	34.031	26.573	150.4	0.678	2.66	39.6	42.8	2.18	29.4	0.00			296
	300	ISL	7.53	7.50	34.033	26.587	149.1	0.687	2.59	38.5	44.0	2.21	29.8	0.00			302
1	349		6.93	6.90	34.067	26.698	139.0	0.758	1.92	28.2	53.9	2.50	33.4	0.00			351
	400	ISL	6.54	6.50	34.137	26.806	129.2	0.826	1.18	17.2	63.9	2.79	36.5	0.00			402
1	415		6.45	6.41	34.156	26.833	126.8	0.846	0.99	14.4	66.7	2.86	37.3	0.00			418
1	486		5.90	5.86	34.181	26.923	118.7	0.933	0.65	9.3	77.8	3.05	39.7	0.00			489
	500	ISL	5.82	5.78	34.192	26.942	117.1	0.949	0.60	8.6	79,2	3.08	40.0	0.00			503
1	569		5.45	5.40	34.245	27.030	109.3	1.027	0.38	5.4	86.0	3.20	41.4	0.00			573

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	MIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 19.6 N	121 42.9 W	17/01/91	0905 UTC	4394 •	340 10 kn			1022.1 *mb*	14.5 C	13.0 C		

CAST	DEPTH o		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.54	14.54	33.450	24 877	306.5	0.000	5.88	101.4	2.7	0.39	0.0	0.01	0.48	0.14	0
1	1		14.54	14.54	33.450	24,877	306.5	0.003	5.88	101.4	2.7	0.39	0.0	0.01	0.48	0.14	1
	10	ISL	14.54	14.54	33.449	24.876	306.8	0.031	5.87	101.3	2.7	0.39	0.0	0.01	0.47	0.13	10
1	16		14.54	14.54	33.448	24.876	307.1	0.049	5.87	101.3	2.6	0.39	0.0	0.01	0.47	0.13	16
	20	ISL	14.54	14.54	33.448	24.876	307.2	0.061	5.88	101.4	2.6	0.39	0.0	0.01	0.47	0.13	20
	30	ISL	14.54	14.54	33.449	24.877	307.4	0.092	5.89	101.6	2.5	0.39	0.0	0.01	0.47	0.13	30
1	31		14.54	14.54	33.449	24.877	307.4	0.095	5.89	101.6	2.5	0.39	0.0	0.01	0.47	0.13	31
1	41		14.50	14.49	33.446	24.883	307.1	0.126	5.88	101.3	2.5	0.39	0.0	0.01	0.48	0.14	41
	50	ISL	14.32	14.31	33.406	24.891	306.6	0.154	5.87	100.8	2.5	0.40	0.1	0.03	0.50	0.17	50
1	51		14.29	14.28	33.400	24.892	306.5	0.157	5.87	100.7	2.5	0.40	0.1	0.04	0.50	0.17	51
1	61		13.93	13.92	33.413	24.978	298.6	0.187	5.76	98.1	3.1	0.48	1.0	0.16	0.27	0.15	61
	75	ISL	12.80	12.79	33.276	25.099	287.3	0.228	5.66	94.1	4.3	0.61	2.9	0.09	0.15	0.12	75
1	76		12.69	12.68	33.265	25.112	286.1	0.231	5.65	93.7	4.4	0.62	3.1	0.09	0.15	0.12	76
1	89		11.04	11.03	33.220	25.385	260.2	0.266	5.25	84.0	7.8	0.95	8.8	0.01	0.10	0.11	89
	100	ISL	10.37	10.36	33.286	25.553	244.3	0.294	4.92	77.6	10.8	1.16	12.3	0.01	0.06	0.09	100
1	105		10.20	10.19	33.330	25.1517	238.4	0.306	4.78	75.2	12.2	1.23	13.6	0.01	0.05	0.08	105
1	120		9.85	9.84	33.452	25.771	224.0	0.341	4.38	68.4	15.7	1.40	16.6	0.00	0.03	0.06	121
	125	ISL	9.73	9.72	33.510	25.836	217.9	0.352	4.22	65.7	17.1	1.46	17.7	0.00	0.02	0.05	126
1	140		9.39	9.37	33.685	26.029	199.8	0.383	3.74	57.9	21.5	1.63	20.7	0.01	0.01	0.03	111
	150	ISL	9.18	9.16	33.776	26.134	190.0	0.403	3.50	54.0	24.2	1.74	22.2	0.01	0.00	0.02	151
1	160		8.99	8.97	33.849	26.221	181.8	0.421	3.32	51.0	26.6	1.83	23.5	0.01	0.00	0.02	lllil
1	184		8.63	8.61	33.943	26.352	169.8	0.463	3.06	46.6	30.9	1.93	25.5	0.01	0.00	0.02	1115
	200	ISL	8.43	8.41	33.992	26.421	163.5	0.490	2.79	42.3	34.1	2.04	26.9	0.01	0.00	0.02	201
1	219		8.20	8.18	34.033	26.488	157.4	0.521	2.51	37.9	37.8	2.16	28.3	0.00	0.00	0.02	220
	250	ISL	7.81	7.79	34.051	26.560	150.9	0.568	2.43	36.4	42.1	2.23	29.6	0.00			251
1	254		7.76	7.73	34.051	26.568	150.3	0.574	2.42	36.2	42.6	2.24	29.7	0.00			255
1	294		7.17	7.14	34.031	26.636	144.1	0.633	2.49	36.7	47.6	2.37	30.8	0.00			296
	300	ISL	7.12	7.09	34.038	26.649	143.0	0.642	2.39	35.2	48.7	2.40	31.2	0.00			302
1	348		6.79	6.76	34.104	26.746	134.3	0.708	1.47	21.5	58.5	2.69	35.0	0.00			350
	400	ISL	6.27	6.23	34.132	26.837	126.0	0.776	1.03	14.9	67.7	2.88	37.6	0.00			403
1	414		6.14	6.10	34.137	26.858	124.2	0.794	0.96	13.8	69.9	2.92	38.1	0.00			417
1	483		5.78	5.74	34.179	26.937	117.3	0.877	0.63	9.0	77.9	3.08	39.7	0.00			486
	500	ISL	5.63	5.59	34.185	26.91.0	115.2	0.897	0.58	8.3	80.6	3.11	40.2	0.00			503
1	564		5.07	5.02	34.209	27.046	107.2	0.968	0.41	5.8	90.9	3.20	41.9	0.00			56U

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 59.4 N	122 23.6 W	17/01/91	1515 UTC	4072 :n	340 08 Jen	340 04 09	1	1023.9 Mb	14.0 C	12.8 C	21a 02	1/8 ST

CAST	DEPTH a		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN al/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PBAEO ug/1	PRESS db
	0	ISL	14.81	14.81	33.275	24.684	324.9	0.000	5.84	101.2	2.5	0.40	0.0	0.00	0.30	0.10	0
1	1		14.81	14.81	33.275	24.684	324.9	0.003	5.84	101.2	2.5	0.40	0.0	0.00	0.30	0.10	1
	10	ISL	14.81	14.81	33.275	24.684	325.1	0.032	5.85	101.4	2.4	0.40	0.0	0.00	0.30	0.10	10
1	16		14.81	14.81	33.276	24.685	325.2	0.052	5.85	101.4	2.4	0.39	0.0	0.00	0.30	0.10	16
	20	ISL	14.81	14.81	33.276	24.686	325.3	0.065	5.85	101.4	2.4	0.39	0.0	0.00	0.30	0.10	20
	30	ISL	14.81	14.81	33.276	24.686	325.6	0.098	5.84	101.2	2.4	0.38	0.0	0.00	0.30	0.10	30
1	31		14.81	14.81	33.276	24.686	325.6	0.101	5.84	101.2	2.4	0.38	0.0	0.00	0.30	0.10	31
1	41		14.82	14.81	33.276	24.684	326.1	0.133	5.85	101.4	2.4	0.39	0.0	0.00	0.30	0.10	41
	50	ISL	14.83	14.82	33.277	24.683	326.4	0.163	5.84	101.2	2.2	0.38	0.0	0.00	0.30	0.10	50
1	51		14.83	14.82	33.277	24.683	326.5	0.166	5.84	101.2	2.2	0.38	0.0	0.00	0.30	0.10	51
1	62		14.84	14.83	33.282	24.685	326.6	0.202	5.84	101.2	2.2	0.38	0.0	0.00	0.29	0.10	62
1	70		14.96	14.95	33.321	24.689	326.4	0.228	5.82	101.2	2.2	0.38	0.0	0.00	0.28	0.11	70
	75	ISL	14.56	14.55	33.365	24.809	315.1	0.244	5.87	101.2	2.4	0.38	0.0	0.00	0.42	0.18	75
1	78		14.28	14.27	33.392	24.889	307.6	0.253	5.91	101.4	2.6	0.39	0.0	0.00	0.51	0.22	78
1	94		14.08	14.07	33.432	24.962	301.0	0.302	5.83	99.6	2.7	0.45	0.2	0.05	0.31	0.17	94
	100	ISL	13.29	13.28	33.361	25.069	290.9	0.320	5.70	95.8	3.9	0.57	2.2	0.04	0.23	0.15	100
1	109		11.88	11.87	33.252	25.257	273.0	0.345	5.49	89.5	6.0	0.78	5.8	0.02	0.13	0.12	109
1	124		10.10	10.09	33.193	25.527	247.3	0.384	5.30	83.1	9.0	1.02	10.4	0.01	0.05	0.06	125
	125	ISL	10.09	10.08	33.206	25.539	246.1	0.387	5.27	82.6	9.3	1.04	10.7	0.01	0.05	0.06	126
1	150		9.76	9.74	33.474	25.804	221.5	0.445	4.23	65.9	16.9	1.46	17.7	0.01	0.02	0.05	151
1	174		9.27	9.25	33.749	26.099	193.8	0.495	3.37	52.0	24.6	1.78	22.9	0.01	0.01	0.03	175
	200	ISL	8.77	8.75	33.893	26.291	175.9	0.543	3.30	50.4	28.6	1.84	24.6	0.00	0.00	0.02	201
1	204		8.70	8.68	33.905	26.311	174.1	0.550	3.29	50.2	29.0	1.85	24.7	0.00	0.00	0.02	205
1	234		8.30	8.28	33.981	26.433	163.0	0.601	3.08	46.6	33.6	1.97	26.4	0.00			235
	250	ISL	8.06	8.03	34.002	26.485	158.2	0.626	2.96	44.5	36.5	2.04	27.4	0.00			251
1	275		7.68	7.65	34.020	26.555	151.8	0.665	2.75	41.0	41.2	2.15	29.0	0.00			277
	300	ISL	7.38	7.35	34.031	26.607	147.1	0.702	2.50	37.0	45.4	2.27	30.6	0.00			302
1	330		7.05	7.02	34.041	26.661	142.3	0.746	2.16	31.8	50.8	2.42	32.6	0.00			332
1	390		6.35	6.32	34.088	26.792	130.2	0.828	1.36	19.7	64.3	2.77	36.6	0.00			392
	400	ISL	6.25	6.21	34.095	26.810	128.5	0.841	1.26	18.2	66.2	2.81	37.1	0.00			402
1	455		5.77	5.73	34.135	26.903	120.1	0.909	0.83	11.8	75.9	3.01	39.6	0.00			458
	500	ISL	5.43	5.39	34.173	26.974	113.6	0.962	0.61	8.6	83.5	3.12	41.0	0.00			503
1	523		5.25	5.21	34.193	27.011	110.1	0.987	0.49	6.9	87.4	3.18	41.7	0.00			526

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 29.1 N	117 46.1 W	15/01/91	0051 UTC	112 n	280 03 kn	290 01 04	1	1019.7 Mb	17.5 C	14.2 C	26m 02	3/8 AC

CAST	DEPTH -	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 UM/1	NO3 UM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	15.62	15.62	33.567	24.732	320.3	0.000	5.80	102.3	3.1	0.314	0.0	0.00	0.19	0.05	0
1	1	15.62	15.62	33.567	24.732	320.3	0.003	5.80	102.3	3.1	0.314	0.0	0.00	0.19	0.05	1
	10 ISL	15.38	15.38	33.571	24.788	315.2	0.032	5.81	102.0	3.0	0.313	0.0	0.00	0.20	0.06	10
1	17	15.13	15.13	33.571	24.844	310.2	0.054	5.81	101.5	3.0	0.313	0.0	0.00	0.22	0.07	17
	20 ISL	15.09	15.09	33.572	24.853	309.4	0.063	5.82	101.6	3.0	0.313	0.0	0.00	0.24	0.08	20
1	27	14.99	14.99	33.554	24.861	308.8	0.085	5.84	101.7	3.0	0.33	0.0	0.00	0.27	0.10	27
	30 ISL	14.73	14.73	33.518	24.890	306.2	0.094	5.83	101.0	3.2	0.'13	0.3	0.07	0.58	0.24	30
1	37	14.16	14.15	33.447	24.956	300.0	0.115	5.78	98.9	3.8	0.63	1.0	0.23	1.21	0.53	37
1	46	14.11	14.10	33.473	24.986	297.4	0.142	5.68	97.1	3.8	0.53	1.1	0.25	0.81	0.44	46
	50 ISL	13.99	13.98	33.475	25.013	295.0	0.154	5.63	96.0	4.0	0.55	1.3	0.30	0.69	0.41	50
1	57	13.71	13.70	33.470	25.067	290 0	0.174	5.53	93.8	4.5	0.(53	1.9	0.40	0.53	0.37	57
1	68	13.21	13.20	33.457	25.158	281 6	0.206	5.25	88.1	5.9	0.30	4 1	0.47	0.30	0.27	68
	75 ISL	12.94	12.93	33.468	25.221	275.8	0.225	5.00	83.5	7.2	0.B9	5.8	0.37	0.24	0.29	75
1	77	12.86	12.85	33.471	25.239	274.1	0.231	4.93	82.2	7.6	0.91	6.3	0.34	0.22	0.29	77

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 25.1 N	117 54.2 W	15/01/91	0308 UTC	612 n	320 06 kn			1021.5 mb	17.4 C	14.8 C		

CAST	DEPTH -	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 UM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	15.37	15.37	33.558	24.780	315.7	0.000	5.80	101.8	2.8	0.35	0.0	0.00	0.19	0.05	0
1	2	15.37	15.37	33.558	24.780	315.7	0.006	5.80	101.8	2.8	0.35	0.0	0.00	0.19	0.05	2
	10 ISL	15.21	15.21	33.547	24.807	313.4	0.031	5.82	101.8	2.7	0.36	0.0	0.00	0.17	0.05	10
1	11	15.18	15.18	33.545	24.812	313.0	0.035	5.82	101.8	2.7	0.36	0.0	0.00	0.17	0.05	11
	20 ISL	15.07	15.07	33.539	24.832	311.4	0.063	5.81	101.4	2.7	0.35	0.0	0.00	0.19	0.07	20
1	22	15.06	15.06	33.538	24.833	311.3	0.069	5.81	101.3	2.7	0.35	0.0	0.00	0.20	0.07	22
	30 ISL	15.05	15.05	33.539	24.837	311.2	0.094	5.82	101.5	2.7	0.35	0.0	0.00	0.25	0.08	30
1	32	15.05	15.05	33.539	24.837	311.3	0.100	5.82	101.5	2.7	0.35	0.0	0.00	0.27	0.09	32
1	42	15.01	15.00	33.536	24.843	311.0	0.131	5.80	101.1	2.7	0.35	0.0	0.00	0.38	0.17	42
	50 ISL	13.89	13.88	33.444	25.010	295.3	0.155	s.55	94.5	4.0	0 52	1.9	0.11	0.65	0.28	50
1	52	13.55	13.54	33.422	25.062	290.3	0.161	5.47	92.4	4.4	0.58	2.6	0.13	0.69	0.30	52
1	61	12.45	12.44	33.397	25.261	271.5	0.187	5.10	84.2	6.7	0.82	6.4	0.05	0.33	0.22	61
1	72	11.96	11.95	33.460	25.403	258.2	0.216	4.67	76.3	8.6	1.01	9.5	0.02	0.20	0.23	72
	75 ISL	11.82	11.81	33.483	25.447	254.1	0.223	4.53	73.8	9.5	1.07	10.5	0.02	0.17	0.22	75
1	86	11.37	11.36	33.567	25.595	240.2	0.251	4.07	65.7	12.8	1.27	13.9	0.02	0.09	0.15	86
1	100	10.98	10.97	33.641	25.723	228.3	0.283	3.73	59.8	15.8	1.45	16.6	0.01	0.04	0.08	100
1	121	10.71	10.70	33.825	25.915	210.6	0.329	3.02	48.2	21.3	1.72	20.4	0.01	0.02	0.06	122
	125 ISL	10.65	10.64	33.851	25.946	207.7	0.338	2.94	46.8	22.1	1.77	20.9	0.01	0.02	0.06	126
1	146	10.30	10.28	33.959	26.091	194.3	0.380	2.65	41.9	25.6	1.97	23.2	0.00	0.01	0.05	147
	150 ISL	10.22	10.20	33.975	26.118	191.9	0.388	2.62	41.4	26.2	1.98	23.5	0.00	0.01	0.05	151
1	175	9.70	9.68	34.049	26.263	1718.5	0.434	2.51	39.2	29.6	2.03	25.2	0.00	0.01	0.04	176
	200 ISL	9.23	9.21	34.093	26.375	168.2	0.477	2.41	37.3	33.1	2.12	26.5	0.00	0.01	0.05	201
1	206	9.12	9.10	34.100	26.398	166.1	0.487	2.39	36.9	34.0	2.15	26.8	0.00	0.01	0.05	207
1	236	8.63	8.61	34.113	26.486	15B.2	0.536	2.25	34.3	38.3	2.26	28.3	0.01			237
	250 ISL	8.47	8.44	34.127	26.522	155.0	0.558	2.14	32.5	40.2	2.31	29.0	0.01			251
1	276	8.23	8.20	34.153	26.579	149.9	0.598	1.92	29.0	43.7	2.41	30.3	0.01			278
	300 ISL	7.98	7.95	34.164	26.625	145.8	0.633	1.71	25.7	47.1	2.51	31.5	0.01			302
1	332	7.65	7.62	34.175	26.682	140.8	0.679	1.43	21.3	51.8	2.64	33.0	0.00			334
1	391	7.10	7.06	34.209	26.787	131.4	0.759	0.94	13.9	60.9	2.84	35.6	0.00			394
	400 ISL	7.03	6.99	34.216	26.803	130.0	0.771	0.88	12.9	62.2	2.87	35.9	0.00			403
1	457	6.64	6.60	34.262	26.892	122.1	0.843	0.55	8.0	70.2	3.07	37.6	0.00			460
	500 ISL	6.34	6.29	34.290	26.954	116.6	0.894	0.40	5.8	75.8	3.16	38.5	0.01			503
1	528	6.15	6.10	34.309	26.994	113.0	0.926	0.30	4.3	79.4	3.22	39.1	0.01			532

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	NET	SECCHI/FOREL	CLD AMT TYPE
33 15.1 N	118 15.1 W	14/01/91	1817 UTC	422 D	020 06 kn	300 02 07	1	1022.5 mb	111.8 C	15.4 C	21m 02	1/8 CI

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 UM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	15.02	15.02	33.515	24.824	31L1.5	0.000	5.82	101.4	2.8	0.39	0.0	0.00	0.21	0.06	0
1	1	15.02	15.02	33.515	24.824	311.6	0.003	5.82	101.4	2.8	0.39	0.0	0.00	0.21	0.06	1
	10 ISL	15.02	15.02	33.514	24.823	311.9	0.031	5.83	101.6	2.6	0.37	0.0	0.00	0.21	0.06	10
1	11	15.02	15.02	33.514	24.823	311.9	0.034	5.83	101.6	2.6	0.37	0.0	0.00	0.21	0.06	11
	20 ISL	14.66	14.66	33.489	24.882	306.6	0.062	5.88	101.7	2.9	0.40	0.0	0.00	0.44	0.18	20
1	21	14.61	14.61	33.486	24.890	305.8	0.065	5.88	101.6	2.9	0.40	0.0	0.00	0.47	0.20	21
	30 ISL	14.21	14.21	33.457	24.953	300.1	0.092	5.77	98.9	3.3	0.45	0.5	0.10	0.82	0.35	30
1	31	14.15	14.15	33.452	24.961	299.3	0.095	5.75	98.4	3.4	0.46	0.6	0.11	0.85	0.36	31
1	41	13.08	13.07	33.359	25.108	2B5.6	0.125	5.57	93.2	4.5	0.63	2.9	0.21	0.64	0.34	41
	50 ISL	12.16	12.15	33.282	25.226	274.5	0.150	5.38	88.2	6.0	0.76	5.3	0.08	0.54	0.37	50
1	51	12.08	12.07	33.281	25.241	273.1	0.153	5.35	87.6	6.2	0.78	5.6	0.06	0.53	0.37	51
1	61	12.07	12.06	33.466	25.387	259.5	0.179	4.70	77.0	8.4	0.99	9.1	0.03	0.23	0.23	61
1	71	11.85	11.84	33.491	25.448	254.0	0.205	4.55	74.2	9.5	1.06	10.5	0.02	0.18	0.24	71
	75 ISL	11.67	11.66	33.503	25.490	250.0	0.215	4.43	72.0	10.5	1.12	11.7	0.02	0.15	0.22	75
1	86	11.22	11.21	33.558	25.616	238.3	0.242	4.02	64.7	13.8	1.32	15.0	0.02	0.06	0.15	86
1	100	11.16	11.15	33.696	25.734	227.3	0.274	3.47	55.8	17.3	1.51	17.2	0.01	0.03	0.08	100
1	120	10.77	10.76	33.815	25.897	212.3	0.318	3.08	49.2	21.0	1.70	20.0	0.01	0.02	0.06	121
	125 ISL	10.68	10.67	33.852	25.942	208.1	0.329	2.96	47.2	22.1	1.75	20.8	0.01	0.02	0.06	126
1	144	10.34	10.32	33.986	26.105	192.9	0.367	2.54	40.2	26.2	1.93	23.5	0.01	0.01	0.05	145
	150 ISL	10.25	10.23	34.017	26.145	189.3	0.379	2.46	38.9	27.2	1.97	24.1	0.01	0.01	0.05	151
1	174	9.86	9.84	34.103	26.279	177.0	0.422	2.25	35.3	30.8	2.11	25.8	0.02	0.00	0.05	175
	200 ISL	9.32	9.30	34.130	26.389	166.9	0.467	2.19	33.9	34.3	2.20	27.0	0.03	0.00	0.04	201
1	205	9.22	9.20	34.133	26.408	165.2	0.475	2.18	33.7	35.0	2.21	27.2	0.03	0.00	0.04	206
1	239	8.94	8.91	34.206	26.510	156.1	0.530	1.79	27.5	40.0	2.38	29.0	0.00			240
	250 ISL	8.80	8.77	34.208	26.534	154.0	0.547	1.74	26.7	41.2	2.41	29.4	0.00			251
1	288	8.25	8.22	34.190	26.605	147.7	0.604	1.63	24.7	45.4	2.50	30.8	0.00			290
	300 ISL	8.06	8.03	34.186	26.630	145.4	0.622	1.56	23.5	47.4	2.54	31.4	0.00			302
1	344	7.43	7.40	34.182	26.719	137.3	0.684	1.24	18.4	55.2	2.71	33.8	0.01			346
	400 ISL	7.04	7.00	34.221	26.805	1.29.8	0.759	0.86	12.7	62.2	2.89	35.8	0.00			403
1	408	6.99	6.95	34.227	26.817	128.8	0.769	0.81	11.9	63.2	2.91	36.1	0.00			411

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	NEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 11.0 N	118 23.3 W	14/01/91	1516 UTC	1176 -	320 05 kn	290 02 04	1	1020.6 ob	16.2 C	14.8 C	27m 02	1/8 CI

CAST	DEPTH -		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN Ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
	0	ISL	15.08	15.08	33.526	24.819	312.0	0.000	5.81	101.4	2.7	0.37	0.0	0.00	0.26	0.10	0
1	1		15.08	15.08	33.526	24.819	312.0	0.003	5.81	101.4	2.7	0.37	0.0	0.00	0.26	0.10	1
1	10		15.08	15.08	33.526	24.819	312.2	0.031	5.79	101.0	2.5	0.36	0.0	0.00	0.26	0.09	10
1	20		15.08	15.08	33.527	24.821	312.5	0.062	5.79	101.0	2.5	0.36	0.0	0.00	0.26	0.09	20
1	30		15.05	15.05	33.520	24.822	312.6	0.094	5.78	100.8	2.5	0.36	0.1	0.00	0.31	0.11	30
1	40		13.89	13.88	33.415	24.987	297.1	0.124	5.69	96.8	3.6	0.49	1.0	0.15	0.58	0.26	40
1	50		13.60	13.59	33.459	25.081	288.5	0.153	5.64	95.4	3.6	0.57	1.5	0.41	0.38	0.25	50
1	59		13.21	13.20	33.451	25.154	281.8	0.179	5.42	91.0	4.7	0.68	3.3	0.63	0.24	0.21	59
1	69		12.84	12.83	33.449	25.22 5	275.2	0.207	5.10	84.9	6.5	0.80	5.6	0.20	0.22	0.22	69
	75	ISL	12.42	12.41	33.466	25.320	266.2	0.223	4.77	78.7	8.2	0.94	8.0	0.08	0.17	0.20	75
1	83		11.84	11.83	33.510	25.464	252.6	0.244	4.30	70.1	10.8	1.14	11.4	0.02	0.10	0.16	83
1	97		11.28	11.27	33.626	25.658	234.5	0.278	3.74	60.3	14.9	1.39	15.5	0.01	0.05	0.12	97
	100	ISL	11.17	11.16	33.654	25.700	230.6	0.285	3.63	58.4	15.8	1.44	16.3	0.01	0.04	0.11	100
1	117		10.70	10.69	33.808	25.904	211.6	0.323	3.11	49.6	20.7	1.70	20.1	0.01	0.02	0.07	118
	125	ISL	10.59	10.58	33.869	25.970	205.4	0.339	2.90	46.1	22.5	1.79	21.3	0.01	0.02	0.07	126
1	144		10.41	10.39	33.983	26.091	194.3	0.377	2.54	40.3	25.8	1.94	23.4	0.00	0.01	0.06	145
	150	ISL	10.32	10.30	34.007	26.125	191.2	0.389	2.49	39.4	26.6	1.97	23.9	0.00	0.01	0.06	151
1	171		9.92	9.90	34.066	26.240	180.7	0.428	2.39	37.5	29.4	2.06	25.2	0.00	0.01	0.06	172
	200	ISL	9.22	9.20	34.1.16	26.395	166.4	0.478	2.31	35.7	33.8	2.15	26.8	0.00	0.00	0.05	201
1	202		9.18	9.16	34.118	26.403	165.6	0.482	2.30	35.5	34.1	2.16	26.9	0.00	0.00	0.05	203
1	231		8.87	8.85	34.151	26.478	158.9	0.529	2.10	32.2	37.6	2.27	28.1	0.00			232
	250	ISL	8.64	8.61	34.156	26.518	155.4	0.558	2.01	30.7	39.8	2.32	28.9	0.00			251
1	270		8.40	8.37	34.159	26.55B	151.9	0.589	1.91	29.0	42.4	2.38	29.7	0.00			272
	300	ISL	8.07	8.04	34.185	26.628	145.6	0.634	1.59	24.0	47.3	2.53	31.4	0.00			302
1	327		7.78	7.75	34.210	26.691	140.0	0.672	1.28	19.2	52.0	2.68	32.9	0.00			329
1	387		7.10	7.06	34.221	26.797	130.4	0.753	0.87	12.8	61.3	2.91	35.7	0.00			389
	400	ISL	7.00	6.96	34.226	26.814	128.9	0.770	0.80	11.8	62.9	2.94	36.1	0.00			403
1	453		6.64	6.60	34.254	26.886	122.6	0.837	0.58	8.5	69.1	3.05	37.4	0.00			456
	500	ISL	6.35	6.30	34.282	26.947	117.3	0.893	0.43	6.2	74.6	3.12	38.6	0.00			503
1	525		6.20	6.15	34.298	26.979	114.5	0.922	0.35	5.1	77.5	3.16	39.3	0.00			529

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 55.1 N	118 56.0 W	14/01/91	0953 DTC	1680 -	330 07 kn			1020.2 mto	15.9 C	14.1 C		

CAST	DEPTH -		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN Ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
	0	ISL	15.20	15.20	33.550	24.811	312.7	0.000	5.81	101.6	3.1	0.38	0.0	0.02	0.24	0.07	0
1	1		15.20	15.20	33.550	24.811	312.7	0.003	5.81	101.6	3.1	0.38	0.0	0.02	0.24	0.07	1
	10	ISL	15.20	15.20	33.548	24.810	313.1	0.031	5.81	101.6	3.1.	0.37	0.0	0.02	0.24	0.07	10
1	11		15.20	15.20	33.548	24.810	313.2	0.034	5.81	101.6	3.1	0.37	0.0	0.02	0.24	0.07	11
	20	ISL	14.97	14.97	33.530	24.847	310.0	0.062	5.86	102.0	3.1	0.37	0.0	0.02	0.29	0.09	20
1	21		14.92	14.92	33.521	24.851	309.6	0.066	5.87	102.1	3.1	0.37	0.0	0.02	0.30	0.09	21
	30	ISL	14.00	14.00	33.467	25.004	295.2	0.093	5.85	99.8	3.8	0.45	0.7	0.06	0.77	0.31	30
1	31		13.89	13.89	33.460	25.021	293.6	0.096	5.85	99.6	3.9	0.46	0.8	0.07	0.81	0.33	31
1	41		13.11	13.10	33.373	25.113	285.2	0.125	5.59	93.6	5.1	0.57	2.9	0.15	0.52	0.31	41
1	50		12.75	12.74	33.403	25.207	276.4	0.150	5.50	91.4	5.9	0.69	4.2	0.29	0.26	0.19	50
1	60		11.84	11.83	33.352	25.341	263.8	0.177	5.08	82.8	8.6	0.94	8.4	0.04	0.16	0.17	60
1	75		11.31	11.30	33.366	25.450	253.8	0.216	4.84	78.0	10.3	1.08	10.7	0.02	0.13	0.17	75
1	89		10.54	10.53	33.433	25.639	236.0	0.250	4.41	69.9	13.9	1.30	14.5	0.01	0.09	0.12	89
	100	ISL	10.20	10.19	33.546	25.785	222.3	0.275	4.02	63.3	17.3	1.47	17.4	0.01	0.05	0.08	100
1	109		10.01	10.00	33.644	25.894	212.1	0.295	3.72	58.4	20.0	1.59	19.4	0.01	0.03	0.06	110
	125	ISL	9.68	9.67	33.756	26.037	198.8	0.328	3.40	53.0	23.1	1.72	21.6	0.00	0.01	0.04	126
1	128		9.63	9.62	33.774	26.059	196.8	0.334	3.35	52.2	23.6	1.74	21.9	0.00	0.01	0.04	129
	150	ISL	9.32	9.30	33.915	26.220	181.9	0.375	3.02	46.7	27.8	1.89	23.7	0.00	0.00	0.03	151
1	154		9.26	9.24	33.936	26.246	179.4	0.382	2.97	45.9	28.6	1.91	24.0	0.00	0.00	0.03	155
1	184		8.61	8.59	34.004	26.403	165.0	0.434	2.80	42.7	33.9	2.04	26.6	0.00	0.01	0.03	185
	200	ISL	8.42	8.40	34.047	26.466	159.3	0.460	2.58	39.2	37.0	2.14	27.7	0.00	0.01	0.03	201
1	217		8.26	8.24	34.085	26.520	154.4	0.487	2.34	35.4	40.2	2.24	28.8	0.00	0.00	0.03	218
	250	ISL	7.92	7.89	34.105	26.587	148.5	0.537	2.09	31.4	44.6	2.36	30.4	0.00			251
1	252		7.90	7.87	34.105	26.590	148.2	0.540	2.08	31.2	44.8	2.37	30.5	0.00			253
1	292		7.61	7.58	34.136	26.657	142.4	0.598	1.69	25.2	50.0	2.53	32.3	0.00			294
	300	ISL	7.54	7.51	34.142	26.672	141.1	0.609	1.61	24.0	51.2	2.56	32.7	0.00			302
1	347		7.12	7.09	34.177	26.759	133.4	0.674	1.17	17.2	58.5	2.76	35.0	0.00			349
	400	ISL	6.81	6.77	34.227	26.841	126.2	0.742	0.76	11.1	65.5	2.95	36.9	0.00			403
1	412		6.75	6.71	34.238	26.858	124.7	0.758	0.68	9.9	66.9	2.98	37.2	0.00			415
1	482		6.40	6.36	34.290	26.946	117.1	0.842	0.39	5.7	74.7	3.11	38.6	0.00			485
	500	ISL	6.30	6.25	34.298	26.965	115.5	0.863	0.36	5.2	76.5	3.14	38.8	0.00			503
1	562		5.95	5.90	34.326	27.033	109.6	0.933	0.26	3.7	82.6	3.23	39.7	0.00			566

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 39.3 N	119 28.8 W	14/01/91	0346 UTC	1296 m	330 18 kn			1020.0 mb	15.5 C	13.9 C			

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PBAEO ug/l	PRESS db
	0	ISL	14.18	14.18	33.541	25.023	292.6	0.000	5.98	102.5	3.7	0.39	0.2	0.02	0.92	0.20	0
1	2		14.18	14.18	33.541	25.023	292.6	0.006	5.98	102.5	3.7	0.39	0.2	0.02	0.92	0.20	2
	10	ISL	14.19	14.19	33.541	25.021	293.0	0.029	5.99	102.7	3.6	0.38	0.3	0.02	0.93	0.21	10
1	17		14.19	14.19	33.540	25.021	293.3	0.050	5.99	102.7	3.6	0.38	0.3	0.02	0.94	0.21	17
	20	ISL	14.03	1.4.03	33.530	25.046	290.9	0.059	5.91	101.0	4.0	0.41	0.8	0.07	0.92	0.24	20
	30	ISL	13.35	13.35	33.483	25.149	281.4	0.087	5.61	94.5	5.5	0.57	3.0	0.22	0.72	0.29	30
1	33		13.09	13.09	33.466	25.188	277.7	0.096	5.50	92.1	6.0	0.63	3.8	0.25	0.62	0.30	33
1	42		12.40	12.39	33.415	25.284	268.9	0.120	5.30	87.4	7.2	0.79	6.2	0.18	0.18	0.19	42
	50	ISL	11.33	11.32	33.399	25.471	251.1	0.141	4.72	76.1	11.5	1.11	11.7	0.06	0.11	0.13	50
1	52		11.07	11.06	33.402	25.520	246.5	0.146	4.57	73.3	12.6	1.19	13.1	0.03	0.09	0.12	52
1	62		10.36	10.35	33.460	25.690	230.5	0.170	4.31	68.1	15.3	1.35	15.8	0.02	0.05	0.09	62
	75	ISL	10.10	10.09	33.497	25.763	223.8	0.199	4.18	65.7	16.9	1.43	17.0	0.02	0.03	0.08	75
1	76		10.09	10.08	33.500	25.768	223.4	0.202	4.17	65.5	17.0	1.43	17.1	0.02	0.03	0.08	76
1	91		9.77	9.76	33.600	25.899	211.2	0.234	3.87	60.4	19.9	1.56	19.4	0.02	0.02	0.06	91
	100	ISL	9.62	9.61	33.729	26.025	199.4	0.253	3.51	54.6	22.8	1.67	21.3	0.02	0.02	0.05	101
1	106		9.53	9.52	33.813	26.106	191.9	0.264	3.28	51.0	24.7	1.74	22.5	0.02	0.02	0.05	107
1	122		9.28	9.27	33.885	26.203	183.0	0.294	3.10	47.9	27.9	1.84	23.9	0.02	0.01	0.05	123
	125	ISL	9.22	9.21	33.897	26.222	181.2	0.300	3.06	47.3	28.6	1.86	24.2	0.02	0.01	0.05	126
1	141		8.91	8.89	33.951	26.314	172.7	0.328	2.83	43.4	32.1	1.97	25.9	0.03	0.01	0.04	142
	150	ISL	8.80	8.78	33.975	26.350	169.4	0.344	2.75	42.1	33.3	2.02	26.4	0.03	0.01	0.04	151
1	162		8.66	8.64	34.003	26.394	165.5	0.364	2.64	40.3	34.9	2.08	27.0	0.03	0.01	0.04	163
1	188		8.08	8.06	34.067	26.532	152.6	0.405	2.31	34.8	41.5	2.23	29.4	0.02	0.01	0.03	189
	200	ISL	7.95	7.93	34.082	26.563	149.8	0.423	2.19	32.9	43.3	2.28	30.1	0.02	0.01	0.03	201
1	221		7.81	7.79	34.095	26.594	147.2	0.454	2.04	30.5	45.7	2.35	30.9	0.03	0.00	0.03	222
	250	ISL	7.53	7.51	34.098	26.638	143.5	0.496	1.95	29.0	48.8	2.41	32.0	0.02			251
1	257		7.47	7.45	34.099	26.647	142.6	0.506	1.92	28.5	49.6	2.42	32.3	0.02			259
1	297		7.25	7.22	34.147	26.716	136.6	0.562	1.44	21.3	54.9	2.61	34.1	0.01			299
	300	ISL	7.23	7.20	34.150	26.722	136.2	0.566	1.41	20.8	55.4	2.62	34.2	0.01			302
1	352		6.87	6.84	34.197	26.809	128.6	0.635	0.93	13.6	63.1	2.83	36.5	0.02			354
	400	ISL	6.59	6.55	34.238	26.879	122.4	0.695	0.63	9.2	69.2	2.96	37.8	0.01			403
1	417		6.50	6.46	34.250	26.901	120.5	0.716	0.56	8.1	71.1	3.00	38.2	0.01			420
1	487		6.17	6.13	34.287	26.973	114.4	0.798	0.39	5.6	77.6	3.10	39.5	0.02			490
	500	ISL	6.11	6.07	34.293	26.986	113.3	0.813	0.37	5.3	78.7	3.11	39.7	0.02			503
1	568		5.80	5.75	34.325	27.051	107.8	0.888	0.27	3.9	84.3	3.18	40.7	0.01			572

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 25.1 N	119 57.6 W	13/01/91	2215 UTC	904 -	320 16 kn	300 08 10 1		1021.0 nob	16.5 C	14.6 C	15a 03	1/8	CC

CAST	DEPTH -		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 UM/l	PO4 UM/l	NO3 UM/l	NO2 UM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
	0	ISL	14.39	14.39	33.560	24.993	295.4	0.000	5.93	102.1	3.1	0.36	0.0	0.01	0.65	0.24	0
1	1		14.39	14.39	33.560	24.993	295.4	0.003	5.93	102.1	3.1	0.36	0.0	0.01	0.65	0.24	1
	10	ISL	14.38	14.38	33.559	24.995	295.5	0.030	5.94	102.2	3.0	0.36	0.1	0.01	0.66	0.23	10
1	16		14.38	14.38	33.561	24.997	295.5	0.047	5.94	102.2	2.9	0.36	0.1	0.01	0.66	0.23	16
	20	ISL	14.37	14.37	33.561	24.999	295.4	0.059	5.93	102.0	2.9	0.36	0.1	0.01	0.68	0.24	20
	30	ISL	14.33	14.33	33.560	25.007	295.0	0.089	5.92	101.8	2.9	0.35	0.1	0.01	0.74	0.28	30
1	31		14.33	14.33	33.560	25.007	295.0	0.092	5.92	101.8	2.9	0.35	0.1	0.01	0.75	0.28	31
1	40		13.70	13.69	33.473	25.071	289.1	0.118	5.87	99.5	3.4	0.41	0.5	0.13	0.46	0.28	40
	50	ISL	13.34	13.33	33.460	25.134	283.4	0.146	5.78	97.3	3.9	0.45	1.1	0.26	0.29	0.25	50
1	51		13.30	13.29	33.460	25.142	282.6	0.149	5.77	97.0	4.0	0.46	1.2	0.27	0.28	0.25	51
1	61		12.61	12.60	33.411	25.241	273.5	0.177	5.50	91.1	5.4	0.63	4.2	0.27	0.14	0.16	61
	75	ISL	11.01	11.00	33.408	25.536	245.5	0.213	4.63	74.1	11.8	1.12	12.5	0.05	0.06	0.11	75
1	76		10.90	10.89	33.413	25.560	243.3	0.216	4.56	72.9	12.3	1.16	13.1	0.03	0.06	0.11	76
1	89		10.34	10.33	33.540	25.756	224.8	0.246	4.00	63.2	17.0	1.40	17.1	0.02	0.03	0.08	89
	100	ISL	10.07	10.06	33.639	25.880	213.3	0.270	3.67	57.7	20.0	1.58	19.2	0.01	0.02	0.06	100
1	105		9.98	9.97	33.679	25.926	209.0	0.281	3.55	55.7	21.2	1.65	20.0	0.01	0.02	0.06	106
1	119		9.66	9.65	33.772	26.052	197.2	0.309	3.26	50.8	24.6	1.75	22.1	0.01	0.01	0.05	120
	125	ISL	9.51	9.50	33.815	26.111	191.8	0.321	3.15	48.9	26.0	1.81	22.8	0.01	0.01	0.05	126
1	139		9.16	9.14	33.903	26.236	180.0	0.347	2.93	45.2	29.1	1.93	24.2	0.01	0.01	0.04	140
	150	ISL	8.94	8.92	33.946	26.305	173.7	0.367	2.83	43.4	31.1	2.00	25.5	0.01	0.01	0.04	151
1	159		8.80	8.78	33.972	26.348	169.8	0.382	2.76	42.2	32.5	2.04	26.4	0.01	0.01	0.04	160
1	183		8.57	8.55	34.034	26.432	162.2	0.422	2.54	38.7	36.1	2.13	27.5	0.01	0.00	0.03	184
	200	ISL	8.33	8.31	34.035	26.470	158.8	0.449	2.70	40.9	36.9	2.11	27.5	0.01	0.00	0.03	201
1	218		8.04	8.02	34.024	26.505	155.7	0.477	2.89	43.5	37.9	2.08	27.6	0.00	0.00	0.02	219
	250	ISL	7.53	7.51	34.030	26.584	148.5	0.526	2.67	39.7	43.7	2.21	29.6	0.00			251
1	253		7.49	7.47	34.031	26.591	147.9	0.531	2.63	39.1	44.3	2.23	29.8	0.00			254
1	293		7.15	7.12	34.067	26.667	141.2	0.588	1.96	28.9	51.5	2.52	32.9	0.00			295
	300	ISL	7.07	7.04	34.070	26.681	139.9	0.598	1.88	27.7	52.9	2.55	33.3	0.00			302
1	348		6.49	6.46	34.088	26.773	131.5	0.663	1.45	21.1	62.2	2.72	35.9	0.00			350
	400	ISL	6.09	6.06	34.121	26.851	124.5	0.730	1.04	15.0	70.5	2.92	38.2	0.00			403
1	413		6.02	5.98	34.134	26.870	122.8	0.746	0.94	13.5	72.3	2.97	38.6	0.00			416
1	483		5.94	5.90	34.262	26.982	113.2	0.829	0.40	5.7	79.9	3.21	39.9	0.00		j	486
	500	ISL	5.87	5.83	34.275	27.002	111.5	0.848	0.37	5.3	81.3	3.23	40.2	0.00			503
1	564		5.63	5.58	34.323	27.070	105.7	0.917	0.26	3.7	86.8	3.30	41.1	0.00			568

RV DAVID STARR JORDAN CALCOFI CRUISE 9101

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 45.1 N	121 18.8 W	13/01/91	1003 UTC	3678 M	350 19 kn			1025.1 nb	14.0 C	13.5 C			

CAST	DEPTH		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/l	OXYGEN	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 UM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.56	14.56	33.339	24.787	315.1	0.000	5.87	101.2	2.7	0.38	0.0	0.00	0.30	0.10	0
1	3		14.56	14.56	33.339	24.787	315.1	0.009	5.87	101.2	2.7	0.38	0.0	0.00	0.30	0.10	3
	10	ISL	14.56	14.56	33.339	24.787	315.3	0.032	5.87	101.2	2.7	0.38	0.0	0.00	0.30	0.10	10
1	17		14.57	14.57	33.340	24.786	315.6	0.054	5.88	101.4	2.6	0.37	0.1	0.00	0.30	0.10	17
	20	ISL	14.57	14.57	33.340	24.786	315.7	0.063	5.88	101.4	2.6	0.37	0.1	0.00	0.30	0.10	20
	30	ISL	14.58	14.58	33.341	24.785	316.1	0.095	5.88	101.5	2.4	0.37	0.1	0.00	0.30	0.09	30
1	33		14.58	14.58	33.341	24.785	316.2	0.104	5.88	101.4	2.4	0.37	0.1	0.00	0.30	0.09	33
1	43		14.58	14.57	33.365	24.804	314.7	0.136	5.87	101.3	2.4	0.37	0.1	0.00	0.35	0.11	43
	50	ISL	14.36	14.35	33.369	24.854	310.1	0.158	5.88	101.0	2.6	0.38	0.1	0.02	0.45	0.21	50
1	53		14.25	14.24	33.372	24.879	307.8	0.167	5.88	100.8	2.7	0.39	0.1	0.04	0.48	0.25	53
1	62		14.08	14.07	33.409	24.944	301.9	0.194	5.78	98.7	3.0	0.43	0.6	0.13	0.35	0.19	62
	75	ISL	13.61	13.60	33.364	25.006	296.3	0.233	5.69	96.2	3.5	0.50	1.8	0.16	0.22	0.15	75
1	77		13.48	13.47	33.349	25.021	294.9	0.239	5.68	95.8	3.7	0.52	2.1	0.16	0.21	0.15	77
1	92		11.65	11.64	33.207	25.265	271.8	0.282	5.44	88.2	6.4	0.79	6.7	0.03	0.12	0.13	92
	100	ISL	10.80	10.79	33.180	25.396	259.3	0.303	5.31	84.5	8.1	0.94	9.3	0.02	0.08	0.11	100
1	107		10.25	10.24	33.207	25.512	248.3	0.321	5.10	80.2	10.2	1.08	11.7	0.01	0.06	0.10	107
1	122		10.13	10.12	33.497	25.759	225.2	0.356	4.03	63.3	17.4	1.47	18.1	0.00	0.03	0.07	123
	125	ISL	10.05	10.04	33.524	25.794	222.0	0.363	4.01	62.9	17.9	1.48	18.5	0.00	0.03	0.06	126
1	142		9.56	9.54	33.616	25.948	207.6	0.399	3.92	60.9	19.5	1.52	19.5	0.01	0.02	0.03	143
	150	ISL	9.45	9.43	33.677	26.013	201.5	0.416	3.60	55.8	22.0	1.64	21.3	0.01	0.02	0.03	151
1	162		9.30	9.28	33.766	26.107	192.8	0.439	3.13	48.4	25.9	1.83	23.9	0.00	0.01	0.03	163
1	186		8.73	8.71	33.900	26.302	174.6	0.483	3.25	49.6	29.2	1.84	24.8	0.00	0.00	0.02	187
	200	ISL	8.48	8.46	33.949	26.380	167.4	0.507	3.16	48.0	31.8	1.90	25.7	0.00	0.00	0.02	201
1	221		8.16	8.14	33.996	26.465	159.6	0.542	2.90	43.7	36.1	2.02	27.4	0.00	0.00	0.02	222
	250	ISL	7.72	7.70	34.033	26.559	151.0	0.587	2.50	37.3	42.5	2.22	29.7	0.00			251
1	255		7.65	7.62	34.036	26.572	149.8	0.594	2.43	36.2	43.6	2.25	30.1	0.00			256
1	296		7.13	7.10	34.046	26.653	142.5	0.654	2.06	30.4	50.7	2.42	32.5	0.00			298
	300	ISL	7.08	7.05	34.047	26.661	141.8	0.660	2.02	29.7	51.5	2.44	32.8	0.00			302
1	350		6.55	6.52	34.070	26.751	133.7	0.729	1.53	22.2	60.5	2.68	35.7	0.00			352
	400	ISL	6.30	6.26	34.119	26.823	127.4	0.794	1.05	15.2	67.8	2.89	37.7	0.00			403
1	415		6.26	6.22	34.137	26.843	125.7	0.813	0.92	13.3	69.7	2.94	38.1	0.00			418
1	484		6.08	6.04	34.219	26.931	118.2	0.897	0.51	7.3	76.6	3.14	39.5	0.00			487
	500	ISL	5.94	5.90	34.224	26.953	116.2	0.916	0.48	6.9	79.1	3.16	39.9	0.00			503
1	565		5.35	5.30	34.248	27.044	107.7	0.989	0.34	4.8	89.3	3.26	41.7	0.00			569

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 25.0 N	121 59.1 W	13/01/91	0208 UTC	n	350 17 kn	010 04 05	2	1026.7 «b	14.3 C	13.7 C		8/8	ST

CAST	DEPTH		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO uq/1	PRESS db
	0	ISL	14.93	14.93	33.258	24.645	328.6	0.000	5.82	101.1	2.9	0.36	0.0	0.00	0.28	0.10	0
1	1		14.93	14.93	33.258	24.645	328.6	0.003	5.82	101.1	2.9	0.36	0.0	0.00	0.28	0.10	1
	10	ISL	14.92	14.92	33.259	24.648	328.5	0.033	5.81	100.9	2.9	0.36	0.0	0.00	0.27	0.10	10
1	16		14.92	14.92	33.259	24.649	328.7	0.053	5.81	100.9	2.8	0.36	0.0	0.00	0.27	0.10	16
	20	ISL	14.93	14.93	33.258	24.646	329.1	0.066	5.81	100.9	2.8	0.36	0.0	0.00	0.27	0.10	20
	30	ISL	14.94	14.94	33.255	24.642	329.8	0.099	5.81	100.9	2.6	0.35	0.0	0.00	0.28	0.11	30
1	35		14.95	14.94	33.253	24.638	330.3	0.115	5.81	100.9	2.6	0.35	0.0	0.00	0.29	0.11	315
	50	ISL	14.95	14.94	33.253	24.639	330.7	0.165	5.81	100.9	2.6	0.35	0.0	0.00	0.29	0.10	50
1	56		14.95	14.94	33.253	24.639	330.9	0.185	5.81	100.9	2.6	0.35	0.0	0.00	0.29	0.10	56
1	70		15.10	15.09	33.309	24.650	330.2	0.231	5.78	100.7	2.6	0.36	0.0	0.00	0.28	0.10	70
	75	ISL	15.13	15.12	33.360	24.683	327.3	0.247	5.75	100.3	2.6	0.35	0.0	0.01	0.27	0.11	75
1	79		15.16	15.15	33.410	24.715	324.3	0.260	5.73	100.1	2.6	0.35	0.0	0.01	0.27	0.13	79
1	89		14.43	14.42	33.336	24.815	315.0	0.292	5.81	99.9	2.7	0.37	0.1	0.08	0.26	0.17	B9
1	100		13.87	13.86	33.268	24.879	309.1	0.327	5.83	99.1	3.0	0.41	0.3	0.13	0.16	0.10	100
1	109		13.53	13.51	33.341	25.005	297.3	0.354	5.78	97.6	3.3	0.42	0.8	0.21	0.12	0.14	109
1	125		12.25	12.23	33.304	25.228	276.2	0.400	5.58	91.7	4.6	0.59	3.7	0.03	0.09	0.10	126
1	139		10.97	10.95	33.228	25.405	259.5	0.437	5.36	85.6	7.3	0.84	7.9	0.02	0.06	0.07	140
	150	ISL	10.37	10.35	33.301	25.566	244.2	0.465	5.10	80.5	10.0	1.00	11.0	0.01	0.04	0.06	151
1	160		9.99	9.97	33.411	25.716	230.1	0.489	4.85	75.9	12.5	1.13	13.4	0.01	0.02	0.05	161
1	179		9.31	9.29	33.603	25.978	205.4	0.530	4.53	70.0	17.0	1.30	16.7	0.00	0.01	0.02	180
	200	ISL	8.90	8.88	33.722	26.137	190.6	0.572	4.20	64.3	21.4	1.49	19.7	0.00	0.00	0.02	2:01
1	205		8.84	8.82	33.746	26.165	188.0	0.581	4.11	62.9	22.4	1.53	20.3	0.00	0.00	0.02	3!06
1	233		8.57	8.55	33.946	26.364	169.6	0.631	3.51	53.4	29.3	1.75	23.9	0.00			234
	250	ISL	8.25	8.22	33.985	26.443	162.2	0.659	3.33	50.3	33.0	1.85	25.4	0.00			251
1	274		7.77	7.74	33.998	26.525	154.7	0.697	3.12	46.6	38.2	1.99	27.2	0.00			275
	300	ISL	7.39	7.36	34.023	26.599	147.8	0.737	2.66	39.4	44.2	2.19	29.7	0.00			302
1	330		7.01	6.98	34.043	26.668	141.6	0.780	2.11	31.0	51.3	2.42	32.6	0.00			332
1	389		6.18	6.15	34.061	26,792	130.0	0.860	1.48	21.3	64.9	2.72	36.6	0.00			391
	400	ISL	6.03	6.00	34.062	26.812	128.1	0.874	1.39	20.0	67.3	2.77	37.2	0.00			102
1	454		5.49	5.45	34.098	26.907	119.3	0.941	0.99	14.0	77.3	2.98	39.5	0.00			457
	500	ISL	5.60	5.56	34.211	26.984	112.9	0.995	0.54	7.7	81.8	3.14	40.4	0.00			503
1	521		5.65	5.61	34.262	27.019	109.9	1.018	0.34	4.8	83.9	3.21	40.8	0.00			524

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 5.0 N	122 39.7 W	12/01/91	1907 UTC	3950 B	360 16 *n	020 04 06	2	1029.4 nb	16.4 C	14.8 C	24B 02	8/8	NS

CAST	DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRESS
	-		DEG C	DEG C	PSS 78	THETA		ml/l		PCT	UM/1	UM/1	UM/1	uM/1	ug/1	Ug/1	db
1	0		16.52	16.52	33.719	24.644	328.6	0.000	5.60	100.7	2.7	0.30	0.1	0.00	0.18	0.07	0
	10	ISL	16.51	16.51	33.716	24.645	328.9	0.033	5.60	100.7	2.7	0.29	0.1	0.00	0.18	0.06	10
1	15		16.51	16.51	33.715	24.644	329.2	0.049	5.60	100.7	2.7	0.29	0.1	0.00	0.18	0.06	15
	20	ISL	16.52	16.52	33.717	24.643	329.4	0.066	5.60	100.7	2.7	0.29	0.1	0.00	0.18	0.06	20
	30	ISL	16.54	16.54	33.722	24.643	329.7	0.099	5.59	100.5	2.6	0.29	0.1	0.00	0.17	0.06	30
1	36		16.56	16.55	33.726	24.642	330.1	0.119	5.59	100.6	2.5	0.29	0.1	0.00	0.17	0.06	36
	50	ISL	16.57	16.56	33.760	24.666	328.2	0.165	5.57	100.2	2.4	0.29	0.1	0.00	0.17	0.06	50
1	55		16.58	16.57	33.768	24.670	328.0	0.181	5.57	100.3	2.4	0.29	0.1	0.00	0.17	0.06	55
1	68		16.69	16.68	33.771	24.647	330.6	0.224	5.59	100.8	2.4	0.28	0.0	0.00	0.18	0.06	68
	75	ISL	16.70	16.69	33.779	24.651	330.5	0.247	5.58	100.7	2.4	0.28	0.0	0.00	0.18	0.06	75
1	77		16.70	16.69	33.782	24.654	330.3	0.254	5.58	100.7	2.4	0.28	0.0	0.00	0.18	0.06	77
1	87		16.70	16.69	33.786	24.657	330.3	0.287	5.57	100.5	2.2	0.20	0.0	0.00	0.18	0.07	87
1	98		16.67	16.65	33.774	24.655	330.8	0.323	5.57	100.4	2.4	0.2S	0.0	0.00	0.18	0.07	98
	100	ISL	16.26	16.24	33.723	24.711	325.6	0.330	5.62	100.5	2.4	0.29	0.0	0.03	0.18	0.09	100
1	108		14.44	14.42	33.534	24.966	301.2	0.355	5.79	99.7	2.6	0.32	0.1	0.16	0.18	0.15	108
1	123		13.57	13.55	33.512	25.130	285.9	0.399	5.60	94.7	3.8	0.44	2.1	0.06	0.11	0.11	124
	125	ISL	13.33	13.31	33.493	25.164	282.6	0.404	5.58	93.9	4.0	0.47	2.6	0.05	0.10	0.11	126
1	137		11.86	11.84	33.393	25.371	262.9	0.437	5.46	89.0	5.5	0.64	5.5	0.01	0.07	0.08	138
	150	ISL	11.05	11.03	33.396	25.521	248.7	0.470	5.34	85.6	6.9	0.75	7.7	0.01	0.06	0.07	151
1	158		10.73	10.71	33.430	25.604	240.9	0.490	5.24	83.4	8.1	0.82	9.0	0.01	0.05	0.06	159
1	177		9.87	9.85	33.561	25.854	217.3	0.533	4.87	76.1	12.8	1.06	13.3	0.01	0.02	0.04	178
	200	ISL	9.47	9.45	33.650	25.990	204.8	0.582	4.68	72.5	15.2	1.17	15.2	0.01	0.06	0.05	201
1	203		9.44	9.42	33.661	26.003	203.6	0.588	4.65	72.0	15.6	1.181	15.4	0.01	0.06	0.05	204
1	232		8.74	8.72	33.899	26.301	175.6	0.643	3.67	56.1	26.5	1.65	22.6	0.00			233
	250	ISL	8.73	8.70	34.024	26.401	166.5	0.674	3.06	46.8	31.6	1.811	25.2	0.00			251
1	274		8.72	8.69	34.124	26.481	159.4	0.713	2.41	36.8	37.0	2.12	27.4	0.00			275
	300	ISL	8.32	8.29	34.138	26.554	152.8	0.754	2.29	34.7	41.4	2.25	29.0	0.00			302
1	329		7.73	7.70	34.105	26.616	147.1	0.797	2.16	32.3	45.9	2.33	30.5	0.00			331
1	388		6.61	6.57	34.063	26.738	135.5	0.880	1.71	24.9	58.6	2.60	34.9	0.00			390
	400	ISL	6.46	6.42	34.066	26.760	133.5	0.897	1.60	23.2	61.0	2.66	35.6	0.00			402
1	452		5.96	5.92	34.100	26.852	125.1	0.964	1.12	16.1	70.6	2.90	38.2	0.00			455
	500	ISL	5.60	5.56	34.136	26.925	118.4	1.022	0.83	11.8	78.1	3.04	39.8	0.00			503
1	519		5.46	5.42	34.151	26.954	115.8	1.044	0.72	10.2	81.1	3.10	40.4	0.00			522

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 45.1 N	123 19.9 W	12/01/91	1311 UTC	3971 m	010 11 kn			1027.9 mb	13.7 C	11.8 C			

CAST	DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRESS
	-		DEG C	DEG C	PSS 78	THETA			ml/1	PCT	uM/1	uM/1	uM/1	uM/1	ug/1	ug/1	db
	0	ISL	16.46	16.46	33.687	24.633	329.7	0.000	5.61	100.7	2.6	0.28	0.0	0.00	0.16	0.06	0
1	2		16.46	16.46	33.687	24.634	329.7	0.007	5.61	100.7	2.6	0.28	0.0	0.00	0.16	0.06	2
	10	ISL	16.47	16.47	33.688	24.632	330.1	0.033	5.61	100.7	2.6	0.28	0.0	0.00	0.17	0.06	10
1	17		16.48	16.48	33.688	24.630	330.5	0.056	5.61	100.8	2.6	0.28	0.0	0.00	0.17	0.06	17
	20	ISL	16.48	16.48	33.688	24.630	330.6	0.066	5.61	100.8	2.6	0.28	0.0	0.00	0.17	0.06	20
	30	ISL	16.47	16.47	33.688	24.633	330.7	0.099	5.62	100.9	2.6	0.28	0.0	0.00	0.16	0.06	30
1	36		16.46	16.45	33.688	24.636	330.6	0.119	5.62	100.9	2.6	0.28	0.0	0.00	0.16	0.06	36
	50	ISL	16.47	16.46	33.687	24.633	331.4	0.165	5.61	100.7	2.6	0.28	0.0	0.00	0.16	0.05	50
1	57		16.48	16.47	33.687	24.631	331.8	0.188	5.61	100.7	2.6	0.28	0.0	0.00	0.16	0.05	57
1	70		16.48	16.47	33.686	24.631	332.2	0.232	5.61	100.7	2.6	0.28	0.0	0.00	0.16	0.06	70
	75	ISL	16.03	16.02	33.569	24.644	331.1	0.248	5.65	100.5	2.6	0.30	0.0	0.00	0.22	0.09	75
1	79		15.71	15.70	33.499	24.662	329.4	0.261	5.67	100.2	2.6	0.32	0.0	0.00	0.26	0.12	79
1	90		16.12	16.11	33.741	24.756	320.9	0.297	5.64	100.6	2.6	0.28	0.0	0.03	0.21	0.15	90
1	99		15.27	15.25	33.746	24.950	302.6	0.325	5.67	99.4	2.6	0.29	0.1	0.16	0.21	0.18	99
	100	ISL	15.22	15.20	33.749	24.964	301.3	0.328	5.66	99.2	2.6	0.29	0.1	0.16	0.21	0.18	100
1	110		14.81	14.79	33.762	25.063	292.1	0.358	5.57	96.8	2.8	0.33	0.8	0.18	0.15	0.15	110
1	125		13.57	13.55	33.659	25.244	275.1	0.400	5.43	91.9	3.8	0.45	2.8	0.02	0.11	0.13	126
1	141		12.63	12.61	33.581	25.371	263.2	0.444	5.34	88.6	5.2	0.58	4.9	0.01	0.07	0.09	142
	150	ISL	11.85	11.83	33.539	25.487	252.2	0.467	5.22	85.2	5.8	0.69	6.9	0.00	0.05	0.07	151
1	160		11.01	10.99	33.519	25.625	239.1	0.491	5.04	80.7	7.2	0.84	9.5	0.00	0.04	0.05	161
1	181		10.04	10.02	33.608	25.862	216.7	0.539	4.45	69.8	14.8	1.19	15.2	0.00	0.01	0.03	182
	200	ISL	9.67	9.65	33.720	26.012	202.8	0.579	4.27	66.5	17.6	1.31	17.2	0.00	0.00	0.02	201
1	205		9.60	9.58	33.751	26.047	199.5	0.589	4.24	66.0	18.2	1.33	17.6	0.00	0.00	0.02	206
1	234		8.79	8.77	33.903	26.296	176.1	0.644	3.69	56.4	26.6	1.64	22.6	0.00			235
	250	ISL	8.51	8.48	33.950	26.377	168.7	0.671	3.53	53.6	29.6	1.74	24.0	0.00			251
1	274		8.18	8.15	33.989	26.457	161.3	0.711	3.37	50.8	33.2	1.84	25.4	0.00			275
	300	ISL	7.76	7.73	33.999	26.527	154.9	0.752	3.21	48.0	37.6	1.95	27.1	0.00			302
1	329		7.32	7.29	33.999	26.591	-149.1	0.796	2.95	43.6	43.0	2.09	29.1	0.00			331
1	388		6.70	6.66	34.054	26.719	137.4	0.880	1.87	27.3	56.3	2.53	34.0	0.00			390
	400	ISL	6.54	6.50	34.056	26.742	135.3	0.897	1.73	25.1	58.9	2.60	34.9	0.00			402
1	452		5.89	5.85	34.069	26.836	126.5	0.965	1.27	18.2	69.8	2.84	38.0	0.00			455
	500	ISL	5.55	5.51	34.119	26.917	119.1	1.024	0.87	12.4	78.4	3.03	39.9	0.00			503
1	522		5.40	5.36	34.143	26.954	115.7	1.050	0.69	9.8	82.4	3.11	40.8	0.00			525

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RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
30 25.2 N	123 59.9 W	12/01/91	0727 UTC	3829 B	010 08	kn		1029.0 Mb	14.1 C	11.9 C		

CAST	DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRESS
			DEG C	DEG C	PSS 78	THETA			»1/1	PCT	UM/1	UM/1	UM/1	UM/1	ug/1	ug/1	db
	0	ISL	16.41	16.41	33.644	24.612	331.7	0.000	5.61	100.6	2.9	0.31	0.1	0.00	0.15	0.06	0
1	1		16.41	16.41	33.644	24.612	331.7	0.003	5.61	100.6	2.9	0.31	0.1	0.00	0.15	0.06	1
	10	ISL	16.45	16.45	33.659	24.615	331.8	0.033	5.60	100.5	2.8	0.30	0.1	0.00	0.19	0.06	10
1	15		16.50	16.50	33.675	24.616	331.9	0.050	5.60	100.6	2.7	0.30	0.1	0.00	0.21	0.06	15
	20	ISL	16.56	16.56	33.700	24.621	331.5	0.066	5.60	100.7	2.7	0.30	0.1	0.00	0.19	0.06	20
	30	ISL	16.71	16.71	33.764	24.636	330.4	0.099	5.59	100.9	2.6	0.29	0.0	0.00	0.15	0.05	30
1	35		16.80	16.79	33.803	24.645	329.8	0.116	5.58	100.9	2.6	0.28	0.0	0.00	0.13	0.05	35
	50	ISL	17.21	17.20	33.943	24.656	329.2	0.165	5.52	100.7	2.4	0.26	0.1	0.00	0.16	0.06	50
1	55		17.32	17.31	33.981	24.659	329.1	0.182	5.50	100.6	2.4	0.25	0.1	0.00	0.18	0.06	55
1	71		17.31	17.30	33.978	24.660	329.6	0.235	5.50	100.6	2.4	0.25	0.1	0.00	0.18	0.05	71
	75	ISL	17.32	17.31	33.982	24.661	329.6	0.248	5.50	100.6	2.4	0.25	0.1	0.00	0.18	0.05	75
1	80		17.33	17.32	33.986	24.662	329.7	0.264	5.49	100.4	2.4	0.25	0.1	0.00	0.18	0.06	80
1	90		17.33	17.31	33.986	24.662	330.0	0.297	5.49	100.4	2.4	0.25	0.1	0.00	0.17	0.06	90
1	100		17.32	17.30	33.986	24.665	330.1	0.330	5.50	100.6	2.4	0.25	0.1	0.00	0.17	0.06	100
1	110		14.71	14.69	33.530	24.906	307.0	0.362	5.77	99.9	2.9	0.32	0.1	0.14	0.17	0.15	110
	125	ISL	14.33	14.31	33.607	25.046	294.1	0.407	5.66	97.3	3.2	0.37	0.8	0.17	0.12	0.15	126
1	126		14.30	14.28	33.608	25.053	293.4	0.410	5.65	97.1	3.2	0.37	0.9	0.17	0.12	0.15	127
1	140		13.65	13.63	33.693	25.254	274.6	0.450	5.46	92.6	4.3	0.44	2.6	0.03	0.10	0.12	141
	150	ISL	12.85	12.83	33.667	25.395	261.3	0.477	5.37	89.6	5.2	0.54	4.5	0.02	0.07	0.09	151
1	160		12.00	11.98	33.615	25.518	249.6	0.502	5.28	86.5	6.3	0.65	6.5	0.01	0.05	0.06	161
1	180		10.82	10.80	33.525	25.663	235.8	0.551	5.01	79.9	9.6	0.89	10.1	0.01	0.03	0.05	181
	200	ISL	10.01	9.99	33.545	25.819	221.2	0.596	4.76	74.6	12.9	1.09	13.3	0.01	0.02	0.03	201
1	205		9.86	9.84	33.567	25.861	217.3	0.607	4.70	73.4	13.7	1.13	14.0	0.01	0.02	0.03	206
1	234		9.48	9.45	33.835	26.133	191.9	0.667	4.25	66.0	19.4	1.34	18.0	0.01			235
	250	ISL	9.30	9.27	33.922	26.231	182.9	0.697	4.19	64.8	21.5	1.40	19.1	0.01			251
1	275		8.96	8.93	33.997	26.344	172.5	0.741	4.13	63.4	24.9	1.48	20.4	0.00			276
	300	ISL	8.36	8.33	34.018	26.454	162.3	0.783	3.83	58.0	30.8	1.67	23.0	0.00			302
1	329		7.64	7.61	34.013	26.556	152.6	0.829	3.40	50.7	38.4	1.91	26.3	0.00			331
1	388		6.78	6.74	34.004	26.669	142.2	0.916	2.66	38.9	50.7	2.29	31.3	0.00			390
	400	ISL	6.61	6.57	34.004	26.692	140.0	0.933	2.50	36.4	53.5	2.36	32.3	0.00			402
1	454		5.98	5.94	34.032	26.795	130.4	1.006	1.74	24.9	65.6	2.69	36.2	0.00			457
	500	ISL	5.78	5.74	34.106	26.879	122.9	1.064	1.10	15.7	73.8	2.95	38.6	0.00			503
1	522		5.69	5.65	34.142	26.919	119.4	1.090	0.79	11.3	77.7	3.08	39.8	0.00			525

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 57.4 N	117 18.3 W	08/01/91	2249 UTC	65 -	300 10 kn	300 02 05	2	1018.1 «b	15.0 C	13.2 C	18» 03	8/8 ST

CAST	DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRESS
	B		DEG C	DEG C	PSS 78	THETA			»1/1	PCT	UM/1	UM/1	UM/1	UM/1	ug/1	ug/1	db
	0	ISL	15.23	15.23	33.548	24.803	313.5	0.000	5.78	101.2	2.7	0.30	0.0	0.01	0.31	0.11	0
1	1		15.23	15.23	33.548	24.803	313.5	0.003	5.78	101.2	2.7	0.30	0.0	0.01	0.31	0.11	1
	10	ISL	15.10	15.10	33.546	24.831	311.2	0.031	5.81	101.4	2.7	0.30	0.1	0.02	0.44	0.18	10
1	11		15.08	15.08	33.546	24.835	310.8	0.034	5.81	101.4	2.7	0.30	0.1	0.02	0.47	0.19	11
2	20		14.89	14.89	33.539	24.871	307.7	0.062	5.79	100.7	2.9	0.33	0.1	0.03	0.80	0.35	20
	30	ISL	14.72	14.72	33.533	24.903	304.9	0.093	5.76	99.8	3.2	0.39	0.4	0.07	1.01	0.40	30
1	31		14.70	14.70	33.532	24,907	304.6	0.096	5.75	99.6	3.2	0.39	0.4	0.08	1.02	0.40	31
1	41		14.43	14.42	33.525	24.959	299.9	0.126	5.61	96.6	3.8	0.40	1.0	0.22	0.85	0.41	41
	50	ISL	14.23	14.22	33.524	25.001	296.1	0.153	5.48	94.0	4.2	0.51	1.5	0.31	0.50	0.32	50
1	51		14.21	14.20	33.524	25.005	295.8	0.156	5.46	93.6	4.2	0.52	1.6	0.32	0.46	0.31	51

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 54.8 N	117 23.6 W	09/01/91	0147 UTC	643 »	270 09 kn	270 03 07	2	1016.9 lib	14.3 C	12.7 C		8/8 ST

CAST	DEPTH		TEMP	POT TEMP	SALINITY	SIGKA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRESS
	a		DEG C	DEG C	PSS 78	THETA			»1/1	PCT	UM/1	UM/1	uM/1	uM/1	ug/1	ug/1	db
	0	ISL	15.14	15.14	33.565	24.836	310.4	0.000	5.83	101.9	2.8	0.31	0.0	0.01	0.30	0.12	0
1	2		15.14	15.14	33.565	24.836	310.4	0.006	5.83	101.9	2.8	0.31	0.0	0.01	0.30	0.12	2
1	8		15.16	15.16	33.567	24.833	310.9	0.025	5.84	102.1	2.8	0.32	0.0	0.01	0.32	0.13	8
	10	ISL	15.14	15.14	33.566	24.837	310.6	0.031	5.83	101.9	2.8	0.32	0.0	0.01	0.32	0.13	10
1	14		15.09	15.09	33.564	24.847	309.8	0.043	5.82	101.6	2.7	0.32	0.0	0.00	0.33	0.14	14
	20	ISL	15.09	15.09	33.564	24.847	309.9	0.062	5.81	101.4	2.7	0.33	0.0	0.01	0.34	0.16	20
1	21		15.09	15.09	33.564	24.847	310.0	0.065	5.81	101.4	2.7	0.33	0.0	0.01	0.34	0.16	21
1	27		15.06	15.06	33.563	24.853	309.6	0.084	5.81	101.4	2.7	0.32	0.0	0.01	0.37	0.17	27
	30	ISL	15.05	15.05	33.564	24.856	309.4	0.093	5.81	101.3	2.6	0.32	0.0	0.01	0.37	0.17	30
1	34		15.03	15.02	33.564	24.860	309.1	0.105	5.81	101.3	2.6	0.32	0.0	0.00	0.37	0.16	34
1	40		14.93	14.92	33.553	24.874	308.0	0.124	5.81	101.1	2.8	0.32	0.0	0.00	0.50	0.22	40
1	47		14.80	14.79	33.544	24.895	306.2	0.145	5.78	100.3	2.9	0.35	0.0	0.02	0.66	0.32	47
	50	ISL	14.68	14.67	33.543	24.920	303.9	0.155	5.76	99.7	3.1	0.36	0.1	0.04	0.59	0.31	50
1	56		14.38	14.37	33.540	24.982	298.2	0.173	5.73	98.6	3.7	0.39	0.3	0.10	0.40	0.25	56
1	67		13.69	13.68	33.503	25.097	287.4	0.205	5.25	89.0	5.3	0.61	3.4	0.27	0.30	0.23	67
	75	ISL	12.92	12.91	33.437	25.201	277.7	0.227	5.09	84.9	6.1	0.73	5.4	0.13	0.25	0.22	75
1	79		12.54	12.53	33.410	25.254	272.7	0.238	5.04	83.4	6.5	0.78	6.3	0.04	0.23	0.22	79
1	95		11.71	11.70	33.441	25.435	255.7	0.281	4.68	76.1	8.8	0.99	10.1	0.02	0.15	0.18	95
	100	ISL	11.63	11.62	33.488	25.487	250.9	0.293	4.45	72.3	10.2	1.08	11.3	0.02	0.12	0.16	100
1	114		11.48	11.47	33.643	25.635	237.2	0.328	3.77	61.1	14.6	1.34	14.8	0.01	0.04	0.09	115
	125	ISL	11.14	11.12	33.743	25.775	224.1	0.353	3.33	53.6	18.1	1.53	17.7	0.01	0.02	0.07	126
1	134		10.85	10.83	33.811	25.880	214.3	0.373	3.06	48.9	20.5	1.65	19.7	0.01	0.01	0.05	135
	150	ISL	10.58	10.56	33.884	25.984	204.6	0.406	2.86	45.5	22.7	1.71	21.4	0.01			151
1	154		10.53	10.51	33.899	26.005	202.8	0.414	2.83	45.0	23.1	1.72	21.7	0.01			155
1	181		10.10	10.08	34.054	26.200	184.7	0.467	2.36	37.2	28.2	1.98	24.5	0.01			182
	200	ISL	9.79	9.77	34.093	26.283	177.2	0.501	2.35	36.8	30.2	2.05	25.5	0.01			201
1	216		9.51	9.49	34.106	26.340	172.0	0.529	2.34	36.4	31.8	2.09	26.1	0.01			217
	250	ISL	8.83	8.80	34.152	26.485	158.6	0.585	2.08	31.9	38.3	2.29	28.2	0.01			251
1	257		8.70	8.67	34.160	26.512	156.1	0.596	2.01	30.7	39.7	2.34	28.7	0.01			258
1	300		8.22	8.19	34.188	26.608	147.6	0.661	1.64	24.8	45.7	2.55	30.8	0.01			302
1	346		7.52	7.49	34.180	26.705	138.8	0.727	1.36	20.2							348

RV DAVID STARR JORDAN | CALCOFI CRUISE 9101 | STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 50.9 N	117 32.0 W	09/01/91	0456 UTC	860 -	290 07 kn			1017.5 mb	14.7 C	12.4 C			

CAST	DEPTH -		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN »1/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	15.26	15.26	33.571	24.814	312.4	0.000	5.80	101.6	2.4	0.33	0.0	0.00	0.37	0.12	0
1	1		15.26	15.26	33.571	24.814	312.4	0.003	5.80	101.6	2.4	0.33	0.0	0.00	0.37	0.12	1
	10	ISL	15.26	15.26	33.570	24.814	312.8	0.031	5.80	101.6	2.4	0.31	0.0	0.00	0.37	0.12	10
1	16		15.26	15.26	33.570	24.814	312.9	0.050	5.80	101.6	2.4	0.31	0.0	0.00	0.37	0.12	16
	20	ISL	15.17	15.17	33.564	24.829	311.6	0.063	5.79	101.2	2.5	0.32	0.1	0.01	0.57	0.19	20
	30	ISL	14.86	14.86	33.547	24.884	306.7	0.093	5.76	100.1	2.9	0.37	0.2	0.05	0.97	0.35	30
1	31		14.82	14.82	33.545	24.891	306.1	0.097	5.76	100.0	3.0	0.38	0.2	0.06	1.00	0.37	31
1	40		14.54	14.53	33.534	24.943	301.4	0.124	5.64	97.3	3.4	0.42	0.8	0.15	0.72	0.39	40
1	50		14.15	14.14	33.523	25.017	294.6	0.154	5.46	93.5	4.1	0.52	1.8	0.30	0.41	0.28	50
1	60		13.26	13.25	33.518	25.195	277.8	0.182	4.93	82.9	6.7	0.74	5.7	0.14	0.21	0.22	60
1	70		12.82	12.81	33.497	25.267	271.3	0.210	4.76	79.3	7.6	0.85	7.2	0.05	0.20	0.23	70
	75	ISL	12.70	12.69	33.500	25.292	268.9	0.223	4.70	78.1	8.0	0.88	7.8	0.05	0.19	0.21	75
1	80		12.57	12.56	33.510	25.326	265.9	0.237	4.62	76.5	8.5	0.91	8.5	0.05	0.17	0.18	80
1	95		11.73	11.72	33.585	25.543	245.4	0.275	4.04	65.8	12.0	1.19	13.0	0.02	0.08	0.11	95
	100	ISL	11.53	11.52	33.619	25.607	239.5	0.287	3.86	62.6	13.4	1.28	14.3	0.01	0.06	0.09	100
1	109		11.25	11.24	33.682	25.707	230.1	0.308	3.57	57.6	15.9	1.42	16.4	0.01	0.03	0.07	110
1	124		10.98	10.96	33.770	25.824	219.3	0.342	3.23	51.8	19.0	1.60	18.7	0.01	0.02	0.06	125
	125	ISL	10.96	10.94	33.778	25.834	218.4	0.344	3.20	51.3	19.2	1.61	18.9	0.01	0.02	0.06	126
1	148		10.50	10.48	33.948	26.048	198.5	0.392	2.67	42.4	24.4	1.83	22.5	0.01	0.01	0.04	149
	150	ISL	10.46	10.44	33.956	26.061	197.3	0.396	2.64	41.9	24.7	1.84	22.7	0.01	0.01	0.04	151
1	173		10.07	10.05	34.024	26.182	186.3	0.440	2.43	38.3	27.8	1.98	24.5	0.01	0.00	0.04	174
	200	ISL	9.71	9.69	34.088	26.293	176.2	0.489	2.34	36.6	30.4	2.08	25.8	0.01	0.01	0.04	201
1	204		9.65	9.63	34.094	26.307	174.9	0.496	2.34	36.5	30.8	2.09	25.9	0.01	0.01	0.04	205
1	233		8.88	8.85	34.107	26.442	162.4	0.545	2.36	36.2	35.2	2.17	27.2	0.01			234
	250	ISL	8.65	8.62	34.136	26.501	157.0	0.572	2.16	33.0	38.3	2.26	28.3	0.01			251
1	273		8.44	8.41	34.177	26.566	151.2	0.608	1.81	27.5	42.5	2.40	29.8	0.00			275
	300	ISL	8.14	8.11	34.198	26.628	145.7	0.648	1.55	23.4	46.7	2.52	31.2	0.00		\	302
I	327		7.84	7.81	34.207	26.680	141.1	0.686	1.34	20.1	50.6	2.62	32.5	0.00			329
1	387		7.13	7.09	34.208	26.782	131.8	0.768	0.99	14.6	60.0	2.85	35.4	0.00			389
	400	ISL	6.99	6.95	34.218	26.810	129.3	0.785	0.88	12.9	62.4	2.91	36.0	0.00			403
1	451		6.49	6.45	34.266	26.915	119.7	0.849	0.50	7.3	71.6	3.12	38.2	0.00			454
	500	ISL	6.20	6.16	34.301	26.981	113.9	0.906	0.37	5.3	77.6	3.21	39.2	0.00			503
1	522		6.07	6.02	34.317	27.010	111.3	0.931	0.31	4.5	80.3	3.25	39.7	0.00			526

RV DAVID STARR JORDAN | CALCOFI CRUISE 9101 | STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 40.8 N	117 52.3 W	09/01/91	0930 UTC	586 -	300 11 kn			1017.0 Mb	14.5 C	12.9 C			

CAST	DEPTH -		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN »1/1	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 UM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	15.59	15.59	33.652	24.804	313.4	0.000	5.71	100.7	2.2	0.29	0.0	0.07	0.26	0.09	0
1	2		15.59	15.59	33.652	24.804	313.5	0.006	5.71	100.7	2.2	0.29	0.0	0.07	0.26	0.09	2
	10	ISL	15.61	15.61	33.652	24.800	314.1	0.031	5.71	100.8	2.0	0.28	0.0	0.02	0.26	0.10	10
1	12		15.61	15.61	33.652	24.800	314.2	0.038	5.71	100.8	2.0	0.28	0.0	0.01	0.26	0.10	12
	20	ISL	15.59	15.59	33.653	24.805	313.9	0.063	5.71	100.7	2.0	0.28	0.0	0.00	0.26	0.10	20
1	21		15.59	15.59	33.653	24.805	314.0	0.066	5.71	100.7	2.0	0.28	0.0	0.00	0.26	0.10	21
	30	ISL	15.61	15.61	33.653	24.801	314.6	0.094	5.77	101.8	2.0	0.28	0.0	0.00	0.27	0.10	30
1	31		15.61	15.61	33.653	24.801	314.7	0.097	5.78	102.0	2.0	0.28	0.0	0.00	0.27	0.10	31
1	41		15.62	15.61	33.652	24.799	315.2	0.129	5.70	100.6	2.0	0.28	0.0	0.00	0.26	0.10	41
1	50		15.61	15.60	33.656	24.804	315.0	0.157	5.69	100.4	2.2	0.29	0.0	0.01	0.30	0.13	50
1	59		15.08	15.07	33.619	24.893	306.8	0.185	5.60	97.8	2.4	0.34	0.4	0.10	0.37	0.16	59
1	70		12.95	12.94	33.416	25.178	279.7	0.217	5.27	88.0	5.2	0.65	4.2	0.15	0.29	0.20	70
	75	ISL	12.24	12.23	33.408	25.310	267.2	0.231	5.01	82.4	7.0	0.80	6.9	0.12	0.22	0.20	75
1	83		11.42	11.41	33.441	25.488	250.3	0.252	4.61	74.5	9.8	1.02	11.0	0.05	0.12	0.19	83
1	98		10.85	10.84	33.497	25.634	236.7	0.288	4.28	68.3	12.8	1.23	14.2	0.02	0.08	0.12	98
	100	ISL	10.81	10.80	33.529	25.666	233.7	0.293	4.16	66.4	13.6	1.27	14.9	0.02	0.07	0.11	100
1	117		10.60	10.59	33.822	25.932	208.8	0.331	3.16	50.3	20.2	1.64	20.3	0.01	0.02	0.06	118
	125	ISL	10.46	10.45	33.893	26.012	201.4	0.347	2.92	46.3	22.3	1.74	21.7	0.01	0.02	0.05	126
1	141		10.14	10.12	33.965	26.123	191.1	0.378	2.71	42.7	25.5	1.86	23.3	0.01	0.01	0.04	142
	150	ISL	9.88	9.86	33.971	26.172	186.6	0.395	2.72	42.6	26.7	1.89	23.9	0.01	0.01	0.04	151
1	170		9.39	9.37	33.973	26.255	179.1	0.432	2.79	43.3	28.9	1.93	24.9	0.01	0.00	0.04	171
1	200		9.42	9.40	34.097	26.347	170.9	0.485	2.36	36.6	32.1	2.09	26.4	0.01	0.00	0.03	201
1	228		8.42	8.40	34.033	26.455	160.8	0.531	2.64	40.1	36.1	2.08	27.5	0.01			229
	250	ISL	8.07	8.04	34.049	26.521	154.8	0.566	2.51	37.8	39.6	2.18	28.7	0.01			'251
1	267		7.94	7.91	34.078	26.563	151.1	0.592	2.29	34.4	42.4	2.28	29.7	0.01			269
	300	ISL	7.68	7.65	34.134	26.645	143.7	0.640	1.79	26.7	48.5	2.49	31.7	0.01			302
1	321		7.55	7.52	34.168	26.691	139.7	0.670	1.47	21.9	52.1	2.62	32.9	0.01			333
1	380		7.17	7.13	34.206	26.775	132.4	0.750	1.02	15.1	59.0	2.83	34.8	0.00			382
	400	ISL	7.03	6.99	34.219	26.805	129.8	0.777	0.89	13.1	61.6	2.90	35.6	0.00			403
1	444		6.71	6.67	34.246	26.870	124.0	0.832	0.64	9.3	67.3	3.04	37.2	0.01			447
	500	ISL	6.34	6.29	34.274	26.941	117.8	0.900	0.47	6.8	73.9	3.14	38.6	0.14			503
1	513		6.26	6.21	34.281	26.957	116.4	0.915	0.43	6.2	75.4	3.16	38.9	0.17			516

RV DAVID STARR JORDAN | CALCOFI CRUISE 9101 | STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 30.8 N	118 12.7 W	09/01/91	1349 UTC	1636 m	340 05	kn		1017.0 mh	14.9 C	13.9 C		

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	15.78	15.78	33.580	24.706	322.8	0.000	5.70	100.9	2.6	0.37	0.0	0.01	0.22	0.07	0
1	1	15.78	15.78	33.580	24.706	322.8	0.003	5.70	100.9	2.6	0.37	0.0	0.01	0.22	0.07	1
	10 ISL	15.79	15.79	33.579	24.703	323.3	0.032	5.70	100.9	2.7	0.34	0.1	0.08	0.22	0.07	10
1	17	15.80	15.80	33.578	24.700	323.8	0.055	5.70	100.9	2.7	0.31	0.1	0.12	0.22	0.07	17
	20 ISL	15.80	15.80	33.578	24.701	323.9	0.065	5.70	100.9	2.7	0.31	0.1	0.10	0.22	0.07	20
1	30	15.78	15.78	33.577	24.705	323.8	0.097	5.70	100.9	2.5	0.30	0.1	0.01	0.22	0.08	30
1	40	15.78	15.77	33.574	24.703	324.3	0.129	5.70	100.9	2.5	0.29	0.0	0.01	0.23	0.08	40
1	49	14.23	14.22	33.397	24.903	305.5	0.158	5.76	98.7	3.6	0.39	0.7	0.12	0.59	0.35	49
	50 ISL	14.11	14.10	33.387	24.920	303.8	0.161	5.75	98.3	3.7	0.40	0.8	0.12	0.59	0.35	50
1	60	13.12	13.11	33.335	25.082	288.6	0.190	5.56	93.1	4.8	0.54	2.8	0.08	0.41	0.31	60
1	69	12.10	12.09	33.322	25.270	270.9	0.216	5.29	86.7	6.5	0.73	6.2	0.04	0.24	0.22	69
	75 ISL	11.73	11.72	33.318	25.3315	264.7	0.232	5.18	84.2	7.4	0.81	7.6	0.03	0.20	0.19	75
1	79	11.57	11.56	33.319	25.36(5	261.9	0.242	5.11	82.8	8.0	0.86	8.3	0.03	0.19	0.18	79
1	94	11.07	11.06	33.377	25.502	249.2	0.281	4.74	76.0	10.8	1.06	11.6	0.02	0.12	0.14	94
	100 ISL	10.90	10.89	33.411	25.559	243.9	0.295	4.57	73.0	12.0	1.14	12.9	0.04	0.10	0.12	100
1	109	10.60	10.59	33.482	25.667	233.8	0.317	4.29	68.1	14.3	1.26	15.1	0.06	0.07	0.09	110
1	124	9.88	9.87	33.669	25.936	208.5	0.350	3.71	58.0	20.0	1.54	19.6	0.03	0.02	0.04	12?i
	125 ISL	9.86	9.85	33.679	25.947	207.4	0.352	3.68	57.6	20.3	1.55	19.8	0.03	0.02	0.04	126
1	148	9.56	9.54	33.853	26.133	190.2	0.398	3.11	48.4	25.5	1.79	23.1	0.01	0.01	0.04	14«l
	150 ISL	9.51	9.49	33.866	26.151	188.5	0.402	3.06	47.5	26.0	1.81	23.3	0.01	0.01	0.04	151
1	174	8.91	8.89	33.983	26.339	170.9	0.445	2.63	40.3	31.3	1.95	25.6	0.07	0.00	0.04	175
	200 ISL	8.76	8.74	34.017	26.350	166.6	0.489	2.65	40.5	33.0	1.97	26.3	0.02	0.00	0.03	201
1	205	8.74	8.72	34.018	26.394	166.3	0.497	2.65	40.5	33.2	1.97	26.4	0.01	0.00	0.03	2015
1	233	8.27	8.25	34.048	26.490	157.5	0.542			38.1	2.41 U	28.1	0.01			231
	250 ISL	8.00	7.97	34.052	26.533	153.6	0.569	2.40	36.1	40.7	2.15	29.1	0.01			251
1	274	7.71	7.68	34.068	26.589	148.6	0.605	2.26	33.8	44.3	2.30	30.4	0.01			276
	300 ISL	7.67	7.64	34.155	26.663	142.0	0.643	1.67	24.9	49.5	2.54	32.0	0.01			302
1	330	7.63	7.60	34.241	26.737	135.6	0.684	1.03	15.4	55.1	2.78	33.6	0.01			332
1	389	7.14	7.10	34.212	26.7B4	131.7	0.763	0.98	14.5	60.0	2.86	35.3	0.01			391
	400 ISL	7.04	7.00	34.214	26.800	130.3	0.778	0.93	13.7	61.4	2.88	35.7	0.01			403
1	455	6.59	6.55	34.241	26.882	123.0	0.847	0.64	9.3	68.8	3.02	37.4	0.00			458
	500 ISL	6.31	6.26	34.270	26.942	117.7	0.901	0.49	7.1	74.0	3.12	38.7	0.03			503
1	523	6.17	6.12	34.285	26.972	115.0	0.928	0.41	5.9	76.6	3.17	39.3	0.05			527

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RV DAVID STARR JORDAN | CALCOFI CRUISE 9101 | STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 20.8 N	118 33.2 W	09/01/91	1801 UTC	1344 m	170 13 kn	190 01 07	6	1016.9 mb	14.2 C	14.2 C	26n 02	8/8 NS

CAST	DEPTH a	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/l	OXYGEN	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS dlb
	0 ISL	15.87	15.87	33.557	24.668	326.4	0.000	5.67	100.5	2.2	0.30	0.0	0.00	0.19	0.06	0
1	2	15.87	15.87	33.557	24.668	326.4	0.007	5.67	100.5	2.2	0.30	0.0	0.00	0.19	0.06	2
	10 ISL	15.89	15.89	33.574	24.677	325.8	0.033	5.68	100.8	2.1	0.29	0.0	0.00	0.19	0.06	10
1	17	15.91	15.91	33.593	24.687	325.1	0.055	5.69	101.0	2.0	0.29	0.0	0.00	0.20	0.06	17
	20 ISL	15.91	15.91	33.593	24,687	325.2	0.065	5.69	101.0	2.0	0.29	0.0	0.00	0.20	0.06	20
	30 ISL	15.89	15.89	33.593	24.692	325.0	0.098	5.68	100.8	2.2	0.30	0.0	0.00	0.20	0.06	30
1	32	15.89	15.89	33.593	24.692	325.1	0.104	5.68	100.8	2.2	0.30	0.0	0.00	0.20	0.06	32
1	42	15.89	15.88	33.592	24.692	325.4	0.137	5.64	100.1	2.1	0.29	0.0	0.00	0.21	0.07	42
	50 ISL	14.74	14.73	33.443	24.830	312.4	0.162	5.79	100.3	2.5	0.34	0.3	0.03	0.54	0.29	50
1	53	14.15	14.14	33.381	24.907	305.1	0.171	5.82	99.6	2.9	0.38	0.4	0.04	0.63	0.36	53
1	61	12.62	12.61	33.286	25.142	282.8	0.195	5.61	92.9	4.6	0.60	3.4	0.05	0.39	0.31	61
1	71	11.73	11.72	33.379	25.383	260.1	0.222	5.00	81.3	7.6	0.87	8.4	0.03	0.24	0.22	71
	75 ISL	11.60	11.59	33.393	25.418	256.9	0.232	4.91	79.6	8.2	0.93	9.3	0.02	0.21	0.20	75
1	80	11.48	11.47	33.412	25.455	253.5	0.245	4.81	77.8	9.1	0.99	10.2	0.02	0.19	0.18	80
1	95	10.52	10.51	33.601	25.773	223.4	0.281	3.98	63.1	15.8	1.38	16.6	0.02	0.05	0.07	95
	100 ISL	10.45	10.44	33.637	25.813	219.7	0.292	3.84	60.8	16.7	1.43	17.4	0.02	0.04	0.06	100
1	111	10.37	10.36	33.682	25.862	215.2	0.316	3.66	57.9	18.0	1.50	18.3	0.02	0.03	0.05	112
	125 ISL	9.78	9.77	33.703	25.979	204.4	0.345	3.58	55.9	21.0	1.62	20.4	0.01	0.01	0.04	126
1	126	9.73	9.72	33.705	25.989	203.4	0.347	3.57	55.7	21.2	1.63	20.6	0.01	0.01	0.04	127
1	150	9.28	9.26	33.881	26.200	183.7	0.394	3.06	47.3	27.0	1.87	23.9	0.01	0.00	0.05	151
1	176	8.94	8.92	34.015	26.360	169.1	0.440	2.75	42.2	31.8	1.98	26.1	0.01	0.01	0.04	177
	200 ISL	8.90	8.88	34.082	26.419	163.9	0.480	2.50	38.4	34.3	2.10	26.9	0.01	0.00	0.03	201
1	205	8.88	8.86	34.089	26.428	163.2	0.488	2.45	37.6	34.8	2.12	27.1	0.01	0.00	0.03	206
1	235	8.23	8.21	34.098	26.535	153.3	0.535	2.27	34.3	40.6	2.27	29.2	0.00			236
	250 ISL	7.88	7.85	34.081	26.574	149.7	0.558	2.26	33.9	43.3	2.31	30.1	0.00			251
1	276	7.43	7.40	34.064	26.626	145.0	0.596	2.18	32.3	47.3	2.37	31.5	0.00			278
	300 ISL	7.51	7.48	34.122	26.660	142.2	0.631	1.82	27.1	49.4	2.49	32.1	0.00			302
1	331	7.74	7.71	34.218	26.703	138.8	0.674	1.26	18.8	52.1	2.68	32.9	0.01			333
1	389	7.25	7.21	34.299	26.837	126.8	0.751	0.56	8.3	62.6	3.02	35.9	0.00			391
	400 ISL	7.15	7.11	34.302	2:6.854	125.3	0.765	0.54	8.0	64.1	3.05	36.3	0.00			403
1	454	6.62	6.58	34.300	36.925	119.0	0.831	0.43	6.3	71.0	3,15	38.1	0.00			457
	500 ISL	6.20	6.16	34.316	26.993	112.8	0.885	0.34	4.9	77.5	3.22	39.4	0.00			503
1	523	5.99	5.94	34.325	27.026	109.7	0.910	0.29	4.2	80.7	3.26	40.1	0.00			527

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	NAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 10.9 N	118 53.6 W	09/01/91	2321 UTC	1370 II	310 16 kn	290 04 04	1	1015.5 Bb	15.0 C	13.0 C	11»	3/8	CU

CAST	DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRESS
	-		DEG C	DEG C	PSS 78	THETA			ml/l	PCT	uM/l	UM/l	uM/l	UM/l	ug/l	ug/l	db
	0	ISL	14.37	14.37	33.533	24.977	297.0	0.000	5.96	102.5	2.7	0.32	0.1	0.00	0.75	0.18	0
1	1		14.37	14.37	33.533	24.977	297.0	0.003	5.96	102.5	2.7	0.32	0.1	0.00	0.75	0.18	1
	10	ISL	14.33	14.33	33.532	24.985	296.5	0.030	5.95	102.3	2.8	0.32	0.2	0.01	0.78	0.22	10
1	16		14.28	14.28	33.534	24.997	295.5	0.047	5.94	102.0	2.9	0.33	0.2	0.02	0.81	0.26	16
	20	ISL	14.23	14.23	33.540	25.012	294.2	0.059	5.92	101.5	2.9	0.34	0.3	0.03	0.81	0.27	20
	30	ISL	14.09	14.09	33.555	25.053	290.5	0.088	5.87	100.4	3.0	0.36	0.7	0.05	0.82	0.28	30
1	31		14.08	14.08	33.557	25.057	290.2	0.091	5.87	100.4	3.0	0.36	0.7	0.05	0.82	0.28	31
1	41		12.74	12.73	33.440	25.237	273.3	0.120	5.43	90.2	6.2	0.65	5.2	0.28	0.34	0.18	41
	50	ISL	12.04	12.03	33.392	25.335	264.2	0.144	5.20	85.1	8.1	0.82	7.9	0.20	0.28	0.15	50
1	51		11.96	11.95	33.389	25.347	263.0	0.146	5.17	84.5	8.3	0.84	8.2	0.19	0.27	0.15	51
1	61		10.67	10.66	33.377	25.572	241.8	0.172	4.67	74.2	12.4	1.15	13.3	0.03	0.14	0.13	61
1	71		10.16	10.15	33.447	25.714	228.4	0.195	4.35	68.4	15.1	1.31	16.0	0.02	0.07	0.10	71
	75	ISL	10.09	10.08	33.501	25.768	223.3	0.204	4.16	65.3	16.6	1.39	17.2	0.02	0.06	0.09	75
1	80		10.04	10.03	33.571	25.831	217.4	0.215	3.92	61.5	18.4	1.48	18.6	0.01	0.05	0.09	80
1	95		9.67	9.66	33.697	25.992	202.5	0.247	3.55	55.3	22.1	1.63	21.0	0.01	0.02	0.06	95
	100	ISL	9.61	9.60	33.742	26.037	198.3	0.257	3.45	53.7	22.9	1.66	21.6	0.01	0.02	0.06	101
1	110		9.52	9.51	33.824	26.116	191.0	0.276	3.27	50.8	24.5	1.72	22.6	0.01	0.01	0.05	111
1	125		9.25	9.24	33.906	26.224	181.0	0.304	3.08	47.6	27.5	1.84	24.1	0.01	0.00	0.04	126
1	150		8.80	8.78	34.006	26.374	167.1	0.348	2.86	43.8	32.0	1.95	25.9	0.01	0.00	0.04	151
1	175		8.56	8.54	34.049	26.446	160.8	0.389	2.68	40.8	35.1	2.04	27.1	0.01	0.00	0.04	176
	200	ISL	8.25	8.23	34.086	26.522	153.9	0.428	2.39	36.1	39.5	2.19	28.7	0.01	0.00	0.04	201
1	204		8.20	8.18	34.090	26.533	152.9	0.434	2.35	35.5	40.2	2.21	28.9	0.01	0.00	0.04	205
1	233		8.05	8.03	34.100	26.563	150.5	0.478	2.23	33.6	42.7	2.28	29.7	0.01			234
	250	ISL	7.95	7.92	34.116	26.591	148.1	0.503	2.06	30.9	44.6	2.36	30.4	0.01			251
1	273		7.75	7.72	34.136	26.636	144.1	0.537	1.81	27.1	47.8	2.48	31.6	0.01			275
	300	ISL	7.32	7.29	34.124	26.689	139.4	0.575	1.64	24.3	52.6	2.59	33.3	0.01			302
1	328		6.87	6.84	34.115	26.744	134.3	0.614	1.46	21.4	57.9	2.71	35.0	0.01			330
1	387		6.56	6.52	34.192	26.847	125.2	0.690	0.84	12.2	66.7	2.98	37.5	0.01			390
	400	ISL	6.52	6.48	34.206	26.863	123.8	0.706	0.76	11.0	68.0	3.02	37.8	0.01			403
1	453		6.34	6.30	34.256	26.927	118.5	0.771	0.52	7.5	72.7	3.14	38.7	0.01			456
	500	ISL	6.07	6.03	34.295	26.992	112.6	0.825	0.39	5.6	78.5	3.23	39.7	0.01			503
1	524		5.93	5.88	34.315	27.026	109.7	0.852	0.32	4.6	81.4	3.27	40.2	0.01			528

RV DAVID STARR JORDAN

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	NAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 0.7 N	119 13.9 W	10/01/91	0430 UTC	1685 -	320 13	kn		1018.2 mb	14.1 C	12.2 C			

CAST	DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRESS
	-		DEG C	DEG C	PSS 78	THETA			Bl/l	PCT	UM/l	UM/l	uM/l	UM/l	ug/l	ug/l	db
	0	ISL	14.59	14.59	33.618	24.996	295.2	0.000	5.89	101.8	2.8	0.32	0.1	0.02	0.80	0.23	0
1	1		14.59	14.59	33.618	24.996	295.2	0.003	5.89	101.8	2.8	0.32	0.1	0.02	0.80	0.23	1
	10	ISL	14.58	14.58	33.618	24.998	295.2	0.030	5.88	101.6	2.8	0.32	0.2	0.02	0.81	0.25	10
1	15		14.57	14.57	33.617	25.000	295.2	0.044	5.87	101.4	2.8	0.33	0.2	0.02	0.81	0.26	15
	20	ISL	14.49	14.49	33.612	25.013	294.1	0.059	5.86	101.1	2.9	0.34	0.4	0.03	0.81	0.26	20
	30	ISL	14.32	14.32	33.600	25.040	291.8	0.088	5.84	100.4	3.2	0.36	0.7	0.06	0.82	0.26	30
1	31		14.30	14.30	33.599	25.043	291.5	0.091	5.84	100.3	3.2	0.36	0.7	0.06	0.82	0.26	31
1	41		13.11	13.10	33.455	25.176	279.1	0.120	5.55	93.0	5.1	0.58	3.9	0.29	0.49	0.26	41
	50	ISL	11.88	11.87	33.362	25.341	263.5	0.144	5.18	84.5	8.0	0.85	8.2	0.16	0.25	0.21	50
1	52		11.62	11.61	33.354	25.383	259.6	0.149	5.08	82.4	8.8	0.91	9.3	0.12	0.21	0.20	52
1	61		10.71	10.70	33.412	25.592	239.9	0.172	4.56	72.6	12.8	1.17	13.7	0.04	0.14	0.14	61
1	71		10.58	10.57	33.537	25.712	228.6	0.195	4.13	65.6	15.7	1.28	16.0	0.03	0.13	0.13	71
	75	ISL	10.44	10.43	33.566	25.759	224.2	0.204	4.02	63.6	16.8	1.36	16.9	0.03	0.12	0.12	75
1	80		10.23	10.22	33.601	25.823	218.3	0.215	3.88	61.2	18.2	1.46	18.1	0.03	0.10	0.11	80
1	95		9.52	9.51	33.778	26.080	194.1	0.246	3.31	51.4	24.4	1.70	22.3	0.01	0.03	0.06	95
	100	ISL	9.47	9.46	33.813	26.115	190.8	0.256	3.22	50.0	25.2	1.74	22.8	0.01	0.03	0.06	100
1	110		9.37	9.36	33.859	26.168	186.0	0.275	3.14	48.6	26.1	1.79	23.3	0.01	0.02	0.06	111
	125	ISL	9.27	9.26	33.895	26.212	182.1	0.302	3.08	47.6	27.3	1.83	24.0	0.01	0.01	0.05	126
1	126		9.26	9.25	33.897	26.215	181.8	0.304	3.08	47.6	27.4	1.83	24.0	0.01	0.01	0.05	127
1	150		8.87	8.85	33.984	26.346	169.8	0.346	2.87	44.0	31.6	1.95	25.7	0.01	0.01	0.03	151
1	176		8.66	8.64	34.028	26.414	163.8	0.390	2.74	41.8	33.7	2.02	26.7	0.01	0.01	0.04	177
	200	ISL	8.39	8.37	34.071	26.489	157.1	0.428	2.48	37.6	37.8	2.15	28.1	0.01	0.01	0.04	201
1	206		8.32	8.30	34.081	26.508	155.4	0.438	2.41	36.5	39.0	2.18	28.5	0.01	0.01	0.04	207
1	234		8.03	8.01	34.103	26.569	150.0	0.480	2.14	32.2	43.3	2.28	30.0	0.01			235
	250	ISL	7.88	7.85	34.113	26.599	147.3	0.504	2.00	30.0	45.5	2.35	30.7	0.01			251
1	275		7.66	7.63	34.130	26.645	143.3	0.541	1.77	26.4	48.9	2.47	31.9	0.01			277
	300	ISL	7.43	7.40	34.152	26.695	138.8	0.576	1.49	22.1	53.2	2.61	33.2	0.01			302
1	330		7.16	7.13	34.179	26.755	133.5	0.617	1.16	17.1	58.4	2.77	34.8	0.01			332
1	391		6.72	6.68	34.219	26.847	125.5	0.696	0.78	11.4	66.3	2.99	37.1	0.00			394
	400	ISL	6.65	6.61	34.227	26.862	124.0	0.707	0.72	10.5	67.7	3.02	37.4	0.00			403
1	455		6.26	6.22	34.279	26.955	115.7	0.773	0.42	6.1	75.7	3.18	38.9	0.00			458
	500	ISL	6.06	6.02	34.302	26.999	112.0	0.824	0.34	4.9	79.6	3.22	39.6	0.00			503
1	526		5.94	5.89	34.315	27.025	109.8	0.853	0.30	4.3	81.9	3.25	40.0	0.00			530

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	HAVES	WEA	BAROMETER	DRY	WET*"	SECCHI/FOREL	CLD AMT	TYPE
31 50.9 N	119 34.2 W	10/01/91	0852 UTC	1785 ▪	340 13 *n			1019.9 *mb*	14.0 C	12.8 C			

CAST	DEPTH ▪		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN »1/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.52	14.52	33.551	24.959	298.7	0.000	5.88	101.5	2.6	0.34	0.0	0.01	0.54	0.16	0
1	1		14.52	14.52	33.551	24.959	298.7	0.003	5.88	101.5	2.6	0.34	0.0	0.01	0.54	0.16	1
	10	ISL	14.53	14.53	33.550	24.956	299.2	0.030	5.88	101.5	2.6	0.34	0.0	0.01	0.53	0.15	10
1	16		14.53	14.53	33.550	24.956	299.4	0.048	5.88	101.5	2.6	0.33	0.0	0.01	0.53	0.15	16
	20	ISL	14.53	14.53	33.551	24.957	299.4	0.060	5.88	101.5	2.6	0.33	0.0	0.01	0.54	0.16	20
	30	ISL	14.52	14.52	33.560	24.967	298.8	0.090	5.88	101.5	2.7	0.32	0.0	0.01	0.56	0.17	30
1	31		14.52	14.52	33.562	24.968	298.7	0.093	5.88	101.5	2.7	0.32	0.0	0.01	0.56	0.17	31
1	41		14.32	14.31	33.535	24.990	296.9	0.123	5.91	101.5	2.9	0.34	0.1	0.03	0.68	0.24	41
	50	ISL	13.62	13.61	33.466	25.082	288.4	0.149	5.82	98.5	3.3	0.42	0.8	0.28	0.66	0.33	50
1	51		13.55	13.54	33.459	25.091	287.5	0.152	5.81	98.2	3.3	0.43	0.9	0.31	0.66	0.34	51
1	61		13.45	13.44	33.462	25.114	285.6	0.180	5.75	97.0	3.8	0.47	1.3	0.42	0.48	0.28	61
1	71		12.99	12.98	33.467	25.210	276.7	0.208	5.44	90.9	5.4	0.62	4.0	0.33	0.27	0.19	71
	75	ISL	12.48	12.47	33.447	25.294	268.7	0.219	5.20	85.9	7.2	0.77	6.5	0.25	0.23	0.17	75
1	80		11.80	11.79	33.424	25.405	258.2	0.233	4.90	79.8	9.6	0.96	9.7	0.15	0.21	0.15	80
1	95		10.67	10.66	33.446	25.6215	237.4	0.270	4.41	70.1	14.2	1.27	14.6	0.06	0.14	0.13	95
	100	ISL	10.45	10.44	33.464	25.67IJ	232.5	0.281	4.30	68.0	15.2	1.33	15.6	0.05	0.11	0.11	100
1	110		10.15	10.14	33.515	25.770	224.0	0.304	4.10	64.5	17.0	1.44	17.2	0.03	0.05	0.08	111
1	125		9.80	9.79	33.625	25.915	210.4	0.337	3.73	58.2	20.2	1.61	19.9	0.02	0.02	0.06	126
1	150		9.22	9.20	33.838	26.176	186.0	0.386	3.10	47.8	27.2	1.88	24.1	0.01	0.01	0.05	151
1	175		8.73	8.71	33.971	26.358	169.1	0.431	2.77	42.3	32.5	2.05	26.7	0.01	0.01	0.05	176
	200	ISL	8.28	8.26	34.045	26.485	157.4	0.472	2.62	39.6	37.5	2.14	28.1	0.01	0.00	0.04	201
1	205		8.21	8.19	34.054	26.503	155.7	0.479	2.60	39.3	38.4	2.15	28.3	0.01	0.00	0.04	206
1	234		8.04	8.02	34.080	26.549	151.8	0.524	2.31	34.8	41.6	2.28	29.6	0.01			235
	250	ISL	7.93	7.90	34.103	26.584	148.8	0.548	2.10	31.5	44.1	2.37	30.4	0.01			251
1	275		7.75	7.72	34.138	26.638	144.0	0.585	1.77	26.5	48.3	2.52	31.8	0.01			277
	300	ISL	7.52	7.49	34.155	26.685	139.9	0.620	1.52	22.6	52.3	2.64	33.0	0.01			302
1	330		7.25	7.22	34.170	26.735	135.4	0.662	1.27	18.8	56.7	2.77	34.4	0.00			332
1	390		6.86	6.82	34.212	26.822	127.9	0.740	0.85	12.5	64.2	2.98	36.6	0.00			392
	400	ISL	6.79	6.75	34.219	26.837	126.5	0.753	0.79	11.6	65.6	3.01	36.9	0.00			403
1	455		6.38	6.34	34.255	26.921	119.1	0.821	0.50	7.2	72.9	3.16	38.6	0.00			458
	500	ISL	6.10	6.06	34.275	26.973	114.5	0.873	0.39	5.6	77.9	3.24	39.7	0.00			503
1	525		5.94	5.89	34.287	27.003	111.8	0.902	0.33	4.7	80.7	3.28	40.3	0.00			529

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 30.7 N	120 14.8 W	10/01/91	1530 UTC	3926 ▪	360 10 kn	340 04 06 1		1022.1 0b	15.0 C	13.0 C	22a 02	5/8	CU

CAST	DEPTH ▪		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN «1/1	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS Clb
	0	ISL	15.01	15.01	33.523	24.832	310.8	0.000	5.78	100.7	2.5	0.34	0.1	0.01	0.28	0.09	0
1	1		15.01	15.01	33.523	24.832	310.8	0.003	5.78	100.7	2.5	0.34	0.1	0.01	0.28	0.09	1
	10	ISL	15.05	15.05	33.519	24.821	312.1	0.031	5.79	101.0	2.5	0.33	0.1	0.01	0.27	0.09	10
1	11		15.05	15.05	33.518	24,820	312.2	0.034	5.79	101.0	2.5	0.33	0.1	0.01	0.27	0.09	11
1	20		15.04	15.04	33.520	24.824	312.1	0.062	5.77	100.6	2.4	0.33	0.0	0.00	0.28	0.09	20
	30	ISL	15.04	15.04	33.521	24.825	312.3	0.094	5.78	100.8	2.4	0.33	0.1	0.01	0.28	0.09	30
1	31		15.04	15.04	33.521	24.825	312.4	0.097	5.78	100.8	2.4	0.33	0.1	0.01	0.28	0.09	31
1	41		14.98	14.97	33.508	24.828	312.4	0.128	5.79	100.8	2.4	0.33	0.1	0.01	0.31	0.10	41
1	50		14.76	14.75	33.471	24.847	310.8	0.156	5.80	100.5	2.4	0.34	0.1	0.01	0.43	0.18	50
1	61		14.49	14.48	33.441	24.882	307.8	0.190	5.79	99.8	2.5	0.37	0.2	0.06	0.35	0.17	61
1	72		14.44	14.43	33.439	24.892	307.2	0.224	5.78	99.5	2.5	0.37	0.2	0.06	0.36	0.17	72
	75	ISL	14.26	14.25	33.427	24.920	304.5	0.233	5.76	98.8	2.7	0.39	0.5	0.08	0.32	0.16	75
1	86		13.31	13.30	33.369	25.071	290.4	0.266	5.64	94.8	3.7	0.50	2.2	0.13	0.14	0.12	86
1	100		11.89	11.88	33.296	25.289	269.7	0.305	5.37	87.6	6.1	0.75	6.2	0.03	0.10	0.11	100
1	121		10.69	10.68	33.354	25.552	245.1	0.359	4.88	77.6	10.3	1.05	11.5	0.02	0.05	0.06	122
	125	ISL	10.72	10.71	33.440	25.613	239.3	0.369	4.52	71.9	12.3	1.17	13.2	0.02	0.04	0.06	126
1	146		10.88	10.86	33.851	25.906	212.1	0.416	2.67	42.7	22.9	1.79	21.1	0.01	0.01	0.04	147
	150	ISL	10.85	10.83	33.882	25.935	209.4	0.424	2.64	42.2	23.3	1.81	21.4	0.01	0.01	0.04	151
1	176		10.46	10.44	33.963	25.067	197.3	0.477	2.43	38.6	26.1	1.94	23.3	0.01	0.00	0.03	177
	200	ISL	10.01	9.99	34.019	26.188	186.2	0.523	2.44	38.4	28.5	2.01	24.5	0.01	0.00	0.03	201
1	207		9.87	9.85	34.031	26.222	183.2	0.536	2.44	38.2	29.1	2.02	24.8	0.01	0.00	0.03	208
1	236		9.39	9.36	34.065	26.328	173.5	0.588	2.49	38.6	31.6	2.07	25.8	0.01			237
	250	ISL	9.16	9.13	34.087	26.382	168.5	0.612	2.41	37.2	33.6	2.13	26.6	0.01			251
1	275		8.77	8.74	34.124	26.473	160.2	0.653	2.21	33.8	37.8	2.25	28.1	0.00			277
	300	ISL	8.38	8.35	34.134	26.542	154.0	0.692	2.04	30.9	41.7	2.33	29.5	0.00			302
1	331		7.94	7.91	34.139	26.612	147.6	0.739	1.81	27.2	46.5	2.43	31.1	0.00			333
1	390		7.41	7.37	34.174	26.716	138.3	0.823	1.27	18.8	55.1	2.71	33.9	0.00			392
	400	ISL	7.31	7.27	34.182	26.737	136.5	0.837	1.18	17.5	56.8	2.76	34.4	0.00			402
1	456		6.76	6.72	34.227	26.849	126.3	0.911	0.71	10.4	66.3	2.99	37.2	0.00			459
	500	ISL	6.49	6.44	34.262	26.912	120.7	0.965	0.51	7.4	71.8	3.11	38.3	0.00			503
1	526		6.33	6.28	34.283	26.950	117.3	0.996	0.39	5.6	75.1	3.18	39.0	0.00			529

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET"	SECCHI/FOREL	CLD AMT	TYPE
31 10.9 N	120 55.2 W	11/01/91	0110 UTC	3924 -	350 09 kn	340 04 05	2	1023.9 «b	14.1 C	12.0 C	24a	02	8/8	SC

CAST	DEPTH -		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN «1/1	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
1	0		15.64	15.64	33.521	24.692	324.1	0.000	5.74	101.3	3.0	0.31	0.0	0.00	0.18	0.05	0
1	10		15.66	15.66	33.520	24.687	324.9	0.032	5.73	101.2	3.0	0.31	0.0	0.00	0.18	0.05	10
	20	ISL	15.37	15.37	33.453	24.700	323.9	0.065	5.76	101.1	3.0	0.32	0.0	0.00	0.21	0.06	20
1	21		15.33	15.33	33.443	24.701	323.9	0.068	5.77	101.1	3.0	0.32	0.0	0.00	0.22	0.06	21
	30	ISL	14.79	14.79	33.319	24.723	322.0	0.097	5.85	101.4	3.0	0.34	0.0	0.00	0.32	0.09	30
1	31		14.73	14.73	33.307	24.727	321.7	0.100	5.86	101.4	3.0	0.34	0.0	0.00	0.33	0.10	31
1	41		14.43	14.42	33.289	24.777	317.2	0.132	5.89	101.3	3.1	0.35	0.0	0.00	0.51	0.20	41
1	50		13.80	13.79	33.279	24.901	305.6	0.160	6.00	101.8	3.2	0.36	0.0	0.01	0.57	0.25	50
1	62		13.81	13.80	33.371	24.970	299.3	0.197	5.82	98.9	3.5	0.41	0.5	0.14	0.27	0.16	62
1	70		13.14	13.13	33.280	25.036	293.3	0.220	5.79	96.9	3.9	0.46	1.4	0.20	0.19	0.15	70
	75	ISL	12.75	12.74	33.262	25.098	287.4	0.235	5.74	95.3	4.3	0.51	2.3	0.15	0.16	0.14	75
1	85		11.98	11.97	33.259	25.243	273.7	0.263	5.58	91.1	5.4	0.63	4.7	0.03	0.11	0.12	85
1	99		10.91	10.90	33.249	25.431	256.1	0.300	5.31	84.8	7.9	0.85	8.6	0.02	0.08	0.08	99
	100	ISL	10.87	10.86	33.249	25.438	255.4	0.303	5.31	84.7	8.0	0.86	8.7	0.02	0.08	0.08	100
1	119		10.28	10.27	33.296	25.577	242.5	0.350	5.22	82.2	9.5	0.94	10.5	0.01	0.05	0.07	120
	125	ISL	10.10	10.09	33.333	25.636	236.9	0.364	5.07	79.5	10.8	1.01	11.8	0.01	0.04	0.06	126
1	144		9.60	9.58	33.493	25.845	217.4	0.407	4.42	68.7	16.3	1.30	16.6	0.01	0.02	0.04	145
	150	ISL	9.49	9.47	33.565	25.919	210.5	0.420	4.17	64.6	18.4	1.40	18.2	0.01	0.01	0.04	151
1	175		9.12	9.10	33.837	26.192	185.0	0.470	3.29	50.7	26.4	1.75	23.5	0.00	0.00	0.03	176
	200	ISL	8.75	8.73	33.935	26.327	172.5	0.514	3.17	48.4	30.3	1.84	25.1	0.00	0.00	0.02	201
1	204		8.69	8.67	33.941	26.341	171.3	0.521	3.15	48.1	30.7	1.84	25.2	0.00	0.00	0.02	205
1	235		8.28	8.26	33.976	26.432	163.1	0.573	3.00	45.4	34.2	1.94	26.8	0.01			236
	250	ISL	8.08	8.05	33.997	26.478	158.8	0.597	2.86	43.1	36.9	2.02	27.8	0.01			251
1	274		7.77	7.74	34.031	26.551	152.2	0.635	2.60	38.9	41.7	2.15	29.4	0.00			276
	300	ISL	7.48	7.45	34.051	26.609	147.0	0.673	2.31	34.3	46.3	2.29	31.0	0.00			302
1	330		7.19	7.16	34.072	26.666	141.9	0.717	1.95	28.8	51.4	2.45	32.7	0.01			332
1	390		6.82	6.78	34.148	26.777	132.0	0.799	1.13	16.5	61.4	2.79	36.0	0.00			392
	400	ISL	6.74	6.70	34.158	26.796	130.4	0.812	1.04	15.2	63.1	2.83	36.4	0.00			402
1	454		6.35	6.31	34.203	26.883	122.5	0.880	0.68	9.8	71.5	3.01	38.3	0.00			457
	500	ISL	6.15	6.11	34.239	26.938	117.8	0.936	0.51	7.3	76.2	3.10	39.2	0.01			503
1	522		6.05	6.00	34.256	26.964	115.6	0.961	0.43	6.2	78.4	3.15	39.6	0.01			525

RV DAVID STARR JORDAN CALCOFI CRUISE 9101 STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 50.5 N	121 35.4 W	11/01/91	0713 UTC	4201 -	020 06 Icn			1025.3 *ab*	14.0 C	11.1 C			

CAST	DEPTH -		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN »1/1	OXY PCT	SIO3 UM/1	PO4 UM/1	MO3 UM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	15.45	15.45	33.448	24.678	325.4	0.000	5.74	100.9	2.8	0.33	0.0	0.00	0.22	0.08	0
1	2		15.45	15.45	33.448	24.678	325.5	0.007	5.74	100.9	2.8	0.33	0.0	0.00	0.22	0.08	2
	10	ISL	15.44	15.44	33.445	24.678	325.7	0.033	5.75	101.0	2.7	0.32	0.0	0.00	0.22	0.07	10
1	11		15.44	15.44	33.445	24.678	325.7	0.036	5.75	101.0	2.7	0.32	0.0	0.00	0.22	0.07	11
	20	ISL	15.44	15.44	33.445	21.678	326.0	0.065	5.74	100.8	2.7	0.33	0.0	0.00	0.23	0.07	20
1	21		15.44	15.44	33.445	24.678	326.0	0.068	5.74	100.8	2.7	0.33	0.0	0.00	0.23	0.07	21
	30	ISL	15.44	15.44	33.448	24.681	326.0	0.098	5.74	100.8	2.7	0.33	0.0	0.00	0.22	0.08	30
1	31		15.44	15.44	33.448	24.681	326.1	0.101	5.74	100.8					0.22	0.08	31
1	41		15.45	15.44	33.445	24.677	326.8	0.134	5.75	101.0	2.6	0.32	0.0	0.00	0.22	0.07	41
	50	ISL	15.43	15.42	33.445	24.682	326.6	0.163	5.74	100.8	2.6	0.33	0.0	0.00	0.22	0.07	50
1	51		15.43	15.42	33.445	24.682	326.7	0.166	5.74	100.8	2.6	0.33	0.0	0.00	0.22	0.07	51
1	61		15.08	15.07	33.372	24.703	325.0	0.199	5.78	100.7	2.6	0.34	0.0	0.00	0.33	0.13	61
1	71		14.75	14.74	33.325	24.738	321.9	0.231	5.79	100.2	2.6	0.35	0.0	0.01	0.38	0.19	71
	75	ISL	14.57	14.56	33.342	24.789	317.0	0.244	5.78	99.7	2.7	0.36	0.2	0.06	0.33	0.19	75
1	87		14.12	14.11	33.439	24.959	301.1	0.281	5.73	98.0	3.2	0.40	0.8	0.22	0.15	0.15	87
	100	ISL	14.01	14.00	33.544	25.063	291.6	0.320	5.65	96.5	3.3	0.39	1.0	0.18	0.14	0.12	100
1	102		13.99	13.98	33.557	25.078	290.3	0.325	5.63	96.1	3.3	0.39	1.0	0.17	0.14	0.12	102
1	121		12.96	12.94	33.565	25.293	270.2	0.379	5.41	90.4	4.7	0.55	4.0	0.03	0.09	0.09	122
	125	ISL	12.74	12.72	33.575	25.344	265.3	0.389	5.34	88.8	5.2	0.59	4.7	0.03	0.08	0.08	126
1	146		11.58	11.56	33.614	25.595	241.8	0.443	4.97	80.7	8.2	0.80	8.6	0.01	0.04	0.05	147
	150	ISL	11.30	11.28	33.593	25.630	238.5	0.452	4.95	79.8	8.8	0.84	9.3	0.01	0.04	0.05	151
1	177		9.71	9.69	33.508	25.839	218.7	0.514	4.71	73.3	14.3	1.17	14.5	0.01	0.02	0.04	178
	200	ISL	9.31	9.29	33.694	26.050	199.0	0.562	3.83	59.2	21.8	1.55	20.4	0.01	0.01	0.02	201
1	207		9.25	9.23	33.765	26.115	192.9	0.576	3.56	55.0	24.2	1.66	22.1	0.01	0.01	0.02	208
1	237		8.55	8.53	33.940	26.363	169.8	0.630	3.16	48.1	31.5	1.87	25.3	0.01			238
	250	ISL	8.33	8.30	33.979	26.427	163.8	0.652	3.03	45.9	34.1	1.95	26.4	0.01			251
1	278		7.91	7.88	34.019	26.521	155.2	0.696	2.81	42.1	39.3	2.08	28.2	0.01			279
	300	ISL	7.53	7.50	34.024	26.580	149.7	0.730	2.73	40.6	43.3	2.15	29.3	0.01			302
1	331		7.02	6.99	34.016	26.645	143.7	0.776	2.61	38.3	49.0	2.25	30.8	0.01			333
1	391		6.32	6.29	34.027	26.748	134.4	0.859	1.99	28.8	60.6	2.56	34.6	0.01			393
	400	ISL	6.23	6.19	34.032	26.763	133.0	0.871	1.88	27.1	62.5	2.61	35.2	0.01		,	402
1	456		5.79	5.75	34.087	26.862	123.9	0.943	1.19	17.0	73.5	2.89	38.5	0.01			459
	500	ISL	5.72	5.68	34.175	26.941	117.0	0.996	0.72	10.3	79.3	3.07	39.8	0.01			503
1	526		5.68	5.64	34.228	26.988	112.9	1.026	0.45	6.4	82.8	3.17	40.6	0.01			529

RV DAVID STARR JORDAN | CALCOFI CRUISE 9101 | STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
30 30.8 N	122 15.* W	11/01/91	1318 UTC	4154 n	330 08 Hn			1025.0 *Mb*	14.5 C	12.2 C		

CAST	DEPTH ·		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN »1/1	OXY PCT	SIO3 uM/1	PO4 UM/1	NO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	17.18	17.18	33.942	24.661	327.1	0.000	5.53	100.8	2.5	0.26	0.1	0.00	0.17	0.06	0
1	1		17.18	17.18	33.942	24.661	327.1	0.003	5.53	100.8	2.5	0.26	0.1	0.00	0.17	0.06	1
	10	ISL	17.19	17.19	33.942	24.659	327.6	0.033	5.53	100.9	2.5	0.25	0.0	0.00	0.18	0.07	10
1	16		17.19	17.19	33.942	24.659	327.8	0.052	5.52	100.7	2.4	0.25	0.0	0.00	0.18	0.07	16
	20	ISL	17.19	17.19	33.942	24.659	327.9	0.066	5.52	100.7	2.3	0.25	0.0	0.00	0.18	0.06	20
	30	ISL	17.19	17.19	33.941	24.659	328.3	0.098	5.51	100.5	2.2	0.25	0.0	0.00	0.17	0.05	30
1	31		17.19	17.18	33.941	24.659	328.3	0.102	5.51	100.5	2.2	0.25	0.0	0.00	0.17	0.05	31
1	40		17.21	17.20	33.942	24.655	329.0	0.131	5.51	100.5	2.2	0.25	0.0	0.00	0.17	0.05	40
1	50		17.21	17.20	33.941	24.655	329.3	0.164	5.52	100.7	2.2	0.25	0.0	0.01	0.17	0.05	50
1	61		17.19	17.18	33.942	24.661	329.2	0.200	5.52	100.7	2.2	0.25	0.0	0.01	^0.17	0.06	61.
1	71		17.21	17.20	33.942	24.656	329.9	0.233	5.53	100.9	2.2	0.25	0.0	0.01	0.17	0.06	71
	75	ISL	17.22	17.21	33.942	24.654	330.3	0.246	5.51	100.5	2.2	0.25	0.0	0.01	0.17	0.05	75
1	79		17.22	17.21	33.942	24.654	330.4	0.260	5.49	100.2	2.2	0.25	0.0	0.01	0.17	0.05	79
1	96		15.81	15.80	33.762	24.843	312.8	0.314	5.63	99.8	2.5	0.29	0.0	0.18	0.25	0.18	96
	100	ISL	15.82	15.80	33.810	24.877	309.7	0.327	5.60	99.3	2.5	0.29	0.1	0.17	0.23	0.17	100
1	110		15.84	15.82	33.923	24.960	302.1	0.357	5.48	97.3	2.5	0.28	0.4	0.14	0.15	0.13	110
	125	ISL	14.87	14.85	33.810	25.038	290.2	0.402	5.40	94.0	2.9	0.35	1.3	0.04	0.11	0.10	126
1	126		14.78	14.76	33.799	25.099	289.2	0.405	5.40	93.8	2.9	0.36	1.4	0.03	0.11	0.10	127
1	150		12.91	12.89	33.762	25.456	255.4	0.470	5.18	86.5	5.3	0.56	5.2	0.01	0.05	0.06	151
1	176		11.40	11.38	33.640	25.649	237.3	0.534	4.81	77.8	9.1	0.86	9.8	0.01	0.03	0.04	177
	200	ISL	10.31	10.29	33.814	25.977	206.3	0.587	3.90	61.6	17.8	1.36	17.4	0.01	0.01	0.02	201
1	206		10.09	10.07	33.871	26.060	198.6	0.600	3.67	57.8	20.1	1.48	19.2	0.01	0.00	0.02	207
1	234		9.41	9.38	33.987	26.364	179.6	0.652	3.32	51.5	26.1	1.71	22.6	0.01			235
	250	ISL	9.14	9.11	34.024	26.336	172.9	0.681	3.20	49.4	28.6	1.79	23.7	0.01			251
1	276		8.72	8.69	34.050	26.4,23	164.9	0.725	3.07	46.9	32.4	1.89	25.2	0.01			277
	300	ISL	8.18	8.15	34.041	26.499	157.9	0.763	2.95	44.5	36.8	1.99	26.9	0.01			302
1	331		7.51	7.48	34.020	26.580	150.2	0.811	2.78	41.3	42.7	2.13	29.2	0.01			333
1	390		6.82	6.78	34.030	26.1584	140.8	0.897	2.24	32.8	52.4	2.42	32.7	0.01			392
	400	ISL	6.67	6.63	34.030	26.704	138.9	0.911	2.15	31.3	54.7	2.47	33.4	0.01			402
1	456		5.88	5.84	34.044	26.817	128.3	0.986	1.61	23.0	68.0	2.74	36.9	0.01			459
	500	ISL	5.61	5.57	34.089	26.886	122.0	1.041	1.16	16.5	75.5	2.93	38.7	0.00			503
1	525		5.45	5.41	34.115	26.926	118.4	1.071	0.91	12.9	79.8	3.04	39.8	0.00			528

RV DAVID STARR JORDAN | CALCOFI CRUISE 9101 | STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
30 10.9 N	122 55.3 W	11/01/91	1859 UTC	3889 ·	010 11 kn	020 02 06	1	1028.1 mb	17.0 C	14.0 C	32» 01	5/8 CU

CAST	DEPTH ·		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN »1/1	OXY PCT	SIO3 uM/1	PO4 UM/1	NO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	17.34	17.34	33.979	24.651	328.0	0.000	5.49	100.5	2.7	0.26	0.1	0.00	0.18	0.06	0
1	1		17.34	17.34	33.979	2^.651	328.0	0.003	5.49	100.5	2.7	0.26	0.1	0.00	0.18	0.06	1
	10	ISL	17.35	17.35	33.978	241.648	328.6	0.033	5.50	100.7	2.7	0.25	0.1	0.00	0.18	0.06	10
1	15		17.35	17.35	33.977	24.648	328.8	0.049	5.50	100.6	2.7	0.25	0.1	0.00	0.18	0.06	15
	20	ISL	17.34	17.34	33.977	24.650	328.8	0.066	5.50	100.6	2.7	0.25	0.1	0.00	0.18	0.06	20
	30	ISL	17.33	17.33	33.978	21.654	328.8	0.099	5.49	100.4	2.6	0.25	0.1	0.00	0.19	0.07	30
1	36		17.32	17.31	33.979	24.657	328.6	0.118	5.49	100.4	2.6	0.25	0.1	0.00	0.19	0.07	36
	50	ISL	17.34	17.33	33.980	24.654	329.5	0.164	5.50	100.6	2.5	0.25	0.1	0.00	0.19	0.07	50
1	56		17.35	17.34	33.980	24.651	329.9	0.184	5.50	100.6	2.5	0.25	0.1	0.00	0.19	0.07	56
1	72		17.36	17.35	33.980	24.650	330.6	0.237	5.51	100.8	2.5	0.25	0.1	0.00	0.19	0.07	72
	75	ISL	17.35	17.34	33.980	24.652	330.5	0.247	5.51	100.8	2.5	0.25	0.1	0.00	0.19	0.07	75
1	81		17.33	17.32	33.980	24.657	330.2	0.267	5.52	101.0	2.5	0.24	0.1	0.00	0.19	0.06	81
1	91		17.35	17.33	33.981	24.654	330.9	0.300	5.51	100.8	2.5	0.24	0.0	0.00	0.18	0.07	91
	100	ISL	17.34	17.32	33.979	24.655	331.1	0.330	5.50	100.6	2.5	0.24	0.0	0.00	0.19	0.06	100
1	101		17.34	17.32	33.979	24.655	331.1	0.333	5.50	100.6	2.5	0.24	0.0	0.00	0.19	0.06	101
1	111		16.93	16.91	34.003	24.771	320.4	0.365	5.52	100.2	2.5	0.23	0.0	0.09	0.15	0.13	111
	125	ISL	16.55	16.53	34.088	24.925	306.1	0.409	5.45	98.2	2.6	0.24	0.1	0.18	0.14	0.14	126
1	127		16.49	16.47	34.097	24.946	304.1	0.415	5.44	97.9	2.6	0.24	0.1	0.18	0.14	0.14	128
1	142		15.78	15.76	34.046	25.069	292.7	0.460	5.33	94.6	2.7	0.29	0.9	0.05	0.10	0.11	143
	150	ISL	15.20	15.18	33.980	25.148	285.4	0.483	5.29	92.8	3.0	0.34	1.6	0.03	0.08	0.10	151
1	161		14.28	14.26	33.881	25.269	273.9	0.514	5.22	89.8	3.8	0.42	2.9	0.01	0.05	0.08	162
1	181		12.57	12.55	33.752	25.516	250.5	0.567	5.03	83.4	6.4	0.63	6.4	0.01	0.03	0.05	182
	200	ISL	11.13	11.11	33.729	25.767	226.6	0.612	4.65	74.8	11.2	0.95	11.6	0.00	0.02	0.04	201
1	207		10.70	10.68	33.741	25.853	218.4	0.627	4.50	71.7	13.1	1.07	13.5	0.00	0.01	0.03	208
1	236		9.92	9.89	33.854	26.076	197.6	0.688	4.03	63.2	19.1	1.37	17.9	0.00			237
	250	ISL	9.66	9.63	33.930	26.178	188.1	0.715	3.63	56.6	22.9	1.56	20.4	0.00			251
1	276		9.23	9.20	34.054	26.346	172.6	0.762	2.92	45.1	30.1	1.88	24.6	0.00			277
	300	ISL	8.75	8.72	34.087	26.448	163.1	0.802	2.70	41.3	34.9	2.01	26.6	0.00			302
1	334		8.09	8.06	34.087	26.549	153.7	0.856	2.58	38.9	40.6	2.12	28.3	0.00			336
1	393		7.26	7.22	34.087	26.669	142.7	0.943	2.04	30.1	50.9	2.42	32.0	0.00			395
	400	ISL	7.17	7.13	34.087	26.682	141.5	0.953	1.98	29.2	52.1	2.45	32.4	0.00			402
1	457		6.48	6.44	34.089	26.777	132.8	1.031	1.55	22.5	62.1	2.70	35.5	0.00			460
	500	ISL	5.92	5.88	34.092	26.851	125.8	1.087	1.28	18.3	70.9	2.86	37.7	0.00			503
1	528		5.55	5.51	34.096	26.899	121.1	1.121	1.10	15.6	76.7	2.96	39.2	0.00			531

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
29 50.8 N	123 35.2 W	12/01/91	0144 UTC	4118 -	010 08 kD	350 03 08	2	1026.2 mb	15.2 C	12.7 C	27«	8/8	SC

	CAST DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRESS
	-		DEG C	DEG C	PSS 78	THETA			»1/1	PCT	uM/1	UM/1	UM/1	uM/1	ug/1	ug/1	db
	0	ISL	17.44	17.44	33.999	24.642	328.8	0.000	5.50	100.8	2.8	0.26	0.0	0.00	0.16	0.05	0
1	2		17.44	17.44	33.999	24.642	328.9	0.007	5.50	100.8	2.8	0.26	0.0	0.00	0.16	0.05	2
	10	ISL	17.44	17.44	33.999	24.643	329.1	0.033	5.52	101.2	2.8	0.26	0.0	0.00	0.16	0.05	10
1	17		17.43	17.43	33.998	24.645	329.2	0.056	5.54	101.5	2.8	0.25	0.0	0.00	0.16	0.05	17
	20	ISL	17.42	17.42	33.998	24.647	329.0	0.066	5.53	101.3	2.8	0.25	0.0	0.00	0.16	0.05	20
	30	ISL	17.40	17.39	33.997	24.652	329.0	0.099	5.50	100.8	2.8	0.25	0.0	0.00	0.16	0.05	30
1	36		17.39	17.38	33.996	24.653	329.0	0.118	5.48	100.4	2.8	0.25	0.0	0.00	0.16	0.05	36
	50	ISL	17.40	17.39	33.995	24.651	329.7	0.165	5.49	100.6	2.7	0.24	0.0	0.00	0.18	0.06	50
1	58		17.41	17.40	33.995	24.649	330.2	0.191	5.49	100.6	2.6	0.24	0.0	0.00	0.19	0.06	58
1	73		17.41	17.40	33.995	24.649	330.7	0.241	5.49	100.6	2.6	0.24	0.0	0.00	0.19	0.06	73
	75	ISL	17.41	17.40	33.995	24.650	330.8	0.247	5.49	100.6	2.6	0.24	0.0	0.00	0.19	0.06	75
1	82		17.39	17.38	33.993	24.653	330.7	0.270	5.48	100.3	2.6	0.24	0.0	0.00	0.19	0.06	82
1	92		17.40	17.38	33.995	24.653	331.1	0.303	5.49	100.5	2.6	0.24	0.0	0.00	0.20	0.06	92
	100	ISL	17.41	17.39	33.995	24.650	331.5	0.330	5.47	100.2	2.6	0.24	0.0	0.00	0.19	0.06	100
1	102		17.41	17.39	33.995	24.651	331.6	0.337	5.47	100.2	2.6	0.24	0.0	0.00	0.19	0.06	102
1	113		17.01	16.99	33.994	24.745	322.9	0.373	5.50	100.0	2.6	0.24	0.0	0.05	0.21	0.15	113
	125	ISL	16.17	16.15	33.994	24.941	304.5	0.410	5.47	97.8	2.8	0.27	0.2	0.16	0.15	0.12	126
1	127		16.02	16.00	33.995	24.976	301.2	0.416	5.47	97.5	2.9	0.28	0.3	0.17	0.14	0.12	128
1	142		15.40	15.38	33.995	25.115	288.3	0.460	5.33	93.8	3.3	0.33	1.3	0.04	0.09	0.08	143
	150	ISL	14.49	14.47	33.872	25.218	278.6	0.483	5.29	91.4	4.0	0.42	2.6	0.03	0.07	0.07	151
1	162		13.09	13.07	33.697	25.371	264.0	0.516	5.23	87.7	5.3	0.56	4.7	0.01	0.05	0.06	163
1	184		12.19	12.17	33.719	25.563	245.9	0.572	5.06	83.2	7.0	0.67	7.0	0.01	0.03	0.04	185
	200	ISL	11.36	11.33	33.732	25.728	230.4	0.610	4.78	77.3	10.1	0.86	10.3	0.00	0.02	0.03	201
1	208		10.95	10.92	33.745	25.812	222.4	0.628	4.61	73.9	12.0	0.97	12.1	0.00	0.01	0.03	209
1	237		9.87	9.84	33.856	26.085	196.7	0.689	4.05	63.4	19.5	1.37	18.0	0.01			238
	250	ISL	9.56	9.53	33.921	26.188	187.1	0.714	3.76	58.5	23.0	1.52	20.2	0.01			251
1	277		9.06	9.03	34.041	26.363	170.9	0.762	3.21	49.4	29.8	1.79	23.9	0.00			278
	300	ISL	8.65	8.62	34.072	26.452	162.6	0.800	2.95	45.0	34.2	1.94	25.8	0.00			302
1	331		8.21	8.18	34.090	26.533	155.2	0.850	2.60	39.3	39.7	2.13	27.9	0.00			333
1	390		7.77	7.73	34.218	26.699	140.3	0.937	1.23	18.4	52.1	2.68	32.9	0.00			392
	400	ISL	7.71	7.67	34.233	26.720	138.4	0.951	1.09	16.3	53.7	2.74	33.4	0.00			402
1	455		7.33	7.29	34.290	26.820	129.6	1.024	0.59	8.7	61.4	2.99	35.6	0.00			458
	500	ISL	6.90	6.85	34.305	26.892	123.1	1.081	0.44	6.5	67.6	3.10	37.2	0.00			503
1	523		6.68	6.63	34.313	26.928	119.8	1.109	0.37	5.4	70.7	3.16	38.0	0.00			526

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
35 1.3 N	120 55.1 W	22/ 1/91	1945 HJTC	17 *a*	04	1212 - 1748 PST	1216 PST	1748 PST	387.4 mg C/m2

DEPTH B	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXT PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	13.11	33.458	25.177	6.20	103.9	3.4	0.44	0.4	0.10	0.79	0.43	83. A	10.1	9.4	9.8	0.15
12	12.91	33.454	25.214	6.16	102.8	3.5	0.44	0.6	0.12	1.07	0.62	34.	14.8	15.0	14.9	0.15
20	12.91	33.453	25.214	6.14	102.4	3.5	0.46	0.8	0.12	0.96	0.62	16.	10.5	10.8	10.6	0.15
35	12.85	33.455	25.227	6.05	100.8	3.7	0.49	1.2	0.17	0.82	0.68	4.2	2.5	2.7	2.6	0.12
48	12.83	33.454	25.231	6.02	100.2	3.9	0.51	1.5	0.18	0.72	0.53	1.3	1.6	1.6	1.6	0.09
67	11.98	33.407	25.358	5.25	85.8	8.0	0.88	7.4	0.20	0.23	0.27	0.24	0.09	0.07	0.08	0.07

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 3.3 N	122 56.5 W	21/ 1/91	2014 1JTC	13 m	03	1233 - 1751 PST	1232 PST	1751 PST	216.5 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXT PCT	SIO3 UM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	12.44	33.115	25.042	6.27	103.4	3.4	0.49	0.7	0.09	0.74	0.20	79. A	4.8	4.4	4.6	0.12
9	12.36	33.119	25.061	6.25	102.8	3.4	0.48	0.7	0.09	0.77	0.21	35.	9.8	9.8	9.8	0.10
15	12.37	33.127	25.066	6.27	103.2	3.4	0.48	0.7	0.10	0.76	0.25	17.	8.7	8.6	8.7	0.15
26	12.40	33.134	25.065	6.24	102,8	3.4	0.49	0.7	0.11	0.70	0.24	4.6	3.1	2.8	3.0	0.16
36	12.40	33.141	25.071	6.21	102.3	3.4	0.49	0.8	0.12	0.63	0.26	1.4	1.7	1.7	1.7	0.09
51	12.49	33.219	25.115	5.99	98,9	3.7	0.54	1.5	0.38	0.22	0.20	0.24	0.11	0.12	0.11	0.06

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 27.0 N	120 31.4 W	19/ 1/91	1926 UTC	9m	05	1211 - 1747 PST	1213 PST	1746 PST	354.3 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 uM/l	PO4 UM/l	NO3 UM/l	NO2 UM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
0	13.31	33.484	25.157	6.05	101.8	3.8	0.48	0.8	0.11	2.02	0.60	100. A	28.1	27.0	27.6	0.16
5	13.24	33.484	25.172	5.99	100.6	3.8	0.49	0.9	0.14	2.06	0.66	43.	29.0	29.2	29.1	0.13
9	13.22	33.482	25.174	5.92	99.4	3.9	0.52	1.2	0.20	1.67	0.62	22.	20.9	18.6	19.8	0.13
17	13.02	33.479	25.212	5.66	94.7	4.9	0.65	2.7	0.47	0.92	0.50	5.5	3.2	2.7	3.0	0.10
24	12.90	33.479	25.236	5.59	93.2	5.2	0.67	3.2	0.54	0.81	0.46	1.7	1.4	1.4	1.4	0.10
35	12.85	33.480	25.247	5.43	90.5	5.9	0.73	4.0	0.66	0.53	0.38	0.26	0.09	0.09	0.09	0.09

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 9.0 N	123 13.2 W	20/ 1/91	1954 UTC	13 m	04	1225 - 1803 PST	1224 PST	1802 PST	312.8 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	12.57	33.187	25.073	6.22	102.9	4.2	0.53	1.2	0.15	0.87	0.28	79. A	6.5	6.0	6.3	0.12
9	12.38	33.184	25.108	6.25	102.9	4.2	0.51	1.2	0.15	0.91	0.30	35.	13.1	13.2	13.2	0.13
16	12.39	33.184	25.106	6.26	103.1	4.2	0.51	1.2	0.15	0.95	0.30	15.	12.0	12.2	12.1	0.15
26	12.39	33.185	25.107	6.23	102.6	4.0	0.51	1.2	0.15	0.96	0.33	4.6	4.6	4.6	4.6	0.12
37	12.37	33.185	25.111	6.23	102.6	4.0	0.52	1.2	0.15	0.95	0.34	1.3	2.5	2.5	2.5	0.08
52	12.46	33.199	25.105	6.14	101.3	4.1	0.54	1.5	0.22	0.61	0.29	0.22	0.28	0.27	0.28	0.06

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 43.7 N	120 26.7 W	18/ 1/91	2013 UTC	11 m	04	1227 - 1743 PST	1212 PST	1742 PST	548.5 mg C/m2

DEPTH D	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCI	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/»3) 1	2	MEAN	DARK
2	13.39	33.466	25.127	6.17	104.0	3.9	0.45	0.8	0.07	2.27	0.52	76. A	19.3	17.9	18.6	0.20
8	13.16	33.468	25.175	6.19	103.8	3.9	0.45	0.8	0.08	2.87	0.71	33.	30.2	32.0	31.1	0.23
13	13.17	33.469	25.174	6.13	102.8	3.8	0.45	0.9	0.08	3.50	0.99	16.	24.5	25.2	24.8	0.18
23	13.17	33.470	25.175	6.08	102.0	3.7	0.46	1.0	0.09	3.24	1.04	4.0	5.6	5.8	5.7	0.14
31	13.13	33.473	25.186	5.83	97.7	3.7	0.46	1.1	0.09	3.43	0.95	1.3	4.8	4.5	4.6	0.10
43	13.16	33.473	25.180	5.87	98.4	4.5	0.55	2.5	0.15	2.83	0.84	0.25	0.20	0.20	0.20	0.09

A) INCUBATION LIGHT INTENSITIES WERE 90, 38, 18, 4.9, 1.6, 0.27 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 85 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 22.0 N	122 38.4 W	17/ 1/91	1936 UTC	17 m	03	1220 - 1755 PST	1220 PST	1755 PST	192.9 mg C/m2

DEPTH -	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/1	OXY PCT	SI:O3 uM/1	PO4 UM/1	NO3 UM/1	NO2 uM/1	CHL ug/1	PHAEO ug/1	LIGHT PCT	UPTAKE (Big C/m3) 1	2	MEAN	DARK
1	14.03	33.341	24.900	6.00	102.4	2.9	0.42	0.2	0.01	0.60	0.19	91. A	2.8	2.5	2.7	0.07
10	13.92	33.341	24.923	5.99	102.0	2.9	0.42	0.1	0.01	0.62	0.19	41.	7.2	7.0	7.1	0.08
18	13.94	33.340	24.918	6.01	102.3	2.7	0.42	0.1	0.02	0.61	0.20	20.	6.1	6.2	6.1	0.08
33	13.94	33.341	24.919	5.98	101.8	2.6	0.42	0.1	0.01	0.63	0.21	5.1	1.9	1.6	1.8	0.08
45	13.92	33.341	24.924	5.99	102.0	2.6	0.43	0.1	0.01	0.67	0.23	1.7	1.3	1.4	1.4	0.05
65	12.62	33.209	25.082	5.71	94.5	4.2	0.64	3.2	0.13	0.25	0.16	0.28	0.09	0.07	0.08	0.04
83	10.78	33.156	25.381	5.33	84.8	7.7	0.99	9.2	0.02	0.12	0.12					
98	9.91	33.432	25.745	4.44	69.4	15.7	1.41	16.1	0.01	0.04	0.07					
118	9.54	33.595	25.934	3.76	58.4	21.0	1.68	20.7	0.01	0.02	0.05					
138	9.16	33.751	26.118	3.40	52.4	25.2	1.77	23.1	0.00	0.01	0.03					
168	8.65	33.918	26.329	3.09	47.1	30.7	1.95	25.6	0.01	0.00	0.03					
201	8.30	34.025	26.467	2.41	36.5	37.7	2.21	28.9	0.00	0.00	0.03					

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 29.4 N	119 19.0 W	15/ 1/91	1951 UTC	20 m	03	1206 - 1740 PST	1206 PST	1740 PST	231.2 mg C/m2

DEPTH a	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/1	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 UM/1	NO2 UM/1	CHL ug/1	PHAEO ug/1	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
0	14.47	33.538	24.959	5.96	102.7	2.4	0.35	0.0	0.00	0.32	0.11	100. A	2.2	2.0	2.1	0.13
12	14.42	33.537	24.970	5.96	102.6	2.4	0.35	0.0	0.00	0.34	0.11	40.	4.9	4.8	4.9	0.12
23	14.31	33.527	24.985	5.99	102.9	2.3	0.35	0.0	0.00	0.43	0.17	17.	5.8	5.7	5.8	0.12
38	13.35	33.477	25.145	5.59	94.1	3.1	0.59	2.5	0.14	0.89	0.47	5.4	3.9	3.7	3.8	0.08
54	12.32	33.497	25.363	4.92	81.1	8.7	0.93	7.7	0.29	0.77	0.42	1.6	1.4	1.4	1.4	0.05
76	11.05	33.474	25.580	4.40	70.6	13.1	1.27	13.5	0.05	0.26	0.33	0,29	0.15	0.09	0.12	0.04

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 59.4 N	120 20.9 W	16/ 1/91	1924 UTC	14 m	04	1201 - 1749 PST	1211 PST	1749 PST	298.3 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/1	OXY PCT	SIO3 uM/1	PO4 UM/1	NO3 UM/1	NO2 uM/1	CHL ug/1	PHAEO ug/1	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.13	33.556	25.045	5.90	101.0	3.7	0.41	0.6	0.05	0.94	0.30	80. A	3.1	2.7	2.9	0.08
10	14.11	33.557	25.050	5.90	101.0	3.7	0.41	0.5	0.05	0.98	0.33	33.	11.7	11.3	11.5	0.09
17	14.12	33.557	25.048	5.90	101.0	3.5	0.41	0.5	0.05	0.96	0.33	16.	11.4	11.4	11.4	0.08
27	14.12	33.557	25.049	5.88	100.6	3.5	0.40	0.5	0.05	0.96	0.33	5.2	5.1	5.3	5.2	0.09
40	14.09	33.553	25.052	5.87	100.4	3.5	0.40	0.5	0.05	0.94	0.34	1.2	2.6	2.5	2.6	0.06
55	13.01	33.378	25.136	5.73	95.7	4.5	0.58	2.6	0.20	0.33	0.19	0.24	0.21	0.19	0.20	0.05

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 15.1 N	118 15.0 W	14/ 1/91	1942 UTC	21 -	02	1202 - 1733 PST	1202 PST	1731 PST	174.1 mg C/m2

DEPTH -	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 UM/1	CHL ug/1	PHAEO ug/1	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	15.10	33.522	24.812	5.81	101.4	2.8	0.37	0.0	0.00	0.22	0.06	93. A	2.2	2.1	2.1	0.09
12	15.00	33.522	24.834	5.83	101.6	2.7	0.37	0.0	0.00	0.24	0.07	42.	3.7	3.7	3.7	0.09
22	14.90	33.524	24.857	5.84	101.5	2.7	0.37	0.0	0.02	0.24	0.08	20.	3.5	3.5	3.5	0.08
40	13.20	33.347	25.074	5.59	93.7	4.5	0.60	2.4	0.18	0.78	0.45	5.4	3.1	3.4	3.2	0.07
57	12.62	33.426	25.250	5.05	83.7	6.5	0.81	5.9	0.07	0.39	0.30	1.6	0.82	0.75	0.79	0.04
81	11.60	33.535	25.528	4.13	67.0	12.5	1.25	13.2	0.04	0.07	0.13	0.27	0.03	0.03	0.03	0.03

A) INCUBATION LIGHT INTENSITIES WERE 90, 38, 18, 4.9, 1.6, 0.27 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 90 65

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 15.5 N	120 17.8 W	13/ 1/91	1925 UTC	17 n	03	1212 - 1741 PST	1211 PST	1741 PST	151.7 mg C/m2

DEPTH -	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
0	14.61	33.477	24.883	5.88	101.6	2.7	0.37	0.0	0.00	0.48	0.18	100. A	1.1	1.0	1.1	0.06
10	14.59	33.476	24.886	5.87	101.4	2.5	0.36	0.0	0.00	0.48	0.17	41.	5.0	4.9	5.0	0.05
18	14.63	33.476	24.878	5.86	101.3	2.4	0.35	0.0	0.00	0.48	0.16	20.	4.6	4.9	4.8	0.05
33	14.60	33.476	24.885	5.85	101.1	2.4	0.35	0.0	0.00	0.50	0.17	5.1	2.2	2.2	2.2	0.07
46	14.57	33.476	24.892	5.86	101.2	2.4	0.34	0.1	0.01	0.49	0.18	1.6	0.94	1.0	0.97	0.05
63	14.28	33.457	24.939	5.84	100.2	2.5	0.37	0.2	0.09	0.40	0.17	0.34	0.09	0.07	0.08	0.04
78	13.55	33.417	25.059	5.71	96.5	3.2	0.45	1.4	0.33	0.12	0.12					
92	12.59	33.337	25.188	5.56	92.0	4.5	0.59	3.6	0.09	0.12	0.12					
106	11.10	33.310	25.445	5.14	82.4	8.0	0.89	9.0	0.01	0.08	0.10					
121	10.19	33.325	25.615	4.96	78.0	10.7	1.05	12.1	0.01	0.05	0.08					
141	9.76	33.483	25.810	4.17	65.0	17.3	1.44	18.1	0.01	0.03	0.05					
167	9.35	33.840	26.157	3.07	47.5	26.4	1.84	23.5	0.00	0.01	0.04					
198	8.72	33.924	26.323	3.27	49.9	29.2	1.84	24.4	0.00	0.00	0.03					

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 5.0 N	122 39.7 W	12/ 1/91	1942 UTC	24 -	02	1212 - 1802 PST	1219 PST	1750 PST	70.5 mg C/m2

DEPTH -	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	HO3 uM/l	NO2 uM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	16.53	33.717	24.640	5.60	100.7	3.0	0.29	0.0	0.00	0.19	0.07	94. A	1.0	0.98	1.0	0.04
14	16.49	33.715	24.649	5.60	100.6	2.8	0.29	0.0	0.00	0.13	0.05	41.	1.9	1.8	1.9	0.03
26	16.52	33.722	24.647	5.60	100.7	2.8	0.29	0.0	0.00	0.18	0.08	19.	1.6	1.5	1.6	0.04
45	16.59	33.751	24.654	5.59	100.6	2.8	0.28	0.0	0.00	0.18	0.07	5.6	0.59	0.50	0.54	0.04
63	16.62	33.753	24.649	5.58	100.5	2.8	0.28	0.0	0.00	0.19	0.08	1.8	0.16	0.21	0.19	0.04
90	16.73	33.767	24.636	5.59	100.9	2.8	0.27	0.0	0.00	0.18	0.07	0.32	0.02	0.00	0.01	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 20.8 N	118 33.2 W	9/ 1/91	1947 UTC	26 m	02	1205 - 1738 PST	1201 PST	1734 PST	135.1 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 UM/l	PO4 UM/l	NO3 uM/l	NO2 UM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	15.85	33.558	24.673	5.70	101.0	1.9	0.30	0.0	0.00	0.21	0.07	94. A	1.0	1.1	1.1	0.08
15	15.84	33.561	24.678	5.71	101.2	1.9	0.30	0.0	0.00	0.21	0.06	41.	2.0	1.9	2.0	0.09
28	15.92	33.594	24.686	5.69	101.0	1.9	0.29	0.0	0.00	0.22	0.07	19.	2.0	2.0	2.0	0.08
50	15.29	33.504	24.758	5.74	100.6	2.2	0.32	0.1	0.01	0.52	0.27	5.2	2.3	2.5	2.4	0.04
70	11.67	33.513	25.498	5.13	83.4	7.1	0.86	7.9	0.02	0.24	0.21	1.6	0.59	0.54	0.56	0.03
99	10.81	33.515	25.656	4.30	68.6	13.3	1.24	14.5	0.01	0.08	0.09	0.29	0.01	0.02	0.01	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 30.7 N	120 14.8 W	10/ 1/91	1943 UTC	22 m	02	1212 - 1754 PST	1208 PST	1751 PST	120.9 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 uM/l	PO4 *uM/X*	NO3 uM/l	NO2 UM/X	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
0	14.96	33.505	24.829	5.80	101.0	2.6	0.34	0.0	0.00	0.29	0.09	100. A	1.8	1.7	1.8	0.07
13	14.93	33.507	24.837	5.80	100.9	2.3	0.33	0.0	0.00	0.28	0.09	40.	3.1	3.0	3.0	0.07
23	14.96	33.507	24.831	5.79	100.8	2.6	0.33	0.0	0.00	0.28	0.08	20.	2.6	2.7	2.7	0.05
42	14.92	33.503	24.838	5.81	101.0	2.6	0.33	0.0	0.00	0.31	0.10	5.3	1.2	1.0	1.1	0.04
58	14.59	33.459	24.875	5.79	100.0	2.6	0.36	0.1	0.03	0.35	0.16	1.7	0.71	0.73	0.72	0.03
85	13.34	33.366	25.062	5.66	95.2	3.8	0.50	2.0	0.17	0.14	0.13	0.27	0.06	0.07	0.06	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 9101 — STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 10.9 N	122 55.3 W	11/ 1/91	1940 UTC	32 m	01	1210 - 1803 PST	1220 PST	1759 PST	112.9 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 UM/l	PO4 UM/l	NO3 UM/l	NO2 UM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	17.35	33.975	24.646	5.50	100.7	2.5	0.26	0.1	0.00	0.18	0.06	95. A	1.1	1.0	1.1	0.05
19	17.32	33.978	24.656	5.50	100.6	2.5	0.25	0.1	0.00	0.18	0.06	40.	2.0	2.0	2.0	0.04
35	17.34	33.975	24.649	5.49	100.4	2.5	0.26	0.1	0.00	0.18	0.07	19.	1.9	1.9	1.9	0.04
63	17.34	33.975	24.650	5.51	100.8	2.5	0.26	0.1	0.00	0.19	0.06	4.9	0.69	0.62	0.66	0.05
84	17.34	33.976	24.652	5.52	101.0	2.5	0.25	0.1	0.00	0.18	0.07	1.8	0.29	0.29	0.29	0.03
122	16.50	34.092	24.940	5.43	97.8	2.7	0.25	0.3	0.17	0.12	0.16	0.29	0.06	0.07	0.07	0.02

A) INCUBATION LIGHT INTENSITIES WERE 90, 38, 18, 4.9, 1.6, 0.27 PERCENT RESPECTIVELY.

CalCOFI Cruise 9101

MACROZOOPLANKTON BIOMASS
Net Mesh Size: 0.505

Line	Sta.	Position		Date	Time (PST)		Water Volume	Max. Tow	Volume per 1000 m	Strained
				Mo/Day	Start	End	Strained (m)	Depth (m)	Total (cm)	Small (cm)
77	49	35 05.4N	120 46.5W	1/22	1337	1343	123	55	73	73
77	51	35 01.3N	120 55.1W	1/22	1047	1109	422	219	154	154
77	55	34 53.3N	121 11.9W	1/22	0739	0801	438	210	75	75
77	60	34 43.4N	121 32.9W	1/22	0332	0354	422	210	128	111
77	70	34 23.3N	122 14.8W	1/21	2107	2129	443	214	167	167
77	80	34 03.3N	122 56.5W	1/21	1328	1350	442	210	84	84
77	90	33 43.3N	123 38.0W	1/21	0717	0739	452	210	197	197
77	100	33 23.2N	124 19.4W	1/21	0049	0111	442	219	68	54
80	51	34 27 .0N	120 31.4W	1/19	1050	1057	134	65	119	119
80	55	34 19.0N	120 48.1W	1/19	1433	1455	440	216	57	57
80	60	34 09.0N	121 09.0W	1/19	1855	1917	451	213	71	71
80	70	33 49.0N	121 50.6W	1/20	0107	0129	433	211	416	208
80	80	33 29 .0N	122 32.0W	1/20	0709	0731	442	214	163	163
80	90	33 09.0N	123 13.2W	1/20	1308	1330	426	216	225	84
80	100	32 49.0N	123 54.4W	1/20	1840	1902	465	207	82	82
82	47	34 16.5N	120 01.5W	1/19	0648	0710	431	209	102	102
83	40.6	34 13.5N	119 24.7W	1/19	0159	0202	51	22	177	177
83	42	34 10.7N	119 30.5W	1/18	2326	2337	206	97	97	97
83	51	33 52.7N	120 07.9W	1/18	1722	1732	200	80	70	70
83	55	33 43.7N	120 26.7W	1/18	1332	1354	444	208	97	97
83	60	33 34.7N	120 45.4W	1/18	0920	0942	443	215	287	287
83	70	33 14.6N	121 26.6W	1/18	0315	0336	440	206	59	59
83	80	32 54.7N	122 07.6W	1/17	2104	2126	438	218	57	57
83	90	32 34.8N	122 48.7W	1/17	1440	1502	442	213	118	61
87	33	33 53.4N	118 29.5W	1/15	0213	0218	101	42	119	119
87	35	33 49.3N	118 37.9W	1/15	0441	0503	437	208	50	50
87	40	33 39.4N	118 58.6W	1/15	0843	0905	421	218	26	26
87	45	33 29.4N	119 19.0W	1/15	1320	1342	479	196	50	50
87	50	33 19.4N	119 39.7W	1/15	1821	1827	132	45	45	45
87	55	33 09.4N	120 00.4W	1/16	0827	0849	462	211	54	54
87	60	32 59.4N	120 20.9W	1/16	1333	1355	456	212	46	46
87	70	32 39.4N	121 02.0W	1/16	1950	2012	455	219	64	31
87	80	32 19.6N	121 42.9W	1/17	0155	0217	455	210	53	53
87	90	31 59.4N	122 23.6W	1/17	0757	0819	440	219	36	36
90	28	33 29.1N	117 46.1W	1/14	1730	1740	209	97	57	57
90	30	33 25.1N	117 54.2W	1/14	1957	2019	420	213	52	52
90	35	33 15.1N	118 15.0W	1/14	1102	1124	449	214	33	33
90	37	33 11.0N	118 23.3W	1/14	0814	0837	451	210	29	29
90	45	32 55.1N	118 56.0W	1/14	0246	0308	432	218	150	150
90	53	32 39.3N	119 28.8W	1/13	2105	2127	436	219	51	51
90	60	32 25.1N	119 57.6W	1/13	1511	1533	479	203	38	38
90	80	31 45.1N	121 18.8W	1/13	0248	0311	475	202	36	36
90	90	31 25.0N	121 59.1W	1/12	1855	1917	508	204	39	39
90	100	31 05 .0N	122 39.7W	1/12	1210	1232	469	207	13	13
90	U0	30 45.1N	123 19.9W	1/12	0552	0614	441	214	20	20
90	120	30 25.2N	123 59.9W	1/12	0020	0041	434	212	30	30
93	26.7	32 57.4N	117 18.3W	1/08	1615	1622	132	56	45	45
93	28	32 54.8N	117 23.6W	1/08	1849	1911	403	220	62	62
93	30	32 50.9N	117 32.0W	1/08	2159	2221	454	212	53	53
93	35	32 40.8N	117 52.3W	1/09	0234	0256	430	221	516	516
93	40	32 30.8N	118 12.7W	1/09	0638	0700	451	216	251	251
93	45	32 20.8N	118 33.2W	1/09	1056	1118	460	213	304	252
93	50	32 10.9N	118 53.6W	1/09	1704	1726	448	216	60	60
93	55	32 00.7N	119 13.9W	1/09	2130	2153	436	217	66	66
93	60	31 50.9N	119 34.2W	1/10	0145	0207	452	209	77	77
93	70	31 30.7N	120 14.8W	1/10	0843	0905	465	213	88	34
93	80	31 10.9N	120 55.2W	1/10	1757	1819	467	211	56	56
93	90	30 50.5N	121 35.4W	1/11	0004	0026	451	212	82	60
93	100	30 30.8N	122 15.4W	1/11	0602	0624	447	211	47	47
93	110	30 10.9N	122 55.3W	1/11	1210	1231	425	219	14	14
93	120	29 50.8N	123 35.2W	1/11	1822	1844	428	216	54	28

FIGURES

Cruise 9103

1. CalCOFI Cruise 9103, track and station positions:.

2. Horizontal distribution of dynamic height anomaly (0 over 500 m). 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.

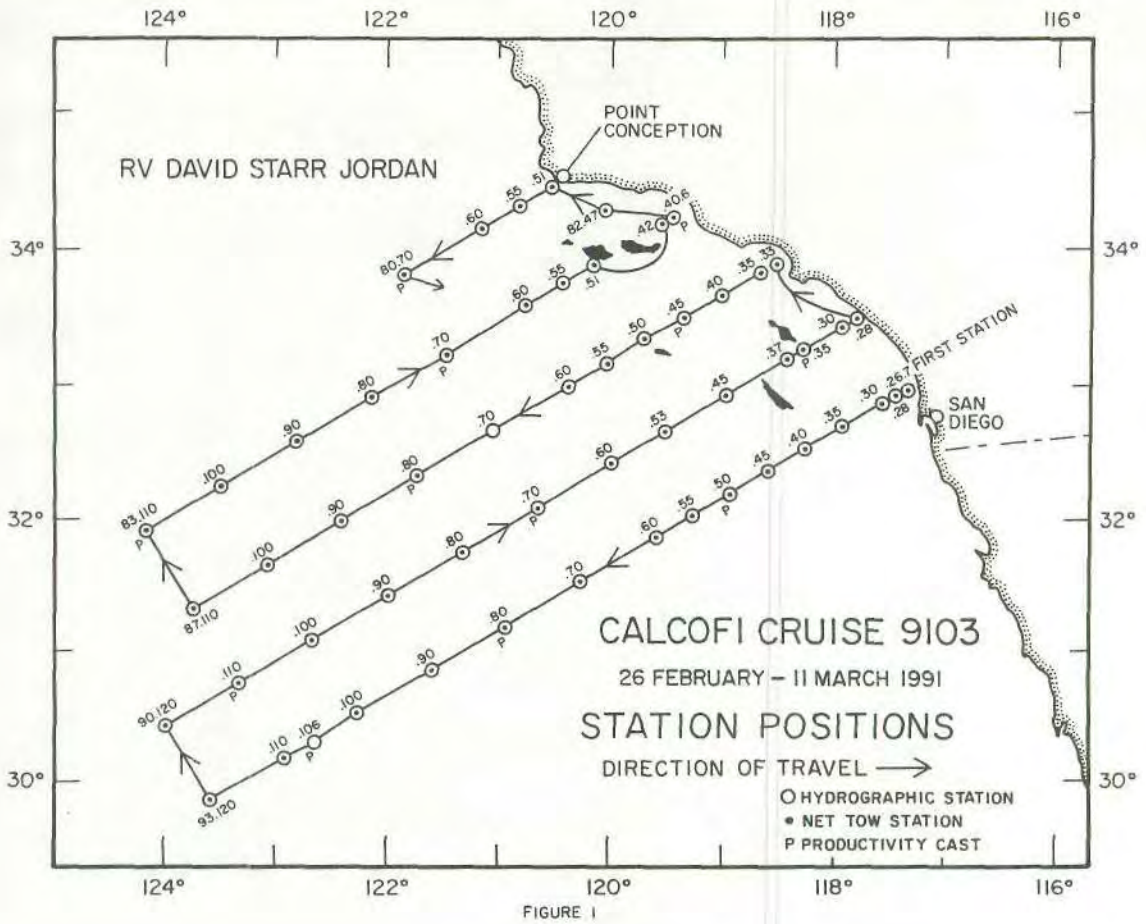

FIGURE 1

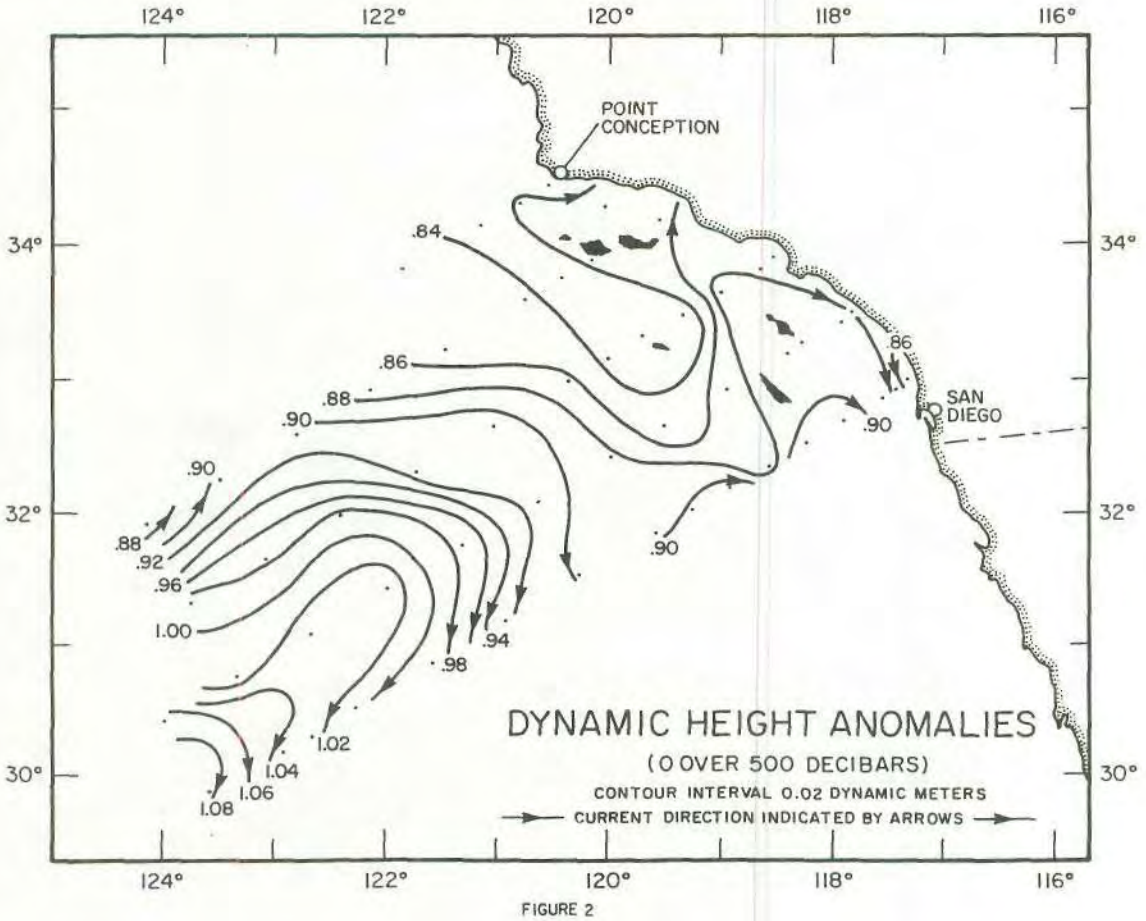

FIGURE 2

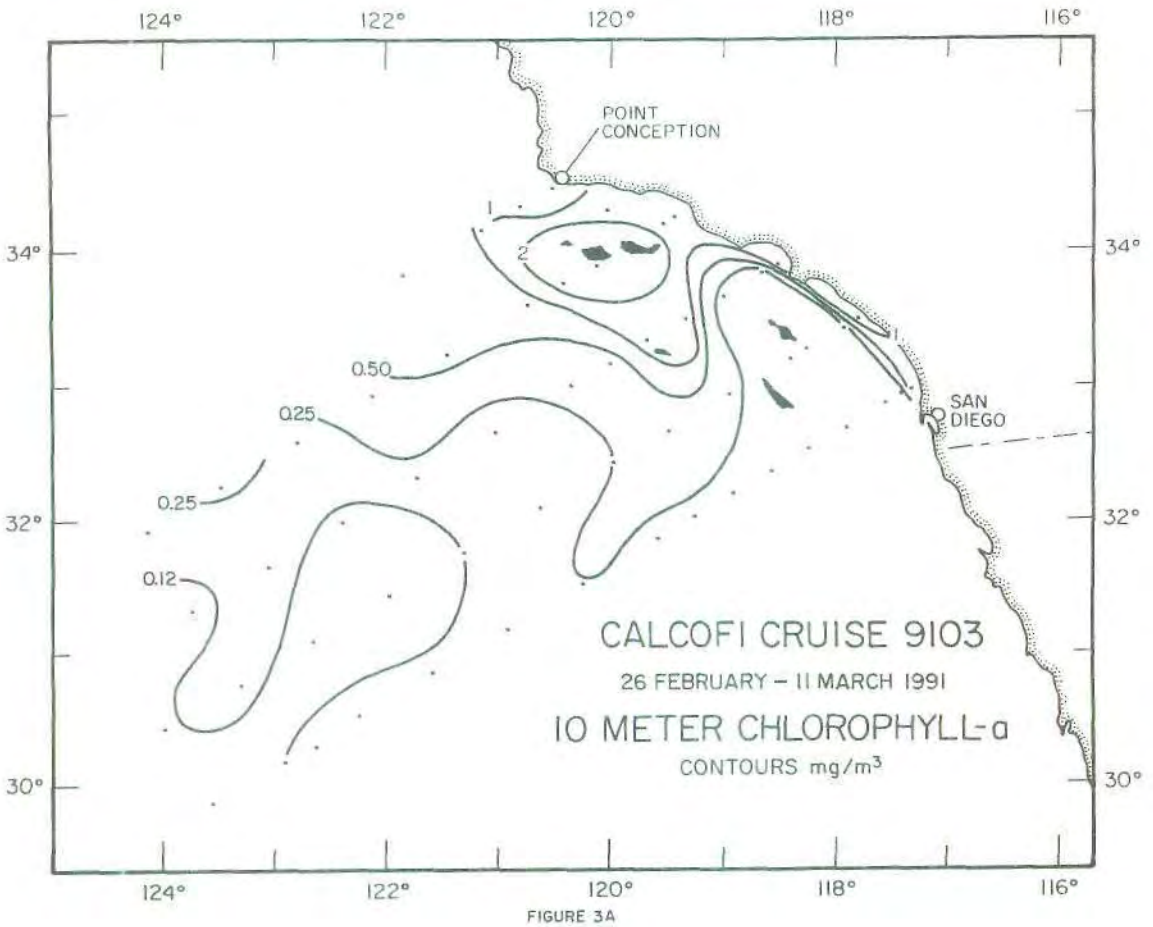

FIGURE 3A

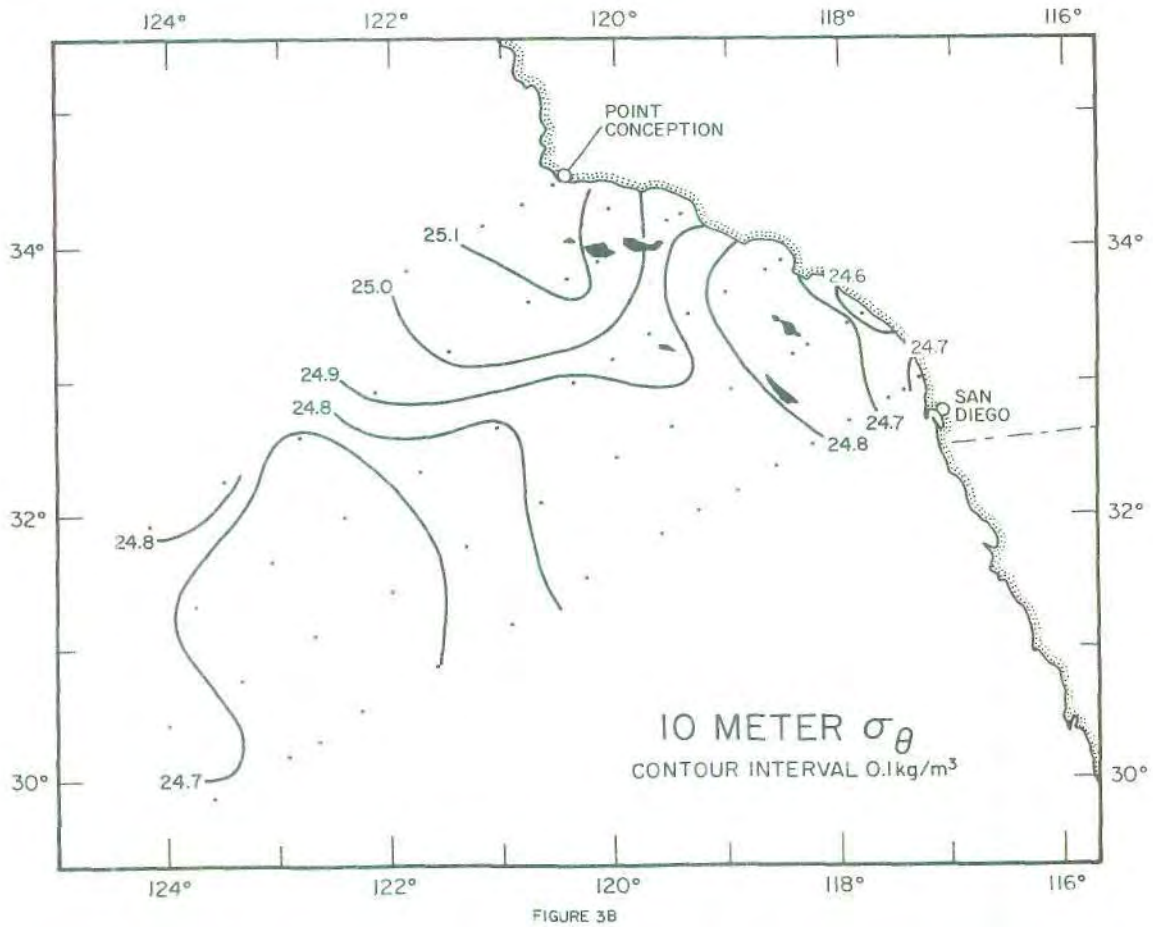

FIGURE 3B

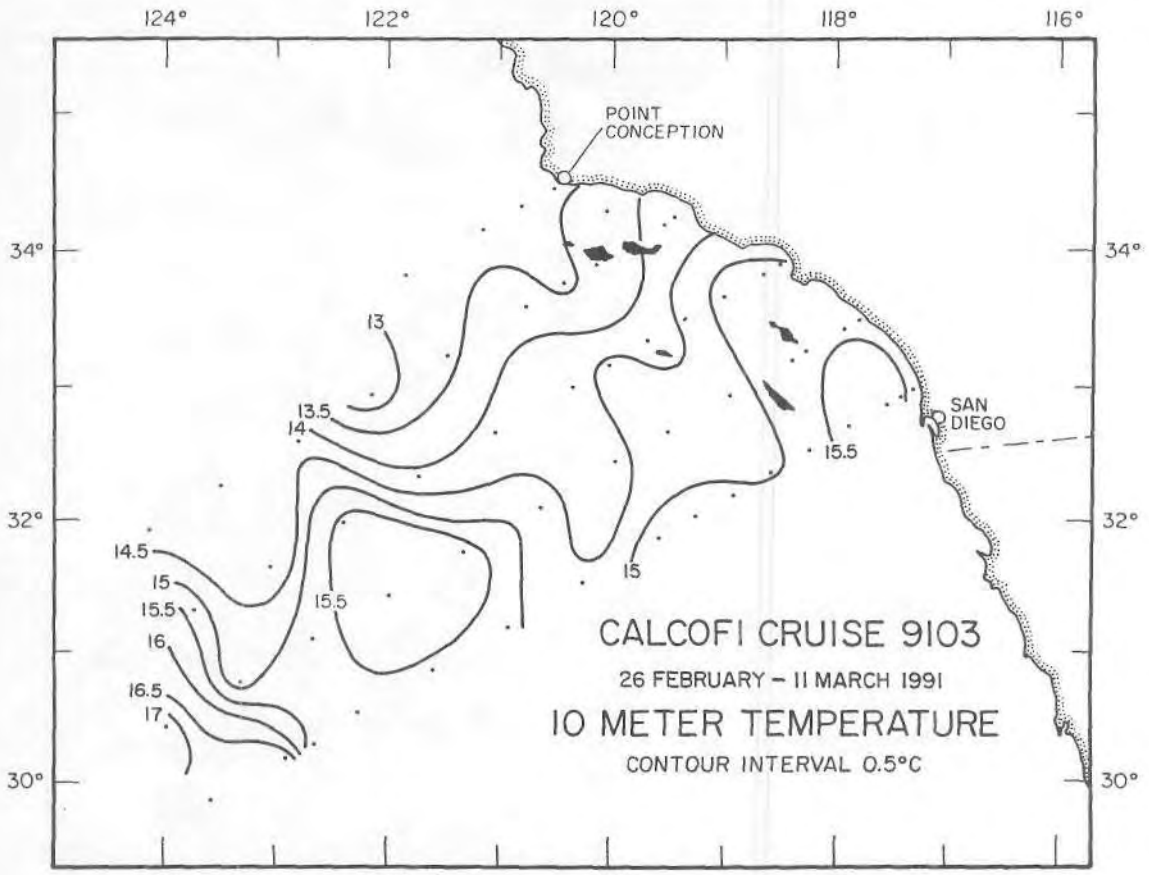

FIGURE 3C

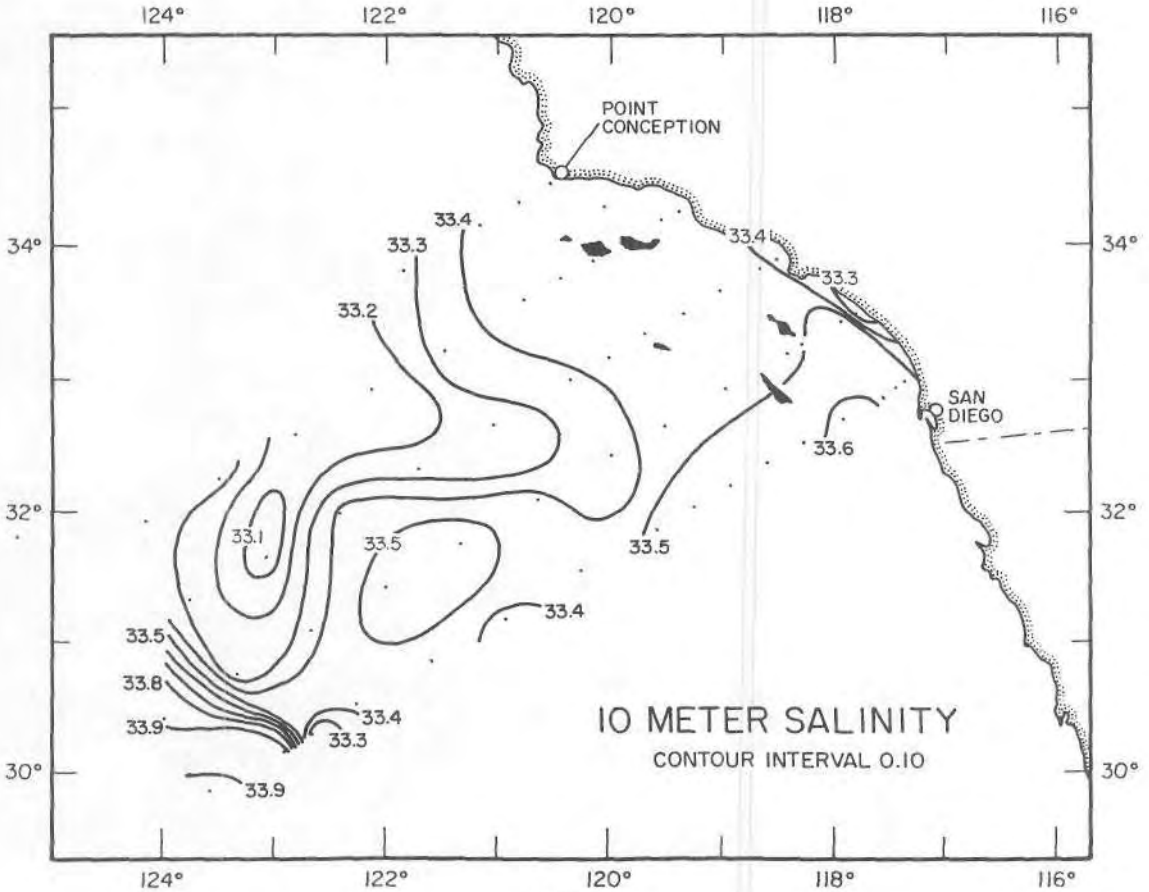

FIGURE 3D

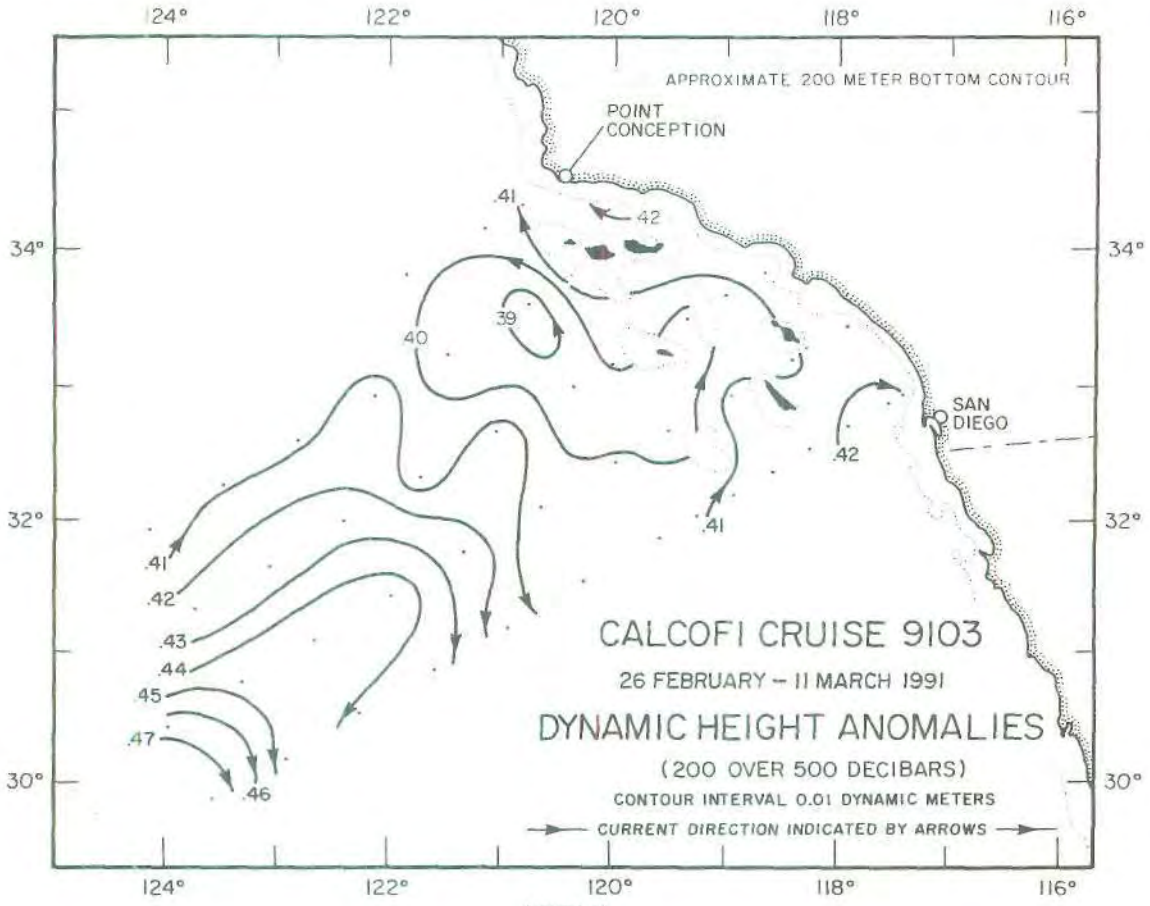

FIGURE 4A

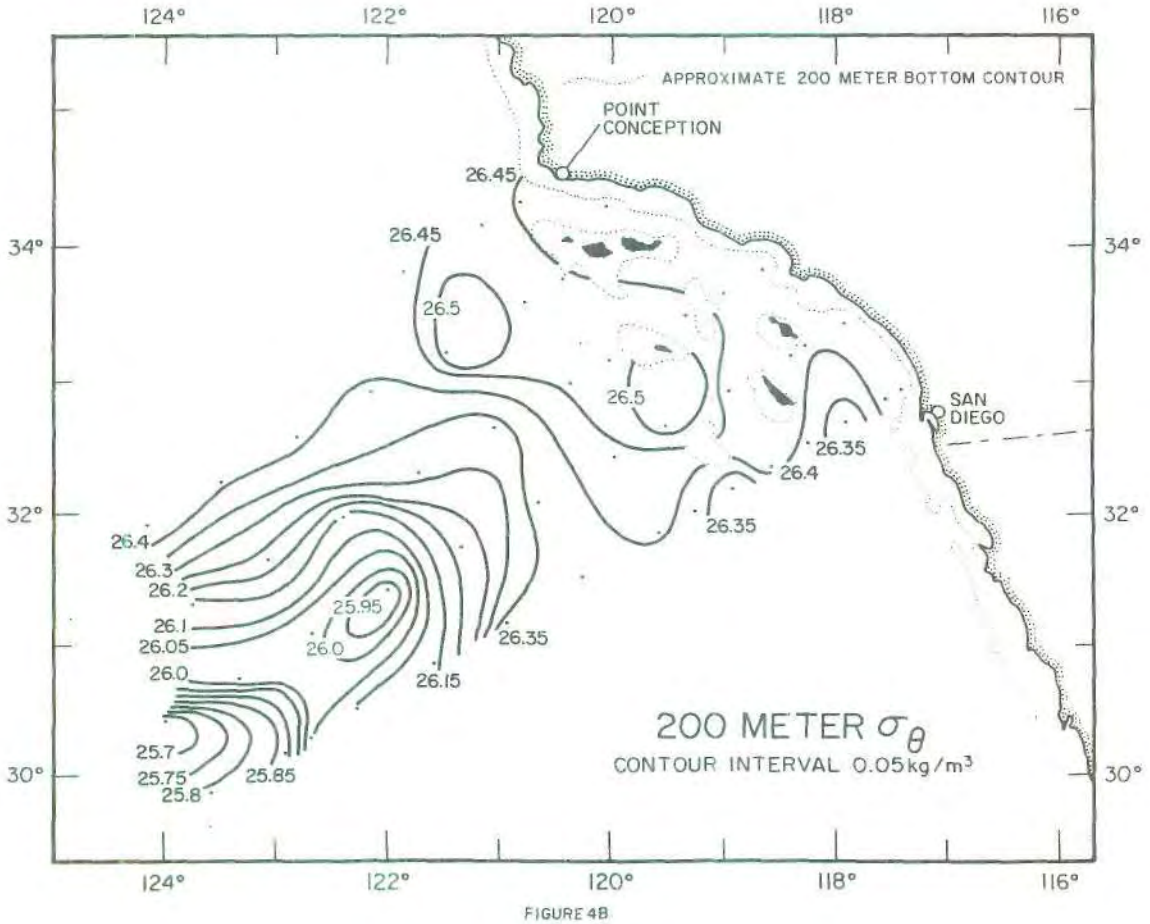

FIGURE 4B

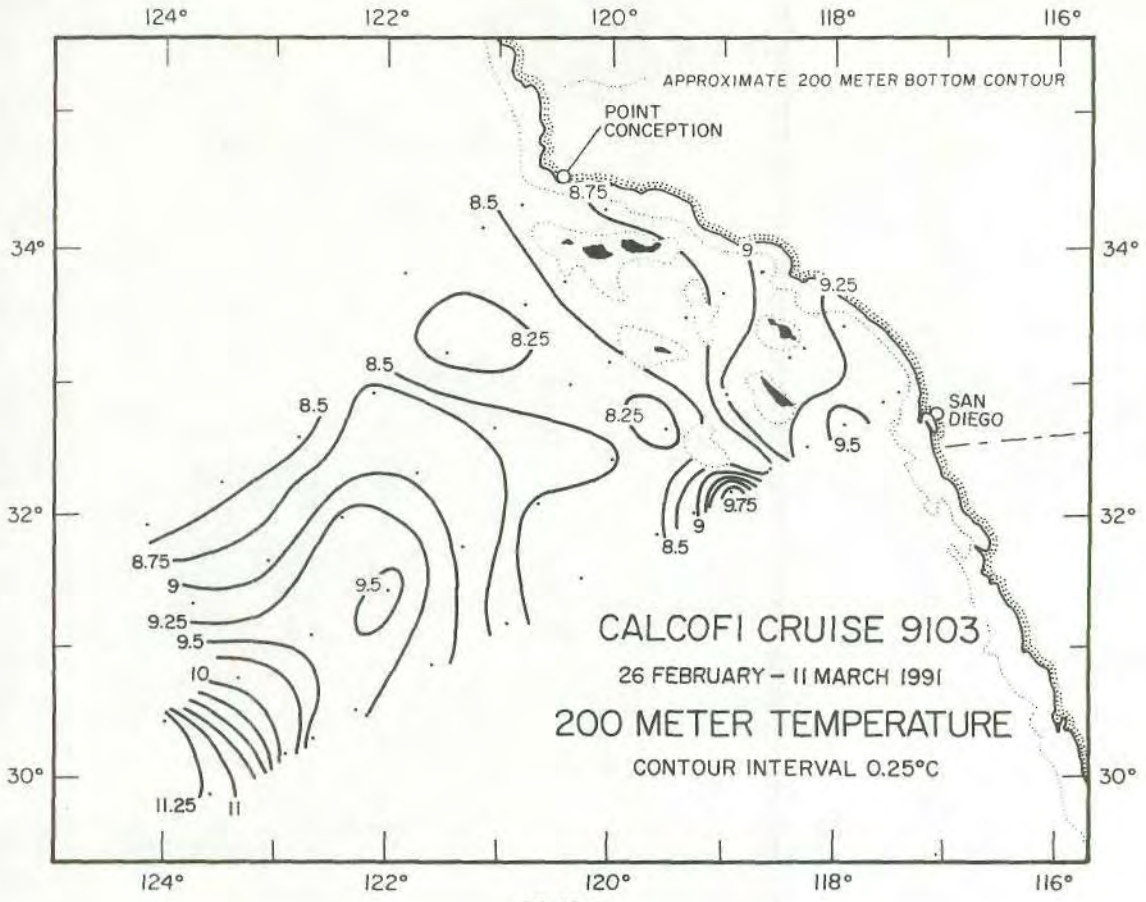

FIGURE 4C

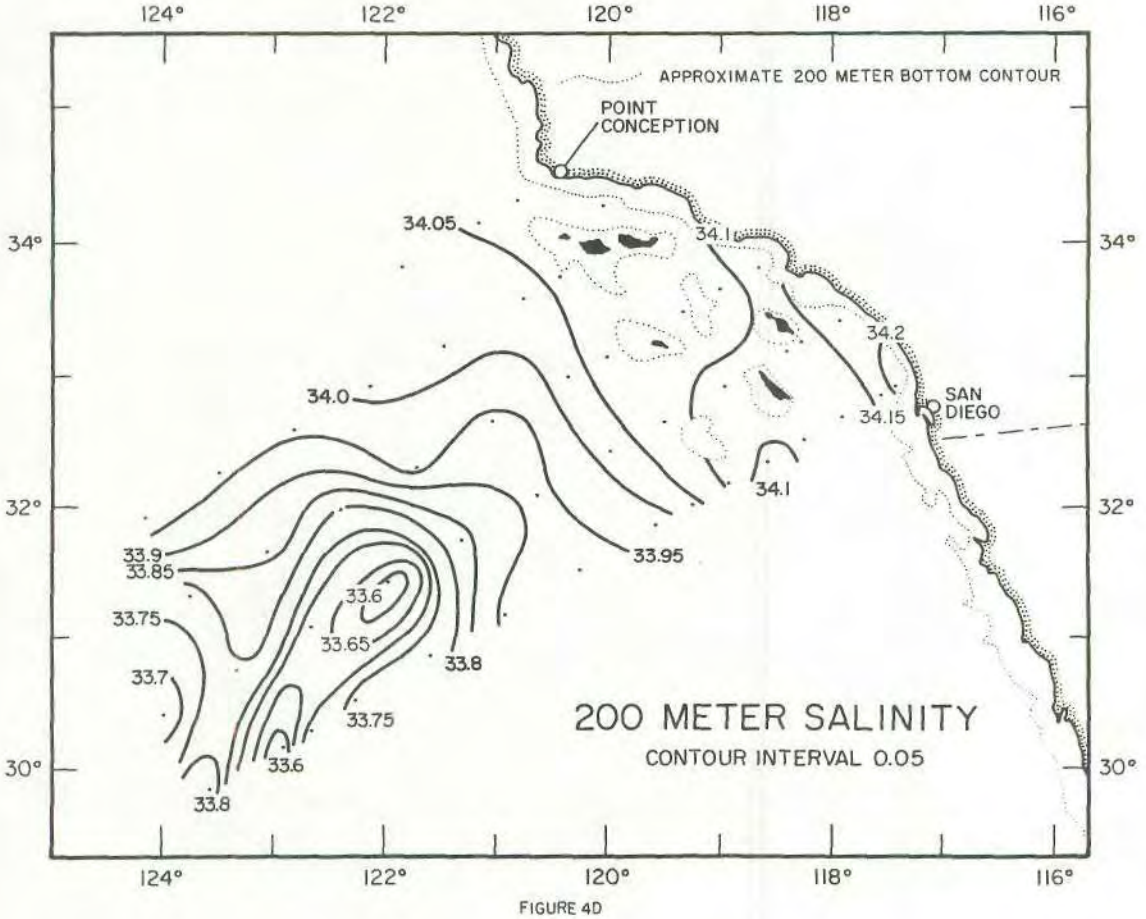

FIGURE 4D

CALCOFI CRUISE 9103
2-5 MARCH 1991

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

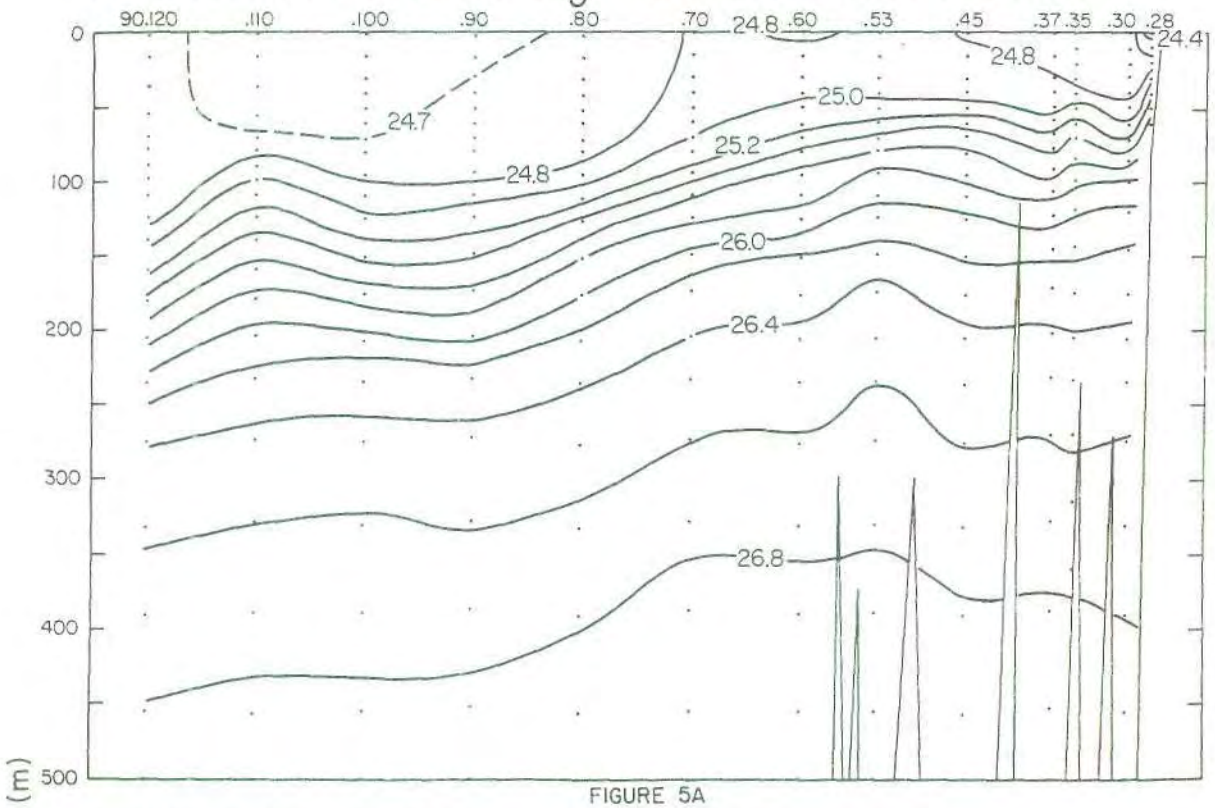

FIGURE 5A

TEMPERATURE (°C) ALONG CALCOFI LINE 90

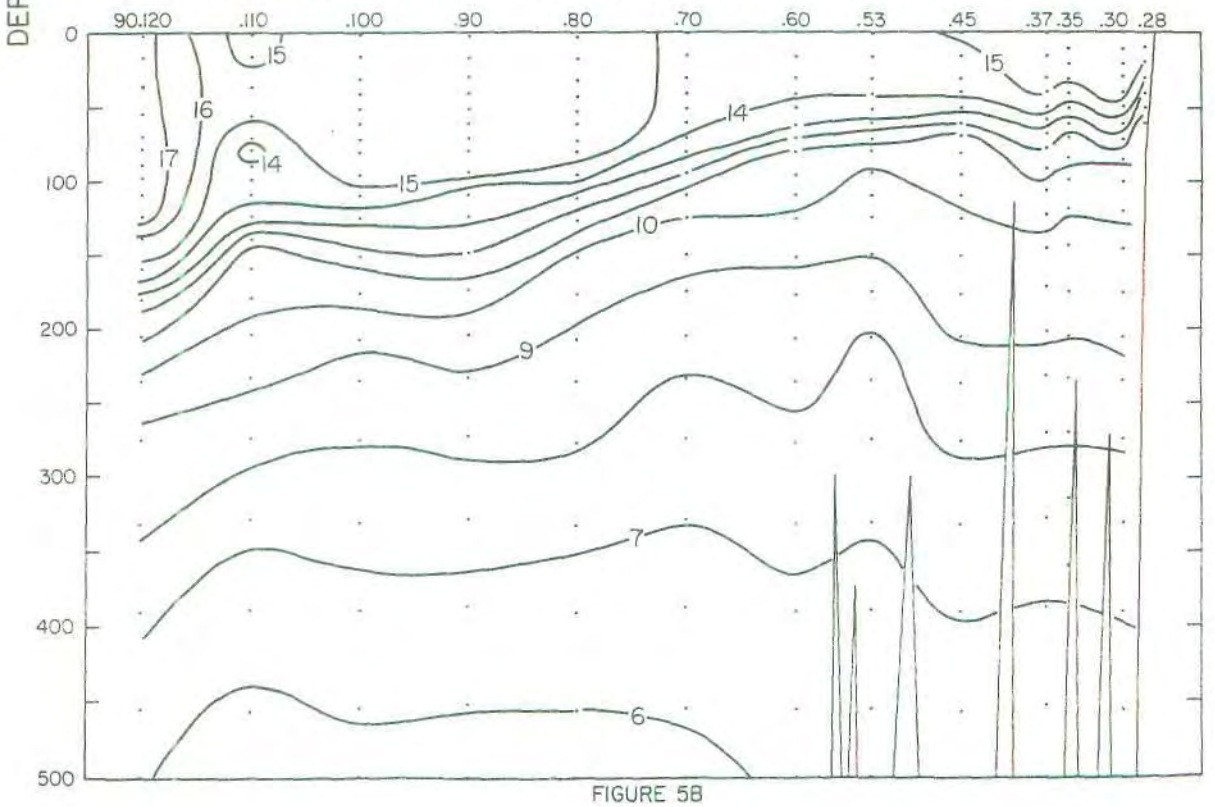

FIGURE 5B

CALCOFI CRUISE 9103
2-5 MARCH 1991

SALINITY ALONG CALCOFI LINE 90

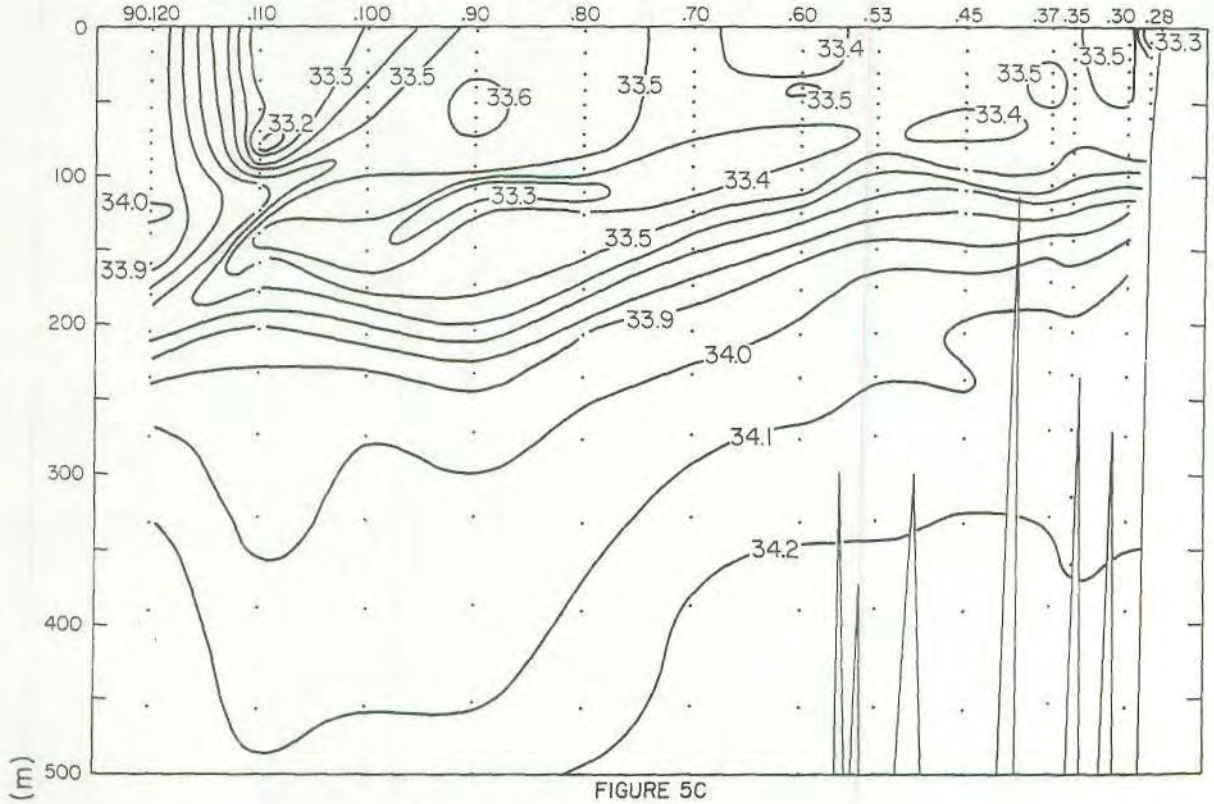

FIGURE 5C

SILICATE (μM/l) ALONG CALCOFI LINE 90

DEPTH (m)

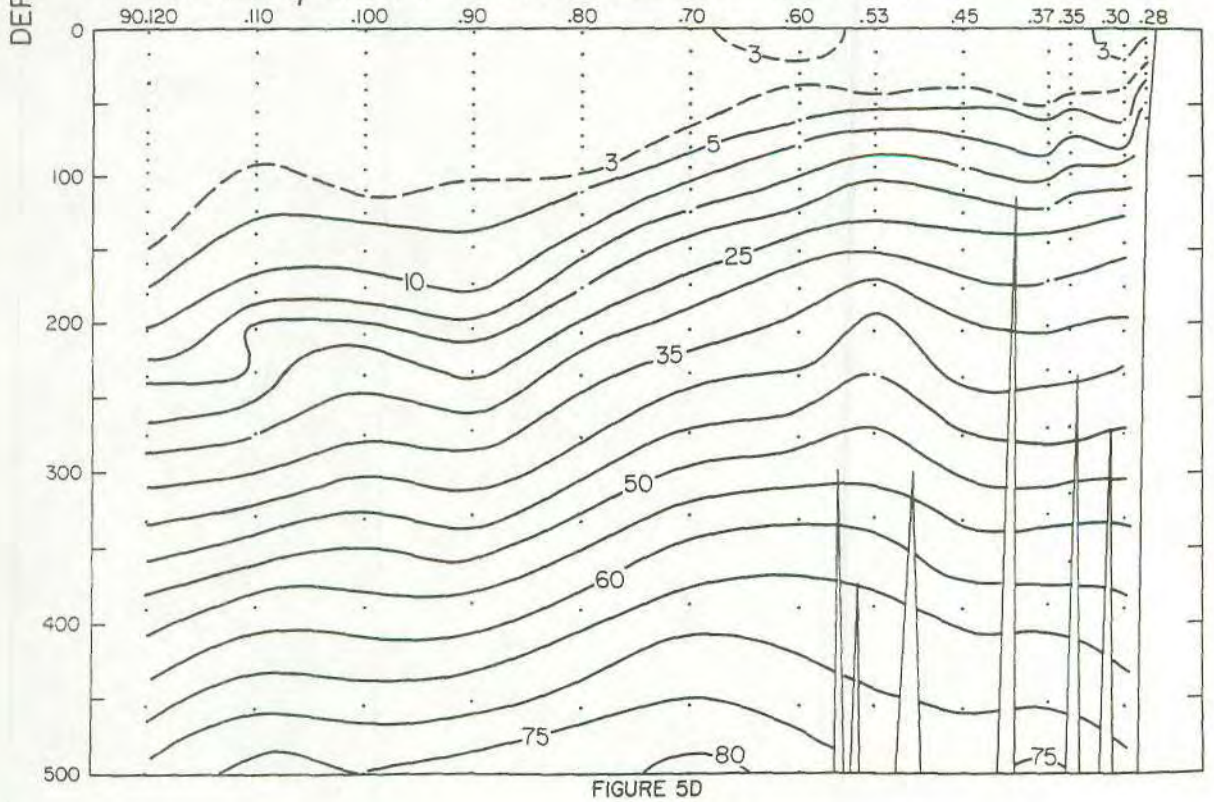

FIGURE 5D

CALCOFI CRUISE 9103
2-5 MARCH 1991

NITRATE (μM/l) ALONG CALCOFI LINE 90

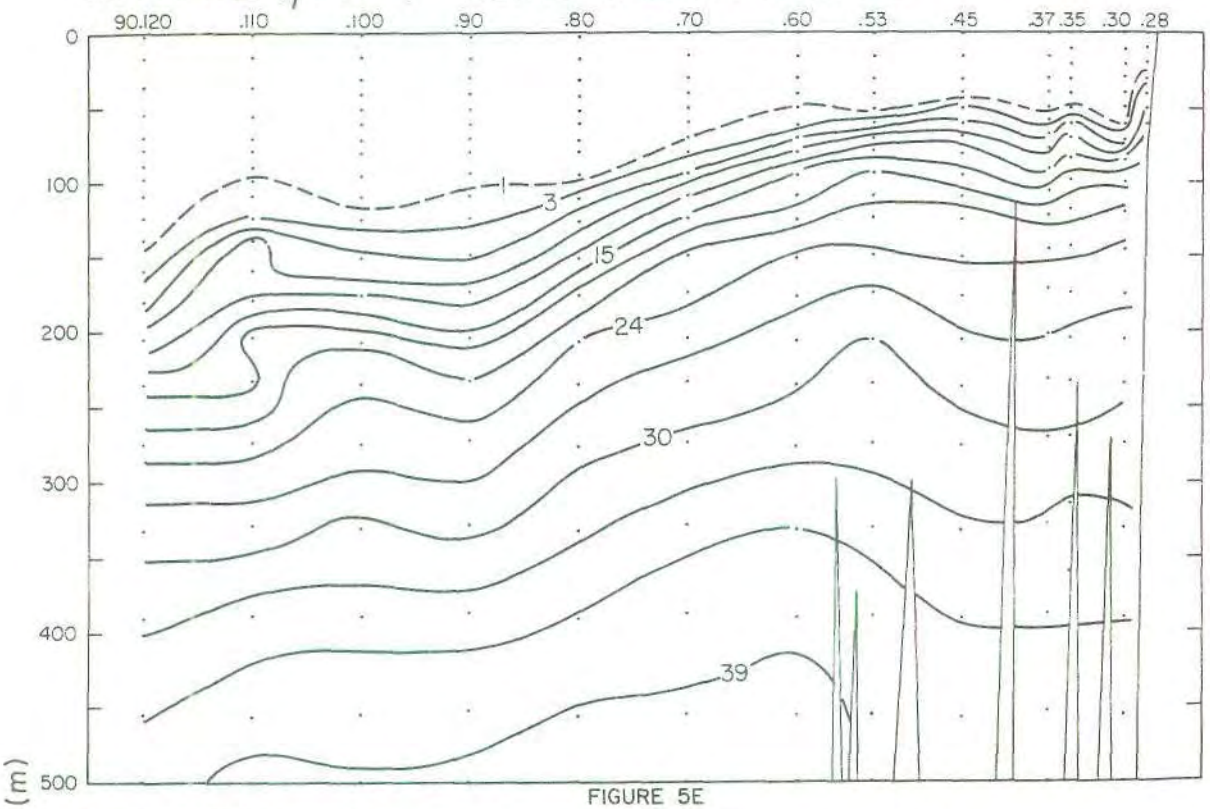

FIGURE 5E

PHOSPHATE (μM/l) ALONG CALCOFI LINE 90

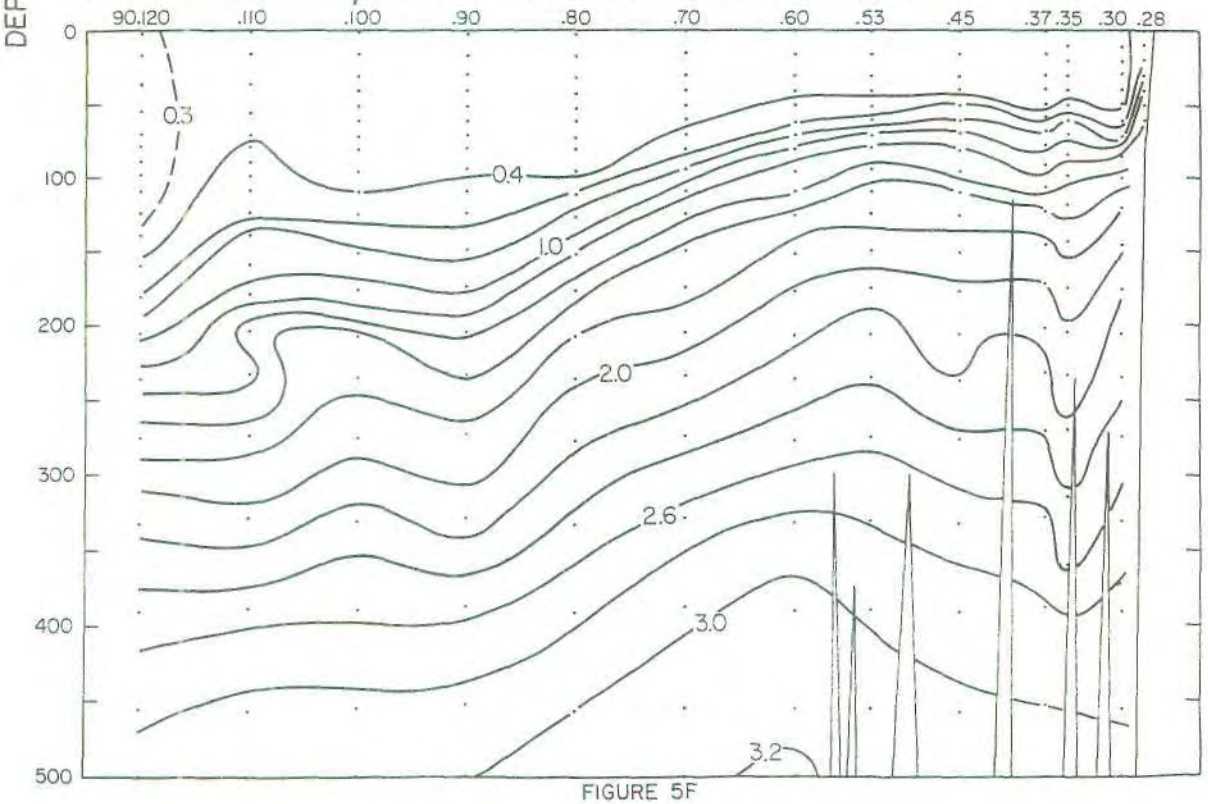

FIGURE 5F

CALCOFI CRUISE 9103
2-5 MARCH 1991

CHLOROPHYLL-a ($\mu g/l$) ALONG CALCOFI LINE 90

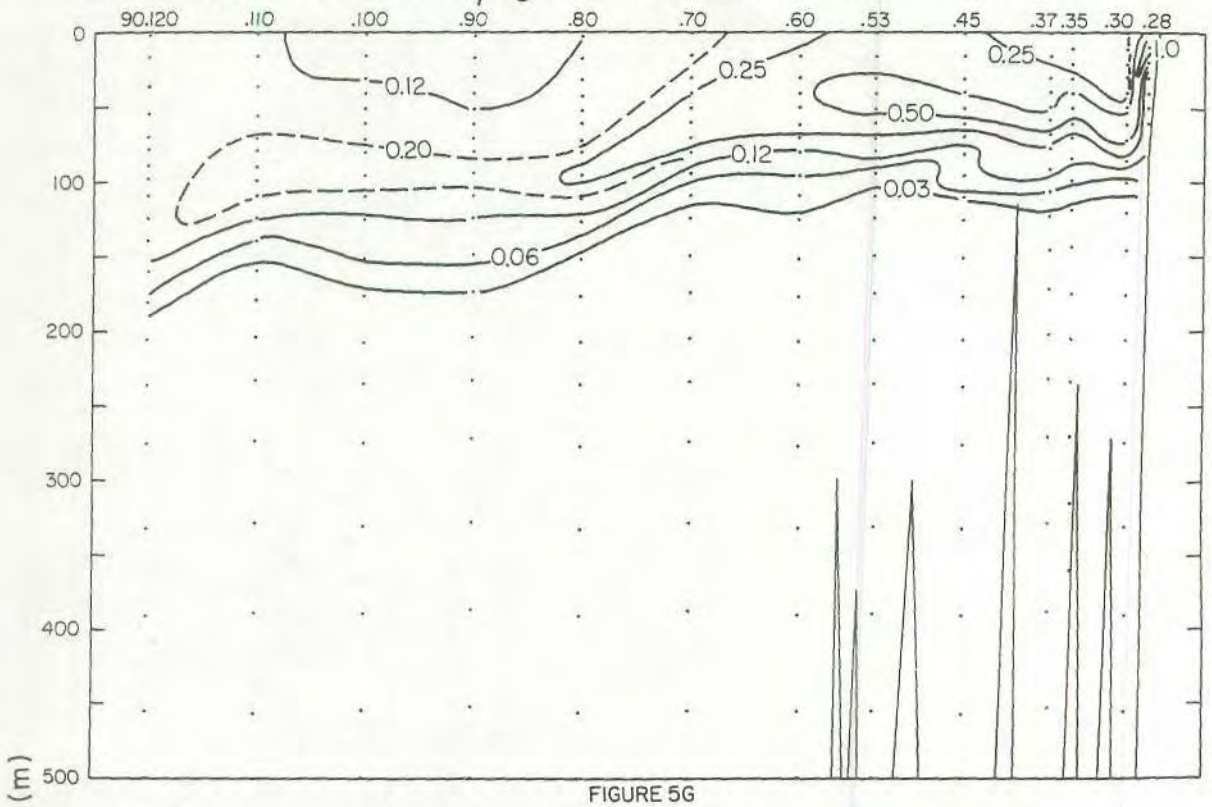

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

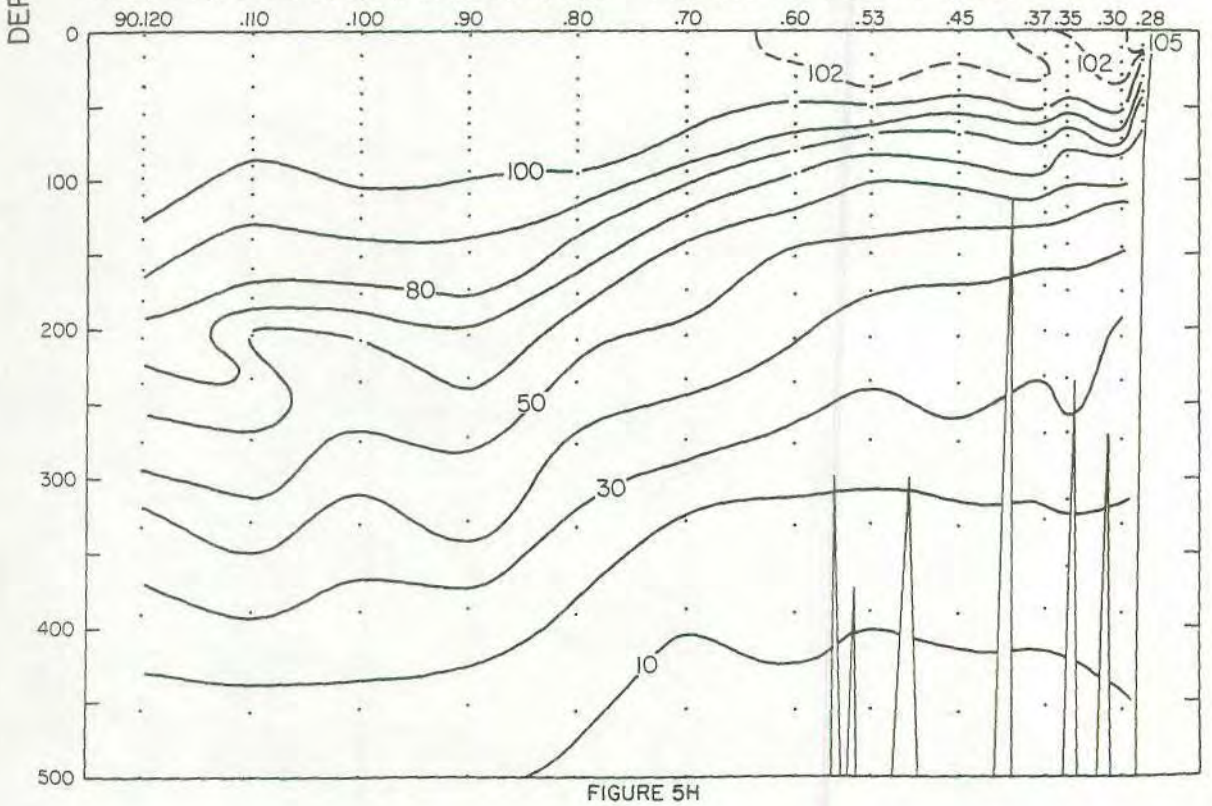

FIGURE 5H

CALCOFI CRUISE 9103
2-5 MARCH 1991

OXYGEN (ml/l) ALONG CALCOFI LINE 90

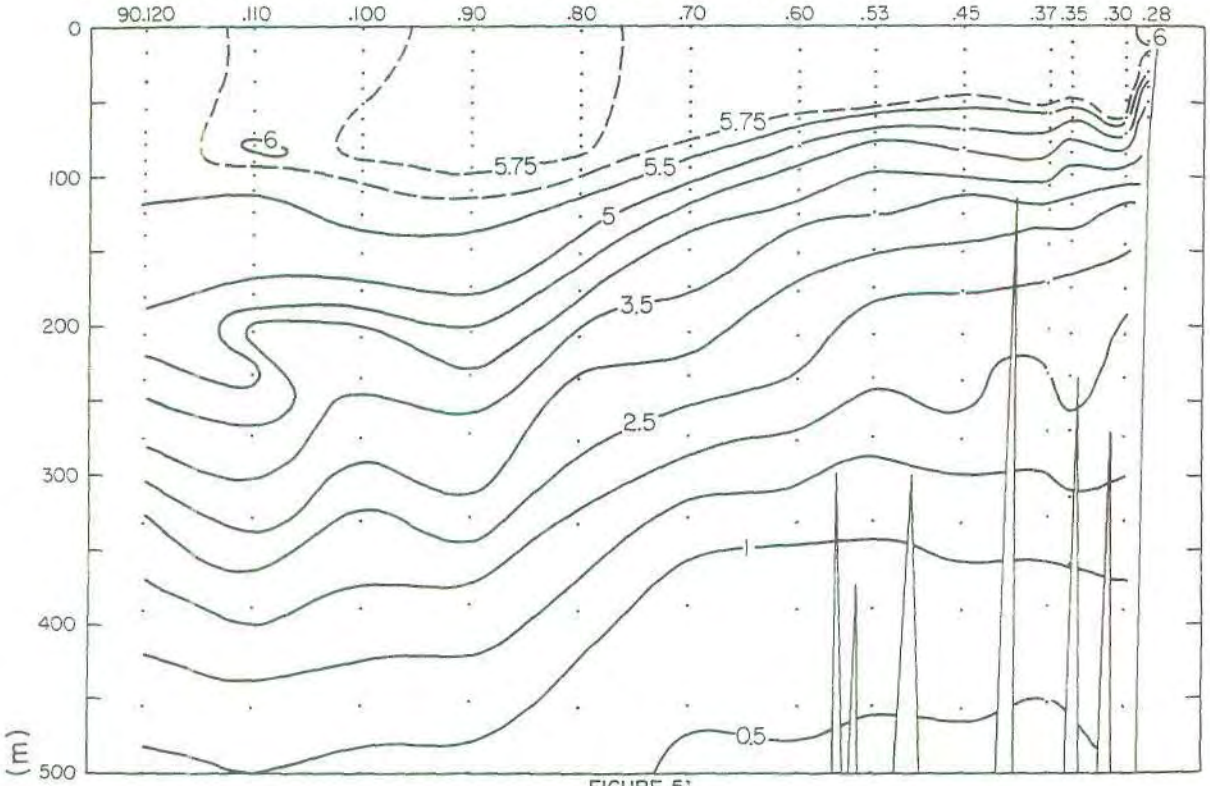

FIGURE 5I

NITRITE (μM/l) ALONG CALCOFI LINE 90

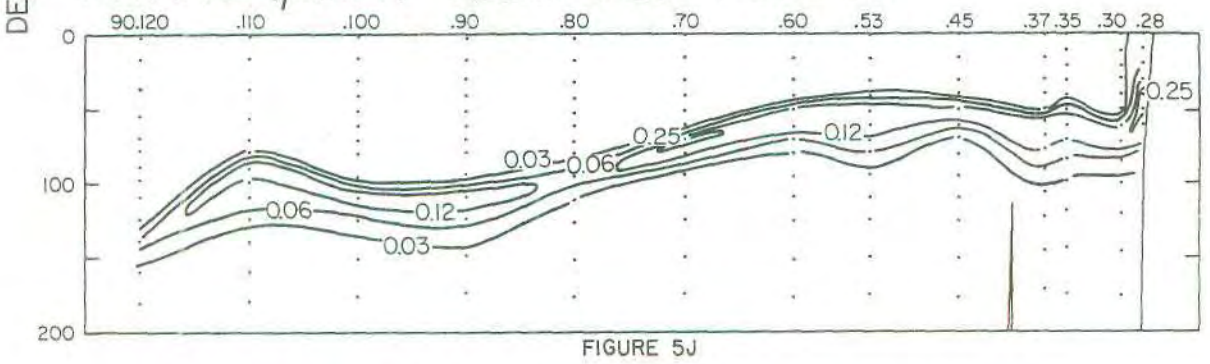

FIGURE 5J

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

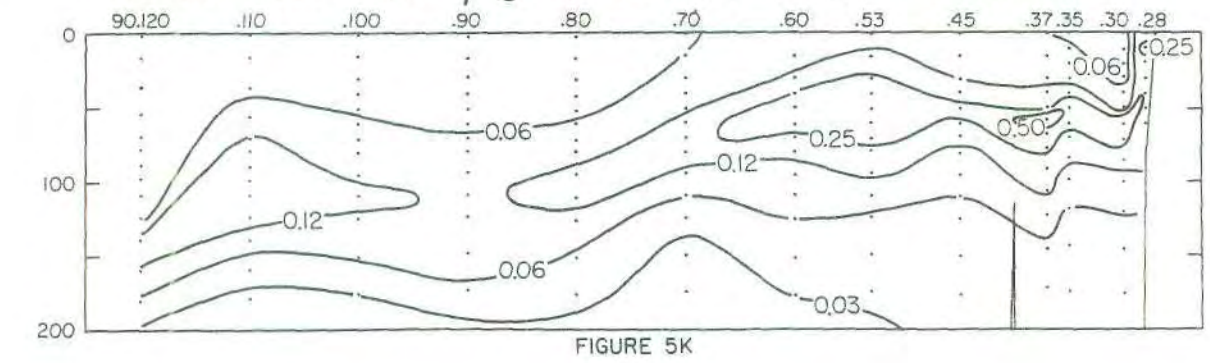

FIGURE 5K

PERSONNEL

CalCOFI Cruise 9103

SHIP'S CAPTAIN

Gary Michael Albertson, RV *David Starr Jordan*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

Griffith, David A. (in charge)	Fishery Biologist, NMFS
Costello, James P.	Staff Research Associate, SIO
Fernandes, Luis F.	Volunteer, SIO
Gripp, Sherry L.	Staff Research Associate, SIO
Gruber, Dennis W.	Marine Technician, SIO
Manion, Susan M.	Fishery Biologist, NMFS
Mullin, Michael M.	Director of MLRG, Professor, SIO
Pyle, Peter	Biologist, Pt. Reyes Bird Observatory
Renger, Edward H.	Staff Research Associate, SIO
Wilkinson, James R.	Staff Research Associate, SIO

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 27.1 N	120 31.4 W	10/03/91	0352 UTC	73 m	010 08 kn			1015.3 mb	13.7 C	11.3 C		

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	13.46	13.46	33.489	25.131	282.3	0.000	6.03	101.8	3.0	0.43	1.1	0.04	0.55	0.20	0
1	1		13.46	13.46	33.489	25.131	282.3	0.003	6.03	101.8	3.0	0.43	1.1	0.04	0.55	0.20	1
	10	ISL	13.44	13.44	33.488	25.135	282.2	0.028	6.01	101.4	3.0	0.43	1.1	0.05	0.62	0.25	10
1	11		13.44	13.44	33.488	25.135	282.3	0.031	6.01	101.4	3.0	0.43	1.1	0.05	0.63	0.26	11
	20	ISL	13.17	13.17	33.502	25.200	276.3	0.056	5.78	97.0	4.5	0.55	2.4	0.10	1.13	0.42	20
1	21		13.13	13.13	33.504	25.209	275.4	0.059	5.74	96.2	4.7	0.57	2.6	0.11	1.17	0.44	21
	30	ISL	12.74	12.74	33.523	25.301	266.9	0.083	5.23	87.0	7.2	0.76	5.2	0.19	0.81	0.42	30
1	32		12.66	12.66	33.527	25.320	265.2	0.089	5.12	85.0	7.7	0.80	5.7	0.20	0.69	0.42	32
1	42		12.54	12.53	33.533	25.348	262.7	0.115	4.96	82.1	8.8	0.87	6.7	0,22	0.35	0.33	42
	50	ISL	12.09	12.08	33.560	25.456	252.7	0.136	4.63	76.0	11.1	1.02	9.5	0.22	0.29	0.43	50
1	52		11.95	11.94	33.568	25.488	249.6	0.141	4.53	74.1	11.8	1.07	10.3	0.22	0.29	0.45	52
1	62		11.36	11.35	33.600	25.622	237.1	0.165	3.99	64.5	15.1	1.29	14.5	0.23	0.17	0.36	62

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 19.0 N	120 48.1 W	10/03/91	0637 UTC	791 -	320 09 kn			1017.1 mb	12.8 C	11.3 C		

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 UM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	13.63	13.63	33.481	25.090	286.2	0.000	6.02	102.0	2.7	0.46	1.2	0.06	1.10	0.33	0
1	1		13.63	13.63	33.481	25.090	286.2	0.003	6.02	102.0	2.7	0.45	1.2	0.06	1.10	0.33	1
	10	ISL	13.44	13.44	33.477	25.126	283.0	0.028	5.98	100.9	3.0	0.46	1.3	0.07	0.91	0.31	10
1	11		13.41	13.41	33.477	25.132	282.5	0.031	5.97	100.6	3.0	0.46	1.3	0.07	0.88	0.31	11
1	20		13.26	13.26	33.477	25.162	279.8	0.057	5.84	98.2	3.2	0.50	1.7	0.09	0.64	0.33	20
	30	ISL	13.20	13.20	33.476	25.174	279.0	0.085	5.79	97.2	3.5	0.53	2.1	0.10	0.59	0.35	30
1	31		13.19	13.19	33.476	25.176	278.9	0.087	5.79	97.2	3.5	0.53	2.1	0.10	0.58	0.35	31
1	40		12.53	12.52	33.510	25.332	264.2	0.112	5.19	85.9	7.6	0.82	5.8	0.20	0.25	0.32	40
1	49		11.71	11.70	33.575	25.538	244.7	0.135	4.45	72.4	13.1	1.14	11.3	0.29	0.17	0.38	49
	50	ISL	11.67	11.66	33.577	25.547	243.9	0.137	4.43	72.0	13.4	1.15	11.6	0.29	0.17	0.38	50
1	59		11.43	11.42	33.591	25.603	238.9	0.159	4.32	69.9	15.4	1.22	13.2	0.30	0.18	0.37	59
1	69		10.99	10.98	33.651	25.729	227.1	0.182	3.70	59.3	17.1	1.42	16.6	0.17	0.12	0.32	69
	75	ISL	10.82	10.81	33.676	25.779	222.5	0.196	3.53	56.4	18.2	1.49	17.7	0.11	0.11	0.29	75
1	84		10.64	10.63	33.709	25.836	217.2	0.215	3.40	54.1	19.9	1.56	18.8	0.06	0.10	0.26	84
1	97		10.44	10.43	33.763	25.913	210.1	0.243	3.22	51.0	21.9	1.64	20.2	0.04	0.11	0.21	98
	100	ISL	10.40	10.39	33.774	25.929	208.7	0.249	3.18	50.4	22.3	1.66	20.5	0.04	0.11	0.20	101
1	117		10.10	10.09	33.833	26.026	199.8	0.284	2.99	47.1	24.6	1.76	21.9	0.03	0.07	0.18	118
	125	ISL	9.88	9.87	33.867	26.090	193.8	0.300	2.91	45.6	26.2	1.80	22.8	0.03	0.06	0.16	126
1	143		9.41	9.39	33.941	26.226	181.2	0.334	2.73	42.3	29.8	1.90	24.9	0.02	0.03	0.13	144
	150	ISL	9.31	9.29	33.963	26.259	178.2	0.346	2.67	41.3	30.8	1.94	25.4	3.02	0.03	0.13	151
1	172		9.06	9.04	34.018	26.343	170.6	0.385	2.45	37.7	34.0	2.08	26.8	0.02	0.02	0.12	173
	200	ISL	8.71	8.69	34.071	26.440	161.8	0.431	2.07	31.6	39.7	2.24	28.5	0.02	0.03	0.14	201
1	201		8.70	8.68	34.073	26.443	161.6	0.433	2.06	31.5	39.9	2.24	28.6	0.02	0.03	0.14	202
1	231		8.39	8.37	34.104	26.515	155.1	0.480	1.82	27.6	43.6	2.35	30.1	0.02			232
	250	ISL	8.12	8.09	34.111	26.562	151.0	0.509	1.83	27.6	45.4	2.37	30.7	0.02			252
1	271		7.83	7.80	34.115	26.608	146.8	0.541	1.87	28.0	47.4	2.39	31.3	0.02			273
	300	ISL	7.57	7.54	34.127	26.655	142.7	0.583	1.74	25.9							302
1	326		7.37	7.34	34.136	26.691	139.6	0.619	1.56	23.1							328
1	386		6.73	6.69	34.147	26.788	130.9	0.700	1.15	16.8							389
	400	ISL	6.66	6.62	34.164	26.812	128.8	0.719	1.03	15.0							403
1	452		6.49	6.45	34.232	26.888	122.2	0.784	0.64	9.3							455
	500	ISL	6.27	6.23	34.256	26.936	118.2	0.842	0.50	7.2							504
1	522		6.17	6.12	34.267	26.958	116.3	0.867	0.43	6.2							526

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 9.0 N	121 9 0 W	10/03/91	1026 UTC	2177 m	350 15	kn		1015.9 mb	12.9 C	10.2 C		

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 UM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	13.13	13.33	33.488	25.156	279.9	0.000	6.00	101.0	3.8	0.43	1.5	0.07	1.10	0.29	0
1	1		13.33	13.33	33.488	25.156	279.9	0.003	6.00	101.0	3.8	0.43	1.5	0.07	1.10	0.29	1
1	10		13.13	13.33	33.489	25.157	280.0	0.028	5.98	100.7	3.8	0.43	1.5	0.07	1.03	0.30	10
1	20		13.14	13.34	33.489	25.156	280.5	0.056	5.97	100.5	3.8	0.44	1.5	0.06	1.15	0.31	20
	30	ISL	13.28	13.28	33.486	25.166	279.8	0.084	5.97	100.4	3.8	0.44	1.6	0.07	1.20	0.34	30
1	31		13.27	13.27	33.485	25.167	279.7	0.087	5.97	100.4	3.8	0.44	1.6	0.07	1.20	0.34	31
1	41		13.06	13.05	33.469	25.197	277.1	0.115	5.99	100.2	3.4	0.45	1.6	0.07	1.86	0.37	41
	50	ISL	12.76	12.75	33.464	25.252	272.1	0.139	5.57	92.6	5.8	0.61	4.1	0.10	0.88	0.30	50
1	51		12.73	12.72	33.471	25.264	271.0	0.142	5.50	91.4	6.2	0.64	4.6	0.10	0.74	0.29	51
1	61		11.18	11.17	33.444	25.534	245.5	0.168	4.57	73.5	11.9	1.11	12.2	0.03	0.12	0.10	61
1	71		10.61	10.60	33.476	25.659	233.6	0.192	4.32	68.6	14.6	1.28	.15.1	0.03	0.11	0.15	71
	75	ISL	10.53	10.52	33.526	25.712	228.7	0.201	4.12	65.3	15.9	1.35	16.1	0.03	0.10	0.16	75
1	84		10.43	10.42	33.643	25.821	218.5	0.221	3.67	58.1	18.8	1.49	18.2	0.04	0.07	0.17	84
1	99		9.91	9.90	33.706	25.959	205.7	0.253	3.48	54.5	21.7	1.63	20.6	0.03	0.10	0.18	100
	100	ISL	9.89	9.88	33.714	25.969	204.8	0.255	3.46	54.2	21.9	1.64	20.8	0.03	0.10	0.18	101
1	119		9.61	9.60	33.867	26.135	189.4	0.293	2.98	46.4	26.5	1.83	23.4	0.03	0.04	0.17	120
	125	ISL	9.52	9.51	33.900	26.176	185.6	0.304	2.87	44.6	27.7	1.87	24.0	0.03	0.04	0.17	126
1	144		9.27	9.25	33.975	26.275	176.5	0.338	2.61	40.4	31.0	1.99	25.5	0.02	0.04	0.17	145
	150	ISL	9.21	9.19	33.992	26.298	174.5	0.349	2.53	39.1	31.9	2.02	25.9	0.02	0.04	0.18	151
1	174		8.92	8.90	34.038	26.381	167.0	0.390	2.31	35.5	35.2	2.13	27.3	0.02	0.03	0.20	175
	200	ISL	8 39	8.37	34.065	26.484	157.5	0.432	2.24	34.0	38.7	2.22	28.6	0.02	0.03	0.14	201
1	204		8 31	8.29	34.069	26.500	156.1	0.438	2.23	33.8	39.3	2.23	28.8	0.02	0.03	0.13	205
1	233		8 12	8.10	34.117	26.566	150.2	0.483	1.93	29.1	44.2	2.39	30.5	0.02			234
	250	ISL	7 98	7.95	34.129	26.597	147.6	0.508	1.82	27.4	46.2	2.44	31.1	0.02			252
1	273		7 80	7.77	34.138	26.631	144.7	0.542	1.70	25.5	48.4	2.50	31.7	0.02			275
	300	ISL	7 64	7.61	34.154	26.667	141.7	0.580	1.52	22.7	51.0	2.58	32.6	0.02			302
1	328		7 48	7.45	34.170	26.703	138.7	0.619	1.32	19.6	54.0	2.66	33.6	0.02			330
1	387		6 96	6.92	34.205	26.803	129.7	0.699	0.90	13.2	63.1	2.87	35.9	0.02			390
	400	ISL	6 88	6.84	34.212	26.820	128.3	0.715	0.84	12.3	64.4	2.90	36.3	0.02			403
1	454		6.61	6.57	34.241	26.879	123.2	0.783	0.63	9.2	68.9	3.02	37.6	0.02			457
	500	ISL	6.32	6.27	34.261	26.934	118.5	0.839	0.49	7.1	74.0	3.09	38.8	0.02			504
1	525		6.16	6.11	34.273	26.964	115.8	0.868	0.41	5.9	76.8	3.13	39.5	0.02			529

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 49.0 N	121 50.5 W	10/03/91	1636 UTC	3624 •	300 08 kn	330 02 03	1	1017.9 mb	13.3 C	10.0 C	12m 04	6/8 CU

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 UM/1	NO3 UM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	13.25	13.25	33.284	25.015	293.4	0.000	6.17	1036	4.0	0.39	0.0	0.00	0.79	0.25	0
1	1	13.25	13.25	33.284	25.015	293.4	0.003	6.17	103.6	4.0	0.39	0.0	0.00	0.79	0.25	1
	10 ISL	13.20	13.20	33.281	25.023	292.9	0.029	6.16	103.3	4.0	0.38	0.0	0.00	0.82	0.27	10
1	16	13.13	13.13	33.278	25.034	291.9	0.047	6.16	103.1	4.0	0.38	0.0	0.00	0.84	0.29	16
	20 ISL	13.07	13.07	33.275	25.044	291.1	0.059	6.14	102.7	4.1	0.38	0.1	0.01	0.83	0.32	20
	30 ISL	12.94	12.94	33.269	25.065	289.3	0.088	6.08	101.4	4.4	0.40	0.3	0.04	0.80	0.38	30
1	31	12.93	12.93	33.269	25.067	289.2	0.090	6.07	101.2	4.4	0.40	0.3	0.04	0.80	0.38	31
1	41	12.93	12.92	33.268	25.067	289.5	0.119	6.06	101.0	4.4	0.41	0.3	0.06	0.56	0.34	41
1	50	12.57	12.56	33.312	25.171	279.8	0.145	5.70	94.3	5.4	0.58	3.1	0.11	0.25	0.20	50
1	61	11.29	11.28	33.380	25.464	252.1	0.174	4.79	77.2	10.5	1.07	11.1	0.03	0.04	0.09	61
1	72	10.73	10.72	33.431	25.603	239.0	0.201	4.35	69.2	14.2	1.28	14.6	0.02	0.03	0.07	72
	75 ISL	10.63	10.62	33.454	25.639	235.7	0.208	4.25	67.5	14.9	1.33	15.3	0.02	0.03	0.07	75
1	81	10.46	10.4!i	33.497	25.702	229.8	0.222	4.07	64.4	16.1	1.41	16.6	0.02	0.02	0.07	81
1	96	9.87	9.86	33.539	25.835	217.4	0.256	3.91	61.1	18.9	1.54	19.0	0.02	0.01	0.06	96
	100 ISL	9.73	9.72	33.566	25.880	213.2	0.264	3.82	59.5	19.9	1.58	19.8	0.02	0.01	0.06	101
1	111	9.44	9.43	33.654	25.996	202.3	0.2S7	3.55	55.0	22.7	1.70	21.8	0.02	0.01	0.05	112
	125 ISL	9.31	9.30	33.764	26.103	192.4	0.31.5	3.23	49.9	25.6	1.81	23.6	0.02	0.00	0.04	126
1	126	9.31	9.30	33.771	26.109	191.9	0.317	3.21	49.6	25.8	1.82	23.7	0.02	0.00	0.04	127
	150 ISL	8.97	8.95	33.881	26.250	179.0	0.361	2.88	44.2	29.7	1.96	26.0	0.02	0.00	0.05	151
1	151	8.96	8.94	33.885	26.2S4	178.5	0.363	2.87	44.1	29.8	1.96	26.1	0.02	0.00	0.05	152
1	176	8.73	8.71	33.978	26.363	168.6	0.407	2.61	39.9	33.4	2.08	27.5	0.02	0.01	0.05	177
	200 ISL	8.44	8.42	34.009	26.433	162.4	0.446	2.62	39.8	35.8	2.11	28.1	0.02	0.01	0.05	201
1	206	8.36	8.34	34.013	26.448	161.0	0.456	2.62	39.7	36.4	2.12	28.2	0.02	0.01	0.05	207
1	236	7.94	7.92	34.045	26.536	153.0	0.503	2.44	36.6	41.5	2.25	29.9	0.02			237
	250 ISL	7.75	7.73	34.051	26.569	150.1	0.524	2.35	35.1	43.7	2.30	30.6	0.02			251
1	276	7.43	7.40	34.060	26.622	145.3	0.563	2.15	31.9	47.8	2.40	31.9	0.02			278
	300 ISL	7.23	7.20	34.086	26.671	140.9	0.597	1.85	27.3	52.0	2.53	33.3	0.02			302
1	331	6.98	6.95	34.117	26.730	135.7	0.640	1.46	21.4	57.4	2.70	35.0	0.01			333
1	390	6.30	6.27	34.114	26.819	127.7	0.718	1.13	16.3	66.9	2.88	37.8	0.01			393
	400 ISL	6.20	6.16	34.122	26.838	125.9	0.730	1.05	15.1	68.8	2.92	38.3	0.01			403
1	456	5.72	5.65	34.173	26.939	116.7	0.798	0.64	9.1	79.1	3.11	40.6	0.01			459
	500 ISL	5.38	5.34	34.192	26.995	111.5	0.848	0.51	7.2	85.6	3.18	41.8	0.00			503
1	525	5.18	5.14	34.203	27.028	108.5	0.876	0.43	6.1	89.3	3.22	42.5	0.00			529

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 16.5 N	120 1.5 W	09/03/91	2302 UTC	576 B	190 03 kn	260 01 04	1	1015.2 mb	16.7 C	14.3 C	09m 05	7/8 CC

CAST	DEPTH •I	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 UM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	CI ISL	14.36	14.36	33.486	24.943	300.2	0.000	6.06	104.2	3.3	0.45	0.9	0.08	1.39	0.35	0
1	1 A	14.36	14.36	33.486	24.943	300.3	0.003	6.06	104.2	3.3	0.45	0.9	0.08	1.39	0.35	1
1	10	13.67	13.67	33.476	25.078	287.6	0.029	6.03	102.2	3.7	0.48	1.0	0.12	1.95	0.72	10
1	20	13.57	13.57	33.477	25.100	285.8	0.058	5.78	97.8	3.7	0.52	1.8	0.17	1.48	0.70	20
	30 ISL	13.34	13.34	33.487	25.1S4	280.9	0.086	5.45	91.7	4.9	0.65	3.3	0.30	0.76	0.47	30
1	31	13.31	13.31	33.488	25.161	280.3	0.089	5.42	91.2	5.0	0.67	3.5	0.31	0.69	0.44	31
1	41	12.79	12.78	33.516	25.286	268.6	0.117	5.27	87.7	5.7	0.79	4.5	0.26	0.22	0.27	41
	50 ISL	12.30	12..29	33.541	25.401	257.9	0.140	4.75	78.3	9.8	1.03	8.7	0.33	0.13	0.29	50
1	51	12.24	12.23	33.544	25.415	256.6	0.143	4.68	77.0	10.3	1.06	9.2	0.33	0.12	0.29	51
1	61	11.58	11.57	33.577	25.564	242.6	0.168	3.96	64.3	14.6	1.37	13.6	0.19	0.12	0.36	61
1	71	10.90	10.89	33.672	25.761	224.0	0.191	3.54	56.6	18.2	1.54	17.3	0.06	0.09	0.28	71
	75 ISL	10.70	10.69	33.697	25.816	218.9	0.200	3.45	5S.0	19.4	1.59	18.3	0.06	0.10	0.30	75
1	85	10.36	10.35	33.747	25.914	209.7	0.222	3.28	51.9	21.7	1.69	20.0	0.06	0.12	0.35	85
1	100	10.18	10.17	33.83	26.010	200.9	0.252	2.99	47.1	23.9	1.81	21.9	0.04	0.08	0.24	101
1	120	9.93	9.92	33.914	26.118	191.1	0.292	2.74	43.0	26.5	1.93	23.6	0.04	0.06	0.19	121
	125 ISL	9.91	9.90	33.931	26.135	189.6	0.301	2.69	42.2	26.9	1.95	23.8	0.04	0.06	0.20	126
1	140	9.82	9.80	33.976	26.186	185.1	0.329	2.56	40.1	28.2	2.01	24.5	0.04	0.06	0.22	141
	150 ISL	9.67	9.55	34.000	26.229	181.1	0.347	2.50	39.0	29.6	2.05	25.2	0.04	0.05	0.21	151
1	170	9.29	9.27	34.038	26.322	172.7	0.383	2.38	36.8	32.9	2.14	26.6	0.03	0.04	0.19	171
1	200	8.77	8.75	34.076	26.435	162.4	0.433	2.13	32.6	38.2	2.27	28.5	0.02	0.02	0.13	201
1	230	8.48	8.16	34.096	26.495	157.1	0.481	1.79	27.2	42.3	2.42	30.1	0.03			231
	250 ISL	8.27	8.24	34.107	26.536	153.5	0.512	1.73	26.2	44.4	2.47	30.8	0.03			252
1	269	8.09	8.06	34.118	26.572	150.3	0.541	1.70	25.6	46.3	2.50	31.4	0.03			271
	300 ISL	7.86	7.83	34.142	26.625	145.7	0.587	1.45	21.7	50.5	2.61	32.4	0.02			302
1	321	7.72	7.69	34.158	26.659	142.8	0.617	1.26	18.8	53.5	2.69	33.0	0.02			323
1	381	7.35	7.31	34.184	26.733	136.6	0.701	0.95	14.1	60.8	2.86	34.4	0.02			384
	400 ISL	7.14	7.10	34.196	26.772	133.0	0.727	0.77	11.4	66.1	2.97	34.3	0.02			403
1	441	6.71	6.67	34.221	26.850	125.9	0.780	0.39	5.7	79.0	3.23	34.0	0.02			444
	500 ISL	6.51	6.46	34.236	26.889	122.9	0.853	0.12	1.7	94.1	3.50	30.0	0.02			503
1	510	6.50	6.45	34.236	26.891	122.9	0.865	0.10	1.5	96.3	3.54	29.1	0.02			514
1	530	6.47	6.42	34.236	26.895	122.8	0.890	0.09	1.3	100.4	3.60	27.6	0.02			534
1	545	6.45	6.40	34.240	26.901	122.4	0.908	0.03	0.4	107.4	3.75	24.2	0.03			549
1	555	6.45	6.40	34.240	26.901	122.5	0.921	0.03	0.4	108.4	3.76	23.9	0.03			559
1	565	6.45	6 40	34.240	26.901	122.6	0.933	0.02	0.3	108.8	3.75	23.5	0.03			569
1	570	6.45	6.40	34.240	26.901	122.7	0.939	0.02	0.3	108.8	3.81	23.2	0.03			574
1	574	6.44	6.39	34.240	26.902	122.7	0.944	0.02	0.3	109.6	3.77	22.9	0.05			578

A) SANTA BARBARA BASIN STATION.

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 13.5 N	119 24.7 W	09/03/91	1803 UTC	32 m	110 06 km	00	1	1016.1 mb	16.4 C	12.4 C	09m 04	6/8 ST

CAST	DEPTH m	TEMP DEG C	POT TEMP DEI! C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 UM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	14.36	14.36	33.433	24.902	304.1	0.000	6.17	106.0	1.3	0.30	0.1	0.00	1.63	0.40	0
1	1	14.36	14.36	33.433	24.902	304.1	0.003	6.17	106.0	1.3	0.30	0.1	0.00	1.63	0.40	1
	10 ISL	14.24	14.24	33.436	24.930	301.7	0.030	6.20	106.3	1.3	0.30	0.1	0.00	1.85	0.49	10
1	11	14.23	14.23	33.436	24.932	301.6	0.033	6.20	106.3	1.3	0.30	0.1	0.00	1.86	0.51	11
	20 ISL	13.38	13.38	33.470	25.133	282.7	0.060	5.30	89.3	5.2	0.68	4.1	0.20	1.34	0.61	20
1	21	13.28	13.28	33.475	25.157	280.4	0.062	5.19	87.3	5.7	0.73	4.6	0.22	1.27	0.62	21
	30 ISL	12.92	12.92	33.492	25.242	272.5	0.087	4.82	80.4	8.4	0.94	6.6	0.24	1.02	0.83	30
1	32	12.84	12.84	33.496	25.261	270.8	0.093	4.74	79.0	9.0	0.99	7.0	0.25	0.96	0.88	32

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 10.6 N	119 30.5 W	09/03/91	1604 UTC	170 m	100 09 Jen	100 01 03	1	1015.2 mb	15.1 C	11.9 C	09m 05	7/8 ST

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 UM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	14.48	14.48	33.444	24.885	305.7	0.000	6.29	108.4	1.1	0.30	0.1	0.00	1.49	0.42	0
1	2	14.48	14.48	33.444	24.885	305.8	0.006	6.29	108.4	1.1	0.30	0.1	0.00	1.49	0.42	2
	10 ISL	14.38	14.38	33.447	24.909	303.7	0.030	6.26	107.6	1.1	0.30	0.1	0.01	1.62	0.42	10
1	12	14.34	14.34	33.448	24.918	302.9	0.037	6.25	107.4	1.1	0.30	0.1	0.01	1.67	0.42	12
	20 ISL	14.26	14.26	33.450	24.936	301.4	0.061	6.25	107.2	1.1	0.30	0.1	0.01	1.77	0.54	20
1	23	14.22	14.22	33.451	24.946	300.6	0.070	6.25	107.1	1.1	0.30	0.1	0.01	1.81	0.60	23
	30 ISL	14.08	14.08	33.454	24.978	297.8	0.091	6.08	103.9	1.5	0.36	0.5	0.04	3.02	0.82	30
1	33	14.02	14.02	33.455	24.991	296.6	0.100	5.93	101.2	1.7	0.39	0.6	0.05	3.32	0.87	33
1	43	12.9?	12.96	33.486	25.228	274.2	0.128	4.85	81.0	7.7	0.91	6.9	0.34	0.54	0.44	43
	50 ISL	12.3?	12.36	33.495	25.352	262.6	0.147	4.59	75.7	9.6	1.04	9.3	0.27	0.46	0.36	50
1	53	12.12	12.11	33.507	25.409	257.2	0.155	4.51	74.0	10.4	1.08	10.2	0.21	0.43	0.35	53
1	62	11.29	11.28	33.625	25.655	234.0	0.177	3.94	63.6	15.1	1.34	14.9	0.10	0.21	0.24	62
1	73	10.71	10.70	33.644	25.773	222.9	0.202	3.71	59.1	17.0	1.48	17.3	0.04	0.10	0.17	73
	75 ISL	10.64	10.63	33.656	25.795	220.9	0.206	3.66	58.2	17.5	1.50	17.7	0.04	0.09	0.16	75
1	87	10.35	10.34	33.744	25.914	209.8	0.232	3.36	53.2	20.6	1.64	20.0	0.03	0.06	0.11	87
	100 ISL	10.18	10.17	33.814	25.998	202.1	0.259	3.14	49.5	22.7	1.74	21.4	0.03	0.04	0.10	101
1	106	10.13	10.12	33.842	26.028	199.4	0.271	3.06	48.2	23.5	1.78	21.9	0.03	0.04	0.09	107
	125 ISL	9.95	9.94	33.924	26.123	190.7	0.308	2.79	43.8	26.2	1.90	23.6	0.04	0.04	0.10	126
1	132	9.89	9.87	33.950	26.154	188.0	0.321	2.70	42.3	27.2	1.94	24.1	0.04	0.04	0.10	133
	150 ISL	9.72	9.70	34.003	26.224	181.7	0.355	2.53	39.5	29.3	2.02	25.1	0.04	0.05	0.13	151
1	158	9.64	9.62	34.027	26.256	178.8	0.369	2.46	38.4	30.3	2.06	25.5	0.04	0.05	0.14	159

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 52.7 N	120 8 0 W	09/03/91	1004 UTC	92 m	100 08 kn			1015.5 mb	14.0 C	12.0 C		

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 UM/1	PC>4 UM/1	NO3 VLM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	14.18	14.18	33.477	24.974	297.3	0.000	6.23	106.7	1.5	0.32	0.1	0.01	2.20	0.41	0
1	1	14.18	14.18	33.477	24.974	297.3	0.003	6.23	106.7	1.5	0.32	0.1	0.01	2.20	0.41	1
	10 ISL	13.61	13.61	33.473	25.089	286.6	0.029	6.12	103.6	2.3	0.40	0.6	0.04	3.79	0.79	10
1	11	13.53	13.53	33.473	25.105	285.1	0.032	6.09	102.9	2.4	0.41	0.7	0.05	3.96	0.84	11
1	20	13.42	13.42	33.472	25.126	283.3	0.058	5.73	96.6	3.7	0.53	2.4	0.09	2.66	0.66	20
	30 ISL	13.42	13.42	33.474	25.128	283.4	0.086	5.76	97.1	3.5	0.52	2.2	0.08	2.95	0.76	30
1	32	13.42	13.42	33.474	25.128	283.4	0.092	5.76	97.1	3.4	0.52	2.2	0.08	3.01	0.79	32
1	42	13.26	13.25	33.478	25.164	280.3	0.120	5.69	95.6	3.8	0.56	2.9	0.10	2.70	0.77	42
	50 ISL	13.03	13.02	33.492	25.221	275.1	0.142	5.52	92.3	5.0	0.65	3.9	0.11	2.58	0.79	50
1	51	12.99	12.98	33.494	25.230	274.2	0.145	5.49	91.8	5.2	0.67	4.1	0.11	2.56	0.79	51
1	62	12 24	12.23	33.525	25.400	258.3	0.174	4.78	78.6	9.2	0.97	8.9	0.13	1.84	0.91	62
1	73	11 38	11.37	33.614	25.630	236.6	0.201	4.12	66.6	14.5	1.28	13.9	0.11	1.23	0.70	73
	75 ISL	11 34	11.33	33.616	25.639	235.8	0.206	4.10	66.2	14.7	1.29	14.1	0.11	1.17	0.69	75
1	87	11 08	11.07	33.630	25.697	230.6	0.234	3.95	63.4	15.8	1.37	15.2	0.11	0.81	0.61	87

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 44.7 N	120 24.6 W	09/03/91	0632 UTC	964 -	340 08 kn			1015.9 mb	13.4 C	11.8 C		

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 UM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	13.59	13.59	33.484	25.101	285.2	0.000	6.25	105.8	2.1	0.35	0.3	0.03	1.95	0.37	0
1	1	13.59	13.59	33.484	25.101	285.2	0.003	6.25	105.8	2.1	0.35	0.3	0.03	1.95	0.37	1
	10 ISL	13.42	13.42	33.490	25.140	281.7	0.028	6.33	106.8	2.3	0.37	0.4	0.04	3.05	0.59	10
1	16	13.26	13.26	33.496	25.177	278.3	0.045	6.36	106.9	2.4	0.38	0.5	0.04	4.10	0.80	16
	20 ISL	13.18	13.18	33.499	25.196	276.7	0.056	6.29	105.6	2.6	0.40	0.9	0.05	4.43	0.86	20
	30 ISL	13.02	13.02	33.505	25.232	273.5	0.084	6.02	100.7	3.4	0.48	2.2	0.09	5.24	1.00	30
1	31	13.01	13.01	33.506	25.235	273.2	0.087	5.99	100.2	3.5	0.49	2.4	0.09	5.32	1.01	31
1	40	12.92	12.91	33.512	25.258	271.3	0.111	5.76	96.1	4.4	0.59	3.5	0.09	3.67	0.75	40
	50 ISL	12.72	12.71	33.513	25.298	267.7	0.138	5.49	91.2	5.9	0.70	4.8	0.11	2.10	0.47	50
1	51	12.70	12.69	33.513	25.302	267.4	0.141	5.44	90.4	6.2	0.72	5.1	0.11	1.96	0.45	51
1	60	11.71	11.70	33.497	25.478	250.8	0.164	4.63	75.3	11.1	1.07	10.8	0.17	0.91	0.40	60
1	71	10.41	10.40	33.514	25.724	227.5	0.190	4.11	65.0	16.1	1.38	16.4	0.03	0.17	0.18	71
	75 ISL	10.35	10.34	33.532	25.748	225.3	0.199	4.04	63.8	16.6	1.42	17.0	0.03	0.16	0.18	75
1	80	10.27	10.26	33.54	25.768	223.5	0.211	3.97	62.6	17.1	1.45	17.3	0.03	0.14	0.17	80
1	95	10.02	10.01	33.750	25.975	204.1	0.243	3.34	52.5	22.2	1.67	20.7	0.04	0.14	0.18	95
	100 ISL	9.92	9.91	33.799	26.030	199.0	0.253	3.19	50.0	23.8	1.73	21.6.	0.04	0.14	0.22	101
1	109	9.74	9.73	33.861	26.109	191.7	0.270	3.00	46.9	26.0	1.82	22.9	0.04	0.13	0.29	110
1	125	9.48	9.47	33.884	26.170	186.2	0.301	2.96	46.0	27.0	1.87	23.8	0.04	0.08	0.19	126
1	150	9.27	9.25	34.000	26.295	174.8	0.346	2.63	40.7	30.9	2.00	25.7	0.02	0.04	0.12	151
1	176	8.96	8.94	34.063	26.394	165.8	0.390	2.32	35.7	34.9	2.13	27.3	0.03	0.04	0.11	177
	200 ISL	8.66	8.64	34.075	26.451	160.8	0.429	2.27	34.6	37.8	2.20	28.2	0.03	0.03	0.11	201
1	206	8.59	8.57	34.077	26.463	159.7	0.439	2.26	34.4	38.4	2.21	28.1	0.03	0.03	0.11	207
1	236	8.29	8.27	34.122	26.545	152.4	0.486	2.15	32.6	41.2	2.29	29.5	0.02			237
	250 ISL	8.15	8.12	34.125	26.568	150.4	0.507	2.07	31.2	42.8	2.33	30.1	0.02			252
1	277	7.88	7.85	34.121	26.606	147.2	0.547	1.88	28.2	46.1	2.42	31.2	0.01			279
	300 ISL	7.63	7.60	34.126	26.646	143.6	0.580	1.73	25.8	49.3	2.51	32.3	0.01			302
1	333	7.32	7.29	34.142	26.703	138.5	0.627	1.50	22.2	53.9	2.63	33.8	0.02			335
1	392	7.02	6.98	34.206	26.796	130.5	0.706	0.97	14.3	61.6	2.83	35.9	0.02			395
	400 ISL	6.96	6.92	34.213	26.810	129.3	0.717	0.91	13.4	62.8	2.86	36.2	0.02			403
1	457	6.50	6.46	34.255	26.905	120.7	0.788	0.58	8.4	71.1	3.02	38.2	0.02			460
	500 ISL	6.28	6.24	34.271	26.947	117.2	0.839	0.47	6.8	75.0	3.09	39.1	0.02			503
1	524	6.15	6.10	34.281	26.971	115.1	0.867	0.41	5.9	77.2	3.13	39.6	0.02			528

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 34.7 N	120 45.2 W	09/03/91	0230 UTC	1423 m	350 08 kn	330 02 06	0	1016.0 mb	14.2 C	12.3 C		0/8

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN Ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
1	0		14.11	14.11	33.493	25.000	294.7	0.000	6.01	102.8	4.0	0.41	0.4	0.03	0.52	0.14	0
1	10		13.83	13.83	33.498	25.063	289.1	0.029	6.06	103.1	4.0	0.39	0.4	0.03	0.97 U	0.17 U	10
1	20		13.79	13.79	33.497	25.070	288.6	0.058	6.05	102.8	4.0	0.39	0.4	0.03	0.46	0.17	20
1	29		13.76	13.76	33.496	25.076	288.3	0.084	6.04	102.6	4.0	0.40	0.4	0.04	0.55	0.20	29
	30	ISL	13.76	13.76	33.496	25.076	288.3	0.087	6.04	102.6	4.0	0.40	0.4	0.04	0.55	0.20	30
1	40		13.74	13.73	33.496	25.081	288.2	0.116	6.01	102.0	4.0	0.40	0.6	0.05	0.54	0.22	40
1	49		13.67	13.66	33.492	25.092	287.4	0.142	5.99	101.5	4.3	0.42	0.7	0.06	0.52	0.23	49
	50	ISL	13.67	13.66	33.491	25.091	287.5	0.145	5.99	101.5	4.3	0.42	0.7	0.06	0.52	0.23	50
1	59		13.62	13.61	33.495	25.105	286.4	0.170	5.96	100.9	4.3	0.42	0.7	0.07	0.45	0.24	59
1	68		13.34	13.33	33.489	25.157	281.7	0.196	5.72	96.3	5.1	0.53	2.4	0.10	0.32	0.19	68
	75	ISL	12.35	12.34	33.473	25.339	264.4	0.215	5.11	84.2	8.4	0.83	7.3	0.07	0.21	0.15	75
1	82		11.26	11.25	33.483	25.550	244.4	0.233	4.45	71.7	12.4	1.17	12.8	0.02	0.12	0.11	82
1	98		10.26	10.25	33.620	25.833	217.7	0.270	3.77	59.5	18.4	1.52	18.4	0.01	0.04	0.07	98
	100	ISL	10.19	10.18	33.631	25.853	215.8	0.274	3.72	58.6	18.9	1.55	18.8	0.01	0.03	0.07	100
1	118		9.69	9.68	33.718	26.005	201.7	0.312	3.41	53.1	22.4	1.70	21.4	0.01	0.01	0.06	119
	125	ISL	9.45	9.44	33.763	26.080	194.7	0.326	3.35	52.0	24.0	1.75	22.3	0.01	0.01	0.05	126
1	143		8.93	8.91	33.871	26.248	179.0	0.359	3.26	50.0	27.6	1.84	24.2	0.01	0.01	0.04	144
	150	ISL	8.84	8.82	33.896	26.282	175.9	0.372	3.22	49.3	28.4	1.86	24.6	0.01	0.01	0.04	151
1	173		8.67	8.65	33.954	26.354	169.4	0.411	3.05	46.5	30.9	1.94	25.6	0.01	0.00	0.03	174
	200	ISL	8.30	8.28	34.016	26.460	159.8	0.456	2.65	40.1	36.3	2.12	28.0	0.01	0.00	0.04	201
1	203		8.25	8.23	34.022	26.472	158.7	0.461	2.60	39.3	37.0	2.14	28.3	0.01	0.00	0.04	204
1	233		7.82	7.80	34.060	26.566	150.1	0.507	2.31	34.6	42.4	2.29	30.1	0.01			234
	250	ISL	7.57	7.55	34.089	26.625	144.7	0.532	2.01	29.9	46.7	2.43	31.6	0.01			251
1	273		7.28	7.2S	34.129	26.698	138.0	0.564	1.58	23.4	52.6	2.61	33.5	0.01			275
	300	ISL	7.06	7.03	34.161	26.754	133.0	0.601	1.24	18.3	57.3	2.75	35.0	0.01			302
1	329		6.89	6.86	34.187	26.798	129.2	0.639	0.98	14.4	61.1	2.85	36.1	0.01			331
1	389		6.60	6.56	34.230	26.871	123.0	0.715	0.66	9.6	67.1	3.00	37.6	0.01			392
	400	ISL	6.53	6.49	34.238	26.887	121.6	0.728	0.61	8.9	68.5	3.03	37.9	0.01			403
1	455		6.16	6.12	34.278	26.967	114.5	0.793	0.39	5.6	75.3	3.14	39.4	0.01			458
	500	ISL	5.98	5.94	34.298	27.006	111.3	0.844	0.33	4.7	78.6	3.18	40.0	0.01			503
1	525		5.88	5.83	34.310	27.028	109.4	0.872	0.30	4.3	80.5	3.20	10.3	0.01			529

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 13.4 N	121 28.3 W	08/03/91	2033 UTC	3642 m	350 08 kn	350 02 06	0	1018.8 mb	15.4 C	14.3 C	16M 04	0/8

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN Ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	.13.63	13.63	33.355	24.993	295.4	0.000	6.06	102.6	3.5	0.41	0.3	0.04	0.47	0.18	0
1	1		13.63	13.63	33.355	24.993	295.5	0.003	6.06	102.6	3.5	0.41	0.3	0.04	0.47	0.18	1
	10	ISL	13.47	13.47	33.359	25.029	292.3	0.029	6.07	102.4	3.5	0.41	0.3	0.04	0.52	0.21	10
1	16		13.33	13.33	33.365	25.062	289.3	0.047	6.08	102.3	3.4	0.41	0.3	0.04	0.57	0.24	16
	20	ISL	13.32	13.32	33.369	25.067	288.9	0.058	6.08	102.2	3.4	0.41	0.3	0.04	0.59	0.25	20
	30	ISL	13.31	13.31	33.378	25.076	288.3	0.087	6.08	102.2	3.3	0.41	0.3	0.04	0.62	0.28	30
1	31		13.31	13.31	33.379	25.077	288.3	0.090	6.08	102.2	3.3	0.41	0.3	0.04	0.62	0.28	31
1	41		13.30	13.29	33.376	25.077	288.6	0.119	6.04	101.5	3.2	0.41	0.3	0.04	0.57	0.28	41
1	50		12.89	12.88	33.302	25.101	286.5	0.145	5.91	98.4	4.3	0.50	1.5	0.08	0.38	0.23	50
1	61		11.83	11.82	33.327	25.324	265.5	0.175	5.40	88.0	7.1	0.84	6.7	0.04	0.06	0.11	61
1	71		11.06	11.05	33.329	25.466	252.1	0.201	4.92	78.8	10.3	1.09	10.8	0.03	0.03	0.08	71
	75	ISL	10.75	10.74	33.332	25.523	246.7	0.211	4.77	75.9	11.7	1.18	12.4	0.03	0.02	0.07	75
1	80		10.40	10.39	33.344	25.593	240.1	0.223	4.59	72.5	13.4	1.29	14.2	0.03	0.02	0.07	80
1	95		9.72	9.71	33.471	25.807	220.0	0.258	4.11	64.0	17.9	1.52	18.2	0.03	0.03	0.09	95
	100	ISL	9.59	9.58	33.527	25.872	213.9	0.269	3.95	61.4	19.3	1.58	19.2	0.03	0.02	0.08	100
1	110		9.41	9.40	33.641	25.991	202.8	0.289	3.66	56.7	22.0	1.69	21.1	0.02	0.01	0.06	111
1	125		9.17	9.16	33.790	26.146	188.3	0.319	3.28	50.6	26.0	1:84	23.7	0.02	0.01	0.07	126
1	150		8.91	8.89	33.916	26.286	175.5	0.364	2.96	45.4	30.2	1.97	25.5	0.02	0.03	0.10	151
1	175		8.49	8.47	34.002	26.419	163.2	0.407	2.75	41.8	34.7	2.09	27.2	0.02	0.02	0.09	176
	200	ISL	8.06	8.04	34.034	26.510	155.0	0.446	2.59	39.0	39.0	2.19	28.9	0.02	0.01	0.07	201
1	205		7.98	7.96	34.038	26.525	153.6	0.454	2.55	38.3	39.9	2.21	29.2	0.02	0.01	0.07	206
1	234		7.72	7.70	34.077	26.594	147.5	0.498	2.20	32.9	45.3	2.37	30.8	0.02			235
	250	ISL	7.61	7.59	34.096	26.625	144.8	0.521	2.00	29.8	47.6	2.45	31.6	0.02			251
1	275		7.43	7.40	34.119	26.669	140.9	0.557	1.72	25.5	51.0	2.56	32.9	0.02			277
	300	ISL	7.15	7.12	34.122 -	26.711	137.2	0.592	1.55	22.9	54.9	2.65	34.1	0.02			302
1	331		6.81	6.78	34.122	26.757	133.0	0.633	1.38	20.2	59.5	2.75	35.5	0.02			333
1	390		6.51	6.47	34.160	26.828	127.0	0.710	0.91	13.2	66.5	2.94	37.6	0.02			393
	400	ISL	6.46	6.42	34.172	26.844	125.6	0.733	0.84	12.2	67.7	2.97	37.9	0.02			403
1	456		6.20	6.16	34.238	26.931	118.0	0.791	0.51	7.4	74.4	3.12	39.5	0.01			459
	500	ISL	5.98	5.94	34.268	26.982	113.5	0.842	0.41	5.9	78.5	3.19	40.3	0.01			503
1	526		5.85	5.80	34.286	27.013	110.8	0.871	0.35	5.0	81.0	3.23	40.7	0.01			530

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 54.7 N	122 7.9 W	08/03/91	1416 UTC	4170 m	360 10 kn	330 04 06	0	1017.5 ab	12.9 C	11.2 C	1.1m 03	0/8

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/1	OXYGEN	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 uM/1	NC>2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	12.90	12.90	33.110	24.949	299.6	0.000	6.15	102.4	3.7	0.41	0.0	0.02	0.48	0.22	0
1	1	12.90	12.90	33.110	24.949	299.6	0.003	6.15	102.4	3.7	0.41	0.0	0.02	0.48	0.22	1
	10 ISL	12.89	12.89	33.109	24.951	299.7	0.030	6.16	102.5	3.7	0.41	0.0	0.01	0.49	0.22	10
1	16	12.89	12.89	33.109	24.951	299.9	0.048	6.16	102.5	3.7	0.41	0.0	0.01	0.49	0.22	16
	20 ISL	12.89	12.89	33.108	24.950	300.0	0.060	6.16	102.5	3.7	0.41	0.0	0.01	0.49	0.22	20
	30 ISL	12.90	12.90	33.108	24.948	300.4	0.090	6.16	102.5	3.8	0.41	0.0	0.02	0.47	0.22	30
1	32	12.90	12.90	33.108	24.948	300.5	0.096	6.16	102.5	3.8	0.41	0.0	0.02	0.47	0.22	32
1	42	12.91	12.90	33.199	25.017	294.2	0.126	6.03	100.4	4.0	0.45	0.6	0.11	0.52	0.29	42
	50 ISL	12.64	12.63	33.267	25.123	284.4	0.149	5.86	97.1	5.0	0.55	2.2	0.12	0.38	0.25	50
1	51	12.59	12.58	33.274	25.138	282.9	0.152	5.84	96.7	5.1	0.57	2.4	0.12	0.36	0.25	51
1	62	12.04	12.03	33.317	25.277	270.0	0.182	5.51	90.2	6.4	0.7(5	5.6	0.03	0.08	0.11	62
1	71	11.15	11.14	33.313	25.437	254.9	0.206	5.01	80.4	10.2	1.06	10.4	0.03	0.04	0.09	71
	75 ISL	10.84	10.83	33.332	25.507	248.2	0.216	4.80	76.5	11.8	1.17	12.2	0.03	0.03	0.09	75
1	82	10.41	10.40	33.387	25.625	237.1	0.233	4.44	70.2	14.4	1.33	15.0	0.03	0.02	0.08	82
1	97	9.85	9.84	33.557	25.853	215.7	0.267	3.80	59.4	19.5	1.59	19.3	0.03	0.02	0.07	97
	100 ISL	9.76	9.75	33.583	25.888	212.4	0.273	3.72	58.0	20.3	1.63	19.9	0.03	0.02	0.07	100
1	112	9.52	9.51	33.670	25.996	202.4	0.298	3.46	53.7	22.8	1.74	21.8	0.02	0.01	0.05	113
	125 ISL	9.52	9.51	33.754	26.061	196.5	0.324	3.25	50.5	24.6	1.81	22.7	CI. 02	0.01	0.04	126
1	127	9.52	9.51	33.764	26.069	195.7	0.328	3.22	50.0	24.8	1.82	22.8	0.02	0.01	0.04	128
	150 ISL	9.41	9.39	33.903	26.196	184.2	0.372	2.88	44.7	27.9	1.93	24.3	0.03	0.01	0.05	151
1	152	9.39	9.37	33.913	26.207	183.1	0.375	2.85	44.2	28.2	1.94	24.4	0.03	0.01	0.05	153
1	177	9.06	9.04	33.980	26.313	173.5	0.420	2.66	40.9	31.7	2.03	26.1	0.02	0.00	0.04	178
	200 ISL	8.79	8.77	34.028	26.394	166.3	0.459	2.52	38.6	34.4	2.11	27.1	0.02	0.00	0.03	201
1	207	8.71	8.69	34.041	26.417	164.2	0.471	2.47	37.7	35.3	2.14	27.4	0.02	0.00	0.03	208
1	235	8.34	8.32	34.095	26.516	155.1	0.515	2.16	32.7	40.6	2.30	29.4	0.02			236
	250 ISL	8.20	8.17	34.113	26.552	152.0	0.538	2.02	30.5	42.5	2.36	30.1	0.02			251
1	275	8.02	7.99	34.134	26.595	148.2	0.576	1.81	27.2	45.2	2.45	31.1	0.02			277
	300 ISL	7.85	7.82	34.146	26.630	145.3	0.612	1.66	24.9	47.8	2.51	31.9	0.02			302
1	331	7.63	7.60	34.157	26.671	141.8	0.657	1.49	22.2	51.3	2.59	33.0	0.02			333
1	389	7.0:;!	6.98	34.190	26.783	131.7	0.736	1.02	15.0	60.8	2.82	35.8	0.02			391
	400 ISL	6.92	6.88	34.197	26.802	130.0	0.751	0.94	13.8	62.4	2.86	36.2	0.02			403
1	454	6.51	6.47	34.234	26.887	122.4	0.819	0.63	9.2	69.9	3.03	38.0	0.01			457
	500 ISL	6.21	6.17	34.262	26.949	116.9	0.874	0.46	6.6	75.3	3.13	39.2	0.01			503
1	526	6.04	5.99	34.279	26.984	113.8	0.904	0.37	5.3	78.4	3.18	39.9		0.01		530

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	5ECCHI/FOREL	CLD AMT TYPE
32 34.7 N	122 48.7 W	08/03/91	0815 UTC	4241 m	020 11 kn			1020.8 ab	13.5 C	11.0 C		

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN al/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	14.35	14.35	33.166	24.698	323.5	0.000	5.95	102.1	2.6	0.40	0.0	0.00	0.13	0.04	0
1	2	14.35	14.35	33.166	24.698	323.6	0.006	5.95	102.1	2.6	0.40	0.0	0.00	0.13	0.04	2
	10 ISL	14.36	14.36	33.165	24.695	324.1	0.032	5.94	101.9	2.6	0.40	0.0	0.00	0.13	0.04	10
1	17	14.37	14.37	33.166	24.694	324.4	0.055	5.93	101.8	2.6	0.40	0.0	0.00	0.13	0.04	17
	20 ISL	14.37	14.37	33.170	24.697	324.2	0.065	5.93	101.8	2.6	0.40	0.0	0.00	0.13	0.04	20
	30 ISL	14.37	14.37	33.183	24.708	323.5	0.097	5.96	102.3	2.7	0.40	0.0	0.00	0.15	0.06	30
1	31	14.37	14.37	33.184	24.708	323.4	0.100	5.96	102.3	2.7	0.40	0.0	0.00	0.15	0.06	31
1	42	14.08	14.07	33.247	24.818	313.3	0.135	5.99	102.2	3.0	0.41	0.0	0.02	0.36	0.17	42
	50 ISL	13.73	13.72	33.212	24.863	309.2	0.160	5.96	101.0	3.3	0.45	0.5	0.07	0.40	0.20	50
1	51	13.67	13.66	33.204	24.869	308.6	0.163	5.96	100.8	3.4	0.46	0.6	0.08	0.41	0.20	51
1	62	12.54	12.53	33.106	25.018	294.6	0.197	5.90	97.4	4.1	0.58	2.3	0.14	0.31	0.16	62
1	71	11.90	11.89	33.036	25.085	288.4	0.223	5.88	95.8	5.0	0.68	3.8	0.06	0.23	0.13	71
	75 ISL	11.61	11.60	33.012	25.120	285.2	0,234	5.86	94.8	5.4	0.72	4.4	0.04	0.18	0.11	75
1	81	11.25	11.24	33.005	25.180	279.5	0.251	5.82	93.4	6.1	0.78	5.4	0.02	0.12	0.09	81
1	97	10.97	10.96	33.230	25.405	258.4	0.294	5.13	82.0	9.5	1.05	10.3	0.02	0.11	0.11	97
	100 ISL	10.84	10.83	33.262	25.453	253.9	0.302	5.00	79.7	10.4	1.10	11.3	0.02	0.10	0.10	100
1	112	10.23	10.22	33.371	25.644	236.0	0.331	4.55	71.6	14.2	1.31	14.9	0.01	0.05	0.07	113
	125 ISL	9.65	9.64	33.476	25.823	219.1	0.361	4.19	65.1	18.0	1.49	18.0	0.01	0.02	0.04	126
1	127	9 57	9.56	33.492	25.849	216.7	0.365	4.14	64.3	18.5	1.51	18.4	0.01	0.02	0.04	128
	150 ISL	9 12	9.10	33.724	26.103	192.9	0.412	3.67	56.5	23.5	1.69	21.7	0.01	0.00	0.03	151
1	152	9 10	9.08	33.743	26.121	191.2	0.416	3.64	56.0	23.9	1.70	21.9	0.01	0.00	0.03	153
1	177	8 77	8.75	33.887	26.286	176.0	0.462	3.37	51.5	28.2	1.81	24.0	0.01	0.00	0.02	178
	200 ISL	8 33	8.31	33.955	26.407	164.8	0.501	3.51	53.1	31.2	1.83	24.7	0.01	0.00	0.01	201
1	206	8.21	8.19	33.966	26.434	162.3	0.511	3.53	53.3	32.1	1.83	24.9	0.01	0.00	0.01	207
1	235	7.77	7.75	34.009	26.533	153.2	0.557	2.98	44.6	39.2	2.07	27.9	0.01			236
	250 ISL	7.57	7.55	34.012	26.564	150.4	0.580	2.88	42.9	41.7	2.13	28.8	0.01			251
1	274	7.30	7.27	34.016	26.606	146.7	0.615	2.71	40.1	45.2	2.21	30.0	0.01			276
	300 ISL	7.17	7.14	34.063	26.661	141.8	0.653	2.12	31.3	50.5	2.42	32.4	0.01			302
1	330	7.06	7.03	34.124	26.725	136.2	0.695	1.40	20.6	56.6	2.67	35.0	0.01			332
1	387	6.66	6.62	34.169	26.815	128.3	0.770	0.92	13.4	65.0	2.88	36.9	0.01			389
	400 ISL	6.55	6.51	34.176	26.835	126.5	0.786	0.84	12.2	66.9	2.92	37.4	0.01			403
I	453	6.10	6.06	34.202	26.915	119.3	0.852	0.59	8.5	74.5	3.04	39.1	0.01			456
	500 ISL	5.75	5.71	34.224	26.976	113.8	0.906	0.45	6.4	80.4	3.12	40.3	0.01			503
1	521	5.60	5.56	34.234	27.003	111.4	0.930	0.39	5.5	83.1	3.16	40.8	0.01			525

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	HIND SPEED	HAVES	HEA	BAROMETER	DRY	NET	SECCHI/FOREL	CLD AMT	TYPE
32 14.5 N	123 29.6 H	08/03/91	0215 UTC	4124 m	340 12 kn	330 07 06	1	1020.8 mb	13.8 C	11.7 C	17n 02	6/8	CU

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT m1/1	OXYGEN	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/I	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.28	14.28	33.314	24.827	311.2	0.000	5.92	101.5	3.3	0.40	0.0	0.00	0.27	0.09	0
1	2		14.28	14.28	33.314	24.827	311.3	0.006	5.92	101.5	3.3	0.40	0.0	0.00	0.27	0.09	2
	10	ISL	14.29	14.29	33.314	24.825	311.7	0.031	5.92	101.5	3.3	0.40	0.0	0.00	0.27	0.08	10
1	17		14.30	14.30	33.314	24.823	312.1	0.053	5.93	101.7	3.3	0.40	0.0	0.00	0.27	0.08	17
	20	ISL	14.30	14.30	33.314	24.823	312.2	0.062	5.93	101.7	3.3	0.40	0.0	0.00	0.27	0.08	20
	30	ISL	14.29	14.29	33.312	24.824	312.4	0.094	5.93	101.7	3.3	0.39	0.0	0.00	0.28	0.09	30
1	32		14.29	14.29	33.311	24.823	312.5	0.100	5.93	101.7	3.3	0.39	0.0	0.00	0.28	0.09	32
1	42		14.29	14.28	33.312	24.824	312.7	0.131	5.93	101.7	3.3	0.39	0.0	0.00	0.28	0.09	42
	50	ISL	14.27	14.26	33.306	24.824	313.0	0.156	5.93	101.6	3.5	0.41	0.1	0.01	0.33	0.12	50
1	51		14.27	14.26	33.305	24.823	313.1	0.159	5.93	101.6	3.5	0.41	0.1	0.01	0.34	0.13	51
1	61		13.69	13.68	33.287	24.930	303.2	0.190	5.92	100.3	3.8	0.46	0.6	0.06	0.44	0.22	61
1	72		13.02	13.01	33.278	25.058	291.2	0.223	5.73	95.7	4.9	0.59	2.6	0.10	0.42	0.27	72
	75	ISL	12.71	12.70	33.252	25.098	287.4	0.231	5.71	94.7	5.2	0.64	3.3	0.08	0.40	0.26	75
1	80		12.10	12.09	33.216	25.187	278.9	0.246	5.62	92.0	6.1	0.74	4.9	0.03	0.35	0.22	80
1	91		10.54	10.53	33.272	25.513	248.0	0.275	4.86	77.0	12.0	1.18	12.8	0.01	0.09	0.10	91
	100	ISL	9.91	9.90	33.271	25.619	238.0	0.296	4.74	74.0	14.1	1.32	15.0	0.01	0.06	0.08	100
1	110		9.64	9.63	33.293	25.681	232.2	0.320	4.68	72.7	15.5	1.38	15.9	0.01	0.03	0.05	111
	125	ISL	9.70	9.69	33.528	25.855	216.0	0.354	3.95	61.5	19.6	1.57	19.2	0.01	0.01	0.04	126
1	126		9.70	9.69	33.545	25.869	214.8	0.356	3.90	60.7	19.9	1.58	19.4	0.01	0.01	0.04	127
	150	ISL	9.08	9.06	33.779	26.152	188.2	0.404	3.82	58.8	23.9	1.64	21.3	0.01	0.00	0.02	151
1	151		9.05	9.03	33.786	26.162	187.3	0.406	3.82	58.7	24.0	1.64	21.3	0.01	0.00	0.02	152
1	175		8.76	8.74	33.908	26.304	174.2	0.449	3.86	59.0	26.7	1.63	22.1	0.00	0.00	0.02	176
	200	ISL	8.44	8.42	33.969	26.401	165.4	0.492	3.71	56.3	29.6	1.69	22.8	0.00	0.00	0.01	201
1	207		8.34	8.32	33.977	26.423	163.4	0.503			30.6	1.71	23.2	0.00	0.00	0.01	208
1	236		7.84	7.82	33.998	26.514	155.1	0.549	3.24	48.5	37.8	2.00	26.9	0.00			237
	250	ISL	7.73	7.71	34.015	26.544	152.5	0.571	2.96	44.2	40.5	2.12	28.3	0.00			251
1	276		7.57	7.54	34.046	26.591	148.3	0.610	2.44	36.3	45.0	2.30	30.4	0.01			278
	300	ISL	7.26	7.23	34.056	26.643	143.6	0.645	2.13	31.5	49.8	2.44	32.1	0.01			302
1	331		6.85	6.82	34.066	26.708	137.7	0.689	1.81	26.5	55.9	2.59	34.0	0.00			333
1	391		6.38	6.34	34.108	26.804	129.2	0.769	1.20	17.4	65.4	2.84	36.8	0.00			393
	400	ISL	6.28	6.24	34.108	26.817	128.0	0.780	1.15	16.6	67.0	2.87	37.2	0.00			403
1	457		5.68	5.64	34.119	26.901	120.2	0.851	0.88	12.5	76.6	3.02	39.5	0.00			460
	500	ISL	5.53	5.49	34.174	26.963	114.7	0.902	0.62	8.8	81.8	3.11	40.5	0.00			503
1	527		5.44	5.40	34.209	27.002	111.3	0.932	0.46	6.5	85.1	3.16	41.1	0.00			531

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	HIND SPEED	HAVES	HEA	BAROMETER	DRY	HET	SECCHI/FOREL	CLD AMT	TYPE
31 54.8 N	124 10.2 H	07/03/91	2023 UTC	4211 m	360 15 kn	360 08 06	1	1024.9 Mb	14.8 C	11.2 C	23n 02	5/8	SC

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/1	OXYGEN	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.39	14.39	33.319	24.807	313.1	0.000	5.93	101.9	2.8	0.40	0.2	0.00	0.18	0.05	0
1	1		14.39	14.39	33.319	24.807	313.1	0.003	5.93	101.9	2.8	0.40	0.2	0.00	0.18	0.05	1
	10	ISL	14.38	14.38	33.319	24.810	313.1	0.031	5.93	101.9	2.8	0.40	0.2	0.00	0.18	0.05	10
	20	ISL	14.37	14.37	33.320	24.813	313.2	0.063	5.92	101.7	2.8	0.40	0.2	0.00	0.19	0.06	20
1	21		14.37	14.37	33.320	24.813	313.2	0.066	5.92	101.7	2.8	0.40	0.2	0.00	0.19	0.06	21
	30	ISL	14.35	14.35	33.320	24.818	313.0	0.094	5.92	101.7	2.8	0.40	0.2	0.00	0.19	0.06	30
1	40		14.33	14.32	33.319	24.821	313.0	0.125	5.93	101.8	2.8	0.39	0.2	0.00	0.20	0.07	40
	50	ISL	13.55	13.54	33.297	24.966	299.4	0.156	5.79	97.8	3.6	0.51	1.9	0.04	0.33	0.15	50
1	61		12.43	12.42	33.266	25.163	280.8	0.188	5.57	91.9	5.2	0.69	4.6	0.07	0.42	0.22	61
	75	ISL	11.15	11.14	33.212	25.359	262.4	0.226	5.31	85.2	8.1	0.93	8.6	0.03	0.17	0.15	75
1	76		11.05	11.04	33.209	25.374	260.9	0.228	5.29	84.7	8.4	0.95	9.0	0.03	0.15	0.14	76
1	85		9.92	9.91	33.213	25.572	242.1	0.251	5.00	78.1	12.5	1.23	13.5	0.02	0.05	0.06	85
1	95		9.97	9.96	33.400	25.710	229.3	0.275	4.47	70.0	14.6	1.341	15.8	0.01	0.05	0.07	95
	100	ISL	9.88	9.87	33.473	25.782	222.5	0.286	4.20	65.6	16.6	1.44	17.5	0.01L	0.03	0.06	100
1	105		9.78	9.77	33.531	25.844	216.7	0.297	3.97	61.9	18.5	1.54	19.0	0.01	0.02	0.04	105
1	114		9.68	9.67	33.589	25.906	211.0	0.316	3.75	58.4	20.4	1.63	20.4	0.01	0.02	0.04	115
	125	ISL	9.57	9.56	33.654	25.975	204.6	0.339	3.52	54.7	22.3	1.71	21.8	0.01L	0.01	0.03	126
1	129		9.53	9.52	33.677	26.000	202.4	0.347	3.45	53.6	22.9	1.74	22.2	0.01	0.01	0.03	130
1	150		9.22	9.20	33.790	26.139	189.6	0.388	3.13	48.3	26.5	1.87	24.3	0.01	0.00	0.03	151
1	170		8.82	8.80	33.917	26.302	174.4	0.425	2.81	43.0	31.0	2.00	26.5	0.01	0.00	0.03	171
1	197		8.48	8.46	33.996	26.417	163.9	0.470	2.68	40.7	34.7	2.09	27.8	0.01	0.00	0.03	198
	200	ISL	8.40	8.38	34.000	26.432	162.5	0.475	2.71	41.1	35.2	2.09	27.8	0.01	0.00	0.03	201
1	220		7.86	7.84	34.015	26.524	153.8	0.507	2.88	43.1	39.0	2.10	28.0	0.01	0.00	0.02	221
	250	ISL	7.49	7.47	34.035	26.594	147.6	0.552	2.62	38.9	44.0	2.23	30.0	0.01			251
1	256		7.45	7.43	34.038	26.602	146.9	0.561	2.52	37.4	45.0	2.27	30.5	0.01			257
1	297		7.10	7.07	34.040	26.653	142.5	0.620	1.77	26.1	53.5	2.56	33.7	0.01			299
	300	ISL	7.07	7.04	34.042	26.659	142.0	0.625	1.74	25.6	54.1	2.57	33.9	0.01			302
1	352		6.51	6.48	34.084	26.767	132.1	0.696	1.31	19.0	63.1	2.77	36.5	0.01			354
	400	ISL	6.20	6.16	34.096	26.818	127.8	0.758	0.89	12.8	70.1	2.95	38.4	0.01			403
1	418		6.11	6.07	34.104	26.835	126.3	0.781	0.75	10.8	72.5	3.01	39.0	0.01			421
1	487		5.73	5.69	34.214	26.971	114.1	0.864	0.49	7.0	80.5	3.19	40.5	0.01			490
	500	ISL	5.66	5.62	34.222	26.985	112.8	0.879	0.47	6.7	82.1	3.20	40.7	0.01			503
1	566		5.30	5.25	34.266	27.064	105.8	0.951	0.35	4.9	90.1	3.26	41.9	0.00			570

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 53.4 N	118 29.4 W	05/03/91	0710 UTC	55 m	090 05 kn			1017.1 mb	15.5 C	12.3 C		

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/l	OXYGEN	OXY PCT	SIO3 UM/l	PO4 uM/l	NO3 uM/l	NO2 UM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
	0 ISL	15.68	15.68	33.174	24.416	350.4	0.000	6.12	107.9	2.7	0.42	0.5	0.06	1.53	0.41	0
1	1	15.68	15.68	33.174	24.416	350.4	0.004	6.12	107.9	2.7	0.42	0.5	0.06	1.53	0.41	1
	10 ISL	15.02	15.02	33.378	24.718	321.9	0.034	6.04	105.2	2.0	0.36	0.2	0.03	1.73	0.40	10
1	11	14.93	14.93	33.406	24.760	318.0	0.037	6.03	104.8	1.9	0.35	0.2	0.03	1.75	0.40	11
	20 ISL	14.74	14.74	33.427	24.817	312.8	0.065	5.91	102.4	2.2	0.37	0.2	0.03	1.66	0.46	20
1	21	14.74	14.74	33.434	24.822	312.3	0.068	5.90	102.2	2.2	0.37	0.2	0.03	1.65	0.47	21
	30 ISL	14.64	14.64	33.414	24.829	312.0	0.097	5.74	99.2	2.8	0.50	0.7	0.07	1.42	0.45	30
1	32	14.62	14.62	33.411	24.831	311.8	0.103	5.71	98.6	2.9	0.53	0.8	0.08	1.36	0.45	32
1	42	14.53	14.52	33.407	24.847	310.6	0.134	5.63	97.1	3.5	0.60	1.1	0.10	1.04	0.54	42
	50 ISL	13.35	13.34	33.439	25.116	285.1	0.158	4.81	81.0	8.1	1.02	5.7	0.33	0.50	0.48	50
1	52	13.05	13.04	33.450	25.184	278.6	0.163	4.60	77.0	9.3	1.12	6.9	0.39	0.37	0.46	52

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 49.4 N	118 37.7 W	05/03/91	0903 UTC	633 m	080 07 kn			1016.9 mb	14.9 C	13.5 C		

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/l	OXYGEN	OXY PCT	SIO3 UM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
	0 ISL	15.20	15.20	33.476	24.754	318.1	0.000	5.88	102.8	2.7	0.35	0.0	0.00	0.20	0.06	0
1	1	15.20	15.20	33.476	24.754	318.2	0.003	5.88	102.8	2.7	0.35	0.0	0.00	0.20	0.06	1
	10 ISL	15.18	15.18	33.475	24.758	318.1	0.032	5.85	102.3	2.7	0.34	0.0	0.00	0.19	0.06	10
1	11	15.18	15.18	33.475	24.758	318.1	0.035	5.85	102.3	2.7	0.34	0.0	0.00	0.19	0.06	11
	20 ISL	15.04	15.04	33.479	24.792	315.2	0.063	5.86	102.1	2.7	0.34	0.0	0.00	0.25	0.10	20
1	21	15.02	15.02	33.479	24.797	314.8	0.067	5.86	102.1	2.7	0.34	0.0	0.00	0.26	0.11	21
	30 ISL	14.93	14.93	33.476	24.814	313.4	0.095	5.85	101.7	2.9	0.35	0.1	0.01	0.41	0.18	30
1	32	14.91	14.91	33.476	24.818	313.0	0.101	5.85	101.7	2.9	0.35	0.1	0.01	0.44	0.20	32
1	41	13.78	13.77	33.447	25.034	292.7	0.128	5.36	91.0	4.3	0.68	2.7	0.25	0.40	0.27	41
	50 ISL	12.98	12.97	33.437	25.188	278.2	0.154	5.07	84.7	6.4	0.81	5.5	0.41	0.40	0.34	50
1	51	12.90	12.89	33.437	25.204	276.7	0.157	5.04	84.0	6.7	0.82	5.8	0.42	0.40	0.34	51
1	62	12.03	12.02	33.484	25.408	257.5	0.186	4.36	71.4	10.6	1.14	10.9	0.26	0.21	0.26	62
1	72	11.46	11.45	33.547	25.563	242.9	0.211	4.00	64.7	13.6	1.33	13.7	0.21	0.16	0.20	72
	75 ISL	11.33	11.32	33.566	25.602	239.3	0.219	3.92	63.3	14.2	1.37	14.4	0.17	0.14	0.18	75
1	85	10.97	10.96	33.633	25.719	228.4	0.242	3.69	59.1	16.3	1.47	16.6	0.06	0.09	0.14	85
	100 ISL	10.56	10.55	33.760	25.890	212.4	0.275	3.25	51.6	20.5	1.68	19.7	0.04	0.04	0.09	100
1	102	10.52	10.51	33.777	25.910	210.5	0.279	3.19	50.7	21.1	1.71	20.1	0.04	0.04	0.09	103
1	122	10.19	10.18	33.919	26.078	195.0	0.320	2.77	43.7	25.5	1.88	22.8	0.02	0.02	0.07	123
	125 ISL	10.16	10.15	33.937	26.098	193.2	0.326	2.72	42.9	26.0	1.90	23.1	0.02	0.02	0.07	126
1	148	9.94	9.92	34.050	26.224	181.7	0.369	2.40	37.7	29.4	2.05	25.0	0.01	0.02	0.10	149
	150 ISL	9.90	9.88	34.057	26.236	180.6	0.372	2.38	37.3	29.7	2.06	25.2	0.01	0.02	0.10	151
1	177	9.37	9.35	34.124	26.376	167.7	0.419	2.18	33.8	34.0	2.20	26.9	0.01	0.03	0.08	178
	200 ISL	9.05	9.03	34.146	26.445	161.5	0.457	2.08	32.0	36.5	2.26	27.8	0.01	0.02	0.05	201
1	208	8.95	8.93	34.148	26.463	160.0	0.470	2.06	31.7	37.3	2.28	28.1	0.01	0.01	0.04	209
1	237	8.58	8.56	34.147	26.520	154.9	0.516	2.02	30.8	40.3	2.34	29.1	0.01			238
	250 ISL	8.42	8.39	34.152	26.549	152.4	0.536	1.94	29.5	42.0	2.38	29.7	0.01			251
1	277	8.11	8.08	34.164	26.605	147.3	0.576	1.73	26.1	45.7	2.47	30.9	0.01			279
	300 ISL	7.88	7.85	34.170	26.644	143.9	0.610	1.59	23.9	48.5	2.54	31.8	0.01			302
1	333	7 59	7.56	34.178	26.693	139.7	0.656	1.39	20.7	52.4	2.64	33.0	0.01			335
1	392	7 13	7.09	34.208	26.782	131.9	0.737	0.96	14.2	60.2	2.84	35.3	0.01			395
	400 ISL	7 08	7.04	34.212	26.793	131.0	0.747	0.92	13.6	61.1	2.86	35.6	0.01			403
1	457	6.75	6.71	34.244	26.863	124.9	0.820	0.64	9.4	67.2	2.99	37.1	0.01			460
	500 ISL	6.49	6.44	34.278	26.925	119.5	0.873	0.46	6.7	72.9	3.08	38.0	0.01			503
1	526	6.33	6.28	34.299	26.963	116.1	0.903	0.35	5.1	76.3	3.14	38.5	0.01			530

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CID AMT TYPE
33 39.4 N	118 58.5 W	05/03/91	1312 UTC	670 m	300 09	kn		1016.8 mb	15.8 C	14.8 C		

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/l	OXYGEN	OXY PCT	SIO3 uM/l	PO4 UM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
1	0	15.41	15.41	33.486	24.716	321.8	0.000	5.83	102.4	2.8	0.35	0.0	0.00	0.19	0.06	0
1	10	15.38	15.38	33.484	24.721	321.6	0.032	5.83	102.3	2.7	0.34	0.0	0.00	0.21	0.06	10
1	20	14.98	14.98	33.484	24.809	313.5	0.064	5.94	103.4	2.4	0.34	0.0	0.00	0.31	0.11	20
1	30	14.96	14.96	33.484	24.814	313.4	0.095	5.93	103.2	2.4	0.34	0.0	0.00	0.35	0.12	30
1	40	14.65	14.64	33.489	24.885	306.9	0.126	5.93	102.6	2.4	0.35	0.0	0.00	0.66	0.42	40
1	49	14.15	14.14	33.477	24.981	297.9	0.154	5.77	98.8	3.5	0.45	1.0	0.07	1.23	0.75	49
	50 ISL	14.05	14.04	33.473	24.999	296.3	0.156	5.73	97.9	3.7	0.47	1.2	0.09	1.20	0.75	50
1	59	13.02	13.01	33.441	25.183	278.9	0.182	5.33	89.1	5.8	0.70	4.3	0.20	0.97	0.70	59
1	69	12.10	12.09	33.435	25.357	262.5	0.209	4.77	78.2	9.0	0.99	8.9	0.09	0.47	0.36	69
	75 ISL	11.75	11.74	33.460	25.442	254.6	0.225	4.53	73.7	10.5	1.10	10.8	0.06	0.32	0.27	75
1	83	11.41	11.40	33.509	25.543	245.1	0.245	4.27	69.0	12.2	1.22	12.9	0.04	0.21	0.21	83
1	99	10.82	10.81	33.617	25.733	227.3	0.283	3.80	60.7	16.1	1.45	16.7	0.02	0.08	0.10	99
	100 ISL	10.78	10.77	33.625	25.746	226.1	0.285	3.77	60.2	16.4	1.46	16.9	0.02	0.08	0.10	100
1	118	10.16	10.15	33.761	25.960	206.1	0.324	3.34	52.6	21.3	1.68	20.5	0.02	0.03	0.08	119
	125 ISL	10.02	10.01	33.801	26.015	201.0	0.338	3.22	50.6	22.8	1.74	21.4	0.02	0.03	0.07	126
1	144	9.74	9.72	33.889	26.131	190.3	0.375	2.97	46.4	26.4	1.86	23.3	0.03	0.02	0.06	145
	150 ISL	9.65	9.63	33.913	26.165	187.2	0.387	2.89	45.1	27.4	1.90	23.8	0.03	0.02	0.06	151
1	173	9.31	9.29	33.992	26.282	176.5	0.428	2.63	40.7	31.1	2.03	25.6	0.01	0.01	0.06	174
	200 ISL	8.79	8.77	34.071	26.427	163.1	0.474	2.38	36.4	36.2	2.18	27.6	0.01	0.01	0.06	201
1	203	8.74	8.72	34.078	26.441	161.8	0.479	2.36	36.1	36.7	2.19	27.8	0.01	0.01	0.06	204
1	233	8.49	8.47	34.121	26.514	155.4	0.527	2.12	32.2	39.9	2.30	29.1	0.01			234
	250 ISL	8.29	8.26	34.142	26.561	151.2	0.553	1.93	29.2	42.6	2.38	30.1	0.01			251
1	273	8.02	7.99	34.166	26.620	145.8	0.587	1.67	25.1	46.6	2.50	31.5	0.00			275
	300 ISL	7.75	7.72	34.180	26.671	141.3	0.626	1.45	21.7	50.4	2.60	32.7	0.00			302
1	330	7.50	7.47	34.191	26.716	137.4	0.668	1.24	18.4	54.3	2.70	33.8	0.01			332
1	390	7.09	7.05	34.223	26.800	130.2	0.748	0.87	12.8	61.5	2.88	35.8	0.01			393
	400 ISL	7.00	6.96	34.232	26.819	128.4	0.761	0.80	11.8	63.2	2.92	36.2	0.01			403
1	456	6.54	6.50	34.278	26.918	119.6	0.830	0.46	6.7	71.9	3.09	38.1	0.01			459
	500 ISL	6.37	6.32	34.294	26.953	116.7	0.882	0.38	5.5	75.3	3.14	38.6	0.01			503
1	525	6.27	6.22	34.303	26.974	115.0	0.911	0.34	4.9	77.2	3.17	38.9	0.01			529

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 29.4 N	119 19.1 W	05/03/91	1726 UTC	1631 m	300 13 kn	280 03 05	1	1019.7 mb	16.3 C	14.3 C	13a 03	7/8 AC

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN Ml/l	OXY PCT	SIO3 uM/l	PO4 UM/l	NO3 VlM/l	NO2 UM/l	CHL-A uq/l	PHAEO uq/l	PRESS db
	0 ISL	14.72	14.72	33.438	24.829	311.0	0.000	6.14	106.3	1.5	0.30	0.1	0.00	0.87	0.28	0
1	1	14.72	14.72	33.438	24.829	311.1	0.003	6.14	106.3	1.5	0.30	0.1	0.00	0.87	0.28	1
	10 ISL	14.70	14.70	33.442	24.837	310.6	0.031	6.13	106.1	1.7	0.30	0.1	0.00	1.01	0.33	10
1	11	14.70	14.70	33.442	24.837	310.6	0.034	6.13	106.1	1.7	0.30	0.1	0.00	1.03	0.34	11
	20 ISL	14.41	14.41	33.443	24.899	304.9	0.062	6.05	104.1	1.8	0.33	0.1	0.00	2.33	0.72	20
1	21	14.38	14.38	33.453	24.914	303.6	0.065	6.04	103.9	1.8	0.33	0.1	0.00	2.43	0.76	21
	30 ISL	13.00	13.00	33.446	25.190	277.4	0.091	5.31	88.7	5.8	0.71	4.9	0.17	1.15	0.59	30
1	31	12.84	12.84	33.446	25.222	274.5	0.094	5.22	86.9	6.3	0.76	5.5	0.19	0.97	0.56	31
1	41	12.04	12.03	33.455	25.383	259.3	0.121	4.83	79.1	9.0	0.98	8.9	0.21	0.69	0.67	41
	50 ISL	11.42	11.41	33.469	25.509	247.5	0.143	4.45	71.9	11.2	1.16	11.9	0.10	0.33	0.37	50
1	51	11.36	11.35	33.473	25.523	246.2	0.146	4.41	71.2	11.5	1.18	12.2	0.09	0.29	0.33	51
1	61	10.90	10.89	33.563	25.676	231.9	0.170	3.99	63.8	14.7	1.37	15.5	0.04	0.16	0.19	61
1	71	10.51	10.50	33.607	25.779	222.3	0.192	3.87	61.4	17.5	1.48	17.2	0.03	0.14	0.19	71
	75 ISL	10.32	10.31	33.644	25.841	216.5	0.201	3.75	59.2	18.9	1.54	18.3	0.03	0.13	0.17	75
1	85	9.93	9.92	33.740	25.982	203.2	0.222	3.42	53.6	22.1	1.68	20.8	0.02	0.10	0.13	85
	100 ISL	9.86	9.85	33.808	26.047	197.4	0.252	3.21	50.3	23.6	1.77	21.9	0.01	0.10	0.13	101
1	101	9.85	9.84	33.809	26.049	197.2	0.254	3.20	50.1	23.6	1.77	21.9	0.01	0.10	0.13	102
1	121 A			33.865			0.293	3.04	47.4	26.2	1.86	23.2	0.01	0.06	0.12	122
	125 ISL	9.60	9.59	33.888	26.153	187.8	0.300	3.00	46.7	27.0	1.88	23.6	0.01	0.05	0.11	126
1	146 A			33.962			0.339	2.75	42.6	30.9	2.01	25.4	0.01	0.03	0.08	147
	150 ISL	9.33	9.32	33.960	26.254	178.7	0.346	2.70	41.8	31.3	2.03	25.6	0.01	0.03	0.07	151
1	176 A			34.068			0.391	2.46	37.9	33.5	2.13	26.8	0.01	0.01	0.05	177
	200 ISL	8.75	8.73	34.072	26.434	162.4	0.431	2.41	36.9	35.9	2.18	27.7	0.01	0.01	0.04	201
1	206 A			34.087			0.440	2.39	36.5	36.7	2.19	27.9	0.01	0.01	0.04	207
1	235 A			34.132			0.486	2.04	30.9	41.9	2.36	29.7	0.01			236
	250 ISL	8.12	8.09	34.142	26.587	148.6	0.508	1.87	28.2	44.4	2.44	30.6	0.01			252
1	275	7.78	7.75	34.162	26.652	142.7	0.544	1.61	24.1	48.5	2.55	32.1	0.01			277
	300 ISL	7.56	7.53	34.182	26.700	138.4	0.580	1.36	20.3	52.3	2.65	33.3	0.01			302
1	331	7.31	7.28	34.202	26.752	133.9	0.622	1.09	16.1	56.8	2.77	34.6	0.01			333
1	390	6.89	6.85	34.244	26.843	125.9	0.698	0.68	10.0	64.7	2.97	36.6	0.01			393
	400 ISL	6.82	6.78	34.252	26.859	124.5	0.711	0.62	9.1	66.1	3.00	36.9	0.01			403
1	455	6.49	6.45	34.293	26.936	117.8	0.778	0.39	5.7	73.1	3.14	38.2	0.01			458
	500 ISL	6.32	6.27	34.310	26.972	114 8	0.830	0.32	4.6	77.1	3.18	38.5	0.01			503
1	525	6.22	6.17	34.320	26.993	113.1	0.858	0.28	4.0	79.3	3.20	38.7	0.01			529

A) THESE THERMOMETERS WERE REVERSED BEFORE BEING READ, RESULTING IN THE LOSS OF THE TEMPERATURE DATA FOR THESE DEPTHS. THE INTERPOLATED DATA SHOULD BE USED WITH CAUTION.

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 19.5 N	119 39.8 W	05/03/91	2158 UTC	75 a	300 18 kn	290 05 03	1	1018.0 mb	14.7 C	12.0 C	12m 03	7/8 AC

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/l	OXYGEN	OXY PCT	SIO3 uM/l	PO4 UM/l	NO3 uM/l	NO2 UM/l	CHL-A uq/l	PHAEO uq/l	PRESS db
	0 ISL	14.33	14.33	33.492	24.954	299.2	0.000	6.21	106.7	1.3	0.30	0.1	0.00	1.12	0.32	0
1	1	14.33	14.33	33.492	24.954	299.2	0.003	6.21	106.7	1.3	0.30	0.1	0.00	1.12	0.32	1
	10 ISL	14.33	14.33	33.490	24.952	299.6	0.030	6.21	106.7	1.3	0.29	0.1	0.00	1.11	0.34	10
1	11	14.33	14.33	33.490	24.952	299.6	0.033	6.21	106.7	1.3	0.29	0.1	0.00	1.11	0.34	11
1	20	14.31	14.31	33.489	24.956	299.5	0.060	6.20	106.5	1.2	0.30	0.1	0.00	1.42	0.37	20
	30 ISL	13.84	13.84	33.493	25.057	290.1	0.089	5.82	99.0	2.8	0.44	1.3	0.05	2.17	0.91	30
1	32	13.70	13.70	33.495	25.088	287.3	0.095	5.72	97.0	3.3	0.48	1.7	0.06	2.25	1.02	32
1	42	12.94	12.93	33.513	25.255	271.7	0.123	5.29	88.3	6.8	0.74	5.5	0.13	1.19	1.00	42
	50 ISL	12.14	12.13	33.539	25.430	255.1	0.144	4.80	78.8	10.0	1.00	9.2	0.14	0.83	0.80	50
1	52	11.97	11.96	33.545	25.467	251.7	0.149	4.70	76.9	10.7	1.05	10.0	0.14	0.79	0.75	52
1	60	11.73	11.72	33.540	25.508	248.0	0.169	4.61	75.0	11.6	1.11	11.1	0.14	0.74	0.77	60
1	73	10.79	10.78	33.601	25.725	227.5	0.200	4.10	65.4	16.5	1.38	15.8	0.11	0.27	0.44	73

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 9.4 N	120 0.4 W	06/03/91	0144 UTC	1200 m	320 18 kn	290 08 06	1	1019.5 mb	13.7 C	11.7 C	12m 03	3/8 AC

CAST	DEPTH a	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/l	OXYGEN	OXY PCT	SIO3 UM/l	PO4 uM/l	NO3 uM/l	NO2 UM/l	CHL-A uq/l	PHAEO uq/l	PRESS db
	0 ISL	14.60	14.60	33.493	24.897	304.6	0.000	6.09	105.2	1.9	0.31	0.1	0.01	0.34	0.10	0
1	2	14.60	14.60	33.493	24.897	304.6	0.006	6.09	105.2	1.9	0.31	0.1	0.01	0.34	0.10	2
	10 ISL	14.53	14.53	33.493	24.912	303.4	0.030	6.12	105.6	1.6	0.31	0.0	0.01	0.37	0.12	10
1	16	14.47	14.47	33.492	24.925	302.4	0.049	6.15	106.0	1.5	0.31	0.0	0.01	0.40	0.14	16
	20 ISL	14.42	14.42	33.496	24.938	301.2	0.061	6.12	105.4	1.8	0.35	0.3	0.03	0.49	0.18	20
	30 ISL	13.98	13.98	33.497	25.031	292.6	0.090	5.84	99.6	2.7	0.44	1.0	0.07	0.74	0.35	30
1	31	13.91	13.91	33.497	25.046	291.3	0.093	5.80	98.8	2.8	0.45	1.1	0.07	0.76	0.37	31
1	41	12.67	12.66	33.482	25.284	268.9	0.121	5.08	84.3	6.9	0.80	6.4	0.22	0.86	0.61	41
	50 ISL	12.13	12.12	33.469	25.377	260.1	0.145	4.89	80.2	8.3	0.93	8.1	0.22	0.84	0.74	50
1	51	12.03	12.07	33.467	25.385	259.4	0.148	4.88	80.0	8.4	0.94	8.2	0.22	0.84	0.74	51
1	61	11.30	11.29	33.451	25.517	247.0	0.173	4.57	73.7	10.8	1.13	11.5	0.18	0.70	0.58	61
1	71	10.73	10.72	33.500	25.657	233.9	0.197	4.27	68.0	13.9	1.29	14.4	0.11	0.75	0.58	71
	75 ISL	10.52	10.51	33.534	25.720	227.9	0.206	4.13	65.5	15.4	1.36	15.6	0.10	0.73	0.59	75
1	78	10.38	10.37	33.560	25.765	223.8	0.213	4.03	63.7	16.4	1.41	16.4	0.10	0.70	0.59	78
1	93	10.10	10.09	33.635	25.872	213.9	0.246	3.78	59.4	19.3	1.55	18.6	0.07	0.39	0.35	93
	100 ISL	9.94	9.93	33.700	25.949	206.7	0.261	3.57	55.9	21.3	1.64	20.0	0.06	0.30	0.28	101
1	110	9.74	9.73	33.792	26.055	196.8	0.281	3.28	51.2	24.0	1.75	21.9	0.05	0.21	0.22	111
1	125	9.62	9.61	33.862	26.130	190.0	0.310	3.06	47.7	26.2	1.84	23.0	0.03	0.11	0.17	126
1	149	9.26	9.24	33.977	26.278	176.3	0.354	2.74	42.4	30.6	2.01	25.4	0.03	0.06	0.15	150
	150 ISL	9.25	9.23	33.980	26.282	176.0	0.356	2.73	42.2	30.7	2.01	25.5	0.03	0.06	0.15	151
1	175	8.92	8.90	34.033	26.377	167.4	0.398	2.57	39.4	34.0	2.07	26.7	0.03	0.04	0.11	176
	200 ISL	8.47	8.45	34.078	26.482	157.7	0.439	2.35	35.7	38.7	2.20	28.5	0.03	0.02	0.07	201
1	205	8.39	8.37	34.086	26.501	156.0	0.447	2.30	34.9	39.6	2.23	28.9	0.03	0.02	0.06	206
1	235	8.13	8.11	34.110	26.559	150.9	0.493	2.04	30.8	43.3	2.37	30.1	0.02			236
	250 ISL	8.03	8.00	34.123	26.585	148.8	0.515	1.93	29.0	44.9	2.42	30.7	0.02			251
1	277	7.85	7.82	34.145	26.629	145.0	0.555	1.73	25.9	48.0	2.51	31.8	0.03			279
	300 ISL	7.64	7.61	34.161	26.672	141.1	0.588	1.52	22.7	51.2	2.59	32.9	0.02			302
1	333	7.32	7.29	34.183	26.735	135.5	0.634	1.22	18.1	56.1	2.72	34.5	0.01			335
1	391	6.81	6.77	34.225	26.839	126.2	0.710	0.76	11.1	64.9	2.96	37.0	0.01			394
	400 ISL	6.74	6.70	34.233	26.855	124.8	0.721	0.71	10.4	66.2	2.98	37.3	0.01			403
1	456	6.39	6.35	34.277	26.937	117.6	0.789	0.46	6.7	73.2	3.10	38.9	0.01			459
	500 ISL	6.18	6.14	34.296	26.979	114.0	0.840	0.38	5.5	77.3	3.16	39.6	0.01			503
1	524	6.06	6.01	34.306	27.003	112.0	0.867	0.33	4.7	79.5	3.20	40.0	0.01			528

RV DAVID STARR JORDAN CALCOFI CRUISE 9103

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 59.4 N	120 21.0 W	06/03/91	0559 UTC	762 m	320 18 kn			1021.1 ab	13.1 C	11.2 C			

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.31	14.31	33.394	24.882	306.0	0.000	6.00	103.0	3.5	0.38	0.0	0.00	0.32	0.10	0
1	1		14.31	14.31	33.394	24.882	306.0	0.003	6.00	103.0	3.5	0.38	0.0	0.00	0.32	0.10	1
	10	ISL	14.27	14.27	33.390	24.888	305.7	0.031	6.00	102.9	3.4	0.39	0.0	0.00	0.34	0.11	10
1	16		14.25	14.25	33.387	24.890	305.7	0.049	6.01	103.0	3.4	0.39	0.0	0.00	0.35	0.11	16
	20	ISL	14.13	14.13	33.381	24.910	303.9	0.061	6.02	102.9	3.4	0.39	0.0	0.00	0.42	0.15	20
	30	ISL	13.81	13.81	33.377	24.974	298.1	0.091	6.04	102.6	3.6	0.38	0.0	0.01	0.61	0.26	30
1	31		13.78	13.78	33.377	24.980	297.5	0.094	6.04	102.5	3.6	0.38	0.0	0.01	0.63	0.27	31
1	40		13.63	13.62	33.402	25.030	293.0	0.121	5.96	100.9	3.8	0.43	0.5	0.08	0.74	0.34	40
1	50		13.43	13.42	33.405	25.073	289.1	0.150	5.88	99.1	3.8	0.47	1.1	0.15	0.76	0.36	50
1	60		13.04	13.03	33.428	25.170	280.3	0.178	5.76	96.3	4.7	0.54	2.3	0.32	0.30	0.28	60
1	75		11.58	11.57	33.346	25.385	260.0	0.219	5.15	83.5	8.2	0.92	8.5	0.05	0.13	0.14	75
1	89		10.51	10.50	33.353	25.581	241.4	0.254	4.74	75.1	11.8	1.18	12.8	0.02	0.07	0.09	89
	100	ISL	10.13	10.12	33.411	25.692	231.1	0.280	4.52	71.0	13.9	1.28	15.0	0.02	0.04	0.06	100
1	103		10.06	10.05	33.434	25.722	228.4	0.287	4.45	69.8	14.5	1.31	15.6	0.02	0.04	0.06	104
1	119		9.70	9.69	33.610	25.919	209.9	0.322	3.86	60.1	19.7	1.57	19.4	0.02	0.02	0.05	120
	125	ISL	9.53	9.52	33.643	25.973	204.8	0.334	3.78	58.7	20.9	1.61	20.3	0.02	0.02	0.05	126
1	137		9.21	9.20	33.702	26.071	195.7	0.358	3.65	56.3	23.1	1.68	21.8	0.01	0.02	0.04	138
	150	ISL	8.96	8.94	33.829	26.210	182.7	0.383	3.33	51.1	26.9	1.81	23.9	0.01	0.01	0.03	151
1	158		8.84	8.82	33.906	26.290	175.3	0.397	3.13	47.9	29.2	1.88	25.0	0.01	0.01	0.03	159
1	183		8.50	8.48	33.991	26.409	164.3	0.440	2.89	43.9	33.5	1.99	26.7	0.01	0.01	0.06	184
	200	ISL	8.42	8.40	34.035	26.456	160.2	0.467	2.68	40.7	35.8	2.09	27.6	0.01	0.00	0.04	201
1	216		8.33	8.31	34.064	26.493	156.9	0.493	2.48	37.6	38.1	2.18	28.5	0.01	0.00	0.03	217
	250	ISL	7.74	7.72	34.082	26.595	147.6	0.544	2.22	33.2	44.8	2.33	30.8	0.01			251
1	252		7 70	7.68	34.083	26.601	147.0	0.547	2.20	32.9	45.2	2.34	30.9	0.01			253
1	292		7.36	7.33	34.177	26.724	135.9	0.604	1.28	19.0	54.9	2.66	34.3	0.01			294
	300	ISL	7.32	7.29	34.188	26.739	134.6	0.615	1.18	17.5	56.1	2.70	34.7	0.01			302
1	346		7.08	7.05	34.226	26.803	129.2	0.675	0.84	12.4	61.5	2.85	36.1	0.01			348
	400	ISL	6.65	6.61	34.238	26.871	123.2	0.744	0.65	9.5	68.1	2.97	37.9	0.01			403
1	412		6.55	6.51	34.239	26.885	122.0	0.758	0.62	9.0	69.4	2.99	38.2	0.01			415
1	483		6.23	6.19	34.274	26.955	116.1	0.843	0.43	6.2	75.4	3.12	39.4	0.01			486
	500	ISL	6.14	6.10	34.282	26.973	114.5	0.862	0.40	5.8	77.1	3.14	39.7	0.01			503
1	565		5.81	5.76	34.315	27.041	108.6	0.935	0.29	4.1	83.4	3.21	40.7	0.01			569

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 39.4 N	121 2.0 W	06/03/91	1207 UTC	3784 M	350 21 k.n			1021.8 mb	12.0 C	9.9 C			

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/1	OXYGEN	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.34	14.34	33.243	24.759	317.7	0.000	5.94	101.9	3.1	0.41	0.1	0.01	0.19	0.06	0
1	1		14.34	14.34	33.243	24.759	317.7	0.003	5.94	101.9	3.1	0.41	0.1	0.01	0.19	0.06	1
	10	ISL	14.30	14.30	33.242	24.767	317.2	0.032	5.95	102.0	2.9	0.40	0.1	0.01	0.18	0.06	10
1	11		14.29	14.29	33.243	24.770	316.9	0.035	5.95	102.0	2.9	0.40	0.1	0.01	0.18	0.06	11
1	20		14.14	14.14	33.224	24.787	315.6	0.063	5.99	102.4	3.2	0.41	0.1	0.01	0.25	0.09	20
	30	ISL	13.31	13.31	33.178	24.922	303.0	0.094	6.15	103.3	3.8	0.42	0.1	0.01	0.50	0.24	30
1	31		13.23	13.23	33.174	24.934	301.8	0.097	6.16	103.3	3.9	0.42	0.1	0.01	0.53	0.26	31
1	41		13.15	13.14	33.180	24.955	300.1	0.127	6.14	102.8	3.9	0.41	0.1	0.01	0.60	0.34	41
	50	ISL	13.12	13.11	33.193	24.972	298.8	0.154	6.10	102.0	3.9	0.42	0.2	0.03	0.63	0.33	50
1	51		13.12	13.11	33.194	24.972	298.8	0.157	6.10	102.0	3.9	0.42	0.2	0.03	0.63	0.33	51
1	61		12.42	12.41	33.161	25.083	288.4	0.187	5.83	96.1	4.2	0.61	2.8	0.09	0.25	0.16	61
	75	ISL	12.24	12.23	33.272	25.204	277.2	0.226	5.57	91.5	5.3	0.71	4.7	0.04	0.15	0.14	75
1	76		12.22	12.21	33.280	25.214	276.3	0.229	5.55	91.1	5.5	0.72	4.9	0.03	0.14	0.14	76
1	90		10.88	10.87	33.263	25.447	254.3	0.266	5.03	80.2	9.9	1.08	11.0	0.02	0.05	0.07	90
	100	ISL	10.43	10.42	33.344	25.588	241.0	0.291	4.94	78.1	10.9	1.11	12.2	0.03	0.04	0.06	100
1	110		10.16	10.15	33.450	25.717	229.0	0.315	4.85	76.3	12.1	1.13	13.0	0.03	0.03	0.05	111
	125	ISL	9.63	9.62	33.575	25.904	211.4	0.348	4.17	64.8	18.3	1.47	18.2	0.02	0.01	0.03	126
1	130		9.49	9.48	33.612	25.955	206.6	0.358	3.93	60.9	20.4	1.59	20.0	0.01	0.01	0.02	131
	150	ISL	9.43	9.41	33.713	26.044	198.6	0.399	3.60	55.8	22.9	1.73	21.4	0.01	0.01	0.03	151
1	155		9.41	9.39	33.727	26.059	197.3	0.408	3.57	55.3	23.2	1.74	21.8	0.01	0.01	0.03	156
1	184		9.00	8.98	33.868	26.235	181.0	0.463	3.25	49.9	27.6	1.88	24.2	0.01	0.00	0.02	185
	200	ISL	8.73	8.71	33.936	26.331	172.1	0.492	3.07	46.9	31.1	1.97	25.7	0.02	0.00	0.02	201
1	217		8.44	8.42	33.994	26.421	163.8	0.520	2.90	44.0	34.9	2.07	27.2	0.02	0.00	0.02	218
	250	ISL	8.01	7.98	34.038	26.521	154.8	0.573	2.70	40.6	39.9	2.20	29.0	0.01			251
1	253		7.98	7.95	34.040	26.527	154.2	0.577	2.68	40.3	40.3	2.21	29.1	0.01			254
1	293		7.63	7.60	34.077	26.607	147.1	0.638	2.16	32.2	47.1	2.44	31.9	0.01			295
	300	ISL	7.55	7.52	34.081	26.622	145.8	0.648	2.08	31.0	48.4	2.48	32.4	0.01			302
1	347		7.03	7.00	34.107	26.716	137.4	0.714	1.58	23.2	56.9	2.69	35.2	0.02			349
	400	ISL	6.66	6.62	34.146	26.797	130.2	0.785	1.12	16.3	64.4	2.88	37.5	0.01			403
1	413		6.58	6.54	34.155	26.815	128.6	0.802	1.03	15.0	66.1	2.92	38.0	0.01			416
1	482		5.89	5.85	34.174	26.919	119.1	0.887	0.67	9.6	77.3	3.12	40.7	0.02			485
	500	ISL	5.78	5.74	34.189	26.945	116.8	0.909	0.60	8.6	79.7	3.15	41.1	0.02			503
1	564		5.38	5.33	34.244	27.037	108.4	0.981	0.36	5.1	88.3	3.27	42.5	0.03			568

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 19.4 N	121 43.0 W	06/03/91	1755 UTC	3982 m	330 20 kn	330 08 03	1	1025.0 mb	13.3 C	9.9 C	20MMM 02	5/8 CS

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN Ml/1	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.27	14.27	33.249	24.779	315.8	0.000	5.94	101.8	3.0	0.40	0.0	0.00	0.23	0.07	0
1	3		14.27	14.27	33.249	24.779	315.9	0.009	5.94	101.8	3.0	0.40	0.0	0.00	0.23	0.07	3
	10	ISL	14.26	14.26	33.249	24.781	315.9	0.032	5.95	101.9	3.0	0.40	0.0	0.01	0.22	0.08	10
1	13		14.26	14.26	33.249	24.781	316.0	0.041	5.95	101.9	3.0	0.40	0.0	0.01	0.22	0.08	13
	20	ISL	14.25	14.25	33.248	24.783	316.0	0.063	5.95	101.9	3.0	0.40	0.0	0.01	0.23	0.07	20
1	23		14.25	14.25	33.248	24.783	316.1	0.073	5.95	101.9	3.0	0.40	0.0	0.01	0.23	0.07	23
	30	ISL	14.26	14.26	33.249	24.782	316.4	0.095	5.95	101.9	2.9	0.39	0.0	0.01	0.24	0.08	30
1	33		14.26	14.26	33.249	24.782	316.5	0.104	5.95	101.9	2.9	0.39	0.0	0.01	0.24	0.08	33
1	43		14.25	14.24	33.248	24.783	316.6	0.136	5.94	101.7	2.9	0.38	0.0	0.01	0.23	0.09	43
	50	ISL	14.09	14.08	33.247	24.816	313.7	0.158	5.94	101.4	3.0	0.40	0.1	0.03	0.30	0.14	50
1	53		13.96	13.95	33.247	24.843	311.2	0.167	5.94	101.1	3.0	0.41	0.2	0.04	0.34	0.17	53
1	63		13.15	13.14	33.258	25.016	294.9	0.198	5.88	98.4	3.6	0.49	1.1	0.16	0.40	0.26	63
	75	ISL	12.82	12.81	33.272	25.092	288.0	0.233	5.90	98.1	4.1	0.52	1.6	0.28	0.24	0.20	75
1	77		12.78	12.77	33.274	25.102	287.1	0.238	5.90	98.0	4.2	0.53	1.8	0.29	0.20	0.18	77
1	92		11.94	11.93	33.277	25.265	271.8	0.280	5.51	89.9	6.2	0.76	5.9	0.04	0.08	0.10	92
	100	ISL	11.25	11.24	33.271	25.387	260.3	0.302	5.22	83.9	8.6	0.95	9.2	0.03	0.05	0.09	100
1	112		10.31	10.30	33.323	25.593	240.8	0.332	4.68	73.8	13.2	1.26	14.3	0.01	0.03	0.08	113
	125	ISL	9.94	9.93	33.557	25.838	217.8	0.362	3.91	61.2	18.8	1.54	19.0	0.01	0.01	0.07	126
1	132		9.86	9.85	33.687	25.953	207.0	0.376	3.54	55.4	21.5	1.65	20.9	0.01	0.01	0.06	133
	150	ISL	9.68	9.66	33.778	26.054	197.7	0.413	3.34	52.1	23.9	1.72	22.5	0.01	0.01	0.07	151
1	157		9.62	9.60	33.785	26.070	196.4	0.427	3.26	50.8	24.3	1.75	22.7	0.01	0.01	0.07	158
1	187		9.14	9.12	33.903	26.240	180.6	0.483	2.97	45.8	28.7	1.91	25.1	0.01	0.01	0.05	188
	200	ISL	8.80	8.78	33.956	26.336	171.7	0.506	2.83	43.3	31.9	2.00	26.5	0.01	0.01	0.04	201
1	221		8.25	8.23	34.027	26.476	158.6	0.541	2.62	39.6	37.2	2.14	28.7	0.01	0.00	0.03	222
	250	ISL	7.74	7.72	34.052	26.571	149.8	0.585	2.41	36.0	42.1	2.25	30.4	0.01			251
1	256		7.66	7.63	34.053	26.584	148.7	0.594	2.37	35.4							257
1	296		7.42	7.39	34.081	26.641	143.9	0.653	2.04	30.3	48.7	2.41	32.3	0.01			298
	300	ISL	7.39	7.36	34.085	26.648	143.2	0.659	1.99	29.5	49.4	2.43	32.6	0.01			302
1	351		6.93	6.90	34.145	26.759	133.2	0.729	1.28	18.8	58.6	2.74	35.8	0.01			353
	400	ISL	6.53	6.49	34.188	26.848	125.3	0.793	0.84	12.2	66.8	2.94	38.1	0.01			403
1	416		6.40	6.36	34.199	26.873	123.0	0.812	0.74	10.7	69.3	2.99	38.7	0.01			419
1	486		5.90	5.86	34.220	26.954	115.8	0.896	0.51	7.3	78.1	3.13	40.5	0.01			489
	500	ISL	5.75	5.71	34.222	26.974	113.9	0.912	0.48	6.9	80.5	3.15	40.9	0.01			503
1	567		5.04	4.99	34.237	27.071	104.8	0.985	0.36	5.1	91.9	3.24	43.1	0.01			571

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 59.3 N	122 23.6 W	07/03/91	0030 UTC	3758 a	350 20 kn	350 10 07	1	1024.0 ab	13.1 C	10.6 C	25m 01	7/8 SC

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/1	OXYGEN	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	MO2 uN/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	15.56	15.56	33.469	24.670	326.2	0.000	5.73	100.9	2.6	0.35	0.0	0.00	0.10	0.03	0
1	1		15.56	15.56	33.469	24.670	326.2	0.003	5.73	100.9	2.6	0.35	0.0	0.00	0.10	0.03	1
	10	ISL	15.59	15.59	33.469	24.663	327.1	0.033	5.74	101.2	2.6	0.35	0.0	0.00	0.10	0.03	10
1	11		15.59	15.59	33.469	24.663	327.1	0.036	5.74	101.2	2.6	0.35	0.0	0.00	0.10	0.03	11
	20	ISL	15.58	15.58	33.467	24.664	327.3	0.065	5.74	101.1	2.6	0.35	0.0	0.00	0.10	0.03	20
1	21		15.58	15.58	33.467	24.664	327.4	0.069	5.74	101.1	2.6	0.35	0.0	0.00	0.10	0.03	21
1	30		15.59	15.59	33.475	24.669	327.3	0.098	5.74	101.2	2.5	0.34	0.0	0.00	0.10	0.03	30
1	40		15.62	15.61	33.479	24.665	327.9	0.131	5.75	101.4	2.6	0.34	0.0	0.00	0.10	0.03	40
1	49		15.69	15.68	33.517	24.679	326.8	0.160	5.74	101.4	2.5	0.34	0.0	0.00	0.11	0.04	49
	50	ISL	15.74	15.73	33.537	24.684	326.5	0.164	5.73	101.3	2.5	0.34	0.0	0.00	0.11	0.04	50
1	59		16.19	16.18	33.728	24.729	322.5	0.193	5.66	101.1	2.4	0.30	0.0	0.00	0.14	0.06	59
1	74		16.12	16.11	33.761	24.771	319.0	0.241	5.64	100.6	2.4	0.29	0.0	0.00	0.26	0.16	74
	75	ISL	16.07	16.06	33.752	24.775	318.6	0.244	5.64	100.5	2.4	0.29	0.0	0.00	0.26	0.17	75
1	88		15.28	15.27	33.636	24.863	310.5	0.285	5.67	99.4	2.9	0.32	0.2	0.07	0.29	0.22	88
	100	ISL	14.92	14.91	33.716	25.003	297.5	0.321	5.57	97.0	3.3	0.36	0.8	0.06	0.25	0.21	100
1	109		14.52	14.50	33.758	25.122	286.4	0.348	5.46	94.3	3.8	0.42	1.7	0.06	0.20	0.20	109
	125	ISL	12.64	12.62	33.506	25.310	268.6	0.392	5.34	88.6	5.7	0.67	5.0	0.03	0.11	0.12	126
1	128		12.25	12.23	33.453	25.344	265.3	0.400	5.32	87.5	6.2	0.72	5.8	0.02	0.09	0.10	129
	150	ISL	10.14	10.12	33.301	25.605	240.4	0.456	5.09	79.9	10.9	1.08	11.7	0.00	0.03	0.05	151
1	154		9.87	9.85	33.303	25.652	236.0	0.465	5.04	78.7	11.8	1.13	12.7	0.00	0.02	0.04	155
1	183		9.63	.9.61	33.664	25.974	206.0	0.529	4.58	71.3	16.1	1.26	15.8	0.00	0.01	0.02	184
	200	ISL	9.27	9.25	33.797	26.137	190.8	0.563	4.28	66.1	20.3	1.40	18.5	0.00	0.01	0.02	201
1	218		8.84	8.82	33.892	26.280	177.4	0.596	3.99	61.1	25.1	1.56	21.4	0.00	0.00	0.02	219
	250	ISL	8.32	8.29	33.977	26.427	163.9	0.651	3.61	54.6	31.6	1.79	24.5	0.00			251
1	253		8.28	8.25	33.981	26.436	163.0	0.656	3.58	54.1	32.2	1.81	24.7	0.00			254
1	292		7.58	7.55	34.003	26.556	151.9	0.717	3.13	46.6	40.5	2.03	28.1	0.00			294
	300	ISL	7.47	7.44	34.009	26.577	150.0	0.729	2.99	44.4	42.3	2.09	28.9	0.00			302
1	349		6.88	6.85	34.045	26.688	139.9	0.800	2.07	30.3	53.7	2.50	33.4	0.00			351
	400	ISL	6.29	6.25	34.079	26.793	130.2	0.869	1.38	19.9	64.8	2.80	37.0	0.00			402
1	414		6.14	6.10	34.087	26.818	127.9	0.887	1.24	17.9	67.6	2.86	37.8	0.00			417
1	484		5.62	5.58	34.119	26.909	119.8	0.974	0.90	12.8	77.5	3.03	40.0	0.00			487
	500	ISL	5.51	5.47	34.133	26.933	117.5	0.993	0.82	11.6	79.9	3.07	40.5	0.00			503
1	567		5.07	5.02	34.193	27.033	108.4	1.069	0.49	6.9	90.2	3.22	42.4	0.00			571

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 39.3 N	123 4.2 W	07/03/91	0637 UTC	4148 m	350 17 kn			1025.4 mb	13.1 C	10.3 C		

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT m1/1	OXYGEN	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.15	14.15	33.057	24.656	327.6	0.000	5.97	101.9	2.7	0.41	0.1	0.00	0.16	0.07	0
1	1		14.15	14.15	33.057	24.656	327.6	0.003	5.97	101.9	2.7	0.41	0.1	0.00	0.16	0.07	1
	10	ISL	14.15	14.15	33.055	24.654	328.0	0.033	5.97	101.9	2.6	0.41	0.1	0.00	0.16	0.07	10
	20	ISL	14.16	14.16	33.054	24.652	328.5	0.066	5.96	101.8	2.5	0.41	0.1	0.00	0.16	0.07	20
1	21		14.16	14.16	33.054	24.652	328.5	0.069	5.96	101.8	2.5	0.41	0.1	0.00	0.16	0.07	21
	30	ISL	14.16	14.16	33.066	24.661	327.9	0.098	5.96	101.8	2.5	0.41	0.1	0.00	0.17	0.07	30
1	41		14.17	14.16	33.081	24.671	327.2	0.134	5.96	101.8	2.5	0.40	0.1	0.00	0.18	0.08	41
	50	ISL	14.40	14.39	33.218	24.729	322.0	0.164	5.89	101.2	2.6	0.40	0.1	0.03	0.23	0.14	50
1	61		14.53	14.52	33.363	24.813	314.3	0.199	5.82	100.3	2.8	0.40	0.2	0.07	0.29	0.20	61
	75	ISL	13.94	13.93	33.308	24.895	306.9	0.242	5.87	99.9	3.2	0.44	0.4	0.09	0.27	0.17	75
1	76		13.88	13.87	33.299	24.901	306.4	0.245	5.88	100.0	3.2	0.44	0.4	0.09	0.27	0.17	76
1	85		13.29	13.28	33.222	24.961	300.8	0.273	5.92	99.4	3.7	0.51	0.9	0.18	0.21	0.15	85
1	95		12.96	12.95	33.21	25.017	295.6	0.302	5.91	98.5	3.7	0.53	1.3	0.21	0.18	0.12	95
	100	ISL	12.60	12.59	33.155	25.045	293.1	0.317	5.87	97.1	4.2	0.58	2.3	0.14	0.17	0.11	100
1	105		12.20	12.19	33.112	25.088	289.0	0.332	5.80	95.1	4.8	0.65	3.5	0.06	0.15	0.11	105
1	115		11.55	11.54	33.191	25.271	271.7	0.360	5.50	89.0	6.4	0.79	6.2	0.02	0.11	0.10	116
	125	ISL	11.44	11.42	33.407	25.459	254.1	0.386	5.31	85.8	7.3	0.81	7.4	0.02	0.07	0.07	126
1	130		11.39	11.37	33.503	25.543	246.2	0.398	5.22	84.3	7.8	0.82	8.0	0.02	0.05	0.05	131
1	150		9.73	9.71	33.376	25.732	228.3	0.446	4.75	73.9	13.8	1.25	14.6	0.01	0.02	0.04	151
1	170		9.45	9.43	33.618	25.967	206.3	0.489	3.94	61.0	20.2	1.55	19.7	0.01	0.01	0.04	171
1	196		8.95	8.93	33.828	26.212	183.5	0.540	3.24	49.7	27.6	1.85	24.3	0.01	0.00	0.02	197
	200	ISL	8.91	8.89	33.852	26.237	181.1	0.547	3.17	48.6	28.4	1.88	24.7	0.01	0.00	0.02	201
1	220		8.72	8.70	33.946	26.341	171.6	0.583	2.91	44.4	31.9	2.00	26.3	0.01	0.00	0.03	221
	250	ISL	8.20	8.17	34.007	26.468	159.9	0.632	2.81	42.4	36.5	2.07	27.8	0.01			251
1	255		8.10	8.07	34.011	26.486	158.2	0.640	2.80	42.2	37.2	2.08	28.0	0.01			256
1	296		7.50	7.47	34.032	26.591	148.7	0.703	2.54	37.7	44.4	2.24	30.3	0.01			298
	300	ISL	7.47	7.44	34.037	26.599	147.9	0.709	2.48	36.8	45.0	2.26	30.6	0.01			302
1	351		7.08	7.05	34.083	26.690	139.9	0.782	1.75	25.8	53.7	2.55	33.9	0.01			353
	400	ISL	6.23	6.19	34.057	26.783	131.1	0.849	1.54	22.2	64.2	2.73	36.7	0.01			402
1	416		5.95	5.91	34.050	26.813	128.2	0.870	1.49	21.3	67.7	2.78	37.5	0.01			419
1	485		5.50	5.46	34.118	26.922	118.3	0.955	0.83	11.8	79.5	3.05	40.5	0.01			488
	500	ISL	5.43	5.39	34.134	26.943	116.4	0.972	0.75	10.6	81.5	3.08	40.9	0.01			503
1	563		5.14	5.09	34.204	27.033	108.4	1.043	0.42	5.9	89.8	3.21	42.4	0.01			567

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
31 19.4 N	123 441.7 W	07/03/91	1328 UTC	4087 m	360 15 k.n			1023.5 0b	13.9 C	10.9 C		

CAST	DEPTH m		TEMP DEB C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 UM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	15.26	15.26	33.289	24.597	333.1	0.000	5.78	101.1	2.5	0.38	0.2	0.00	0.10	0.04	0
1	1		15.26	15.26	33.289	24.597	333.1	0.003	5.78	101.1	2.5	0.38	0.2	0.00	0.10	0.04	1
	10	ISL	15.25	15.25	33.290	24.600	333.1	0.033	5.78	101.1	2.5	0.38	0.2	0.00	0.10	0.04	10
	20	ISL	15.24	15.24	33.290	24.603	333.2	0.067	5.79	101.2	2.5	0.39	0.2	0.00	0.11	0.04	20
1	21		15.24	15.24	33.290	24.603	333.2	0.070	5.79	101.2	2.5	0.39	0.2	0.00	0.11	0.04	21
	30	ISL	15.24	15.24	33.289	24.603	333.5	0.100	5.79	101.2	2.5	0.39	0.2	0.00	0.11	0.04	30
1	41		15.23	15.22	33.289	24.605	333.6	0.137	5.79	101.2	2.4	0.38	0.2	0.00	0.10	0.04	41
	50	ISL	15.24	15.23	33.289	24.603	334.1	0.167	5.79	101.2	2.4	0.39	0.2	0.00	0.10	0.04	50
1	60		15.25	15.24	33.289	24.601	334.6	0.200	5.80	101.4	2.4	0.39	0.2	0.00	0.11	0.04	60
	75	ISL	15.25	15.24	33.412	24.697	325.9	0.250	5.75	100.6	2.5	0.36	0.1	0.00	0.23	0.14	75
1	76		15.25	15.24	33.425	24.707	325.0	0.253	5.75	100.6	2.5	0.36	0,1	0.00	0.24	0.15	76
1	86		14.85	14.84	33.480	24.836	312.9	0.285	5.70	99.0	2.8	0.39	0.3	0.10	0.28	0.20	86
1	95		14.25	14.24	33.467	24.954	301.9	0.312	5.67	97.2	3.3	0.43	0.9	0.11	0.25	0.18	95
	100	ISL	13.78	13.77	33.425	25.019	295.8	0.327	5.65	95.9	3.9	0.50	1.6	0.08	0.23	0.17	100
1	105		13.27	13.26	33.375	25.084	289.7	0.342	5.62	94.4	4.5	0.57	2.5	0.04	0.20	0.16	105
1	115		12.34	12.32	33.291	25.201	278.6	0.370	5.56	91.5	5.0	0.68	4.1	0.02	0.12	0.12	115
	125	ISL	11.39	11.37	33.245	25.342	265.2	0.398	5.41	87.2	6.8	0.84	6.9	0.01	0.07	0.08	126
1	129		11.05	11.03	33.239	25.399	259.8	0.408	5.34	85.5	7.7	0.91	8.1	0.01	0.06	0.07	130
1	150		9.96	9.94	33.325	25.654	235.7	0.460	4.90	76.6	11.9	1.18	13.1	0.01	0.03	0.04	151
1	170		9.51	9.49	33.523	25.883	214.3	0.505	4.34	67.3	17.1	1.42	17.3	0.01	0.01	0.04	171
1	196		9.19	9.17	33.739	26.104	193.8	0.558	3.64	56.1	23.6	1.69	21.9	0.01	0.01	0.03	197
	200	ISL	9.12	9.10	33.772	26.141	190.3	0.566	3.66	56.3	24.1	1.69	22.0	0.01	0.01	0.03	201
1	220		8.74	8.72	33.911	26.310	174.5	0.602	3.83	58.5	26.3	1.67	22.4	0.01	0.00	0.01	221
	250	ISL	8.25	8.22	33.987	26.445	162.1	0.653	3.51	53.0	32.2	1.83	24.9	0.01			251
1	255		8.18	8.15	33.990	26.458	160.9	0.661	3.43	51.8	33.3	1.87	25.4	0.01			256
1	295		7.65	7.62	34.012	26.554	152.3	0.724	2.95	44.0	40.8	2.11	28.5	0.01			297
	300	ISL	7.56	7.53	34.013	26.567	151.0	0.731	2.87	42.7	42.1	2.15	29.0	0.01			302
1	351		6.63	6.60	34.027	26.707	137.9	0.805	2.08	30.3	55.4	2.52	33.8	0.01			353
	400	ISL	6.14	6.10	34.062	26.798	129.6	0.870	1.45	20.9	64.9	2.78	37.1	0.01			402
1	415		6.04	6.00	34.075	26.821	127.5	0.890	1.29	18.5	67.5	2.84	37.9	0.01			418
1	485		5.55	5.51	34.144	26.937	117.0	0.975	0.72	10.2	79.3	3.08	40.6	0.01			488
	500	ISL	5.47	5.43	34.156	26.956	115.3	0.993	0.66	9.4	81.3	3.11	40.9	0.01			503
1	566		5.10	5.05	34.210	27.043	107.5	1.066	0.41	5.8	90.3	3.22	42.4	0.01			570

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 29.1 N	117 46.1 W	05/03/91	0054 UTC	78 m	250 05 kn	250 01 07	1	1016.4 mb	17.5 C	15.1 C	07m 04	7/8 AC

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
1	0	15.94	15.94	33.201	24.379	354.0	0.000	6.05	107.2	3.3	0.47	0.8	0.06	0.53	0.15	0
1	10	15.31	15.31	33.273	24.574	335.6	0.034	6.02	105.4	2.8	0.45	0.4	0.04	1.37	0.30	10
1	20	15.19	15.19	33.451	24.738	320.3	0.067	5.71	99.8	2.7	0.46	0.3	0.05	0.75	0.21	20
	30 ISL	14.39	14.39	33.456	24.914	303.8	0.098	5.55	95.5	3.6	0.60	1.6	0.14	0.19	0.16	30
1	31	14.28	14.28	33.451	24.933	302.0	0.102	5.52	94.7	3.7	0.62	1.8	0.15	0.15	0.16	31
1	41	12.89	12.88	33.427	25.198	277.0	0.130	4.88	81.4	7.8	1.00	6.1	0.35	0.18	0.25	41
	50 ISL	12.33	12.32	33.439	25.316	266.0	0.155	4.63	76.3	9.1	1.08	8.4	D.32	0.17	0.19	50
1	51	12.29	12.28	33.441	25.325	265.1	0.158	4.61	75.9	9.2	1.08	8.6	0.32	0.17	0.18	51
1	61	11.71	11.70	33.488	25.471	251.4	0.183	4.34	70.6	11.5	1.19	11.5	0.24	0.17	0.20	61

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 25.1 N	117 54.3 W	04/03/91	2211 UTC	1346 R	300 07 kn	300 02 07	1	1017.7 mb	18.4 C	15.9 C	26B 03	6/8 AC

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 UM/1	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
	0 ISL	15.58	15.58	33.503	24.691	324.1	0.000	5.81	102.4	3.3	0.35	0.0	0.01	0.20	0.05	0
1	1	15.58	15.58	33.503	24.692	324.2	0.003	5.81	102.4	3.3	0.35	0.0	0.01	0.20	0.05	1
	10 ISL	15.49	15.49	33.519	24.724	321.3	0.032	5.83	102.6	3.2	0.34	0.0	0.00	0.18	0.04	10
1	11	15.48	15.48	33.521	24.728	321.0	0.036	5.83	102.5	3.2	0.34	0.0	0.00	0.18	0.04	11
	20 ISL	15.46	15.46	33.527	24.737	320.4	0.064	5.81	102.2	3.0	0.34	0.0	0.00	0.16	0.04	20
1	21	15.46	15.46	33.526	24.736	320.5	0.068	5.81	102.2	3.0	0.34	0.0	0.00	0.16	0.04	21
1	30	15.45	15.45	33.526	24.739	320.5	0.096	5.81	102.1	2.9	0.33	0.0	0.00	0.18	0.05	30
1	41	15.41	15.40	33.527	24.749	319.9	0.132	5.80	101.9	3.0	0.33	0.0	0.00	0.22	0.07	41
1	50	14.85	14.84	33.508	24.857	309.9	0.160	5.88	102.1	3.1	0.35	0.0	0.00	0.26	0.11	50
1	61	13 ..66	13.65	33.452	25.063	290.4	0.193	5.77	97.8	4.0	0.49	1.0	0.07	0.71	0.34	61
1	72	12.88	12.87	33.429	25.202	277.5	0.224	5.27	87.8	6.0	0.71	4.3	0.22	0.54	0.32	72
	75 ISL	12.52	12.51	33.434	25.276	270.4	0.232	5.06	83.7	7.3	0.82	6.1	0.19	0.46	0.29	75
1	86	11.22	11.21	33.492	25.564	243.1	0.261	4.33	69.7	12.7	1.22	13.1	0.05	0.17	0.15	86
	100 ISL	10.35	10.34	33.604	25.805	220.5	0.293	3.85	60.8	17.4	1.49	17.6	0.02	0.05	0.09	100
1	101	10.32	10.31	33.614	25.818	219.2	0.295	3.82	60.3	17.7	1.50	17.8	0.02	0.05	0.09	101
1	121	10.21	10.20	33.888	26.051	197.6	0.337	2.94	46.4	23.8	1.80	22.1	0.01	0.01	0.06	122
	125 ISL	10.14	10.13	33.916	26.085	194.4	0.345	2.86	45.1	24.8	1.84	22.6	0.01	0.01	0.06	126
1	146	9.77	9.75	34.005	26.217	182.3	0.384	2.59	40.5	28.9	1.98	24.6	0.01	0.00	0.04	147
	150 ISL	9.75	9.73	34.022	26.233	180.8	0.392	2.54	39.7	29.3	2.00	24.9	0.01	0.00	0.04	151
1	176	9.69	9.67	34.117	26.318	173.3	0.438	2.20	34.4	31.9	2.14	26.4	0.01	0.01	0.04	177
	200 ISL	9.44	9.42	34.188	26.415	164.5	0.478	1.89	29.4	35.7	2.28	27.9	0.01	0.00	0.03	201
1	206	9.34	9.32	34.198	26.439	162.3	0.488	1.84	28.5	36.7	2.31	28.2	0.01	0.00	0.03	207
1	235	8.IS2	8.60	34.168	26.531	153.9	0.534	1.91	29.1	40.9	2.35	29.4	0.00			236
	250 ISL	8.39	8.36	34.164	26.563	151.0	0.557	1.87	28.4	42.6	2.38	30.0	0.00			251
1	275	8.11	8.08	34.165	26.606	147.2	0.594	1.74	26.2	45.5	2.46	30.9	0.00			277
	300 ISL	7.82	7.79	34.174	26.656	142.8	0.630	1.54	23.1	49.2	2.56	32.1	0.00			302
1	331	7.51	7.48	34.190	26.714	137.6	0.674	1.27	18.9	53.9	2.69	33.6	0.00			333
1	390	7.05	7.01	34.213	26.797	130.4	0.753	0.91	13.4	61.1	2.87	35.9	0.00			393
	400 ISL	7.00	6.96	34.217	26.807	129.6	0.766	0.87	12.8	62.0	2.89	36.1	0.00			403
1	456	6.73	6.69	34.240	26.863	124.9	0.837	0.66	9.6	67.0	2.98	37.2	0.00			459
	500 ISL	6.46	6.41	34.260	26.915	120.4	0.891	0.52	7.5	71.5	3.06	38.4	0.00			503
1	525	6.30	6.25	34.272	26.945	117.7	0.921	0.44	6.4	74.1	3.11	39.1	0.00			529

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
33 15.1 N	118 15.0 W	04/03/91	1817 UTC	387 m	330 03 kn	250 04 06	1	1019.7 mb	16.8 C	14.6 C	28m 03	7/8 AC

CAST	DEPTH n	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 UM/1	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
	0 ISL	15.36	15.36	33.495	24.734	320.1	0.000	5.82	102.1	2.7	0.32	0.0	0.00	0.22	0.06	0
1	1	15.36	15.36	33.495	24.734	320.1	0.003	5.82	102.1	2.7	0.32	0.0	0.00	0.22	0.06	1
	10 ISL	15.32	15.32	33.494	24.742	319.6	0.032	5.80	101.7	2.7	0.31	0.0	0.00	0.24	0.06	10
1	11	15.31	15.31	33.494	24.745	319.4	0.035	5.80	101.7	2.7	0.31	0.0	0.00	0.24	0.06	11
	20 ISL	15.20	15.20	33.487	24.764	317.9	0.064	5.81	101.6	2.7	0.31	0.0	0.00	0.23	0.08	20
1	21	15.19	15.19	33.486	24.765	317.8	0.067	5.81	101.6	2.7	0.31	0.0	0.00	0.23	0.08	21
	30 ISL	15.17	15.17	33.489	24.772	317.4	0.096	5.82	101.7	2.7	0.31	0.0	0.00	0.27	0.10	30
1	31	15.17	15.17	33.489	24.772	317.4	0.099	5.82	101.7	2.7	0.31	0.0	0.00	0.27	0.10	31
1	41	14.75	14.74	33.482	24.858	309.5	0.130	5.83	101.0	2.7	0.34	0.1	0.01	0.52	0.24	41
	50 ISL	13.78	13.77	33.455	25.041	292.3	0.157	5.73	97.3	3.6	0.44	1.2	0.09	0.79	0.45	50
1	51	13.65	13.64	33.453	25.066	289.9	0.160	5.72	96.9	3.8	0.46	1.3	0.10	0.80	0.47	51
1	61	12.50	12.49	33.449	25.291	268.6	0.188	5.03	83.2	7.5	0.80	6.9	0.21	0.37	0.29	61
1	71	11.91	11.90	33.454	25.408	257.8	0.214	4.65	75.9	9.6	0.95	9.9	0.12	0.24	0.20	71
	75 ISL	11.75	11.74	33.467	25.448	254.0	0.225	4.53	73.7	10.4	1.00	10.8	0.09	0.21	0.18	75
1	85	11.36	11.35	33.513	25.555	244.0	0.250	4.26	68.8	12.4	1.13	13.0	0.05	0.14	0.14	85
1	99	10.61	10.60	33.588	25.747	226.0	0.282	3.91	62.1	16.0	1.33	16.7	0.03	0.07	0.09	99
	100 ISL	10.57	10.56	33.595	25.760	224.8	0.285	3.88	61.6	16.3	1.34	16.9	0.03	0.07	0.09	100
1	119	10.06	10.05	33.746	25.965	205.6	0.326	3.42	53.8	21.0	1.53	20.5	0.02	0.02	0.06	120
	125 ISL	9.99	9.98	33.791	26.012	201.2	0.338	3.28	51.5	22.2	1.58	21.3	0.02	0.02	0.05	126
1	144	9.89	9.87	33.920	26.130	190.4	0.375	2.88	45.1	25.6	1.73	23.4	0.01	0.01	0.04	145
	150 ISL	9.85	9.83	33.956	26.165	187.3	0.386	2.77	43.4	26.7	1.77	24.0	0.01	0.01	0.04	151
1	175	9.62	9.60	34.069	26.292	175.7	0.432	2.40	37.4	30.8	1.92	25.9	0.01	0.01	0.04	176
	200 ISL	9.15	9.13	34.111	26.402	165.6	0.474	2.27	35.0	34.4	2.01	27.3	0.01	0.00	0.04	201
1	205	9.05	9.03	34.114	26.420	164.0	0.483	2.26	34.8	35.1	2.02	27.5	0.01	0.00	0.04	206
1	234	8.60	8.58	34.122	26.497	157.0	0.529	2.20	33.5	38.5	2.08	28.6	0.01			235
	250 ISL	8.44	8.41	34.135	26.532	153.9	0.554	2.08	31.6	40.5	2.14	29.3	0.01			251
1	270	8.24	8.21	34.151	26.576	150.1	0.584	1.89	28.6	43.3	2.22	30.2	0.01			272
	300 ISL	7.77	7.74	34.157	26.650	143.3	0.628	1.61	24.1	49.0	2.35	32.2	0.01			302
1	315	7.54	7.51	34.160	26.686	140.0	0.650	1.47	21.9	51.9	2.41	33.2	0.01			317
1	360	7.18	7.15	34.195	26.765	133.1	0.711	1.07	15.8	58.4	2.57	35.2	0.01			362

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 11.1 N	118 23.3 W	04/03/91	1432 UTC	1606 •	160 06 kn	240 05 07	1	1018.7 ab	15.9 C	14.0 C	22B 02	7/8	AC

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYM HT m1/1	OXYGEN	OXY PCT	SIO3 uM/1	PO4 uM/l	NO3 UM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	15.35	15.35	33.495	24.736	319.9	0.000	5.80	101.7	2.5	0.34	0.0	0.00	0.18	0.06	0
1	1		15.35	15.35	33.495	24.736	319.9	0.003	5.80	101.7	2.5	0.34	0.0	0.00	0.18	0.06	1
	10	ISL	15.34	15.34	33.493	24.737	320.1	0.032	5.80	101.7	2.5	0.33	0.0	0.00	0.19	0.07	10
1	16		15.33	15.33	33.492	24.739	320.1	0.051	5.80	101.7	2.5	0.33	0.0	0.00	0.20	0.08	16
	20	ISL	15.26	15.26	33.498	24.759	318.3	0.064	5.83	102.1	2.3	0.33	0.0	0.00	0.23	0.08	20
1	30		15.08	15.08	33.515	24.812	313.6	0.096	5.89	102.8	2.0	0.33	0.0	0.00	0.31	0.10	30
1	40		15.06	15.05	33.522	24.822	313.0	0.127	5.84	101.9	2.1	0.33	0.0	0.00	0.37	0.14	40
1	50		14.87	14.86	33.514	24.857	309.9	0.158	5.85	101.6	2.1	0.34	0.0	0.00	0.45	0.22	50
1	59		13.44	13.43	33.459	25.113	285.6	0.185	5.48	92.4	4.5	0.58	2.6	0.17	0.86	0.73	59
1	68		12.61	12.60	33.424	25.251	272.7	0.210	5.14	85.2	6.4	0.78	5.6	0.23	0.45	0.40	68
	75	ISL	12.21	12.20	33.436	25.337	264.6	0.229	4.88	80.2	7.9	0.90	7.8	0.16	0.28	0.30	75
1	78		12.08	12.07	33.445	25.369	261.6	0.237	4.78	78.3	8.5	0.95	8.6	0.12	0.24	0.28	78
1	92		11.53	11.52	33.472	25.492	250.2	0.272	4.48	72.6	10.8	1.12	11.3	0.05	0.16	0.20	92
	100	ISL	10.95	10.94	33.514	25.630	237.2	0.292	4.22	67.5	13.3	1.26	13.9	0.03	0.10	0.16	100
1	107		10.49	10.48	33.570	25.754	225.4	0.308	3.97	62.9	15.6	1.39	16.2	0.02	0.06	0.13	108
1	123		10.28	10.27	33.747	25.929	209.2	0.343	3.37	53.2	20.0	1.63	19.7	0.02	0.02	0.08	124
	125	ISL	10.24	10.23	33.770	25.954	206.9	0.347	3.30	52.1	20.6	1.(66	20.1	0.02	0.02	0.08	126
1	146		9.85	9.83	33.969	26.175	186.2	0.388	2.70	42.3	26.5	1.89	23.6	0.01	0.01	0.05	147
	150	ISL	9.80	9.78	33.988	26.199	184.1	0.396	2.65	41.5	27.1	1.91	23.9	0.01	0.01	0.05	151
1	172		9.56	9.54	34.049	26.286	176.1	0.435	2.48	38.6	29.8	2.00	25.0	0.01	0.01	0.05	173
	200	ISL	9.14	9.12	34.125	26.414	164.5	0.483	2.24	34.6	34.1	2.13	26.8	0.00	0.00	0.03	201
1	202		9.11	9.09	34.129	26.422	163.7	0.486	2.22	34.2	34.4	2.14	26.9	0.00	0.00	0.03	203
1	232		8.71	8.69	34.162	26.512	155.7	0.534	1.98	30.3	38.4	2.27	28.4	0.00			233
	250	ISL	8.44	8.41	34.161	26.553	152.0	0.562	1.91	29.0	40.8	2.32	29.2	0.00			251
1	271		8.13	8.10	34.157	26.597	148.1	0.593	1.82	27.5	43.7	2.38	30.1	0.00			273
	300	ISL	7.79	7.76	34.174	26.661	142.3	0.636	1.53	22.9	48.4	2.50	31.6	0.00			302
1	328		7.51	7.48	34.194	26.717	137.3	0.675	1.23	18.3	53.1	2.63	33.1	0.00			330
1	388		6.96	6.92	34.222	26.817	128.5	0.754	0.83	12.2	61.7	2.83	35.7	0.00			390
	400	ISL	6.88	6.84	34.230	26.834	126.9	0.770	0.76	11.1	63.1	2.87	36.1	0.00			403
1	453		6.54	6.50	34.267	26.909	120.3	0.835	0.50	7.3	69.3	3.00	37.5	0.00			456
	500	ISL	6.18	6.14	34.294	26.978	114.2	0.890	0.38	5.5	75.5	3.08	38.7	0.00			503
1	521		6.02	5.97	34.307	27.008	111.4	0.914	0.32	4.6	78.3	3.12	39.2	0.00			525

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 55.2 N	118 56.0 W	04/03/91	0923 UTC	1695 m	290 07 kn			1021.9 mb	15.8 C	12.8 C			

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	15.05	15.05	33.485	24.794	314.4	0.000	5.89	102.7	2.9	0.38	0.0	0.00	0.26	0.08	0
1	1		15.05	15.05	33.485	24.794	314.4	0.003	5.89	102.7	2.9	0.38	0.0	0.00	0.26	0.08	1
	10	ISL	14.86	14.86	33.482	24.833	311.0	0.031	5.90	102.5	2.9	0.37	0.0	0.00	0.27	0.08	10
1	16		14.70	14.70	33.478	24.865	308.1	0.050	5.90	102.1	2.9	0.37	0.0	0.00	0.28	0.09	16
	20	ISL	14.67	14.67	33.475	24.869	307.8	0.062	5.90	102.1	2.9	0.37	0.0	0.00	0.28	0.09	20
	30	ISL	14.61	14.61	33.471	24.879	307.2	0.093	5.89	101.8	2.9	0.37	0.0	0.00	0.33	0.12	30
1	31		14.61	14.61	33.471	24.879	307.2	0.096	5.89	101.8	2.9	0.37	0.0	0.00	0.34	0.12	31
1	40		14.51	14.50	33.475	24.904	305.1	0.124	5.88	101.4	3.0	0.38	0.2	0.01	0.47	0.18	40
	50	ISL	13.26	13.25	33.434	25.130	283.8	0.153	5.63	94.6	4.7	0.58	2.8	0.15	0.52	0.28	50
1	51		13.11	13.10	33.429	25.156	281.3	0.156	5.60	93.8	4.9	0.61	3.1	0.16	0.52	0.29	51
1	61		12.02	12.01	33.355	25.310	266.8	0.183	5.27	86.2	6.9	0.83	6.6	0.07	0.33	0.19	61
1	70		10.99	10.98	33.345	25.491	249.7	0.206	4.95	79.2	9.8	1.05	10.5	0.03	0.18	0.17	70
	75	ISL	10.67	10.66	33.371	25.567	242.5	0.219	4.77	75.8	11.4	1.14	12.1	0.02	0.12	0.13	75
1	81		10.44	10.43	33.412	25.639	235.8	0.233	4.58	72.4	13.1	1.23	13.7	0.01	0.07	0.08	81
1	96		10.19	10.18	33.487	25.741	226.4	0.268	4.30	67.7	15.4	1.36	15.8	0.01	0.11	0.09	96
	100	ISL	10.21	10.20	33.543	25.781	222.7	0.277	4.09	64.4	16.5	1.43	16.7	0.01	0.09	0.08	100
1	111		10.24	10.23	33.703	25.901	211.6	0.301	3.53	55.7	19.8	1.61	19.3	0.01	0.03	0.06	112
	125	ISL	».85	9.84	33.797	26.041	198.5	0.329	3.29	51.5	23.0	1.73	21.5	0.01	0.01	0.05	126
1	126		9.82	9.81	33.802	26.049	197.7	0.331	3.28	51.3	23.2	1.74	21.6	0.01	0.01	0.05	127
	150	ISL	9.64	9.62	33.926	26.177	186.1	0.377	2.94	45.8	26.7	1.88	23.4	0.01	0.01	0.04	151
1	151		9.64	9.62	33.931	26.181	185.8	0.379	2.93	45.7	26.8	1.88	23.5	0.01	0.01	0.04	152
1	177		9.38	9.36	34.061	26.325	172.5	0.426	2.53	39.2	31.2	2.04	25.5	0.01	0.00	0.04	178
	200	ISL	9.11	9.09	34.124	26.418	164.1	0.465	2.27	35.0	35.2	2.17	27.1	0.01	0.00	0.04	201
1	206		9.02	9.00	34.130	26.438	162.4	0.474	2.23	34.3	36.1	2.19	27.5	0.01	0.00	0.04	207
1	237		8.36	8.34	34.082	26.503	156.4	0.524	2.38	36.1	39.1	2.20	28.4	0.01			238
	250	ISL	8.27	8.24	34.105	26.535	153.6	0.544	2.22	33.6	41.0	2.27	29.1	0.01			251
1	276		8.17	8.14	34.167	26.599	148.0	0.583	1.77	26.7	45.2	2.45	30.7	0.01			278
	300	ISL	7.91	7.88	34.188	26.654	143.0	0.618	1.49	22.4	49.4	2.57	32.0	0.01			302
1	333		7.52	7.49	34.203	26.723	136.9	0.664	1.18	17.6	54.9	2.70	33.6	0.01			335
1	392		7.04	7.00	34.236	26.817	128.(5	0.743	0.79	11.6	62.5	2.89	35.9	0.01			395
	400	ISL	6.99	6.95	34.240	26.827	127.7	0.753	0.75	11.0	63.4	2.91	36.1	0.01			403
1	457		6.64	6.60	34.266	26.895	121.8	0.824	0.54	7.9	69.4	3.03	37.3	0.00			460
	500	ISL	6.41	6.36	34.283	26.939	118.0	0.875	0.42	6.1	73.4	3.09	38.3	0.00			503
1	524		6.28	6.23	34.293	26.964	115.9	0.903	0.36	5.2	75.6	3.13	38.8	0.00			528

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 39.1 N	119 28.8 W	04/03/91	0426 UTC	1309 m	140 04 kn			1022.8 Mb	15.5 C	13.6 C		

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT m1/1	OXYGEN	OXY PCT	SIO3 uM/1	PO4 UM/1	NO3 UM/1	N()2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.81	14.81	33.466	24.831	310.8	0.000	5.97	103.6	2.5	0.36	0.0	0.01	0.29	0.09	0
1	1		14.81	14.81	33.466	24.831	310.8	0.003	5.97	103.6	2.5	0.36	0.0	0.01	0.29	0.09	1
	10	ISL	14.62	14.62	33.468	24.874	307.1	0.031	5.98	103.3	2.5	0.36	0.0	0.01	0.33	0.12	10
1	16		14.45	14.45	33.469	24.911	303.7	0.049	5.98	103.0	2.5	0.36	0.0	0.01	0.39	0.15	16
	20	ISL	14.40	14.40	33.469	24.922	302.8	0.061	5.98	102.9	2.5	0.36	0.0	0.01	0.43	0.18	20
	30	ISL	14.28	14.28	33.465	24.944	300.9	0.092	5.98	102.6	2.5	0.36	0.0	0.01	0.55	0.27	30
1	31		14.27	14.27	33.464	24.945	300.8	0.095	5.98	102.6	2.5	0.36	0.0	0.01	0.56	0.28	31
1	41		14.12	14.11	33.455	24.970	298.8	0.125	5.95	101.8	2.5	0.38	0.1	0.05	0.74	0.36	41
	50	ISL	13.66	13.65	33.440	25.054	291.0	0.151	5.90	100.0	3.7	0.43	0.6	0.18	0.54	0.32	50
1	51		13.59	13.58	33.439	25.067	289.8	0.154	5.89	99.6	3.9	0.44	0.7	£1.19	0.51	0.32	51
1	61		12.85	12.84	33.455	25.228	274.7	0.182	5.43	90.5	6.4	0.69	4.5	0.23	0.38	0.41	61
1	71		11.21	11.20	33.417	25.507	248.2	0.208	4.79	77.0	11.1	1.09	11.1	0.11	0.23	0.28	71
	75	ISL	10.94	10.93	33.433	25.568	242.5	0.218	4.63	74.0	12.4	1.18	12.6	0.08	0.20	0.25	75
1	80		10.72	10.71	33.462	25.630	236.7	0.230	4.46	71.0	13.8	1.26	14.1	0.06	0.16	0.22	80
1	95		9.87	9.86	33.550	25.844	216.5	0.264	4.04	63.2	18.1	1.49	18.1	0.02	0.04	0.13	95
	100	ISL	9.83	9.82	33.602	25.891	212.2	0.275	3.86	60.3	19.5	1.56	19.1	0.02	0.03	0.11	100
1	110		9.74	9.73	33.682	25.969	205.0	0.296	3.57	55.7	21.8	1.67	20.7	0.02	0.02	0.08	111
1	125		9.48	9.47	33.748	26.063	196.3	0.326	3.52	54.6	23.1	1.70	21.5	0.02	0.01	0.05	126
1	150		9.06	9.04	33.959	26.296	174.6	0.372	3.01	46.3	29.6	1.92	24.8	0.01	0.00	0.04	151
1	175		8.48	8.46	34.036	26.448	160.6	0.414	2.65	40.3	36.0	2.10	27.4	0.01	0.00	0.03	176
	200	ISL	8.06	8.04	34.083	26.548	151.3	0.453	2.27	34.2	42.0	2.28	29.7	0.01	0.00	0.03	201
1	206		7.99	7.97	34.090	26.564	149.9	0.462	2.19	32.9	43.1	2.32	30.1	0.01	0.00	0.03	207
1	235		7.84	7.82	34.097	26.592	147.7	0.505	2.08	31.2	45.0	2.37	30.8	0.01			236
	250	ISL	7.75	7.73	34.108	26.614	145.9	0.527	1.95	29.2	46.8	2.43	31.3	0.01			251
1	275		7.57	7.54	34.133	26.660	141.8	0.563	1.69	25.2	50.4	2.54	32.2	0.01			277
	300	ISL	7.36	7.33	34.159	26.710	137.3	0.598	1.41	20.9	54.2	2.66	33.5	0.01			302
1	331		7.11	7.08	34.190	26.770	132.0	0.640	1.09	16.1	58.9	2.79	35.1	0.01			333
1	390		6.73	6.69	34.230	26.854	124.8	0.716	0.71	10.4	66.5	2.97	37.1	0.01			393
	400	ISL	6.69	6.65	34.234	26.863	124.0	0.728	0.67	9.8	67.3	2.99	37.2	0.01			403
1	455		6.50	6.46	34.258	26.907	120.5	0.795	0.52	7.6	70.8	3.06	37.8	0.01			458
	500	ISL	6.30	6.25	34.285	26.955	116.4	0.849	0.42	6.1	74.6	3.13	38.6	0.01			503
1	524		6.19	6.14	34.299	26.981	114.2	0.876	0.36	5.2	76.6	3.16	39.1	0.01			528

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 25.2 N	119 57.5 W	03/03/91	2345 UTC	900 m	200 05 kn	240 02 07	1	1023.7 nb	17.1 C	15.2 C	20B 03	7/8 ST

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DirN HT m1/1	OXYGEN	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 UM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.55	14.55	33.336	24.787	315.1	0.000	5.93	102.3	3.6	0.40	0.0	0.00	0.24	0.07	0
1	1		14.55	14.55	33.336	24.787	315.1	0.003	5.93	102.3	3.6	0.40	0.0	0.00	0.24	0.07	1
	10	ISL	14.43	14.43	33.337	24.813	312.8	0.031	5.95	102.3	3.5	0.40	0.0	0.00	0.25	0.08	10
1	16		14.33	14.33	33.340	24.837	310.8	0.050	5.96	102.3	3.4	0.39	0.0	0.00	0.26	0.09	16
	20	ISL	14.31	14.31	33.343	24.843	310.3	0.063	5.94	101.9	3.1	0.39	0.0	0.00	0.28	0.09	20
	30	ISL	14.28	14.28	33.355	24.859	309.0	0.094	5.92	101.5	2.4	0.38	0.0	0.01	0.35	0.13	30
1	31		14.28	14.28	33.357	24.861	308.9	0.097	5.92	101.5	2.4	0.38	0.0	0.01	0.36	0.14	31
1	42		14.21	14.20	33.501	24.987	297.2	0.130	6.00	102.8	3.2	0.39	0.0	0.00	0.47	0.27	42
	50	ISL	13.62	13.61	33.458	25.076	288.9	0.153	5.80	98.2	3.9	0.51	1.4	0.14	0.42	0.38	50
1	51		13.54	13.53	33.450	25.086	288.0	0.156	5.77	97.5	4.0	0.52	1.6	0.16	0.41	0.39	51
1	62		13.15	13.14	33.440	25.157	281.5	0.188	5.74	96.2	4.2	0.54	1.9	0.17	0.37	0.36	62
1	72		11.89	11.88	33.317	25.305	267.5	0.215	5.32	86.8	7.6	0.86	7.1	0.05	0.18	0.18	72
	75	ISL	11.55	11.54	33.310	25.362	262.1	0.223	5.21	84.4	8.6	0.94	8.5	0.04	0.14	0.16	75
1	81		10.96	10.95	33.323	25.479	251.1	3.238	4.99	79.8	10.5	1.09	11.1	0.03	0.09	0.13	81
1	96		10.32	10.31	33.432	25.676	232.6	0.275	4.46	70.4	14.6	1.33	15.2	0.01	0.06	0.07	96
	100	ISL	10.28	10.27	33.442	25.690	231.3	0.284	4.42	69.7	15.0	1.35	15.6	0.01	0.06	0.07	100
1	110		10.22	10.21	33.471	25.723	228.4	0.307	4.31	67.9	15.9	1.40	16.4	0.01	0.05	0.08	111
	125	ISL	9.9)	9.92	33.614	25.884	213.4	0.340	3.76	58.9	20.3	1.63	20.0	0.01	0.02	0.06	126
1	126		9.90	9.89	33.626	25.899	212.0	0.342	3.72	58.2	20.7	1.65	20.3	0.01	0.02	0.06	127
	150	ISL	9.13	9.11	33.864	26.211	182.7	0.390	3.20	49.3	28.2	1.91	24.8	0.01	0.01	0.03	151
1	152		9.07	9.05	33.880	26.233	180.6	0.393	3.17	48.8	28.7	1.92	25.1	0.01	0.01	0.03	153
1	177		8.86	8.84	33.952	26.323	172.5	0.437	2.94	45.0	31.8	2.02	26.5	0.01	0.00	0.03	178
	200	ISL	8.54	8.52	34.022	26.428	162.9	0.476	2.71	41.2	36.3	2.14	28.1	0.01	0.00	0.03	201
1	207		8.41	8.42	34.040	26.457	160.2	0.487	2.64	40.1	37.6	2.18	28.6	0.01	0.00	0.03	208
1	236		8.26	8.24	34.063	26.503	156.3	0.533	2.48	37.5	40.2	2.25	29.6	0.01			237
	250	ISL	8.10	8.07	34.078	26.539	153.1	0.555	2.32	35.0	42.7	2.33	30.5	0.01			251
1	277		7.75	7.72	34.111	26.617	146.1	0.595	1.94	29.0	48.5	2.52	32.4	0.00			279
	300	ISL	7.51	7.48	34.144	26.677	140.6	0.628	1.58	23.5	53.4	2.68	34.0	0.00			302
1	332		7.22	7.19	34.188	26.753	133.7	0.672	1.13	16.7	59.6	2.87	36.0	0.00			334
1	391		6.83	6.79	34.237	26.846	125.6	0.749	0.79	11.6	67.6	3.07	38.5	0.00			393
	400	ISL	6.78	6.74	34.237	26.853	125.1	0.760	0.76	11.1	68.3	3.08	38.7	0.00			403
1	455		6.48	6.44	34.235	26.892	121.9	0.828	0.61	8.9	72.5	3.14	39.7		0.00		458
	500	ISL	6.23	6.19	34.276	26.957	116.2	0.881	0.43	6.2	78.0	3.23	40.9		0.00		503
1	524		6.09	6.04	34.298	26.993	113.0	0.909	0.33	4.8	81.0	3.28	41.6		0.00		528

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 5.1 N	120 38.3 W	03/03/91	1705 UTC	3430 m	170 08 kn	240 05 07	1	1024.8 mb	15.5 C	14.8 C	25m 03	5/8	ST

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
	0 ISL	14.69	14.69	33.416	24.818	312.0	0.000	5.86	101.4	2.7	0.38	0.0	0.00	0.18	0.06	0
1	1	14.69	14.69	33.416	24.818	312.1	0.003	5.86	101.4	2.7	0.38	0.0	0.00	0.18	0.06	1
	10 ISL	14.65	14.65	33.416	24.827	311.5	0.031	5.87	101.5	2.7	0.38	0.0	0.00	0.18	0.06	10
1	16	14.62	14.62	33.416	24.834	311.0	0.050	5.87	101.4	2.7	0.38	0.0	0.00	0.18	0.06	16
	20 ISL	14.61	14.61	33.416	24.836	310.9	0.062	5.87	101.4	2.7	0.38	0.0	0.00	0.19	0.07	20
	30 ISL	14.60	14.60	33.416	24.839	311.0	0.093	5.86	101.2	2.7	0.38	0.0	0.00	0.22	0.08	30
1	31	14.60	14.60	33.416	24.839	311.0	0.097	5.86	101.2	2.7	0.38	0.0	0.00	0.22	0.08	31
1	41	14.61	14.60	33.415	24.836	311.6	0.128	5.85	101.0	2.7	0.38	0.0	0.00	0.25	0.08	41
	50 ISL	14.59	14.58	33.421	24.845	311.0	0.156	5.86	101.2	2.7	0.38	0.0	0.00	0.28	0.11	50
1	51	14.59	14.58	33.422	24.846	310.9	0.159	5.86	101.2	2.7	0.38	0.0	0.00	0.29	0.11	51
1	61	14.51	14.50	33.426	24.866	309.3	0.190	5.87	101.2	2.7	0.39	0.1	0.02	0.39	0.16	61
1	71	13.68	13.67	33.41.0	25.027	294.2	0.220	5.79	98.1	3.3	0.47	1.0	0.27	0.31	0.21	71
	75 ISL	13.52	13.51	33.404	25.055	291.6	0.232	5.77	97.4	3.5	0.49	1.3	0.23	0.28	0.20	75
1	80	13.33	13.32	33.392	25.084	288.9	0.246	5.72	96.2	3.8	0.53	1.9	0.14	0.24	0.18	80
1	95	11.99	11.98	33.332	25.298	268.8	0.288	5.29	86.5	7.0	0.84	7.1	0.02	0.07	0.08	95
	100 ISL	11.52	11.51	33.338	25.390	260.0	0.301	5.11	82.7	8.4	0.95	8.9	0.02	0.06	0.07	100
1	110	10.69	10.68	33.380	25.572	242.9	0.326	4.74	75.4	11.4	1.15	12.3	0.01	0.04	0.06	111
1	125	10.02	10.01	33.488	25.771	224.2	0.361	4.34	68.0	15.5	1.37	16.2	0.01	0.02	0.04	126
1	150	9.32	9.30	33.695	26.048	198.2	0.414	3.65	56.4	22.6	1.68	21.4	0.02	0.01	0.02	151
1	175	8.76	8.76	33.850	26.255	178.8	0.461	3.58	54.7	26.5	1.75	23.1	0.01	0.00	0.01	176
	200 ISL	8.46	8.44	33.947	26.381	167.3	0.505	3.20	48.6	31.1	1.91	25.5	0.01	0.00	0.02	201
1	205	8.40	8.38	33.960	26.401	165.5	0.513	3.12	47.3	32.1	1.94	26.0	0.01	0.00	0.02	206
1	234	7.97	7.95	34.014	26.508	155.7	0.559	2.88	43.3	37.7	2.08	28.2	0.01			235
	250 ISL	7.84	7.82	34.040	26.547	152.2	0.584	2.65	39.7	40.6	2.17	29.2	0.01			251
1	274	7.68	7.65	34.074	26.598	147.8	0.620	2.24	33.4	45.1	2.33	30.7	0.01			276
	300 ISL	7.37	7.34	34.105	26.667	141.5	0.658	1.79	26.5	51.0	2.52	32.9	0.01			302
1	329	7.01	6.98	34.138	26.743	134.5	0.698	1.32	19.4	57.5	2.71	35.2	0.00			331
1	388	6.58	6.54	34.211	26.859	124.1	0.774	0.72	10.5	67.2	2.97	37.9	0.00			390
	400 ISL	6.49	6.45	34.215	26.874	122.8	0.789	0.66	9.6	68.8	3.00	38.3	0.00			403
1	455	6.10	6.06	34.219	26.928	118.1	0.855	0.53	7.6	75.2	3.08	39.6	0.00			458
	500 ISL	5.76	5.72	34.223	26.974	114.0	0.907	0.47	6.7	80.4	3.14	40.8	0.00			503
1	525	5.57	5.53	34.226	27.000	111.7	0.935	0.44	6.3	83.3	3.17	41.4	0.00			529

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 45.1 N	121 18.9 W	03/03/91	1115 UTC	3592 m	200 13	kn		1023.5 mb	16.1 C	14.5 C			

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 UM/l	PO4 UM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
	0 ISL	15.76	15.76	33.583	24.713	322.1	0.000	5.71	101.0	2.7	0.35	0.0	0.00	0.12	0.06	0
1	3	15.76	15.76	33.583	24.713	322.2	0.010	5.71	101.0	2.7	0.35	0.0	0.00	0.12	0.06	3
	10 ISL	15.75	15.75	33.580	24.713	322.4	0.032	5.71	101.0	2.7	0.34	0.0	0.00	0.12	0.06	10
1	18	15.73	15.73	33.580	24.718	322.2	0.058	5.71	101.0	2.7	0.34	0.0	0.00	0.13	0.05	18
	20 ISL	15.71	15.71	33.578	24.721	322.0	0.064	5.71	100.9	2.7	0.34	0.0	0.00	0.13	0.05	20
	30 ISL	15.64	15.64	33.570	24.731	321.4	0.097	5.72	101.0	2.7	0.36	0.0	0.00	0.14	0.04	30
1	32	15.63	15.63	33.568	24.731	321.4	0.103	5.72	100.9	2.7	0.36	0.0	0.00	0.14	0.04	32
1	43	15.63	15.62	33.561	24.726	322.2	0.138	5.73	101.1	2.7	0.34	0.0	0.00	0.15	0.06	43
	50 ISL	15.62	15.61	33.562	24.730	322.1	0.161	5.72	100.9	2.7	0.34	0.0	0.00	0.16	0.06	50
1	53	15.62	15.61	33.562	24.730	322.2	0.171	5.72	100.9	2.7	0.34	0.0	0.00	0.16	0.06	53
1	62	15.60	15.59	33.561	24.734	322.1	0.200	5.73	101.0	2.5	0.34	0.0	0.00	0.17	0.06	62
1	73	15.61	15.60	33.559	24.730	322.7	0.235	5.72	100.9	2.5	0.34	0.0	0.00	0.18	0.06	73
	75 ISL	15.60	15.59	33.558	24.732	322.7	0.242	5.72	100.9	2.5	0.34	0.0	0.00	0.19	0.06	75
1	81	15.57	15.56	33.553	24.735	322.5	0.261	5.71	100.6	2.5	0.34	0.0	0.00	0.21	0.08	81
1	96	14.24	14.23	33.421	24.921	305.1	0.308	5.82	99.8	2.6	0.39	0.2	0.06	0.26	0.14	96
	100 ISL	13.79	13.78	33.375	24.978	299.6	0.320	5.77	98.0	3.2	0.46	1.1	0.06	0.24	0.14	100
1	112	12.51	12.50	33.295	25.171	281.4	0.355	5.54	91.5	5.3	0.68	4.5	0.03	0.17	0.14	112
	125 ISL	11.66	11.64	33.397	25.411	258.7	0.390	5.25	85.2	7.4	0.84	7.6	0.02	0.10	0.11	126
1	127	11.55	11.53	33.417	25.447	255.3	0.395	5.21	84.4	7.8	0.86	8.1	0.02	0.09	0.10	128
	150 ISL	9.89	9.87	33.468	25.777	224.0	0.450	4.77	74.6	13.2	1.20	14.0	0.02	0.02	0.04	151
1	152	9.76	9.74	33.472	25.802	221.7	0.455	4.73	73.7	13.7	1.23	14.5	0.02	0.02	0.04	153
1	177	9.17	9.15	33.642	26.031	200.3	0.508	4.08	62.8	20.4	1.53	19.6	0.01	0.00	0.03	178
	200 ISL	8.97	8.95	33.841	26.219	182.8	0.552	3.49	53.6	26.4	1.76	23.2	0.01	0.00	0.03	201
1	208	8.92	8.90	33.901	26.274	177.8	0.566	3.30	50.6	28.2	1.83	24.2	0.01	0.00	0.03	209
1	236	8.51	8.49	33.966	26.389	167.3	0.614			32.7	1.98	26.4	0.01			237
	250 ISL	8.36	8.33	33.993	26.433	163.3	0.637	2.79	42.3	34.8	2.04	27.2	0.01			251
1	277	8.09	8.06	34.034	26.506	156.7	0.681	2.58	38.9	39.0	2.16	28.7	0.01			279
	300 ISL	7.78	7.75	34.057	26.570	150.9	0.716	2.31	34.5	43.5	2.28	30.3	0.01			302
1	333	7.30	7.27	34.081	26.658	142.8	0.764	1.91	28.3	50.4	2.47	32.7	0.01			335
1	392	4.54	6.50	34.114	26.788	130.9	0.845	1.28	18.6	62.6	2.76	36.5	0.01			394
	400 ISL	6.46	6.42	34.118	26.801	129.6	0.856	1.21	17.6	64.1	2.79	36.9	0.01			402
1	456	6.00	5.96	34.154	26.889	121.6	0.926	0.81	11.6	73.1	3.00	39.2	0.01			459
	500 ISL	5.84	5.80	34.204	26.949	116.4	0.978	0.57	8.2	78.1	3.10	40.1	0.01			503
1	525	5.75	5.70	34.232	26.983	113.5	1.007	0.43	6.1	81.0	3.15	40.6	0.01			528

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 90 <M>

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	TOT	SECCHI/FOREL	CLDftM'JTYPE
31 25.0 N	121 59.4 W	03/03/91	0539 UTC	3849 n	170 13	kn		1025.2 mb	16.2 C	14.8 C		

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT m1/1	OXYGEN	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/L	1PRESS dto
	0	ISL	15.92	15.92	33.587	24.680	325.3	0.000	s.69	101.0	2.4	0.35	0.1	0.00	0.10	0.0}	0
1	2		15.92	15.93:	33.5117	24.610	325.3	0.007	5.69	101.0	2.4	0.35	0.1	0.00	0.10	0.03	2
	10	ISL	15.91	15.91	33.588	24.683	325.2	0.033	5.69	101.0	2.4	0.35	0.1	0.00	0.10	0.0}	10
1	17		15.91	15.93.	33.591	24.686	325.2	0.055	5.68	100.8	2.4	0.34	0.1	0.00	0.10	0.03	17
	20	ISL	15.90	15.90	33.592	24.689	325.0	0.065	5.68	100.8	2.4	0.34	0.1	0.00	0.10	0.03	20
	30	ISL	15.87	15.87	33.598	24.701	324.2	0.098	5.68	100.7	2.4	0.34	0.1	0.00	0.10	0.04	30
1	31		15.87	15.87	33.599	24.701	324.2	0.3.01	5.68	100.7	2.4	0.34	0.1	0.00	0.10	0.04	31
1	41		15.91	15.90	33.609	24.701	324.6	0.133	5.68	100.8	2.4	0.33	0.1	0.00	0.10	0.04	41
	50	ISL	15.91	15.90	33.610	24.702	324.8	0.162	5.68	100.8	2.4	0.33	0.1	0.00	0.12	0.04	50
1	51		15.91	15.90	33.610	24.702	324.8	0.166	5.68	100.8	2.4	0.33	0.1	0.00	0.12	0.04	51
1	61		15.89	15.88	33.613	24.709	324.4	0.1.98	5.68	100.8	2.4	0.33	0.1	0.00	0.13	0.05	61
1	71		15.85	15.81	33.600	24.708	324.8	0.231	5.69	100.9	2.4	0.33	0.1	0.00	0.16	0.07	71
	75	ISL	15.80	15.79	33.588	24.710	324.7	0.244	5.69	100.7	2.4	0.33	0.1	0.00	0.17	0.07	75
1	80		15.73	15.72	33.575	24.716	324.3	0.260	5.69	100.6	2.4	0.34	0.1	0.00	0.19	0.08	80
1	94		15.66	15.65	33.590	24.744	322.1	0.305	5.69	100.5	2.4	0.34	0.1	0.02	0.21	0.10	94
	100	ISL	14.74	14.73	33.429	24.821	314.8	0.324	5.76	99.7	2.8	0.40	0.6	0.11	0.18	0.11	100
1	109		13.37	13.35	33.228	24.950	302.5	0.352	5.84	98.2	3.4	0.50	1.4	0.23	0.14	0.11	109
1	124		3.3.45	13.43	33.395	25.064	292.1	0.3197	5.66	95.4	3.5	0.52	1.9	0.09	0.12	0.10	125
	125	ISL	13.41	13.39	33.400	25.076	291.0	0.399	5.65	95.2	3.6	0.53	2.0	0.08	0.12	0.10	126
1	149		12.00	11.98	33.452	25.391	261.3	0.466	5.34	87.4	5.8	0.73	5.9	0.02	0.07	0.08	150
	150	ISL	11.94	11.92	33.451	25.402	260.3	0.468	5.33	87.1	5.9	0.74	6.1	0.02	0.07	0.08	151
1	174		10.66	10.64	33.456	25.637	238.1	0.528	5.10	81.1	9.2	0.97	10.3	0.01	0.03	0.05	175
	200	ISL	9.55	9.53	33.578	25.920	211.4	0.587	4.54	70.5	15.9	1.30	16.0	0.00	0.01	0.02	201
1	204		9.42	9.40	33.606	25.963	207.3	0.595	4.45	68.9	17.1	1.35	16.8	0.00	0.01	0.02	205
1	233		8.95	8.92	33.874	26.249	180.7	0.651	3.96	60.8	24.1	1.59	21.0	0.00			234
	250	ISL	8.69	8.66	33.946	26.346	171.7	0.681	3.69	56.3	27.8	1.71	22.9	0.00			251
1	273		8.35	8.32	33.989	26.432	163.8	0.720	3.37	51.0	32.3	1.86	25.0	0.00			274
	300	ISL	7.91	7.88	34.005	26.510	156.6	0.763	3.15	47.2	36.9	1.99	26.9	0.00			302
1	328		7.47	7.44	34.008	26.577	150.5	0.806	2.91	43.2	41.9	2.12	28.8	0.00			330
1	387		6.73	6.69	34.078	26.734	136.0	0.891	1.83	26.7	56.4	2.57	34.4	0.00			389
	400	ISL	6.58	6.54	34.083	26.758	133.8	0.908	1.67	24.3	59.1	2.64	35.2	0.00			402
1	452		6.04	6.00	34.095	26.838	126.5	0.976	1 20	17.2	68.9	2.86	37.8	0.00			455
	500	ISL	5.64	5.60	34.122	26.909	120.0	1.035	0.91	12.9	76.9	2.99	39.6	0.00			503
1	520		5.47	5.43	34.134	26.939	117.2	1.059	0.79	11.2	80.2	3.05	40.4	0.00			523

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	MAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 5.1 N	122 39.7 W	03/03/91	0004 UTC	3874 n	160 10 Xn	250 06 08	1	1022.8 mb	17.81 C	15.2 C	23m 01	3/8	ST

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 UM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	15.39	15.39	33.304	24.580	334.7	0.000	5.79	101.5	2.6	0.39	0.0	0.00	0.10	0.03	0
1	1		15.39	15.39	33.304	24.580	334.8	0.003	5.79	101.5	2.6	0.39	0.0	0.00	0.10	0.03	1
	10	ISL	15.33	15.33	33.321	24.607	332.5	0.033	5.79	101.4	2.6	0.38	0.0	0.00	0.10	0.04	10
1	16		15.28	15.28	33.339	24.632	330.3	0.053	5.78	101.1	2.6	0.37	0.0	0.00	0.11	0.04	16
	20	ISL	15.29	15.29	33.352	24.640	329.7	0.066	5.78	101.2	2.6	0.37	0.0	0.00	0.11	0.04	20
	30	ISL	15.32	15.32	33.377	24.653	328.7	0.099	5.77	101.1	2.6	0.37	0.0	0.00	0.12	0.04	30
1	31		15.32	15.32	33.379	24.655	328.6	0.3.03	5.77	101.1	2.6	0.37	0.0	0.00	0.12	0.04	31
1	41		15.39	15.38	33.411	24.664	328.0	0.135	5.77	101.2	2.6	0.37	0.0	0.00	0.13	0.05	41
	50	ISL	15.45	15.44	33.450	24.681	326.7	0.165	5.75	101.0	2.6	0.37	0.0	0.00	0.15	0.06	50
1	51		15.46	15.45	33.455	24.683	326.6	0.168	5.75	101.0	2.6	0.37	0.0	0.00	0.15	0.06	51
1	61		15.58	15.57	33.496	24.688	326.4	0.201	5.73	101.0	2.6	0.37	0.0	0.00	0.16	0.06	61
1	72		15.62	15.61	33.528	24.704	325.2	0.237	5.72	100.9	2.6	0.35	0.0	0.00	0.19	0.08	72
	75	ISL	15.62	15.61	33.533	24.708	324.9	0.246	5.72	100.9	2.6	0.35	0.0	0.00	0.20	0.08	75
1	80		15.63	15.62	33.545	24.715	324.4	0.263	5.71	100.7	2.6	0.35	0.0	0.00	0.22	0.09	80
1	96		15.37	15.36	33.544	24.772	319.4	0.314	5.75	100.9	2.6	0.35	0.0	0.00	0.24	0.11	96
	100	ISL	15.20	15.18	33.513	24.786	318.2	0.327	5.75	100.5	2.7	0.36	0.1	0.05	0.23	0.12	100
1	110		14.66	14 64	33.436	24.844	312.9	0.359	5.74	99.2	2.8	0.41	0.2	0.16	0.19	0.13	110
1	125		13.62	13 60	33.434	25.059	292.6	0.404	5.61	94.9	3.8	0.50	1.8	0.04	0.11	0.10	126
	150	ISL	11.64	11 62	33.313	25.350	265.1	0.474	5.36	86.9	7.0	0.84	7.4	0.02	0.06	0.06	151
1	151		11.56	11 .54	33.310	25.362	263.9	0.476	5.35	86.6	7.2	0.85	7.6	0.02	0.06	0.06	152
1	176		10.29	10.27	33.475	25.71.6	230.5	0.538	4.89	77.1	11.3	1.08	12.0	0.01	0.02	0.03	177
	200	ISL	9.40	9.38	33.689	26.031	200.8	0.590	4.11	63.6	20.2	1.50	18.9	0.01	0.00	0.02	201
1	207		9.20	9.18	33.751	26.112	193.2	0.604	3.89	60.0	22.9	1.61	20.8	0.01	0.00	0.02	208
1	235		8.70	8.68	33.926	26.328	173.1	0.655	3.60	54.9	28.2	1.75	23.3	0.01			236
	250	ISL	8.44	8.41	33.968	26.401	166.3	0.680	3.49	53.0	30.6	1.81	24.3	0.01			251
1	275		8.05	8.02	34.001	26.486	158.5	0.721	3.29	49.5	34.6	1.92	25.8	0.01			276
	300	ISL	7.73	7.70	34.023	26.551	152.6	0.760	2.91	43.5	39.7	2.08	28.0	0,01			302
1	331		7.37	7.34	34.036	26.613	147.1	0.806	2.42	35.8	46.3	2.29	30.8	0.01			333
1	390		6.70	6.66	34.054	26.719	137.4	0.8 90	1.87	27.3	56.6	2.56	34.3	0.01			392
	400	ISL	6.60	6.56	34.060	26.737	135.8	0.904	1.77	25.8	58.4	2.61	34.9	0.01			402
1	454		6.12	6.08	34.099	26.831	127.3	0.975	1.24	17.8	67.8	2.154	37.5	0.01			457
	500	ISL	5.79	5.75	34.134	26.900	121.0	1.032	0.93	13.3	75.0	2.98	39.1	0.01			503
1	520		5.65	5.61	34.150	26.930	118.3	1.056	0.79	11.2	78.1	3.04	39.8	0.01			523

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	NAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 45.1 N	123 19.7 W	02/03/91	1609 UTC	3808 n	210 09 kn	310 04 07	1	1022.2 Mb	16.5 C	14.1 C	32n 02	7/8	SC

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT m1/1	OXYGEN	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.95	14.95	33.260	24.642	328.8	0.000	5.84	101.5	2.5	0.38	0.1	0.00	0.13	0.05	0
1	1		14.95	14.95	33.260	24.642	328.8	0.003	5.84	101.5	2.5	0.38	0.1	0.00	0.13	0.05	1
	10	ISL	14.96	14.96	33.261	24.641	329.2	0.033	5.83	101.3	2.4	0.39	0.1	0.00	0.13	0.05	10
1	16		14.98	14.98	33.263	24.639	329.7	0.053	5.83	101.4	2.4	0.39	0.1	0.00	0.13	0.05	16
	20	ISL	14.99	14.99	33.267	24.640	329.7	0.066	5.83	101.4	2.4	0.39	0.1	0.00	0.13	0.05	20
	30	ISL	15.02	15.02	33.276	24.641	329.9	0.099	5.82	101.3	2.4	0.38	0.1	0.00	0.12	0.05	30
1	36		15.03	15.02	33.281	24.642	329.9	0.119	5.82	101.3	2.4	0.38	0.1	0.00	0.12	0.05	36
	50	ISL	15.03	15.02	33.293	24.652	329.4	0.165	5.83	101.5	2.4	0.38	0.1	0.00	0.16	0.07	50
1	56		15.03	15.02	33.305	24.661	328.7	0.185	5.83	101.5	2.41	0.38	0.1	0.00	0.18	0.08	56
1	71		14.53	14.52	33.228	24.710	324.5	0.234	5.90	101.6	2.4	0.39	0.1	0.02	0.21	0.13	71
	75	ISL	14.07	14.06	33.154	24.749	320.8	0.246	5.97	101.8	2.6	0.41	0.1	0.03	0.23	0.13	75
1	79		13.70	13.69	33.107	24.789	317.0	0.259	6.02	101.8	2.8	0.43	0.2	0.03	0.24	0.14	79
1	89		14.13	14.12	33.319	24.865	310.2	0.291	5.77	98.6	2.9	0.44	0.7	0.21	0.25	0.17	89
1	99		14.41	14.40	33.578	25.006	297.1	0.321	5.63	96.9	3.3	0.43	1.2	0.10	0.21	0.17	99
	100	ISL	14.42	14.41	33.594	25.016	296.2	0.324	5.62	96.8	3.3	0.43	1.2	0.10	0.21	0.17	100
1	109		14.50	14.48	33.736	25.109	287.6	0.350	5.52	95.3	3.5	0.42	1.5	0.08	0.20	0.19	109
1	124		13.49	13.47	33.694	25.287	270.9	0.392	5.39	91.1	4.7	0.52	3.6	0.04	0.12	0.16	125
	125	ISL	13.32	13.30	33.666	25.300	269.7	0.395	5.38	90.6	4.9	0.55	4.0	0.04	0.11	0.15	126
1	139		11.04	11.02	33.338	25.478	252.5	0.431	5.20	83.3	8.3	0.95	9.2	0.01	0.05	0.07	140
	150	ISL	10.94	10.92	33.464	25.594	241.8	0.458	5.19	83.0	8.4	0.92	9.1	0.01	0.03	0.05	151
1	159		10.85	10.83	33.552	25.679	233.9	0.480	5.18	82.7	8.5	0.89	9.1	0.01	0.02	0.04	160
1	179		10.25	10.23	33.627	25.841	218.7	0.525	4.82	76.0	12.1	1.10	12.6	0.01	0.01	0.02	180
	200	ISL	9.89	9.87	33.796	26.035	200.7	0.569	3.84	60.1	19.8	1.52	18.7	0.01	0.00	0.02	201
1	204		9.83	9.81	33.828	26.070	197.5	0.577	3.69	57.7	21.1	1.59	19.7	0.01	0.00	0.02	205
1	233		9.27	9.24	33.923	26.236	182.0	0.632	4.52	69.9	20.1	1.37	17.9	0.01			234
	250	ISL	8.85	8.82	33.956	26.329	173.4	0.662	4.40	67.4	23.5	1.46	19.5	0.01			251
1	274		8.27	8.24	33.984	26.440	163.0	0.703	3.94	59.6	30.0	1.70	23.0	0.01			275
	300	ISL	7.81	7.78	33.993	26.516	156.0	0.744	3.60	53.9	35.3	1.88	25.5	0.01			302
1	329		7.35	7.32	33.992	26.581	150.0	0.789	3.19	47.2	41.4	2.07	28.1	0.01			331
1	389		6.31	6.28	34.006	26.732	135.8	0.874	2.13	30.8	58.3	2.54	34.4	0.01			391
	400	ISL	6.23	6.19	34.017	26.751	134.1	0.889	1.96	28.3	60.4	2.60	35.1	0.01			402
1	456		5.94	5.90	34.077	26.836	126.6	0.962	1.28	18.3	69.4	2.86	37.8	0.01			459
	500	ISL	5.53	5.49	34.106	26.909	119.8	1.016	1.00	14.2	77.6	3.00	39.7	0.01			503
1	526		5.28	5.24	34.124	26.953	115.7	1.047	0.83	11.7	82.4	3.08	40.8	0.01			529

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 25.1 N	123 59.9 W	02/03/91	1021 UTC	4215 a	240 09 kn			1019.1 mb	17.0 C	13.5 C			

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/1	OXYGEN	OXY PCT	SIO3 UM/1	PO4 uM/1	NIO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	17.02	17.02	33.982	24.729	320.5	0.000	5.52	100.4	2.4	0.29	0.0	0.00	0.12	0.05	0
1	1		17.02	17.02	33.982	24.729	320.6	0.003	5.52	100.4	2.4	0.29	0.0	0.00	0.12	0.05	1
	10	ISL	17.01	17.01	33.981	24.731	320.7	0.032	5.53	100.5	2.4	0.28	0.0	0.00	0.12	0.05	10
1	16		17.01	17.01	33.981	24.731	320.9	0.051	5.53	100.5	2.4	0.28	0.0	0.00	0.12	0.05	16
	20	ISL	17.01	17.01	33.981	24.732	321.0	0.064	5.53	100.5	2.4	0.28	0.0	0.00	0.12	0.05	20
	30	ISL	17.02	17.02	33.982	24.730	321.5	0.096	5.52	100.4	2.4	0.27	0.0	0.00	0.12	0.05	30
1	36		17.02	17.01	33.982	24.730	321.6	0.116	5.52	100.4	2.4	0.27	0.0	0.00	0.12	0.05	36
	50	ISL	17.04	17.03	33.982	24.726	122.5	0.161	5.51	100.2	2.4	0.27	0.0	0.00	0.12	0.05	50
1	55		17.04	17.03	33.982	24.727	322.7	0.177	5.51	100.2	2.4	0.27	0.0	0.00	0.12	0.05	55
1	70		17.04	17.03	33.982	24.727	323.1	0.225	5.51	100.2	2.4	0.27	0.0	0.00	0.12	0.05	70
	75	ISL	17.03	17.02	33.982	24.730	323.1	0.241	5.52	100.4	2.4	0.27	0.0	0.00	0.12	0.05	75
1	78		17.03	17.02	33.982	24.730	323.1	0.251	5.52	100.4	2.4	0.27	0.0	0.00	0.12	0.05	78
1	89		17.05	17.04	33.982	24.726	323.9	0.287	5.51	100.2	2.4	0.27	0.0	0.00	0.12	0.05	89
1	98		17.05	17.03	33.986	24.729	323.9	0.316	5.51	100.2	2.2	0.27	0.0	0.00	0.13	0.05	98
	100	ISL	17.05	17.03	33.987	24.730	323.9	0.322	5.51	100.2	2.2	0.27	0.0	0.00	0.13	0.05	100
1	109		17.05	17.03	33.990	24.733	323.9	0.351	5.50	100.0	2.2	0.27	0.0	0.00	0.13	0.05	109
1	124		17.09	17.07	34.004	24.734	324.3	0.400	5.50	100.1	2.2	0.27	0.0	0.01	0.16	0.06	125
	125	ISL	17.02	17.00	34.002	24.750	322.9	0.403	5.49	99.8	2.2	0.27	0.0	0.01	0.16	0.07	126
1	139		15.84	15.82	33.969	24.997	299.6	0.447	5.37	95.4	2.5	0.33	0.6	0.07	0.18	0.16	140
	150	ISL	15.33	15.31	33.948	25.094	290.5	0.479	5.30	93.1	2.9	0.37	1.2	0.05	0.14	0.14	151
1	159		14.89	14.87	33.909	25.161	284.3	0.505	5.25	91.4	3.4	0.42	2.0	0.02	0.10	0.10	160
1	180		12.77	12.75	33.705	25.440	257.7	0.562	5.10	84.9	5.4	0.63	5.3	0.01	0.04	0.05	181
	200	ISL	11.35	11.33	33.674	25.685	234.5	0.611	4.84	78.2	9.2	0.88	9.4	0.00	0.02	0.03	201
1	205		11.07	11.04	33.686	25.745	228.8	0.623	4.76	76.4	10.3	0.94	10.5	0.00	0.01	0.02	206
1	235		9.91	9.88	33.899	26.112	194.1	0.686	4.26	66.8	18.0	1.31	16.8	0.00			236
	250	ISL	9.45	9.42	33.958	26.235	182.6	0.715	4.01	62.2	21.7	1.47	19.2	0.00			251
1	275		8.84	8.81	34.019	26.380	169.1	0.759	3.58	54.8	27.7	1.70	22.4	0.00			276
	300	ISL	8.48	8.45	34.066	26.473	160.5	0.800	3.07	46.7	33.2	1.92	25.2	0.00			302
1	332		8.12	8.09	34.100	26.554	153.2	0.850	2.45	36.9	39.9	2.16	28.1	0.00			334
1	391		7.22	7.18	34.109	26.692	140.5	0.937	1.79	26.4	51.9	2.48	32.3	0.00			393
	400	ISL	7.12	7.08	34.113	26.709	138.9	0.949	1.70	25.0	53.5	2.52	32.8	0.00			402
1	455		6.54	6.50	34.138	26.807	129.9	1.023	1.20	17.4	62.6	2.75	35.7	0.00			458
	500	ISL	6.05	6.01	34.152	26.882	123.0	1.080	0.90	12.9	70.6	2.88	37.8	0.00			503
1	522		5.81	5.76	34.160	26.918	119.6	1.107	0.76	10.9	74.5	2.95	38.8	0.00			525

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MC/YR	MESSENGER	BOTTOM	HIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CUD AMT TYPE
32 57.4 N	117 18.4 W	26/02/91	2028 UTC	64 ai	310 07 kn	00	0	1018.0 mb	17.5 C	14.5 C	19m 04	0/8

CAST	DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN BIT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	15.64	15.64	33.510	24.683	324.9	0.000	6.46	114.0	1.0	0.23	0.2	0.00	0.32	0.10	0
1	1	15.64	15.64	33.510	24.683	324.9	0.003	6.46	114.0	1.0	0.23	0.2	0.00	0.32	0.10	1
	10 ISL	15.33	15.33	33.507	24.750	318.9	0.032	6.62	116.1	1.0	0.23	0.2	0.00	0.«8	0.13	10
1	11	15.28	15.28	33.507	24.761	317.8	0.035	6.63	116.1	1.0	0.23	0.2	0.00	0.73	0.13	11
	20 ISL	14.87	14.87	33.501	24.846	310.0	0.064	6.30	109.4	1.0	0.28	0.2	0.01	0.76	0.30	20
1	21	14.82	14.82	33.500	24.856	309.1	0.067	6.24	108.3	1.0	0.28	0.2	0.01	0.76	0.33	21
	30 ISL	14.38	14.38	33.490	24.942	301.1	0.094	5.69	97.9	3.1	0.48	0.8	0.08	1.77	0.70	30
1	32	14.26	14.26	33.487	24.965	299.0	0.100	5.56	95.4	3.7	0.54	1.1	0.11	1.99	0.77	32
1	42	13.27	13.26	33.465	25.152	281.5	0.129	5.06	85.0	6.2	0.79	4.1	0.28	2.02	0.75	42
	50 ISL	12.45	12.44	33.451	25.302	267.3	0.151	4.71	77.8	8.5	0.98	7.3	0.34	1.32	0.56	50
1	52	12.25	12.24	33.452	25.341	263.6	0.156	4.63	76.2	9.1	1.03	8.2	0.35	1.93	U-0.92 0	52
1	62	11.44	11.43	33.520	25.546	244.3	0.182	4.17	67.4	12.6	1.22	12.5	0.12	0.27	0.28	62

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	EiAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 54.9 N	117 23.7 W	26/02/91	2206 UTC	612 m	310 04 kn	270 01 05	1	1016.0 mb	16.8 C	14.1 C	38m 02	2/8 ST

CAST	DEPTH n	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT m1/1	OXYGEN	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0 ISL	16.68	16.6 8	33.601	24.517	340.8	0.000	5.80	104.5	2.9	0.36	0.1	0.00	0.10	0.03	0
1	1	16.68	16.6 8	33.601	24.517	340.8	0.003	5.80	104.5	2.9	0.36	0.1	0.00	0.10	0.03	1
	10 ISL	15.90	15.90	33.595	24.691	324.5	0.033	5.81	103.1	2.9	0.36	0.1	0.01	0.13	0.04	10
1	11	15.79	15.7 9	33.594	24.715	322.2	0.037	5.81	102.9	2.9	0.36	0.1	0.01	0.14	0.04	11
	20 ISL	15.47	15.47	33.582	24.777	316.6	0.065	5.86	103.1	3.0	0.36	0.1	0.01	0.17	0.05	20
1	21	15.43	15.43	33.579	24.784	316.0	0.068	5.87	103.2	3.0	0.36	0.1	0.01	0.17	0.05	21
	30 ISL	14.54	14.54	33.507	24.922	303.1	0.096	5.86	101.1	3.7	0.42	0.0	0.01	0.17	0.11	30
1	31	14.43	14.43	33.499	24.939	301.5	0.099	5.86	100.9	3.8	0.43	0.0	0.01	0.17	0.12	31
1	41	13.56	13.55	33.445	25.078	288.5	0.129	5.69	96.2	4.7	0.54	1.3	0.12	0.74	0.42	41
1	50	12.79	12.78	33.438	25.226	274.6	0.154	5.07	84.3	7.2	0.84	5.6	0.15	0.62	0.35	50
1	61	11.97	11.96	33.466	25.406	257.7	0.183	4.56	74.6	10.3	1.09	10.2	0.07	0.41	0.34	61
1	71	11.44	11.43	33.518	25.544	244.7	0.209	4.22	68.3	13.0	1.27	13.2	0.05	0.22	0.20	71
	75 ISL	11.23	11.22	33.539	25.599	239.6	0.218	4.11	66.2	14.1	1.33	14.2	0.04	0.17	0.18	75
1	85	10.80	10.79	33.603	2:5.725	227.7	0.242	3.85	61.4	16.7	1.48	16.6	0.03	0.07	0.14	85
1	100	10.49	10.4 8	33.746	25.891	212.3	0.275	3.33	52.8	20.9	1.66	20.1	0.03	0,02	0.07	100
1	120	9.97	9.96	33.837	26.052	197.4	0.316	3.12	49.0	24.5	1.81	22.4	0.02	0.01	0.05	121
	125 ISL	9.98	9.97	33.890	26.091	193.7	0.325	2.96	46.5	25.7	1.87	23.1	0.02	0.01	0.05	126
1	144	10.04	10.02	34.070	26.222	181.8	0.361	2.32	36.5	30.3	2.10	25.7	0.02	0.00	0.05	145
	150 ISL	9.98	9.16	34.099	26.255	178.8	0.372	2.23	35.1	31.3	2.14	26.2	0.02	0.00	0.05	151
1	175	9.65	9.1.3	34.166	26.363	169.0	0.415	2.03	31.7	34.8	2.26	27.7	0.02	0.00	0.04	176
	200 ISL	9.46	9.44	34.209	26.428	163.3	0.457	1.80	28.0	37.7	2.36	28.7	0.01	0.00	0.04	201
1	205	9.41	9.:39	34.213	26.440	162.3	0.465	1.77	27.5	38.3	2.38	28.9	0.01	0.00	0.04	206
1	235	8.85	8.82	34.194	26.515	155.5	0.513	1.77	27.2	41.7	2.43	30.1	0.02			236
	250 ISL	8.77	8.74	34.212	26.542	153.2	0.536	1.65	25.3	43.0	2.48	30.7	0.03			251
1	274	8.68	8.65	34.241	26.579	150.2	0.572	1.44	22.0	45.2	2.56	31.6	0.04			276
	300 ISL	8.30	8.27	34.216	26.618	146.7	0.611	1.43	21.7	48.2	2.60	32.5	0.03			302
1	332	7.79	7.76	34.184	26.669	142.1	0.657	1.42	2:1.3	52.4	2.66	33.7	0.01			334
1	391	7.39	7.35	34.253	26.781	132.2	0.738	0.80	11.9	61.1	2.91	36.4	0.04			394
	400 ISL	7.28	7.24	34.255	26.799	130.6	0.750	0.75	11.1	62.7	2.94	36.9	0.04			403
1	455	6.58	6.54	34.256	26.895	121.7	0.819	0.54	7.9	72.2	3.09	39.6	0.01			458
	500 ISL	6.30	6.25	34.274	26.947	117.2	0.873	0.43	6.2	77.2	3.16	40.6	0.01			503
1	525	6.15	6.10	34.284	26.974	114.8	0.902	0.37	5.3	79.9	3.20	41.1	0.01			529

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 50.7 N	117 31.9 W	27/02/91	0058 CTC	870 H	320 04 kn	270 01 05	1	1014.5 mb	15.8 C	13.7 C	36m 01	6/8 ST

CAST	DEPTH m	TEMP DEG C	POT TEMP DEC. C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ml/1	OXY PCT	SIO3 uM/1	PO4 UM/1	NO3 uM/1	NO2 uM/1	CIIL-A ug/1	PHAEO ug/1	PRESS db
1	0	16.14	16.14	33.599	24.639	329.1	0.000	5.81	103.6	3.2	0.32	0.2	0.00	0.14	0.03	0
1	10	15.87	15 87	33.596	24.698	323.8	0.033	5.82	103.2	3.1	0.32	0.2	0.00	0.16	0.04	10
1	20	15.73	15 73	33.589	24.725	321.6	0.065	5.82	102.9	2.8	0.32	0.2	0.00	0.14	0.04	20
1	30	15.24	15 24	33.565	24.815	313.3	0.097	5.89	103.1	2.7	0.32	0.2	0.00	0.19	0.07	30
1	40	14.71	14 70	33.528	24.902	305.3	0.128	5.86	101.5	3.2	0.36	0.2	0.00	0.22	0.09	40
	50 ISL	13.68	13 67	33.458	25.064	290.1	0.157	5.62	95.3	4.3	0.52	1.6	0.15	0.66	0.43	50
1	51	13.57	13 56	33.451	25.081	288.5	0.160	5.59	94.5	4.4	0.54	1.8	0.16	0.70	0.47	51
1	61	12.62	12.61	33.401	25.231	274.4	0.188	5.25	87.0	6.4	0.74	5.1	0.16	0.59	0.54	61
1	70	11.63	11.62	33.479	25.479	250.9	0.212	4.44	72.1	10.9	1.10	11.1	0.05	0.21	0.23	70
	75 ISL	11.32	11.31	33.489	25.544	244.9	0.224	4.31	69.5	11.9	1.18	12.5	0.04	0.19	0.22	75
1	85	10.97	10.96	33.517	25.628	237.0	0.249	4.18	66.9	13.5	1.27	14.2	0.03	0.16	0.19	85
1	99	10.66	10.65	33.715	25.838	217.4	0.280	3.44	54.8	18.7	1.55	18.6	0.01	0.04	0.09	99
	100 ISL	10.65	10.64	33.726	25.848	216.4	0.282	3.40	54.1	19.0	1.57	18.8	0.01	0.04	0.09	100
1	120	10.55	10.54	33.909	26.009	201.6	0.324	2.73	43.4	23.8	1.80	21.8	0.01	0.01	0.06	121
	125 ISL	10.49	10.48	33.942	26.045	198.3	0.334	2.63	41.8	24.7	1.84	22.4	0.01	0.01	0.06	126
1	145	10.20	10.18	34.046	26.176	186.2	0.373	2.36	37.3	28.0	1.98	24.5	0.01	0.00	0.05	146
	150 ISL	10.13	1C.11	34.069	26.206	183.5	0.382	2.29	36.1	28.8	2.01	24.9	0.01	0.00	0.05	151
1	174	9.78	5.76	34.148	26.327	172.4	0.425	2.05	32.1	32.4	2.14	26.4	0.01	0.00	0.04	175
	200 ISL	9.30	9.28	34.165	26.420	164.0	0.468	1.97	30.5	35.9	2.23	27.7	0.01	0.00	0.04	201
1	205	9.20	S.18	34.162	26.434	162.8	0.477	1.96	30.3	36.5	2.24	27.9	0.01	0.00	0.04	206
1	233	8.73	8.71	34.131	26.484	158.3	0.522	2.08	31.8	38.5	2.24	28.5	0.01			234
	250 ISL	8.57	8.54	34.134	26.512	156.0	0.548	2.05	31.2	39.8	2.26	28.9	0.01			251
1	274	8.40	8.37	34.149	26.550	152.7	0.585	1.92	29.1	42.0	2.32	29.7	0.01			276
	300 ISL	8.14	8.11	34.159	26.597	148.5	0.624	1.74	26.3	45.2	2.40	30.8	0.01			302
1	329	7.84	7.81	34.169	26.650	143.9	0.667	1.52	22.8	49.2	2.51	32.1	0.01			331
1	387	7.29	7.25	34.196	26.751	135.0	0.748	1.09	16.1	57.3	2.71	34.7	0.01			389
	400 ISL	7.21	7.17	34.202	26.767	133.6	0.765	1.01	14.9	58.6	2.74	35.1	0.01			403
1	452	6.91	6 .87	34.228	2:6.829	128.3	0.833	0.76	11.1	63.8	2.86	36.5	0.01			455
	500 ISL	15.54	6.49	34.255	26.900	121.9	0.893	0.57	8.3	70.3	2.97	38.1	0.01			503
1	520	6.38	6.33	34.267	26.931	119.1	0.917	0.49	7.1	73.0	3.02	38.7	0.01			524

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 40.7 N	117 52.5 W	27/02/91	0503 UTC	572 m	300 07 kn			1014.5 mb	14.5 C	12.9 C		

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT m1/1	OXYGEN	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	I6.09	16.09	33.609	24.658	327.3	0.000	5.77	102.8	2.9	0.32	0.0	0.00	0.15	0.03	0
1	1		16.09	16.09	33.609	24.658	327.3	0.003	5.77	102.8	2.9	0.32	0.0	0.00	0.15	0.03	1
	10	ISL	15.83	15.83	33.604	24.713	322.4	0.033	5.80	102.8	2.9	0.33	0.0	0.00	0.14	0.03	10
1	11		15.79	15.79	33.603	24.722	321.6	0.036	5.80	102.7	2.9	0.33	0.0	0.00	0.14	0.03	11
	20	ISL	15.66	15.66	33.594	24.744	319.7	0.065	5.80	102.4	2.9	0.33	0.0	0.00	0.15	0.04	20
1	21		15.65	15.65	33.593	24.746	319.6	0.068	5.80	102.4	2.9	0.33	0.0	0.00	0.15	0.04	21
1	29		15.54	15.54	33.582	24.762	318.3	0.093	5.82	102.5	2.9	0.33	0.0	0.00	0.18	0.05	29
	30	ISL	15.47	15.47	33.577	24.774	317.2	0.096	5.83	102.6	2.9	0.33	0.0	0.00	0.19	0.06	30
1	40		14.64	14.63	33.517	24.908	304.7	0.128	5.86	101.3	3.3	0.38	0.0	0.00	0.39	0.18	40
1	49		13.99	13.98	33.466	25.006	295.6	0.155	5.81	99.1	3.7	0.43	0.3	0.03	0.76	0.37	49
	50	ISL	13.95	13.94	33.463	25.012	295.0	0.158	5.81	99.0	3.8	0.43	0.5	0.04	0.78	0.40	50
1	60		13.42	13.41	33.439	25.102	286.7	0.187	5.57	93.9	4.5	0.57	2.0	0.11	1.02	0.54	60
1	69		12.28	12.27	33.429	25.318	266.2	0.212	4.85	79.8	8.3	0.94	7.9	0.09	0.30	0.28	69
	75	ISL	11.90	11.89	33.455	25.410	257.6	0.227	4.57	74.6	10.0	1.07	10.1	0.06	0.27	0.27	75
1	83		11.61	11.60	33.508	25.505	248.7	0.247	4.31	70.0	11.8	1.17	12.0	0.03	0.22	0.25	83
1	98		11.06	11.05	33.620	25.693	231.2	0.283	3.86	62.0	15.6	1.38	15.6	0.02	0.09	0.13	98
	100	ISL	11.01	11.00	33.634	25.713	229.4	0.288	3.81	61.1	16.0	1.40	16.0	0.02	0.08	0.12	100
1	118		10.71	10.70	33.748	25.855	216.2	0.328	3.38	53.9	19.4	1.59	18.7	0.01	0.03	0.09	119
	125	ISL	10.62	10.61	33.790	25.904	211.7	0.343	3.23	51.4	20.7	1.66	19.7	0.01	0.02	0.08	126
1	143		10.36	10.34	33.880	26.019	201.1	0.380	2.95	46.7	23.7	1.80	21.8	0.01	0.01	0.05	144
	150	ISL	10.19	10.17	33.900	26.064	197.0	0.394	2.95	46.5	24.6	1.82	22.3	0.01	0.01	0.05	151
1	173		9.69	9.67	33.964	26.198	184.5	0.438	2.94	45.9	27.1	1.88	21.7	0.01	0.01	0.05	174
	200	ISL	9.53	9.51	34.105	26.336	172.1	0.486	2.39	37.2	32.1	2.11	26.0	0.00	0.00	0.04	201
1	204		9.52	9.50	34.125	26.353	170.5	0.493	2.30	35.8	32.9	2.15	26.4	0.00	0.00	0.04	205
1	233		9.14	9.11	34.192	26.467	160.1	0.541	1.89	29.2	38.1	2.31	28.4	0.00			234
	250	ISL	8.97	8.94	34.223	26.519	155.5	0.568	1.65	25.4	40.8	2.42	29.4	0.00			251
1	274		8.74	8.71	34.255	26.581	150.0	0.605	1.35	20.7	44.3	2.55	30.7	0.00			276
	300	ISI	8.45	8.42	34.261	26.631	145.6	0.643	1.19	18.1	47.4	2.63	31.7	0.00			302
1	330		8.10	8.07	34.255	26.679	141.4	0.686	1.08	16.3	51.0	2.70	32.7	0.00			332
1	391		7.38	7.34	34.265	26.792	131.2	0.769	0.72	10.7	60.5	2.91	35.5	0.00			393
	400	ISI	7.30	7.26	34.263	26.802	130.3	0.781	0.70	10.4	61.5	2.93	35.8	0.00			403
1	457		6.82	6.78	34.252	26.860	125.3	0.854	0.62	9.1	67.2	3.00	37.3	0.00			460
	500	ISI,	6.49	6.44	34.260	26.911	120.8	0.907	0.51	7.4	72.1	3.07	38.5	0.00			503
1	525		6.30	6.25	34.265	26.940	118.2	0.937	0.45	6.5	75.0	3.11	39.2	0.00			529

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
32 30.8 N	118 12.9 W	27/02/91	0853 UTC	1613 m	240 05 kn			998.5 mb	14.5 C	12.5 C		

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/1	OXYGEN	OXY PCT	SIC)3 uM/1	PO4 uM/1	NO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	15.08	15.08	33.560	24.845	309.5	0.000	5.82	101.6	2.8	0.37	0.0	0.00	0.18	0.08	0
1	1		15.08	15.08	33.560	24.845	309.5	0.003	5.82	101.6	2.8	0.37	0.0	0.00	0.18	0.08	1
	10	ISL	15.05	15.05	33.557	24.850	309.4	0.031	5.82	101.5	2.8	0.37	0.0	0.00	0.17	0.09	10
1	11		15.04	15.04	33.557	24.852	309.2	0.034	5.82	101.5	2,8	0.37	0.0	0.00	0.17	0.09	11
1	20		15.01	15.01	33.556	24.858	308.9	0.062	5.83	101.6	2.8	0.36	0.0	0.00	0.18	0.09	20
	30	ISL	14.96	14.96	33.555	24.869	308.2	0.093	5.82	101.3	2.8	0.36	0.0	0.00	0.19	0.12	30
1	31		14.95	14.95	33.555	24.871	308.0	0.096	5.82	101.3	2.8	0.36	0.0	0.00	0.19	0.12	31
1	40		14.81	14.80	33.537	24.887	306.7	0.123	5.87	101.9	2.8	0.36	0.0	0.00	0.25	0.14	40
1	50		14.32	14.31	33.497	24.961	299.9	0.154	5.81	99.8	3.5	0.43	0.6	0.05	0.36	0.27	50
1	59		14.28	14.27	33.518	24.986	297.8	0.181	5.92	101.6	3.6	0.41	0.4	0.03	0.35	0.21	59
1	70		14.12	14.11	33.518	25.020	294.9	0.213	5.85	100.1	3.6	0.42	0.7	0.05	0.37	0.20	70
	75	ISL	13.64	13.63	33.485	25.094	288.0	0.228	5.59	94.7	4.5	0.54	2.3	0.07	0.35	0.25	75
1	84		12.57	12.56	33.429	25.263	272.0	0.253	5.06	83.8	6.8	0.81	6.1	0.10	0.29	0.33	84
1	99		11.21	11.20	33.436	25.523	247.4	0.292	4.64	74.6	10.5	1.09	11.2	0.03	0.12	0.15	99
	100	ISL	11.13	11.12	33.445	25.544	245.4	0.294	4.59	73.7	10.9	1.11	11.6	0.03	0.11	0.14	100
1	118		10.18	10.17	33.651	25.871	214.6	0.336	3.68	58.0	18.4	1.52	18.3	0.01	0.03	0.07	119
	125	ISL	10.20	10.19	33.743	25.939	208.2	0.351	3.40	53.6	20.3	1.63	19.7	0.01	0.03	0.08	126
1	144		10.25	10.23	33.909	26.061	1.97.2	0.389	2.80	44.2	24.2	1.83	22.2	0.01	0.02	0.11	145
	150	ISL	10.20	10.18	33.950	26.101	193.4	0.401	2.67	42.1	25.4	1.88	22.9	0.01	0.02	0.10	151
1	174		9.85	9.83	34.067	26.252	179.5	0.446	2.33	36.5	29.6	2.04	25.0	0.01	0.01	0.06	175
	200	ISL	9.40	9.38	34.130	26.376	168.2	0.491	2.14	33.2	33.5	2.16	26.6	0.00	0.00	0.05	201
1	204		9.33	9.31	34.137	26.393	166.6	0.498	2.12	32.9	34.1	2.18	26.8	0.00	0.00	0.05	205
1	233		8.99	8.96	34.186	26.487	158.2	0.545	1.86	28.6	37.9	2.30	28.1	0.00			234
	250	ISL	8.66	8.63	34.175	26.530	154.3	0.571	1.86	28.4	40.1	2.33	28.8	0.00			251
1	275		8.18	8.15	34.149	26.583	149.5	0.609	1.87	28.2	43.3	2.37	29.9	0.00			277
	300	ISL	7.91	7.88	34.157	26.630	145.3	0.646	1.69	25.4	46.5	2.45	30.9	0.00			302
1	330		7.67	7.64	34.176	26.680	140.9	0.689	1.41	21.1	50.5	2.57	32.2	0.00			332
1	390		7.13	7.09	34.204	26.779	132.2	0.771	0.97	14.3	59.1	2.77	34.8	0.00			392
	400	ISL	7.05	7.01	34.208	26.793	130.9	0.784	0.91	13.4	60.3	2.80	35.1	0.00			403
1	455		6.66	6.62	34.232	26.866	124.6	0.854	0.65	9.5	66.5	2.93	36.8	0.00			458
	500	ISL	6.39	6.34	34.259	26.923	119.6	0.909	0.49	7.1	71.5	3.01	38.0	0.00			503
1	524		6.24	6.19	34.274	26.954	116.8	0.938	0.40	5.8	741.1	3.05	38.6	0.00			528

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	HAVES	HE	A	BAROMETER	DRY	HET	SECCHI/FOREL	CLD AMT	TYPE
32 20.9 N	118 33.3 H	27/0 2/91	1311 UTC	1370 n	180	16 kn				1010.5 ab	15.0 C	13.5 C			

CAST	DEPTH -		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN Ml/1	OXY PCT	SIO3 uM/1	PQ4 UM/1	NO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	14.98	14.9 8	33.554	24.862	307.9	0.000	5.81	101.2	2.7	0.37	0.0	0.00	0.17	0.06	0
1	1		14.98	14.9 8	33.554	24.862	307.9	0.003	5.81	101.2	2.7	0.37	0.0	0.00	0.17	0.06	1
1	10		14.99	14.99	33.551	24.858	308.6	0.031	5.82	101.4	2.7	0.37	0.0	0.00	0.17	0.06	10
	20	ISL	14.96	14.96	33.544	24.859	308.7	0.062	5.82	101.3	2.5	0.37	0.0	0.00	0.22	0.09	20
1	21		14.96	14.96	33.543	24.859	308.8	0.065	5.82	101.3	2.5	0.37	0.0	0.00	0.23	0.09	21
1	30		14.45	14.4 5	33.499	24.935	301.9	0.092	5.93	102.1	2.9	0.37	0.0	0.00	0.41	0.17	30
1	41		14.21	14.20	33.478	24.969	298.9	0.125	5.94	101.8	2.9	0.38	0.0	0.01	0.38	0.19	41
	50	ISL	13.53	13.52	33.444	25.0B3	288.2	0.152	5.71	96.5	4.2	0.52	2.0	0.15	0.38	0.24	50
1	51		13.45	13.44	33.440	25.097	287.0	0.155	5.68	95.8	4.3	0 54	2.2	0.16	0.38	0.24	51
1	60		13.08	13.07	33.402	25.141	282.9	0.180	5.58	93.4	4.8	0.61	3.2	0.16	0.35	0.25	60
1	70		12.19	12.18	33.376	25.294	268.5	0.208	5.22	85.7	7.2	0.83	6.9	0.09	0.18	0.16	70
	75	ISL	11.60	11.59	33.384	25.411	257.5	0.221	4.97	80.6	9.3	0.98	9.5	0.06	0.13	0.13	75
1	85		10.52	10.51	33.450	25.655	234.4	0.246	4.43	70.2	14.2	1.30	14.9	0.03	0.06	0.09	85
1	99		9.91	9.90	33.637	25.905	210.8	0.277	3.71	58.1	20.8	1.63	20.3	0.01	0.03	0.06	99
	100	ISL	9.89	9.88	33.646	25.916	209.8	0.279	3.68	57.6	21.1	1.64	20.5	0.01	0.03	0.06	100
1	119		9.70	9.69	33.751	26.030	199.4	0.318	3.3,4	52.1	24.4	1.78	22.6	0.01	0.02	0.05	120
	125	ISL	9.63	9.62	33.770	26.056	197.0	0.330	3.28	51.1	25.1	1.80	23.0	0.01	0.02	0.05	126
1	145		9.37	9.35	33.831	26.146	188.8	0.368	3.11	48.2	27.6	1.88	24.4	0.01	0.01	0.05	146
	150	ISL	9.27	9.25	33.859	26.184	185.2	0.378	3.04	47.0	28.8	1.92	24.9	0.01	0.01	0.05	151
1	175		8.81	8. 79	33.997	26.366	168.4	0.422	2.69	41.2	34.5	2.10	27.5	0.01	0.00	0.04	176
	200	ISL	8.71	8.69	34.070	26.439	161.9	0.463	2.47	37.7	37.1	2.19	28.5	0.01	0.00	0.04	201
1	206		8.70	8.68	34.080	26.449	161.1	0.473	2.43	37.1	37.6	2.21	28.7	0.01	0.00	0.04	207
1	235		8.35	8.3	34.106	26.523	154.5	0.518	2.17	32.9	41.8	2.34	30.3	0.01			236
	250	ISL	8.16	8. 1.3	34.114	26.558	151.3	0.541	2.05	30.9	44.1	2.40	31.1	0.01			251
1	274		7.87	7.34	34.124	26.609	146.8	0.577	1.87	28.0	47.7	2.50	32.4	0.00			276
	300	ISL	7.59	7.S6	34.131	26.656	142.7	0.615	1.66	24.7	51.6	2.61	33.7	0.00			302
1	331		7.30	7.17	34.138	26.703	138.5	0.658	1.43	21.2	56.0	2.72	35.1	0.00			333
1	389		6.92	6.18	34.165	26.777	132.1	0.737	1.06	15.6	62.9	2.88	37,1	0.00			391
	400	ISL	6.90	6.86	34.180	26.792	130.9	0.751	0.97	14.2	641.0	2.92	37.4	0.00			403
1	455		6.76	6.72	34.254	26.870	124.3	0.822	0.57	8.3	69.8	3.09	38.9	0.00			458
	500	ISL	6.41	6.36	34.274	26.932	118.7	0.876	0.42	6.1	75.6	3.18	40.1	0.00			503
1	525		6.22	6.17	34.286	26.967	115.6	0.905	0.34	1.9	78.8	3.23	40.8	0.00			529

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	HEA	BAROMETER	DRY	HET	SECCHI/FOREL	CLD AMT	TYPE
32 10.9 N	118 53.7 W	27/92/91	1751 UTC	1373 m	150	18 kn	170 04 03	6	1008.2 ab	14.1 C	14.0 C	16m	02	8/8	ST

CAST	DEPTH I)		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN al/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	15.07	15.07	33.544	24.1835	310.5	0.000	5.83	101.7	3.0	0.36	0.0	0.01	0.18	0.07	0
1	1		15.07	15.07	33.544	24.835	310.5	0.003	5.83	101.7	3.0	0.36	0.0	0.01	0.18	0.07	1
	10	ISL	15.08	15.08	33.551	24.539	310.4	0.031	5.82	101.6	3.0	0.36	0.0	0.01	0.18	0.07	10
1	11		15.08	15.08	33.552	24.839	310.4	0.034	5.82	101.6	3.0	0.36	0.0	0.01	0.18	0.07	11
	20	ISL	15.06	15.06	33.550	24.843	310.4	0.062	5.83	101.7	3.1	0.36	0.0	0.01	0.18	0.06	20
1	21		15.06	15.06	33.550	24.843	310.4	0.065	5.83	101.7	3.1	0.36	0.0	0.01	0.18	0.06	21
	30	ISL	15.07	15.07	33.556	24.845	310.4	0.093	5.82	101.5	3.1	0.35	0.0	0.01	0.20	0.08	30
1	31		15.07	15.07	33.557	24.846	310.4	0.096	5.82	101.6	3.1	0.35	0.0	0.01	0.20	0.08	31.
1	41		15.07	15.06	33.559	24.848	310.5	0.127	5.82	101.5	3.1	0.35	0.0	0.01	0.20	0.09	41
1	50		15.03	15 02	33.552	24.852	310.4	0.155	5.83	101.6	3.2	0.36	0.0	0.01	0.26	0.14	50
1	60		14.80	14.79	33.520	24.877	308.3	0.186	5.80	100.6	3.7	0.39	0.2	0.03	0.39	0.27	60
1	70		13.21	13 20	33.426	25.134	283.9	0.216	5.41	90.8	5.6	0.65	3.3	0.16	0.40	0.38	70
	75	ISL	12.68	12 67	33.418	25.233	274.6	0.230	5.16	85.6	7.0	0.79	5.4	0.14	0.34	0.34	75
1	84		12.04	12.03	33.438	25.371	261.6	0.254	4.73	77.4	9.6	1.01	9.1	0.06	0.20	0.24	84
1	99		11.54	11 53	33.523	25.531	246.7	0.292	4.23	68.6	12.7	1.26	13.0	0.03	0.13	0.21	99
	100	ISL	11.51	11 50	33.531	25.542	245.6	0.294	4.19	67.9	13.0	1.28	13.3	0.03	0.13	0.20	100
1	118		10.98	10 97	33.683	25.757	225.6	0.337	3.53	56.6	18.0	1.55	17.8	0.02	0.05	0.09	119
	125	ISL	10.86	10 84	33.752	25.832	218.6	0.352	3.27	52.3	20.1	1.66	19.4	0.02	0.03	0.08	126
1	143		10.62	10 60	33.905	25.994	203.6	0.390	2.73	43.5	24.8	1.89	22.6	0.01	0.01	0.05	144
	150	ISL	10.48	10 46	33.931	26.038	199.5	0.404	2.66	42.2	25.9	1.93	23.3	0.01	0.01	0.05	151
1	172		10.07	10 05	33.991	26.156	188.7	0.447	2.56	40.3	28.6	2.03	25.0	0.01	0.01	0.05	173
	200	ISL	9.79	9 77	34.128	26.311	174.6	0.498	2.13	33.4	33.4	2.21	27.3	0.01	0.00	0.05	201
1	202		9.77	9 75	34.137	26.321	173.6	0.502	2.10	32.9	33.7	2.22	27.4	0.01	0.00	0.05	203
1	231		9.26	9 23	34.148	26.414	165.2	0.551	2.17	33.6	36.2	2.27	28.4	0.01			232
	250	ISL	9.00	8 97	34.193	26.491	158.2	0.581	1.85	28.5	40.1	2.41	29.8	0.01			251
1	271		8.69	8 66	34.236	26.574	150.6	0.614	1.45	22.2	45.2	2.57	31.6	0.01			273
	300	ISL	8.02	7 99	34.200	26.647	143.8	0.656	1.41	21.2	51.3	2.67	33.7	0.01			302
1	326		7.44	7 41	34.159	26.699	138.9	0.693	1.37	20.3	56.3	2.73	35.3	0.01			328
1	386		6.92	6 88	3,4.215	26,. 817	128.4	0.773	0.83	12.2	66.1	2.98	38.2	0.01			388
	400	ISL	6.83	6 79	34.227	26.838	1.26.5	0.791	0.74	10.8	67.9	3.02	38.6	0.01			403
1	451		6.58	6 54	34.263	26.901	121.1	0.854	0.51	7.4	73.4	3.14	39.8	0.00			454
	500	ISL	6.41	6.36	34.279	26 936	118.3	0.913	0.43	6.2	76.8	3.20	40.4	0.00			503
1	521		6.34	6.29	34.286	26.951	117.1	0.938	0.39	5.6	78.2	3.22	40.6	0.00			525

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 0.8 N	119 14.1 W	27/02/91	2300 UTC	n	180 17 kn	190 05 05	6	1001.8 nb	15.1 C	15.0 C	25MB 02	B/8	ST

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN Ml/1	OXY PCT	SIO3 uM/1	PO4 UM/1	NO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISI	15.15	15.15	33.552	24.824	31.1.5	0.000	5.88	102.8	3.3	0.36	0.0	0.00	0.24	0.10	0
1	1		15.15	15.15	33.552	24.824	311.6	0.003	5.88	102.8	3.3	0.36	0.0	0.00	0.24	0.10	1
	10	ISI,	15.15	15.15	33.556	24.827	311.5	0.031	5.86	102.4	3.3	0.35	0.0	0.00	0.23	0.10	10
1	16		15.15	15.15	33.559	24.830	311.5	0.050	5.84	102.1	3.3	0.35	0.0	0.00	0.23	0.10	16
	20	ISI.	15.15	15.15	33.559	24.830	311.6	0.062	5.83	101.9	3.3	0.35	0.0	0.00	0.24	0.10	20
	30	ISI.	15.14	15.14	33.559	24.832	311.6	0.093	5.82	101.7	3.2	0.36	0.0	0.00	0.25	0.09	30
1	31		15.14	15.14	33.559	24.832	311.7	0.097	5.82	101.7	3.2	0.36	0.0	0.00	0.25	0.09	31
1	41		15.14	15.13	33.563	24.836	311.7	0.128	5.83	101.9	3.2	0.36	0.0	0.00	0.24	0.11	41
	50	ISL	15.11	15.10	33.564	24.844	311.2	0.156	5.83	101.8	3.2	0.36	0.0	0.00	0.26	0.12	50
1	51		15.11	15.10	33.564	24.844	311.2	0.159	5.83	101.8	3.2	0.36	0.0	0.00	0.26	0.12	51
1	62		14.85	14.84	33.552	24.891	307.0	0.193	5.80	100.7	3.3	0.38	0.2	0.02	0.37	0.24	62
	75	ISL	12.73	12.72	33.436	25.237	274.2	0.231	4.99	82.9	7.3	0.82	6.1	0.12	0.31	0.38	75
1	76		12.55	12.54	33.431	25.268	271.3	0.233	4.92	81.4	7.7	0.86	6.6	0.13	0.31	0.39	76
1	89		11.81	11.80	33.480	25.447	254.5	0.268	4.45	72.5	10.6	1.10	10.7	0.05	0.17	0.23	89
	100	ISL	11.48	11.47	33.527	25.545	245.4	0.295	4.17	67.5	12.4	1.22	12.9	0.04	0.13	0.18	100
1	105		11.36	11.35	33.555	25.588	241.3	0.307	4.04	65.2	13.3	1.28	13.9	0.03	0.12	0.17	105
1	120		10.76	10.75	33.692	25.803	221.2	0.342	3.52	56.2	18.4	1.55	18.2	0.02	0.05	0.08	121
	125	ISL	10.51	10.50	33.708	25.859	216.0	0.353	3.52	55.9	19.4	1.59	19.0	0.02	0.04	0.06	126
1	140		9.88	9.86	33.734	25.987	204.0	0.384	3.51	54.9	21.6	1.65	20.6	0.01	0.01	0.04	141
	150	ISL	9.81	9.79	33.771	26.027	200.3	0.405	3.40	53.1	22.7	1.70	21.4	0.01	0.01	0.04	151
1	160		9.77	9.75	33.814	26.068	196.7	0.424	3.28	51.2	23.9	1.76	22.1	0.01	0.01	0.04	161
1	185		8.85	8.83	33.937	26.313	173.6	0.471	3.15	48.2	29.9	1.90	25.1	0.01	0.00	0.03	186
	200	ISL	8.94	8.92	34.042	26.381	167.5	0.496	2.69	41.3	32.9	2.05	26.6	0.01	0.00	0.03	201
1	219		9.12	9.10	34.148	26.436	162.8	0.528	2.10	32.4	36.5	2.24	28.2	0.01	0.00	0.04	220
	250	ISL	8.20	8.17	34.127	26.563	151.0	0.576	2.07	31.3	42.9	2.35	30.4	0.01			251
1	254		8.06	8.03	34.119	26.577	149.6	0.582	2.07	31.2	43.7	2.36	30.7	0.01			255
1	294		7.57	7.54	34.139	26.665	141.7	0.641	1.71	25.5	50.1	2.53	32.9	0.01			296
	300	ISL	7.55	7.52	34.149	26.676	140.7	0.649	1.63	24.3	50.9	2.56	33.2	0.01			302
1	349		7.46	7.43	34.224	26.748	134.7	0.716	1.03	15.3	56.5	2.77	34.9	0.00			351
	400	ISL	7.07	7.03	34.238	26.814	129.0	0.784	0.79	11.6	62.4	2.91	36.6	0.00			403
1	414		6.93	6.89	34.237	26.833	127.3	0.802	0.75	11.0	64.2	2.94	37.1	0.00			417
1	483		6.17	6.13	34.252	26.946	116.9	0.886	0.45	6.5	75.8	3.11	40.0	0.00			486
	500	ISL	6.11	6.07	34.262	26.961	1.15.6	0.906	0.42	6.0	77.0	3.13	40.3	0.00			503
1	564		5.88	5.83	34.298	27.019	1.10.8	0.978	0.29	4.2	81.5	3.20	41.3	0.00			568

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CID AMT	TYPE
31 50.8 N	119 34.2 W	28/02/91	0324 UTC	1790 n	220 17 kn			1000.5 mb	15.8 C	14.6 C			

CAST	DEPTH •		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN »1/1	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 uM/1	NO2 UM/1	CHL-A Uq/1	PHAEO ug/1	PRESS db
1	0		15.15	15.15	33.524	24.802	313.6	0.000	5.78	101.0	3.0	0.37	0.0	0.00	0.18	0.07	0
	10	ISL	15.16	15.16	33.527	24.803	313.8	0.031	5.79	101.2	3.0	0.37	0.0	0.00	0.18	0.07	10
1	14		15.16	15.16	33.528	24.804	313.9	0.044	5.79	101.2	3.0	0.37	0.0	0.00	0.18	0.07	14
	20	ISL	15.15	15.15	33.530	24.808	313.7	0.063	5.79	101.2	3.0	0.37	0.0	0.00	0.18	0.07	20
1	30		15.14	15.14	33.531	24.811	313.7	0.094	5.80	101.3	2.9	0.37	0.0	0.00	0.18	0.07	30
1	39		15.13	15.12	33.531	24.813	313.7	0.122	5.80	101.3	2.8	0.37	0.0	0.00	0.19	0.07	39
1	49		15.00	14.99	33.516	24.830	312.4	0.154	5.84	101.7	3.0	0.37	0.0	0.00	0.24	0.09	49
	50	ISL	14.87	14.86	33.507	24.852	310.4	0.157	5.84	101.5	3.1	0.38	0.0	0.02	0.27	0.11	50
1	58		13.71	13.70	33.431	25.037	292.9	0.181	5.84	99.0	4.0	0.4(5	0.8	0.15	0.46	0.28	58
1	69		12.71	12.70	33.373	25.192	278.3	0.212	5.44	90.3	5.8	0.70	4.7	0.05	0.22	0.16	69
	75	ISL	12.32	12.31	33.349	25.249	273.0	0.229	5.35	88.1	6.5	0.77	5.8	0.03	0.17	0.14	75
1	77		12.20	12.19	33.342	25.266	271.4	0.234	5.33	87.5	6.8	0.79	6.2	0.03	0.16	0.14	77
1	92		10.95	10.94	33.345	25.498	249.5	0.273	4.86	77.7	10.8	1.11	11.8	0.03	0.15	0.16	92
	100	ISL	10.49	10.48	33.393	25.616	238.4	0.293	4.60	72.8	13.4	1.26	14.5	0.02	0.09	0.11	100
1	107		10.20	10.19	33.447	25.708	229.7	0.309	4.40	69.2	15.6	1.37	16.5	0.01	0.03	0.06	107
1	122		9.90	9.89	33.550	25.839	217.6	0.343	4.10	64.1	18.5	1.49	18.6	0.01	0.03	0.05	123
	125	ISL	9.85	9.84	33.568	25.862	215.5	0.349	4.03	63.0	19.1	1.52	19.1	0.01	0.03	0.05	126
1	146		9.55	9.53	33.696	26.012	201.6	0.393	3.60	55.9	23.3	1.70	22.2	0.01	0.01	0.05	147
	150	ISL	9.48	9.46	33.727	26.047	198.3	0.401	3.53	54.8	24.2	1.73	22.7	0.01	0.01	0.05	151
1	172		9.06	9.04	33.884	26.238	180.5	0.443	3.24	49.8	28.8	1.88	25.2	0.01	0.00	0.03	173
	200	ISL	8.47	8.45	33.974	26.401	165.4	0.491	3.12	47.4	34.0	2.00	27.4	0.01	0.00	0.03	201
1	202		8.43	8.41	33.978	26.410	164.6	0.495	3.11	47.2	34.4	2.01	27.5	0.01	0.00	0.03	203
1	232		8.08	8.06	34.043	26.514	155.1	0.542	2.58	38.9	41.2	2.23	30.2	0.01			233
	250	ISL	7.93	7.90	34.066	26.555	151.6	0.570	2.36	35.4	44.2	2.33	31.1	0.01			251
1	272		7.73	7.70	34.08	26.595	148.0	0.603	2.16	32.3	47.5	2.43	32.1	0.00			274
	300	ISL	7.28	7.25	34.078	26.658	142.2	0.644	1.95	28.8	52.9	2.55	34.1	0.00			302
1	328		6.82	6.79	34.073	26.717	136.7	0.683	1.76	25.7	58.5	2.66	36.2	0.00			330
1	388		6.27	6.24	34.102	26.813	128.1	0.762	1.26	18.2	68.8	2.90	39.1	0.00			390
	400	CSL	6.21	6.17	34.112	26.829	126.8	0.777	1.16	16.7	70.3	2.94	39.6	0.00			403
1	453		6.02	5.98	34.171	26.900	120.6	0.843	0.76	10.9	76.1	3.09	41.1	0.00			456
	500	CSL	5.88	5.84	34.244	26.976	114.0	0.898	0.46	6.6	81.9	3.23	41.7	0.00			503
1	521		5.82	5.77	34.277	27.010	111.0	0.922	0.33	4.7	84.5	3.29	42.0	0.00			525

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 30.8 N	120 14.7 W	28/02/91	1011 UTC	3779 n	220 16 kn			1000.5 Bb	15.1 C	13.9 C			

CAST	DEPTH		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN nl/l	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 UM/1	NO2 uM/1	CHL-A ug/1	PBAEO ug/1	PRESS db
	0	ISL	14.53	14.53	33.443	24.873	306.8	0.000	5.86	101.1	2.9	0.40	0.0	0.00	0.25	0.10	0
1	2		14.53	14.53	33.443	24.874	306.9	0.006	5.86	101.1	2.9	0.40	0.0	0.00	0.25	0.10	2
	10	ISL	14.52	14.52	33.443	24.876	306.9	0.031	5.87	101.2	2.9	0.39	0.1	0.00	0.25	0.10	10
1	16		14.51	14.51	33.443	24.878	306.8	0.049	5.87	101.2	2.9	0.39	0.1	0.00	0.25	0.10	16
	20	ISL	14.51	14.51	33.443	24.878	306.9	0.061	5.87	101.2	2.9	0.39	0.1	0.00	0.25	0.10	20
	30	ISL	14.51	14.51	33.443	24.879	307.2	0.092	5.87	101.2	2.9	0.39	0.1	0.00	0.26	0.10	30
1	32		14.51	14.51	33.443	24.879	307.3	0.098	5.87	101.2	2.9	0.39	0.1	0.00	0.26	0.10	32
1	42		14.50	14.49	33.444	24.882	307.3	0.129	5.88	101.3	2.9	0.40	0.1	0.00	0.27	0.11	42
	50	ISL	14.23	14.22	33.446	24.941	301.9	0.153	5.89	101.0	3.3	0.41	0.2	0.05	0.35	0.17	50
1	52		14.14	14.13	33.443	24.957	300.3	0.159	5.89	100.8	3.4	0.42	0.2	0.06	0.37	0.19	52
1	61		13.66	13.65	33.395	25.019	294.6	0.186	5.80	98.2	3.7	0.49	1.0	0.27	0.31	0.21	61
1	72		13.08	13.07	33.393	25.135	283.9	0.218	5.76	96.4	4.1	0.55	1.9	0.31	0.14	0.12	72
	75	ISL	12.85	12.84	33.374	25.166	281.0	0.226	5.68	94.6	4.5	0.60	2.9	0.22	0.12	0.11	75
1	81		12.34	12.33	33.335	25.231	274.6	0.243	5.48	90.2	5.6	0.73	5.1	0.03	0.09	0.09	81
1	95		11.21	11.20	33.325	25.436	255.5	0.280	5.07	81.5	8.7	0.99	9.5	0.02	0.06	0.07	95
	100	ISL	10.91	10.90	33.334	25.497	249.8	0.293	4.96	79.2	9.7	1.06	10.8	0.02	0.05	0.07	100
1	111		10.39	10.38	33.380	25.624	237.9	0.320	4.71	74.4	12.3	1.21	13.5	0.01	0.04	0.06	112
	125	ISL	9.97	9.96	33.496	25.785	222.7	0.352	4.24	66.4	16. .9	1.44	17.2	0.01	0.02	0.05	126
1	126		9.95	9.94	33.505	25.796	221.8	0.354	4.20	65.8	17.2	1.46	17.5	0.01	0.02	0.05	127
	150	ISL	9.28	9.26	33.706	26.063	196.7	0.404	3.56	55.0	24.1	1.74	22.6	0.01	0.00	0.03	151
1	151		9.25	9.23	33.713	26.073	195.8	0.406	3.55	54.8	24.3	1.75	22.7	0.01	0.00	0.03	152
1	176		8.80	8.78	33.823	26.231	181.2	0.453	3.80	58.1	26.1	1.70	22.3	0.01	0.00	0.02	177
	200	ISL	8.36	8.34	33.935	26.387	166.7	0.495	3.39	51.3	31.8	1.89	25.2	0.01	0.00	0.02	201
1	207		8.24	8.22	33.962	26.426	163.1	0.507	3.23	48.8	33.8	1.96	26.2	0.01	0.00	0.02	208
1	236		7.83	7.81	34.004	26.520	154.5	0.553	2.89	43.3	39.9	2.13	28.8	0.01			237
	250	ISL	7.66	7.64	34.014	26.553	151.5	0.574	2.76	41.2	42.2	2.20	29.7	0.01			251
1	277		7.35	7.32	34.025	26.606	146.8	0.614	2.50	37.0	46.8	2.32	31.3	0.01			279
	300	ISL	7.02	6.99	34.033	26.658	142.0	0.648	2.22	32.6	52.0	2.46	33.1	0.01			302
1	333		6.58	6.55	34.050	26.731	135.3	0.693	1.78	25.9	59.8	2.66	35.7	0.00			335
1	393		6.13	6.10	34.121	26.846	124.9	0.771	1.03	14.8	70.8	2.96	39.0	0.00			395
	400	ISL	6.10	6.06	34.131	26.858	123.9	0.780	0.96	13.8	71.7	2.98	39.2	0.00			403
1	458		5.92	5.88	34.207	26.941	116.7	0.850	0.54	7.7	78.7	3.14	40.6	0.00			461
	500	ISL	5.66	5.62	34.230	26.992	112.2	0.898	0.42	6.0	84.0	3.21	41.7	0.00			503
1	526		5.50	5.46	34.244	27.022	109.4	0.927	0.35	5.0	87.2	3.26	42.4	0.00			530

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 10.4 N	120 55.3 W	28/02/91	1733 UTC	m	240 16 kn	240 08 05	6	1002.1 mb	15.9 C	15.0 C	27m	8/8	ST

CAST	DEPTH		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT m1/1	OXYGEN	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 UM/1	CHL-A ug/1	PHAEO ug/1	PRESS db
	0	ISL	15.04	15.04	33.386	24.720	321.4	0.000	5.80	101.0	2.4	0.35	0.0	0.00	0.17	0.06	0
1	2		15.04	15.01	33.386	24.720	321.5	0.006	5.80	101.0	2.4	0.35	0.0	0.00	0.17	0.06	2
	10	ISL	15.05	15.05	33.391	24.722	321.5	0.032	5.80	101.1	2.4	0.35	0.0	0.00	0.17	0.06	10
1	17		15.05	15.0:5	33.395	24.725	321.4	0.055	5.80	101.1	2.4	0.35	0.0	0.00	0.18	0.06	17
	20	ISL	15.04	15.04	33.398	24.730	321.1	0.064	5.80	101.0	2.4	0.35	0.0	0.00	0.18	0.06	20
	30	ISL	15.02	15.02	33.409	24.743	320.1	0.096	5.80	101.0	2.4	0.35	0.0	0.00	0.19	0.06	30
1	31		15.02	15.02	33.410	24.744	320.1	0.100	5.80	101.0	2.4	0.35	0.0	0.00	0.19	0.06	31
1	41		14.33	14.32	33.429	24.906	304.9	0.131	5.94	102.0	2.6	0.37	0.0	0.00	0.32	0.12	41
	50	ISL	14.27	14.26	33.433	24.922	303.6	0.158	5.92	101.6	2.8	0.38	0.0	0.00	0.37	0.16	50
1	51		14.26	14.25	33.434	24.925	303.4	0.161	5.92	101.5	2.8	0.38	0.0	0.00	0.37	0.16	51
1	60		14.05	14.04	33.428	24.964	299.9	0.188	5.93	101.3	2.9	0.39	0.2	0.03	0.39	0.19	60
1	70		13.24	13.23	33.318	25.045	292.4	0.218	5.85	98.2	3.7	0.50	1.4	0.16	0.28	0.18	70
	75	ISL	12.87	12.86	33.295	25.101	287.2	0.232	5.73	95.4	4.2	0.57	2.5	0.11	0.23	0.16	75
1	79		12.58	12.57	33.287	25.151	282.5	0.244	5.62	93.0	4.6	0.63	3.6	0.05	0.19	0.14	79
1	93		11.58	11.57	33.288	25.340	264.6	0.282	5.29	85.7	6.9	0.85	7.3	0.03	0.10	0.09	93
	100	ISL	11.11	11.10	33.276	25.416	257.5	0.300	5.18	83.1	8.2	0.96	9.1	0.02	0.08	0.08	100
1	108		10.64	10.63	33.276	25.499	249.7	0.321	5.03	79.8	9.8	1.08	11.1	0.02	0.06	0.08	108
1	122		10.14	10.13	33.371	25.659	234.7	0.355	4.60	72.3	13.3	1.28	14.6	0.01	0.04	0.06	123
	125	ISL	10.04	10.03	33.393	25.693	231.5	0.362	4.57	71.6	13.7	1.30	15.0	0.01	0.04	0.06	126
1	147		9.42	9.40	33.573	25.937	208.7	0.410	41.32	66.9	17.5	1.42	17.7	0.01	0.01	0.03	148
	150	ISL	9.35	9.33	33.606	25.974	205.2	0.416	4.21	65.1	18.6	1.47	18.5	0.01	0.01	0.03	151
1	171		8.91	8.89	33.821	26.212	182.9	0.457	3.43	52.6	26.3	1.78	23.6	0.01	0.00	0.02	172
	200	ISL	8.57	8.55	33.939	26.358	169.5	0.508	3.15	47.9	30.9	1.91	25.7	0.00	0.00	0.02	201
1	201		8.56	8.54	33.941	26.361	169.2	0.510	3.15	47.9	31.0	1.91	25.7	0.00	0.00	0.02	202
1	229		8.11	8.09	33.999	26.475	158.8	0.556	2.96	44.6	35.9	2.03	27.4	0.00			230
	250	ISL	7.89	7.86	34.020	26.524	154.4	0.589	2.75	41.2	39.0	2.12	28.6	0.00			251
1	269		7.71	7.68	34.031	26.559	151.3	0.618	2.54	37.9	41.7	2.21	29.7	0.00			271
	300	ISL	7.36	7.33	34.049	26.624	145.5	0.664	2.22	32.9	46.9	2.36	31.6	0.01			302
1	323		7.09	7.06	34.061	26.671	141.2	0.697	1.97	29.0	51.1	2.47	33.1	0.01			325
1	382		6.36	6.33	34.091	26.793	130.0	0.777	1.29	18.7	63.8	2.78	36.9	0.00			384
	400	ISL	6.26	6.22	34.111	26.822	127.5	0.800	1.11	16.0	66.4	2.85	37.7	0.00			402
1	447		6.06	6.02	34.165	26.890	121.5	0.858	0.74	10.6	72.5	2.99	39.2	0.00			450
	500	ISL	5.64	5.60	34.194	26.966	114.6	0.921	0.54	7.7	80.3	3.11	40.6	0.00			503
1	517		5.50	5.46	34.204	26.991	112.3	0.940	0.48	6.8	82.8	3.15	41.1	0.00			520

RV DAVID STARR JORDAN CALCOFI CRUISE 9103 STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 50.7 N	121 35.3 W	01/03/91	0303 UTC	4083 a	200 17 kn			1004.5 mb	16.3 C	15.5 C			

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/l	OXYGEN	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 UM/l	NO2 UM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
	0	ISL	15.42	15.42	33.470	24.702	323.2	0.000	5.73	100.6	3.1	0.35	0.0	0.00	0.13	0.05	0
1	2		15.42	15.42	33.470	24.702	323.2	0.006	5.73	100.6	3.1	0.35	0.0	0.00	0.13	0.05	2
	10	ISL	15.43	15.43	33.471	24.700	323.6	0.032	5.73	100.7	3.0	0.35	0.0	0.00	0.13	0.05	10
1	16		15.44	15.44	33.472	24.699	323.9	0.052	5.73	100.7	3.0	0.35	0.0	0.00	0.13	0.05	16
	20	ISL	15.46	15.46	33.489	24.708	323.2	0.065	5.73	100.7	3.0	0.35	0.0	0.00	0.14	0.05	20
	30	ISL	15.51	15.51	33.539	24.736	320.9	0.097	5.73	100.9	3.0	0.34	0.0	0.00	0.16	0.07	30
1	31		15.52	15.52	33.544	24.737	320.7	0.100	5.73	100.9	3.0	0.34	0.0	0.00	0.16	0.07	31
1	41		15.72	15.71	33.625	24.755	319.3	0.132	5.71	101.0	3.0	0.32	0.0	0.00	0.18	0.08	41
	50	ISL	15.54	15.53	33.570	24.754	319.8	0.161	5.74	101.1	3.0	0.34	0.0	0.00	0.19	0.08	50
1	52		15.50	15.49	33.558	24.753	319.9	0.167	5.75	101.2	3.0	0.35	0.0	0.00	0.19	0.08	52
1	61		14.85	14.84	33.444	24.808	314.9	0.196	5.85	101.5	3.0	0.37	0.0	0.00	0.26	0.12	61
1	71		14.65	14.64	33.423	24.835	312.6	0.227	5.85	101.1	3.1	0.37	0.0	0.00	0.31	0.16	71
	75	ISL	14.62	14.61	33.422	24.840	312.2	0.240	5.85	101.1	3.1	0.37	0.0	0.00	0.30	0.16	75
1	82		14.57	14.56	33.418	24.848	311.6	0.262	5.85	100.9	3.2	0.38	0.0	0.00	0.27	0.15	82
1	97		14.21	14.20	33.359	24.879	309.1	0.308	5.82	99.7	3.4	0.43	0.3	0.11	0.15	0.12	97
	100	ISL	14.06	14.05	33.361	24.912	306.0	0.317	5.79	98.8	3.5	0.45	0.6	0.10	0.14	0.12	100
1	112		13.34	13.32	33.382	25.075	290.7	0.353	5.64	94.9	4.0	0.53	2.1	0.08	0.10	0.11	112
	125	ISL	12.62	12.60	33.383	25.219	277.2	0.390	5.49	91.0	5.1	0.64	4.1	0.03	0.08	0.11	126
1	128		12.43	12.41	33.381	25.254	273.9	0.398	5.46	90.1	5.4	0.67	4.7	0.02	0.08	0.11	129
	150	ISL	10.40	10.38	33.341	25.592	241.8	0.455	5.17	81.6	9.3	0.98	10.1	0.00	0.04	0.06	151
1	153		10.14	10.12	33.344	25.639	237.3	0.462	5.11	80.2	10.0	1.03	11.0	0.00	0.03	0.05	154
1	179		9.43	9.41	33.564	25.929	210.1	0.520	4.07	63.0	19.4	1.53	19.0	0.00	0.01	0.03	180
	200	ISL	9.09	9.07	33.768	26.143	190.1	0.562	3.90	60.0	23.5	1.59	21.2	0.00	0.00	0.02	201
1	210		3.98	8.96	33.854	26.228	182.2	0.581	3.82	58.6	24.8	1.62	21.5	0.00	0.00	0.01	211
1	240		8.76	8.73	33.971	26.354	170.7	0.634	3.57	54.6	28.6	1.74	23.2	0.00			241
	250	ISL	3.65	8.62	33.998	26.393	167.3	0.651	3.42	52.2	30.4	1.80	24.0	0.00			251
1	281		3.24	8.21	34.049	26.496	157.9	0.701	2.93	44.3	36.9	2.02	26.0	0.00			283
	300	ISL	7.88	7.85	14.053	26.553	152.6	0.731	2.68	40.2	41.3	2.14	28.6	0.00			302
1	338		7.16	7.13	34.047	26.651	143.4	0.787	2.23	32.9	50.1	2.37	31.9'	0.00			340
1	399		6.43	6.39	34.069	26.767	132.8	0.871	1.59	23.0	61.7	2.67	35.5	0.00			401
	400	ISL	6.42	6.38	34.069	26.768	132.7	0.873	1.58	22.9	61.9	2.67	35.6	0.00			402
1	465		5.78	5.74	34.095	26.870	123.3	0.956	1.10	15.7	73.3	2.90	38.8	0.00			468
	500	ISL	5.77	5.73	34.159	26.922	118.9	0.998	0.78	11.1	76.7	3.01	39.5	0.00			503
1	534		5.76	5.71	34.222	26.974	114.5	1.038	0.47	6.7	80.0	3.11	40.1	0.00			537

RV DAVID STARK JORDAN CALCOFI CRUISE 9103 STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 30.9 N	122 15.6 W	01/03/91	1431 UTC	3561 m	230 16 kn		1	1003.5 mb	16.0 C	15.1 C	21a 02	6/8	ST

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/l	OXYGEN	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 UM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
	0	ISL	15.27	15.27	33.423	24.698	323.5	0.000	5.76	100.8	2.6	0.35	0.1	0.00	0.15	0.05	0
1	2		15.27	15.27	33.423	24.698	323.5	0.006	5.76	100.8	2.6	0.35	0.1	0.00	0.15	0.05	2
	10	ISL	15.28	15.28	33.424	24.697	323.9	0.032	5.76	100.9	2.6	0.35	0.1	0.00	0.16	0.05	10
1	17		15.29	15.29	33.424	24.695	324.3	0.055	5.76	100.9	2.5	0.34	0.1	0.00	0.16	0.05	17
	20	ISL	15.29	15.29	33.424	24.695	324.4	0.065	5.76	100.9	2.5	0.34	0.1	0.00	0.16	0.05	20
	30	ISL	15.28	15.28	33.423	24.697	324.5	0.097	5.76	100.8	2.5	0.34	0.1	0.00	0.15	0.05	30
1	33		15.28	15.27	33.423	24.697	324.6	0.107	5.76	100.8	2.5	0.34	0.1	0.00	0.15	0.05	33
1	43		15.29	15.28	33.427	24.698	324.8	0.139	5.77	101.0	2.4	0.34	0.1	0.00	0.16	0.05	43
	50	ISL	15.27	15.26	33.445	24.717	323.2	0.162	5.78	101.2	2.5	0.34	0.1	0.00	0.17	0.06	50
1	53		15.26	15.25	33.454	24.726	322.5	0.172	5.78	101.2	2.5	0.34	0.1	0.00	0.18	0.06	53
1	62		15.25	15.24	33.470	24.741	321.3	0.201	5.79	101.3	2.5	0.34	0.1	0.00	0.21	0.08	62
1	73		15.12	15.11	33.491	24.786	317.4	0.236	5.78	100.9	2.5	0.34	0.1	0.00	0.29	0.17	73
	75	ISL	14.99	14.98	33.482	24.807	315.4	0.242	5.79	100.8	2.5	0.35	0.1	0.01	0.28	0.17	75
1	82		14.50	14.49	33.448	24.886	308.0	0.264	5.81	100.1	2.6	0.37	0.1	0.06	0.23	0.16	82
1	97		14.22	14.21	33.452	24.949	302.5	0.310	5.79	99.2	2.8	0.38	0.1	0.12	0.20	0.18	97
	100	ISL	14.18	14.17	33.446	24.952	302.2	0.319	5.77	98.8	2.9	0.39	0.3	0.11	0.19	0.17	100
1	113		13.63	13.61	33.394	25.026	295.4	0.358	5.63	95.3	3.7	0.5CI	1.9	0.06	0.14	0.12	113
	125	ISL	12.14	12.12	33.326	25.266	272.6	0.392	5.40	88.5	5.8	0.70	5.1	0.02	0.08	0.08	126
1	127		11.87	11.85	33.319	25.312	268.3	0.397	5.36	87.4	6.2	0.74	5.7	0.02	0.07	0.08	128
	150	ISL	10.36	10.34	33.373	25.624	238.7	0.456	4.77	75.3	11.5	1.12	12.4	0.01	0.03	0.05	151
1	152		10.29	10.27	33.384	25.645	236.8	0.460	4.71	74.2	12.0	1.15	13.0	0.01	0.03	0.05	153
1	178		9.79	9.77	33.599	25.897	213.2	0.519	3.93	61.3	18.6	1.48	18.6	0.01	0.01	0.03	179
	200	ISL	9.28	9.26	33.753	26.101	194.2	0.564	3.48	53.7	23.6	1.67	21.9	0.01	0.00	0.03	201
1	209		9.08	9.06	33.804	26.173	187.5	0.581	3.37	51.8	25.3	1.72	22.8	0.01	0.00	0.03	210
1	237		8.67	8.64	33.893	26.307	175.1	0.632	3.41	52.0	28.2	1.77	23.7	0.01			238
	250	ISL	8.51	8.48	33.930	26.361	170.2	0.654	3.31	50.3	30.0	1.81	24.5	0.01			251
1	278		8.17	8.14	33.996	26.464	160.7	0.700	2.99	45.1	34.6	1.93	26.5	0.00			279
	300	ISL	7.86	7.83	34.028	26.536	154.2	0.735	2.70	40.4	39.2	2.06	28.2	0.00			302
1	333		7.41	7.38	34.064	26.629	145.6	0.784	2.23	33.1	46.6	2.28	30.8	0.00			335
1	392		6.77	6.73	34.127	26.768	132.9	0.867	1.32	19.3	59.5	2.64	35.0	0.00			394
	400	ISL	6.69	6.65	34.134	26.784	131.5	0.877	1.23	17.9	61.0	2.68	35.5	0.00			402
1	457		6.23	6.19	34.181	26.882	122.6	0.950	0.76	11.0	69.8	2.89	37.9	0.00			460
	500	ISL	6.08	6.04	34.226	26.937	117.9	1.001	0.55	7.9	73.9	2.98	38.7	0.00			503
1	525		6.00	5.95	34.252	26.968	115.2	1.030	0.42	6.0	76.3	3.03	39.1	0.00			528

RV DAVID STARR JORDAN | CALCOFI CRUISE 91.03 | STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 10.4 N	122 55.4 W	01/03/91	2202 UTC	3233 a	290 19 kn	280 08 05	1	1011.1 nb	17.5 C	15.3 C	34B 01	7/8	ST

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT ml/l	OXYGEN	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
	0	ISL	16.90	16.90	33.902	24.696	323.7	0.000	5.59	101.4	2.7	0.30	0.1	0.00	0.13	0.04	0
1	1		16.90	16.90	33.902	24.696	323.7	0.003	5.59	101.4	2.7	0.30	0.1	0.00	0.13	0.04	1
	10	ISL	16.91	16.91	33.902	24.694	324.2	0.032	5.59	101.4	2.7	0.30	0.1	0.00	0.12	0.04	10
1	16		16.91	16.91	33.901	24.694	324.5	0.052	5.67 U	102.8 U	2.7	0.30	0.1	0.00	0.12	0.04	16
	20	ISL	16.90	16.90	33.900	24.695	324.5	0.065	5.60	101.5	2.7	0.30	0.1	0.00	0.12	0.04	20
1	30		16.88	16.88	33.900	24.700	324.3	0.097	5.60	101.5	2.7	0.29	0.1	0.00	0.12	0.04	30
1	40		16.90	16.89	33.902	24.698	324.9	0.130	5.64	102.3	2.4	0.29	0.1	0.00	0.11	0.04	40
1	50		16.94	16.93	33.926	24.707	324.3	0.162	5.60	101.6	2.4	0.28	0.0	0.00	0.11	0.04	50
1	58		16.92	16.91	33.935	24.719	323.5	0.188	5.58	101.2	2.0	0.28	0.0	0.00	0.12	0.04	58
1	69		16.93	16.92	33.936	24.718	324.0	0.224	5.60	101.6	2.0	0.27	0.0	0.00	0.12	0.04	69
	75	ISL	16.85	16.84	33.923	24.727	323.3	0.243	5.63	102.0	2.3	0.28	0.0	0.01	0.15	0.06	75
1	78		16.79	16.78	33.911	24.732	322.9	0.253	5.65	102.2	2.4	0.28	0.0	0.01	0.16	0.07	78
1	93		16.33	16.32	33.732 U			0.302	5.67	101.5	2.4	0.31	0.1	0.05	0.20	0.13	93
	100	ISL	15.62	15.60	33.609	24.768	320.1	0.324	5.68	100.2	2.9	0.33	0.1	0.11	0.19	0.13	100
1	108		14.70	14.68	33.484	24.872	310.2	0.349	5.70	98.7	3.5	0.37	0.2	0.16	0.16	0.11	108
1	123		13.42	13.40	33.367	25.048	293.6	0.395	5.72	96.4	3.8	0.50	1.7	0.11	0.10	0.10	124
	125	ISL	13.23	13.21	33.351	25.074	291.2	0.400	5.70	95.6	4.0	0.53	2.1	0.10	0.10	0.10	126
1	148		11.53	11.51	33.291	25.353	264.7	0.464	5.45	88.2	6.4	0.79	6.4	0.01	0.06	0.06	149
	150	ISL	11.53	11.51	33.314	25.371	263.1	0.470	5.44	88.0	6.5	0.79	6.5	0.01	0.06	0.06	151
1	173		11.56	11.54	33.572	25.567	245.1	0.528	5.24	85.0	7.2	0.79	7.5	0.01	0.03	0.05	174
	200	ISL	9.99	9.97	33.599	25.864	216.9	0.591	4.77	74.8	14.5	1.19	14.2	0.00	0.01	0.02	201
1	204		9.72	9.70	33.603	25.912	212.3	0.599	4.69	73.1	15.9	1.26	15.4	0.00	0.01	0.02	205
1	233		8.90	8.87	33.870	26.253	180.2	0.656	4.03	61.8	24.9	1.57	20.7	0.00			234
	250	ISL	8.57	8.54	33.940	26.360	170.3	0.686	3.84	58.4	28.5	1.67	22.4	0.00			251
1	274		11.19	8.16	33.982	26.450	162.0	0.726	3.62	54.6	33.0	1.79	24.2	0.00			275
	300	ISL	7.77	7.74	34.012	26.536	154.0	0.767	3.18	47.5	38.9	1.99	26.9	0.00			302
1	331		7.33	7.30	34.028	26.612	147.1	0.813	2.62	38.8	45.9	2.24	30.0	0.00			333
1	391		6.71	6.67	34.058	26.721	137.2	0.899	1.82	26.6	57.0	2.55	34.0	0.01			393
	400	ISL	6.59	6.55	34.060	26.739	135.6	0.911	1.72	25.0	59.0	2.59	34.6	0.01			402
1	456		5.90	5.86	34.080	26.843	125.9	0.984	1.23	17.6	70.9	2.84	38.1	0.01			459
	500	ISL	5.65	5.61	34.121	26.907	120.2	1.038	0.95	13.5	77.2	2.98	39.6	0.00			503
1	524		5.51	5.47	34.144	26.942	117.0	1.067	0.80	11.3	80.6	3.05	40.4	0.00			527

RV DAVID STARR JORDAN | CALCOFI CRUISE 9103 | STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
29 50.8 N	123 35.2 W	02/03/91	0428 UTC	4011 a	300 11 kn			1017.4 mb	16.9 C	14.1 C			

CAST	DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT m1/1	OXYGEN	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 UM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRESS db
	0	ISL	16.84	16.84	33.878	24.692	324.1	0.000	5.52	100.0	2.5	0.30	0.0	0.00	0.09	0.03	0
1	1		16.84	16.84	33.878	24.692	324.1	0.003	5.52	100.0	2.5	0.30	0.0	0.00	0.09	0.03	1
	10	ISL	16.82	16.82	33.878	24.697	324.0	0.032	5.55	100.5	2.5	0.29	0.0	0.00	0.09	0.03	10
1	16		16.81	16.81	33.879	24.700	323.8	0.052	5.57	100.8	2.5	0.29	0.0	0.00	0.09	0.03	16
	20	ISL	16.81	16.81	33.881	24.702	323.8	0.065	5.57	100.8	2.5	0.29	0.0	0.00	0.09	0.03	20
	30	ISL	16.81	16.81	33.885	24.705	323.8	0.097	5.56	100.6	2.5	0.29	0.0	0.00	0.09	0.03	30
1	31		16.81	16.80	33.886	24.706	323.8	0.100	5.56	100.6	2.5	0.29	0.0	0.00	0.09	0.03	31
1	41		16.84	16.83	33.879	24.694	325.3	0.133	5.57	100.9	2.5	0.29	0.0	0.00	0.09	0.03	41
	50	ISL	17.00	16.99	33.954	24.714	323.7	0.162	5.53	100.5	2.5	0.28	0.0	0.00	0.10	0.04	50
1	51		17.02	17.01	33.964	24.717	323.4	0.165	5.53	100.5	2.5	0.28	0.0	0.00	0.10	0.04	51
1	61		17.20	17.19	34.039	24.733	322.3	0.198	5.51	100.6	2.5	0.27	0.0	0.00	0.12	0.05	61
1	71		17.27	17.26	34.065	24.736	322.3	0.230	5.50	100.5	2.3	0.27	0.0	0.00	0.15	0.06	71
	75	ISL	17.27	17.26	34.065	24.737	322.5	0.243	5.49	100.3	2.3	0.27	0.0	0.00	0.16	0.06	75
1	80		17.27	17.26	34.066	24.738	322.5	0.259	5.48	100.2	2.3	0.27	0.0	0.00	0.16	0.06	80
1	95		17.24	17.22	34.062	24.742	322.6	0.307	5.49	100.3	2.3	0.27	0.0	0.00	0.17	0.07	95
	100	ISL	17.22	17.20	34.060	24.746	322.4	0.323	5.49	100.2	2.3	0.27	0.0	0.00	0.18	0.08	100
1	110		17.09	17.07	34.027	24.752	322.2	0.356	5.50	100.1	2.3	0.27	0.0	0.00	0.19	0.11	110
1	125		16.51	16.49	33.938	24.819	316.1	0.403	5.50	99.0	2.4	0.28	0.1	0.04	0.23	0.22	126
1	150		15.14	15.12	33.960	25.146	285.6	0.179	5.26	92.1	3.5	0.43	2.1	0.02	0.12	0.11	151
1	175		12.62	12.60	33.789	25.535	248.6	0.545	4.93	81.9	6.8	0.74	6.9	0.01	0.03	0.05	176
	200	ISL	11.23	11.21	33.805	25.808	222.7	0.604	4.57	73.7	11.2	1.03	11.7	0.00	0.01	0.03	201
1	205		11.04	11.01	33.818	25.853	218.6	0.615	4.50	72.3	1.2.2	1.09	12.6	0.00	0.01	0.02	206
1	234		9.98	9.95	33.881	26.086	196.6	0.676	4.07	63.9	18.7	1.41	17.7	0.00			235
	250	ISL	9.46	9.43	33.925	26.207	185.2	0.706	3.97	61.6	22.0	1.52	19.6	0.00			251
1	274		8.80	8.77	33.984	26.359	171.0	0.749	3.89	59.5	26.5	1.63	21.8	0.00			275
	300	ISL	8.31	8.28	34.006	26.452	162.4	0.792	3.75	56.7	30.9	1.75	23.6	0.00			302
1	330		7.89	7.86	34.010	26.518	156.4	0.840	3.50	52.5	36.0	1.89	25.6	0.00			332
1	389		7.16	7.12	34.027	26.636	145.7	0.929	2.61	38.5	47.7	2.28	30.7	0.00			391
	400	ISL	7.02	6.98	34.029	26.656	143.8	0.945	2.46	36.1	49.8	2.35	31.5	0.00			402
1	455		6.39	6.35	34.051	26.758	134.4	1.022	1.77	25.6	60.6	2.65	35.4	0.00			458
	500	ISL	5.98	5.94	34.099	26.849	126.0	1.080	1.20	17.2	70.1	2.88	38.1	0.00			503
1	525		5.75	5.70	34.127	26.900	121.3	1.111	0.89	12.7	75.4	3.01	39.6	0.00			528

RV DAVID STARR JORDAN — CALCOFI CRUISE 9103 — STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 49.0 N	121. 50.5 W	10/ 3/91	1942 UTC	12 m	04	1210 - 1830 PST	1217 PST	1830 PST	391.2 mg C/m2

DEPTH m	TEMP DEG C	5SALINITY PSS 78	SIGMA THETA	DISS O2 mil/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL ug/1	PHAEO ug/1	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	13.34	33.283	24.996	6.19	104.1	1.1	0.39	0.0	0.00	0.73	0.24	77. A	7.1	6.8	6.9	0.22
9	13.19	33.283	25.026	6.20	103.9	1.1	0.38	0.0	0.00	0.80	0.25	32.	15.6	15.4	15.5	0.29
15	13.18	33.280	25.026	6.21	104.1	4.1	0.38	0.0	0.00	0.84	0.26	15.	15.1	14.5	14.8	0.36
26	12.97	33.271	25.061	6.13	102.3	4.6	0.38	0.1	0.02	0.99	0.41	3.6	9.5	10.1	9.8	0.16
33	12.94	33.273	25.068	6.07	101.2	4.7	0.40	0.3	0.05	0.70	0.34	1.5	3.8	3.9	3.8	0.10
46	12.52	33.373	25.228	5.55	91.8	6.1	0.67	4.6	0.09	0.14	0.19	0.28	0.10	0.06	0.08	0.05

RV DAVID STARR JORDAN — CALCOFI CRUISE 9103 — STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 13.5 N	119 24.7 W	9/ 3/91	1922 UTC	9 m	04	1215 - 1831 PST	1209 PST	1828 PST	714.9 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL ug/1	PHAEO ug/1	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2 B	14.34	33.438	24.910	6.23	107.0	1.3	0.30	0.1	0.00	1.78	0.48	71. A	23.9	23.7	23.8	0.25
6	14.26	33.436	24.925	6.20	106.3	1.2	0.30	0.1	0.00	1.67	0.50	36.	32.1	31.6	31.9	0.27
14	14.06	33.442	24.972	6.09	104.0	1.7	0.35	0.2	0.03	2.74	0.88	9.2	46.3	46.3	46.3	0.29
19	13.61	33.458	25.077	5.58	94.5	3.7	0.56	2.4	0.13	2.58	0.97	3.9	14.2	14.2	14.2	0.20
30	12.94	33.491	25.237	4.88	81.5	8.0	0.93	6.4	0.26	0.90	0.65	0.60	2.5	2.4	2.5	0.09

B) THE DEPTHS SAMPLED AT THIS STATION DIFFERED FROM THE DESIRED DEPTHS AND LIGHT LEVELS BY A LARGER AMOUNT THAN NORMAL.

RV DAVID STARR JORDAN — CALCOFI CRUISE 9103 — STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 13.4 N	121 28.3 W	8/ 3/91	2008 UTC	16 m	04	1228 - 1830 PST	1217 PST	1830 PST	482.4 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/1	OXY PCT	SIO3 UM/1	PO4 UM/1	NO3 UM/1	NO2 UM/1	CHL ug/1	PHAEO ug/1	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	13.57	33.353	25.004	6.07	102.6	3.6	0.41	0.3	0.04	0.47	0.19	83. A	4.0	4.0	4.0	0.08
12	13.26	33.361	25.073	6.10	102.4	3.5	0.41	0.3	0.04	0.59	0.24	32.	14.8	14.6	14.7	0.24
19	13.28	33.365	25.072	6.08	102.2	3.4	0.41	0.3	0.04	0.61	0.26	16.	15.0	15.3	15.2	0.21
34	13.30	33.375	25.076	6.05	101.7	3.4	0.41	0.3	0.04	0.60	0.28	3.8	8.6	9.3	9.0	0.10
42	13.24	33.367	25.082	6.02	101.1	3.4	0.42	0.5	0.05	0.53	0.25	1.8	4.2	4.7	4.5	0.06
60	11.93	33.324	25.303	5.43	88.6	7.3	0.84	6.8	0.04	0.05	0.10	0.32	0.04	0.02	0.03	0.06

RV DAVID STARR JORDAN — CALCOFI CRUISE 9103 — STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 54.8 N	124 10.2 W	7/ 3/91	2001 UTC	23 m	02	1228 - 1840 PST	1228 PST	1840 PST	140.6 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/1	OXY PCT	SIO3 UM/1.	PO4 UM/1	NO3 uM/1	NO2 uM/1	CHL ug/1	PHAEO ug/1	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	14.36	33.319	24.814	5.94	102.0	3.2	0.40	0.2	0.00	0.18	0.08	94. A	0.92	0.87	0.90	0.05
16	14.31	33.318	24.824	5.92	101.6	3.1	0.41	0.2	0.00	0.19	0.06	34.	3.0	2.9	2.9	0.04
28	14.33	33.320	24.822	5.93	101.8	3.1	0.40	0.2	0.00	0.20	0.06	15.	2.6	2.5	2.6	0.04
48	14.33	33.322	24.824	5.92	101.6	2.9	0.41	0.2	0.01	0.21	0.07	4.1	1.4	1.4	1.4	0.02
61	12.93	33.321	25.108	5.66	94.4	4.7	0.60	2.9	0.15	0.42	0.23	1.7	1.3	1.7	1.5	0.04
86	10.04	33.214	25.553	4.99	78.1	12.6	1.22	13.8	0.02	0.06	0.08	0.32	0.05	0.05	0.05	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 9103 — STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 29.4 N	119 19.1 W	5/ 3/91	1921 UTC	13 m	03	1210 - 1830 PST	1209 PST	1825 PST	409.6 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/1	OXY PCT	SIO3 uM/1	PO4 uM/1	NO3 uM/1	NO2 uM/1	CHL ug/1	PHAEO ug/1	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.74	33.446	24.831	6.16	106.7	1.7	0.30	0.0	0.00	0.89	0.19	79. A	10.6	9.6	10.1	0.15
10	14.73	33.444	24.832	6.15	106.5	1.7	0.30	0.0	0.00	0.94	0.21	31.	13.6	12.9	13.2	0.17
16	14.71	33.445	24.837	6.16	106.6	1.7	0.30	0.0	0.00	1.01	0.25	15.	12.1	12.4	12.3	0.17
28	14.55	33.450	24.875	6.10	105.3	2.0	0.31	0.0	0.00	1.53	0.47	3.7	7.1	7.4	7.3	0.18
35	14.43	33.450	24.901	6.03	103.8	2.1	0.34	0.0	0.01	2.25	0.77	1.6	6.4	7.1	6.7	0.17
50	12.94	33.456	25.211	5.28	88.1	6.4	0.76	5.2	0.21	1.00	0.77	0.27	0.35	0.42	0.38	0.05

A) INCUBATION LIGHT INTENSITIES WERE 91, 36, 18, 4.8, 2.0 AND 0.34 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 9103 — STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 19.4 N	121 43.0 N	6/ 3/91	1949 UTC	20 m	02	1221 - 1833 PST	1218 PST	1836 PST	112.6 119 c/m2

DEPTH a	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 UM/l	PO4 UM/l	NO3 UM/l	NO2 uM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.34	33.238	24.756	5.94	101.9	3.4	0.42	0.0	0.02	0.21	0.07	86. A	1.8	1.7	1.7	0.06
13	14.32	33.237	24.759	5.94	101.9	3.2	0.41	0.0	0.01	0.21	0.08	37.	2.8	2.8	2.8	0.06
24	14.34	33.237	24.755	5.94	101.9	3.1	0.41	0.0	0.02	0.20	0.08	16.	2.2	2.4	2.3	0.06
42	14.33	33.239	24.760	5.94	101.9	3.0	0.40	0.0	0.02	0.23	0.08	4.0	0.90	0.85	0.88	0.06
52	13.61	33.247	24.915	5.97	100.9	5.5	0.72	4.9	0.06	0.50	0.26	1.8	1.3	1.3	1.3	0.04
76	12.15	33.190	25.158	5.68	93.1	5.6	0.72	4.5	0.06	0.21	0.14	0.29	0.12	0.10	0.11	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 9103 — STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 15.1 N	1115 15.0 W	4/ 3/91	1942 UTC	28 m	03	1205 - 1815 PST	1205 PST	1815 PST	398.1 mg C/m2

DEPTH -	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	15.32	33.497	24.744	5.84	102.4	2.7	0.33	0.1	0.00	0.22	0.07	85. A	5.5	5.7	5.6	0.08
20	15.19	33.493	24.770	5.84	102.1	2.7	0.32	0.1	0.00	0.27	0.08	33.	6.9	6.9	6.9	0.09
34	15.15	33.491	24.778	5.83	101.8	2.6	0.31	0.1	0.00	0.31	0.11	16.	6.6	6.5	6.5	0.09
58	13.06	33.427	25.165	5.46	91.3	5.2	0.60	3.4	0.22	0.67	0.51	4.2	4.1	4.1	4.1	0.03
74	12.19	33.452	25.353	4.78	78.5	8.7	0.89	8.6	0.16	0.29	0.20	1.7	0.85	0.90	0.87	0.03
106	10.74	33.692	25.806	3.53	56.3	18.5	1.44	18.4	0.03	0.04	0.07	0.30	0.02	0.02	0.02	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 9103 — STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 5.1 N	120 38.3 W	3/ 3/91	1919 UTC	25 m	03	1215 - 2030 PST	1215 PST	1821 PST	153.0 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 uM/l	PO4 UM/l	NO3 uM/l	NO2 uM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.79	33.419	24.799	5.90	102.3	2.7	0.39	0.1	0.00	0.17	0.06	88. A	1.1	1.3	1.2	0.11
18	14.62	33.418	24.836	5.88	101.6	2.7	0.38	0.1	0.00	0.18	0.06	33.	2.3	2.4	2.3	0.16
30	14.59	33.419	24.843	5.89	101.7	2.7	0.38	0.1	0.00	0.21	0.08	16.	2.3	2.3	2.3	0.16
52	14.54	33.429	24.862	5.88	101.4	2.7	0.38	0.1	0.01	0.36	0.15	4.1	2.3	2.4	2.4	0.05
66	13.49	33.403	25.060	5.77	97.4	3.5	0.50	1.4	0.23	0.30	0.20	1.7	1.2	1.2	1.2	0.03
95	11.44	33.301	25.376	5.14	83.0	8.4	0.96	9.2	0.02	0.07	0.08	0.29	0.05	0.04	0.05	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 9103 — STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 45.1 N	123 19.7 W	2/ 3/91	1953 UTC	32 m	02	1230 - 1835 PST	1225 PST	1835 PST	139.4 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/«3) 1	2	MEAN	DARK
3	14.83	33.118	24.582	5.89	102.0	2.4	0.44	0.2	0.00	0.12	0.04	87. A	0.81	0.85	0.83	0.04
21	14.66	33.159	24.627	5.89	101.7	2.4	0.41	0.1	0.00	0.13	0.05	37.	2.0	1.9	1.9	0.06
37	14.68	33.163	24.627	5.89	101.7	2.4	0.41	0.1	0.00	0.13	0.04	17.	1.9	1.9	1.9	0.06
64	15.00	33.299	24.664	5.84	101.6	2.4	0.39	0.1	0.00	0.17	0.06	4.6	1.0	1.0	1.0	0.04
83	15.10	33.428	24.742	5.80	101.2	2.4	0.35	0.1	0.00	0.25	0.13	1.9	0.99	1.0	1.0	0.02
119	13.63	33.386	25.020	5.68	96.1	3.7	0.51	2.0	0.06	0.24	0.16	0.33	0.26	0.37	0.32	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 9103 — STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 10.9 N	118 53.7 W	27/ 2/91	1931 UTC	16 m	02	1206 - 1823 PST	1209 PST	1819 PST	53.4 mg C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 uM/l	PO4 UM/l	NO3 uM/l	NO2 uM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	15.09	33.539	24.827	5.81	101.4	3.4	0.37	0.0	0.00	0.19	0.07	83. A	3.1	3.2	3.2	0.08
12	15.07	33.550	24.840	5.82	101.6	3.2	0.37	0.0	0.00	0.19	0.08	32.	1.8	1.8	1.8	0.08
19	15.08	33.555	24.842	5.83	101.7	3.1	0.36	0.0	0.00	0.19	0.07	16.	0.96	0.93	0.95	0.06
34	15.09	33.559	24.843	5.81	101.4	3.0	0.37	0.0	0.00	0.19	0.08					
43	15.09	33.555	24.841	5.82	101.6	3.0	0.36	0.1	0.00	0.20	0.08	1.6	0.04	0.04	0.04	0.04
61	13.52	33.387	25.042	5.68	95.9	4.2	0.55	1.7	0.15	0.36	0.29	0.29	0.02	0.03	0.02	0.02

A) INCUBATION LIGHT INTENSITIES WERE 91, 36, 18, 4.8, 2.0 AND 0.34 PERCENT RESPECTIVELY.

RV DAVID STARR JORDAN — CALCOFI CRUISE 9103 — STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 10.4 N	121 55.3 W	28/ 2/91	1914 UTC	27 m	02	1213 - 1828 PST	1217 PST	1827 PST	172.4 ng C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 uM/l	PO4 UM/l	NO3 uM/l	NO2 uM/l	CHL ug/l	PHAEO uq/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	15.02	33.367	24.710	5.79	100.8	2.5	0.36	0.0	0.00	0.17	0.05	84. A	0.45	0.40	0.43	0.06
19	15.00	33.367	24.715	5.80	100.9	2.5	0.36	0.0	0.00	0.17	0.06	34.	2.1	2.2	2.2	0.05
31	14.98	33.379	24.729	5.81	101.1	2.5	0.36	0.0	0.00	0.18	0.06	17.	2.6	2.6	2.6	0.06
56	13.76	33.362	24.973	5.93	100.6	3.2	0.43	0.4	0.08	0.36	0.19	4.1	3.2	3.3	3.3	0.04
71	12.99	33.316	25.093	5.68	94.8	4.1	0.57	2.5	0.09	0.23	0.18	1.8	0.92	0.94	0.93	0.02
102	11.14	33.258	25.397	5.17	82.9	8.3	0.96	9.1	0.03	0.09	0.10	0.30	0.10	0.07	0.09	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 9103 — STATION 93 106

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 17.3 N	122 39.0 W	1/ 3/91	1931 UTC	32 m	02	1216 - 2000 PST	1222 PST	1834 PST	127.1 ng C/m2

DEPTH m	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ml/l	OXY PCT	SIO3 UM/l	PO4 UM/l	NO3 uM/l	NO2 UM/l	CHL ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	15.20	33.278	24.602	5.79	101.1	2.8	0.39	0.0	0.00	0.14	0.05	87. A	0.58	0.60	0.59	0.07
22	15.18	33.287	24.614	5.80	101.3	2.8	0.38	0.0	0.00	0.13	0.05	35.	1.8	1.7	1.7	0.08
38	15.25	33.348	24.646	5.80	101.4	2.8	0.37	0.0	0.00	0.14	0.06	16.	1.8	1.8	1.8	0.09
65	15.33	33.458	24.714	5.79	101.5	2.8	0.36	0.0	0.00	0.19	0.07	4.4	1.1	1.2	1.1	0.08
83	15.30	33.483	24.741	5.79	101.4	2.8	0.36	0.0	0.00	0.26	0.11	1.9	0.84	0.90	0.87	0.03
101	14.83	33.460	24.826	5.76	99.9	3.0	0.40	0.1	0.06	0.24	0.18					
119	14.46	33.601	25.014	5.58	96.2	3.8	0.44	1.2	0.09	0.18	0.17	0.33	0.17	0.17	0.17	0.01
140	12.95	33.591	25.316	5.39	90.0	5.1	0.60	3.8	0.03	0.10	0.11					
169	11.19	33.629	25.678	4.84	77.9	10.5	0.99	10.8	0.01	0.02	0.05					
198	9.51	33.705	26.026	4.31	66.9	19.4	1.44	18.5	0.01	0.00	0.02					

A) INCUBATION LIGHT INTENSITIES WERE 91, 36, 18, 4.8, 2.0 AND 0.34 PERCENT RESPECTIVELY.

CalCOFI Cruise 9103

MACROZOOPLANKTON BIOMASS
Net Mesh Size: 0.505 mm

Line	Sta.	Position		Date Mo/Day	Time (PST) Start	End	Water Volume Strained (m)	Max. Tow Depth (m)	Volume per 1000 m Total (cm)	Strained Small (cm)
80	51	34 27.1N	120 31.4W	3/09	2031	2037	117	55	991	991
80	55	34 19.0N	12048.1W	3/09	2327	2349	431	214	237	237
80	60	34 09 .0N	121 09.0W	3/10	0322	0344	426	212	230	120
80	70	33 49.0N	121 50.5W	3/10	0926	0948	436	216	48	48
82	47	34 16.5N	120 01.5W	3/09	1626	1648	431	208	163	163
83	40.6	34 13.5N	119 24.7W	3/09	1037	1040	50	21	121	121
83	42	34 10.6N	119 30.5W	3/09	0847	0902	306	144	82	82
83	51	33 52.7N	12008.0W	3/09	0243	0250	145	67	117	117
83	55	33 44.7N	120 24.6W	3/08	2317	2339	428	219	145	145
83	60	33 34.7N	12045.2W	3/08	1920	1942	447	209	300	287
83	70	33 13.4N	121 28.3W	3/08	1318	1340	440	210	57	57
83	80	32 54.7N	122 07.9W	3/08	0704	0726	432	215	74	46
83	90	32 34.7N	12248.7W	3/08	0058	0120	451	213	82	51
83	100	32 14.5N	123 29.6W	3/07	1858	1920	445	211	65	65
83	110	31 54.8N	124 10.2W	3/07	1300	1322	428	220	33	33
87	33	33 53.4N	118 29.4W	3/04	2340	2345	96	41	114	114
87	35	33 49.4N	118 37.7W	3/05	0154	0216	434	208	51	51
87	40	33 39.4N	118 58.5W	3/05	0608	0630	444	215	34	34
87	45	33 29.4N	119 19.1W	3/05	1018	1040	440	222	36	36
87	50	33 19.5N	119 39.8W	3/05	1450	1456	132	45	61	61
87	55	33 09.4N	120 00.4W	3/05	1849	1911	486	206	51	51
87	60	32 59 4 N	120 21.0W	3/05	2246	2308	448	218	80	80
87	80	32 19.4N	121 43.0W	3/06	1042	1104	448	219	25	25
87	90	31 59.3N	12223.6W	3/06	1722	1744	492	218	18	18
87	100	31 39.3N	123 04.2W	3/06	2321	2343	453	220	46	46
87	110	31 19.4N	123 44.7W	3/07	0619	0641	476	206	23	23
90	28	33 29.IN	117 46.1W	3/04	1728	1746	371	166	113	67
90	30	33 25.1N	117 54.3W	3/04	1457	1519	448	206	51	51
90	35	33 15.1N	118 15.0W	3/04	1100	1122	418	218	24	24
90	37	33 11.1N	118 23.3W	3/04	0724	0745	441	209	36	36
90	45	32 55.2N	118 56.0W	3/04	0213	0235	439	207	196	196
90	53	32 39.IN	119 28.8W	3/03	2118	2140	445	215	130	130
90	60	32 25.2N	119 57.5W	3/03	1637	1659	470	214	272	272
90	70	32 05.1N	12038.3W	3/03	1003	1025	448	217	45	45
90	80	31 45.1N	121 18.9W	3/03	0403	0425	466	213	39	39
90	90	31 25.0N	121 59.4W	3/02	2226	2248	457	216	24	24
90	100	31 05.1N	122 39.7W	3/02	1657	1719	465	209	22	22
90	110	30 45.1N	123 19.7W	3/02	0852	0914	477	218	80	31
90	120	30 25.1N	123 59.9W	3/02	0312	0334	468	212	26	26
93	26.7	32 57.4N	117 18.4W	2/26	1301	1308	124	54	145	145
93	28	32 54.9N	117 23.7W	2/26	" 1453	1515	433	208	113	113
93	30	32 50.7N	117 31.9W	2/26	1747	1809	441	207	120	84
93	35	32 4I3.7N	117 52.5W	2/26	2150	2212	420	216	152	131
93	40	32 30.8N	118 12.9W	2/27	0145	0206	407	213	229	229
93	45	32 20.9N	118 33.3W	2/27	0612	0634	455	205	35	35
93	50	32 10.9N	118 53.7W	2/27	1045	1107	467	203	212	182
93	55	32 00.8N	119 14.1 W	2/27	1600	1622	478	205	38	38
93	60	31 50.8N	119 34.2V/	2/27	2021	2043	445	219	31	31
93	70	31 30.8N	120 14.7W	2/28	0302	0324	466	210	144	144
93	80	31 10.4N	120 55.3W	2/28	1021	1043	540	193	20	20
93	90	30 50.7N	121 35 3 W	2/28	1950	2012	508	204	41	41
93	100	30 30.9N	122 15.6W	3/01	0731	0753	526	208	19	19
93	110	30 10.4N	122 55.4W	3/01	1448	1510	499	212	12	12
93	120	29 50.8N	123 35.2W	3/01	2111	2133	457	225	18	18