UNIVERSITY OF CALIFORNIA, SAN DIEGO SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

CalCOFI Cruise 8901
20 January – 3 February 1989

CalCOFI Cruise 8904
17 – 30 April 1989

SIO Reference 89-26
31 December 1989

UNIVERSITY OF CALIFORNIA

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093

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Approved for distribution:

Edward A. Frieman, Director

CONTENTS

INTRODUCTION

The data in this report were collected during Cruises 8901*, and 8904 of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the RV *David Starr Jordan* of the National Marine Fisheries Service (NMFS). 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 the National Marine Fisheries Service Southwest Fisheries Center, the California Department of Fish and Game, and the Marine Life Research Group (MLRG) of the Scripps Institution of Oceanography. MLRG contributes to this program by investigations of the physical, chemical, and biological structure of the California Current. Data from CalCOFI Cruises 8901 and 8904 were collected and processed by personnel of the Marine Life Research Group and the Southwest Fisheries Center, National Marine Fisheries Service. Volunteers and other SIO staff members also assisted in the collection of data and chemical analyses at sea.

STANDARD PROCEDURES

Hydrographic Cast Data

The hydrographic casts usually consisted of 20 3-1 plastic (PVC) bottles lowered to a maximum sampling depth of 525 meters, bottom depth permitting. Temperature, salinity, oxygen and nutrients were determined for all depths sampled. Chlorophyll-a and phaeopigments were usually determined from the top 14 depths. Productivity casts were merged with 200 meter hydrographic casts at a few non-standard CalCOFI sampling locations. Special near-bottom casts were done in the Santa Monica and Santa Barbara Basins.

Paired protected reversing thermometers were used to determine temperatures which are recorded to hundredths of a degree Celsius. 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 Wormley Standard Seawater batch P-103 on 8901 and batch P-108 on 8904. Salinity values have been calculated from the algorithms for the Practical Salinity Scale, 1978 (PSS78, UNESCO, 1981a) and were reported to three decimal places, provided 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). Due to equipment failure nitrate, nitrite and silicate could not be analyzed on some stations on Cruise 8904.

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

The observed data have been evaluated using the methodology described by Klein (1973). This involves consideration of their variation as functions of density or depth and their relations to each other, and comparisons with adjacent observations.

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

Primary Productivity Casts

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). Six depths, corresponding to predetermined levels of light penetration, were sampled with 5-1 Niskin bottles. Temperature, salinity, oxygen, nutrients, chlorophyll-a, and phaeopigments were determined for all depths sampled. Triplicate samples (two light and one dark control) were drawn from each depth into 250-ml polycarbonate incubation bottles which were innoculated with approximately 10 uCi of C as $NaHCO_3$. These were incubated from local apparent noon to civil twilight in seawater-cooled incubators with neutral-density screens which simulate the *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.

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.

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 (EOS80, 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 Productivity Casts

In addition to the normal hydrographic data, the tabulated data include: the light levels at which the samples were incubated, 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 shown are the total for the incubation period. Also shown are the times of local apparent noon (LAN), civil twilight, and the vertically integrated value of the mean uptake from the surface to the deepest sample, assuming that the shallowest measured value extends 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.

Secchi Disk Observations

Secchi disk observations were made on most daylight stations. The times are given in local PST (+8) time. Weather codes, cloud observations, and Forel water color are also presented.

Macrozooplankton Data

Macrozooplankton biomass volumes are tabulated as total biomass volume (cm/1000 m strained) and as the total volume minus the volume of larger organisms under the heading "Small."

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.

P: After depth values indicates the bottle posttripped.

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

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FIGURES

Cruise 8901

1. CalCOFI Cruise 8901 track and station positions.

2. Horizontal distribution of chlorophyll-a at 10 meters.

3. 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).

4. Horizontal distribution of sigma-theta at 10 meters.

5. Horizontal distribution of temperature at 10 meters.

6. Horizontal distribution of salinity at 10 meters.

7. Horizontal distribution of dynamic height anomaly (200 over 500 m).

8. Horizontal distribution of sigma-theta at 200 meters.

9. Horizontal distribution of temperature at 200 meters.

10. Horizontal distribution of salinity at 200 meters.

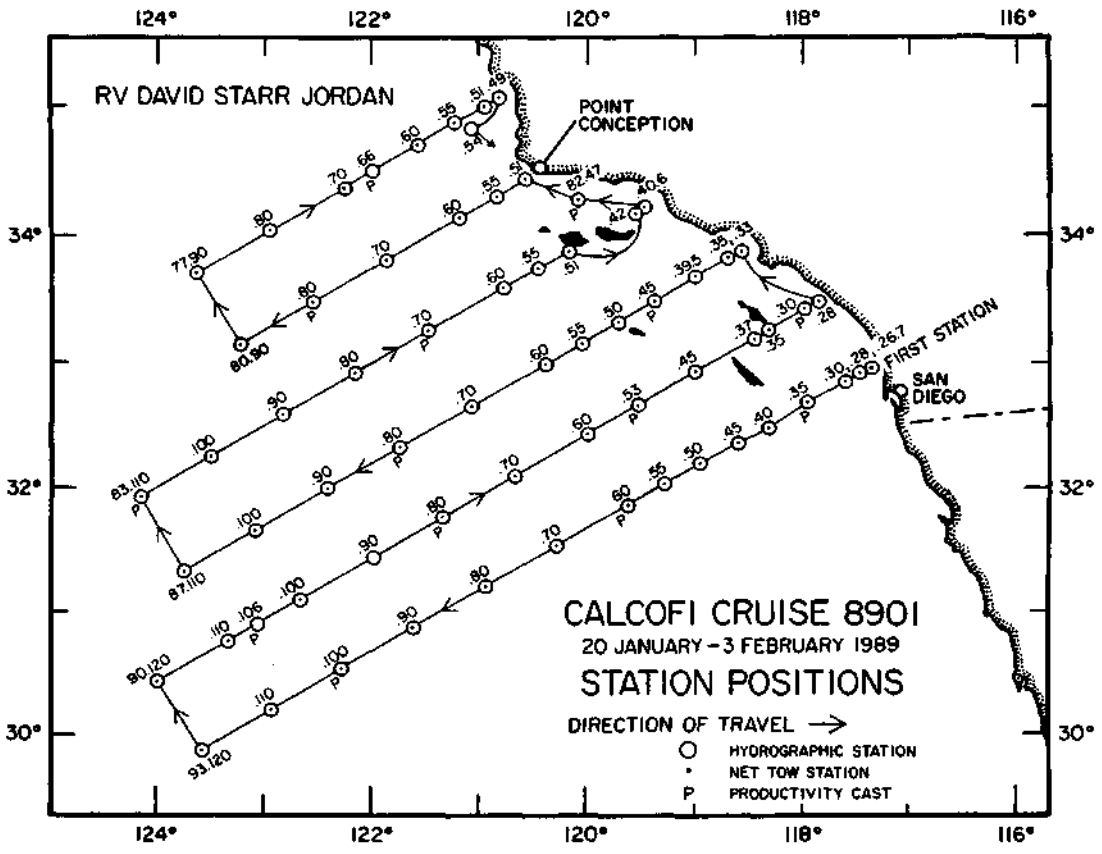
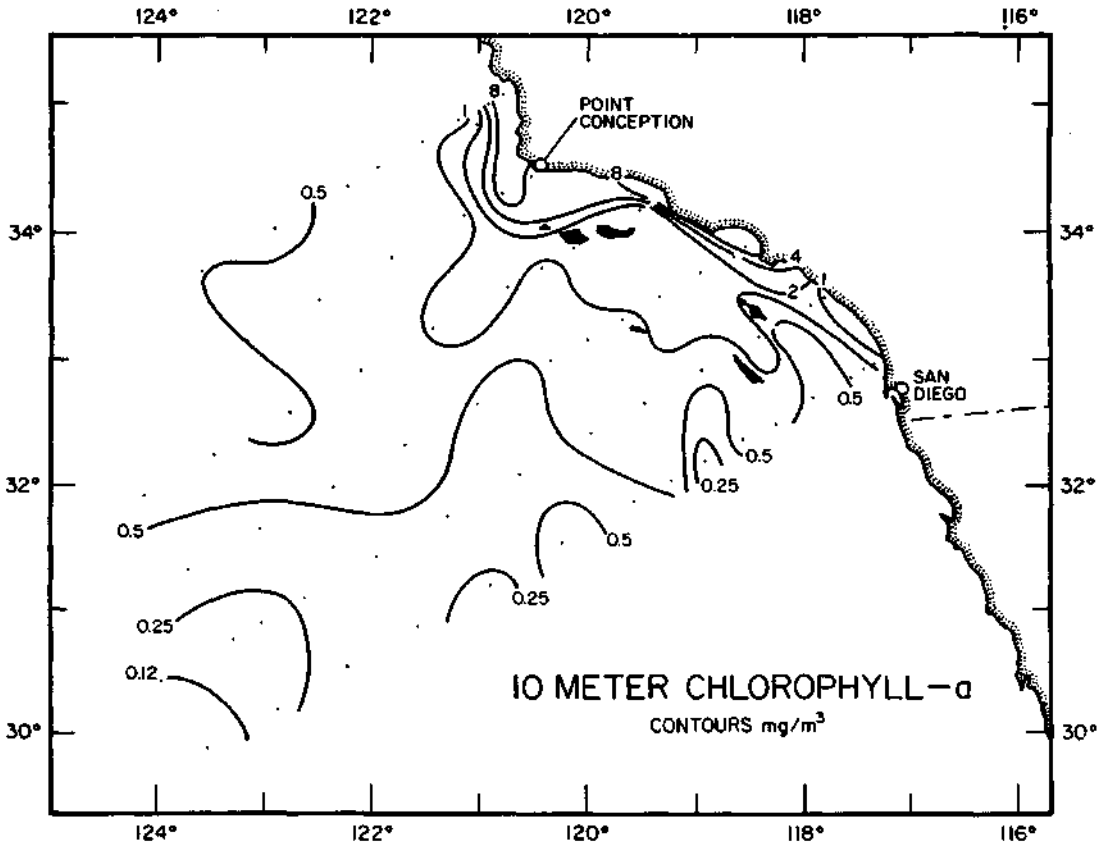


FIGURE 1



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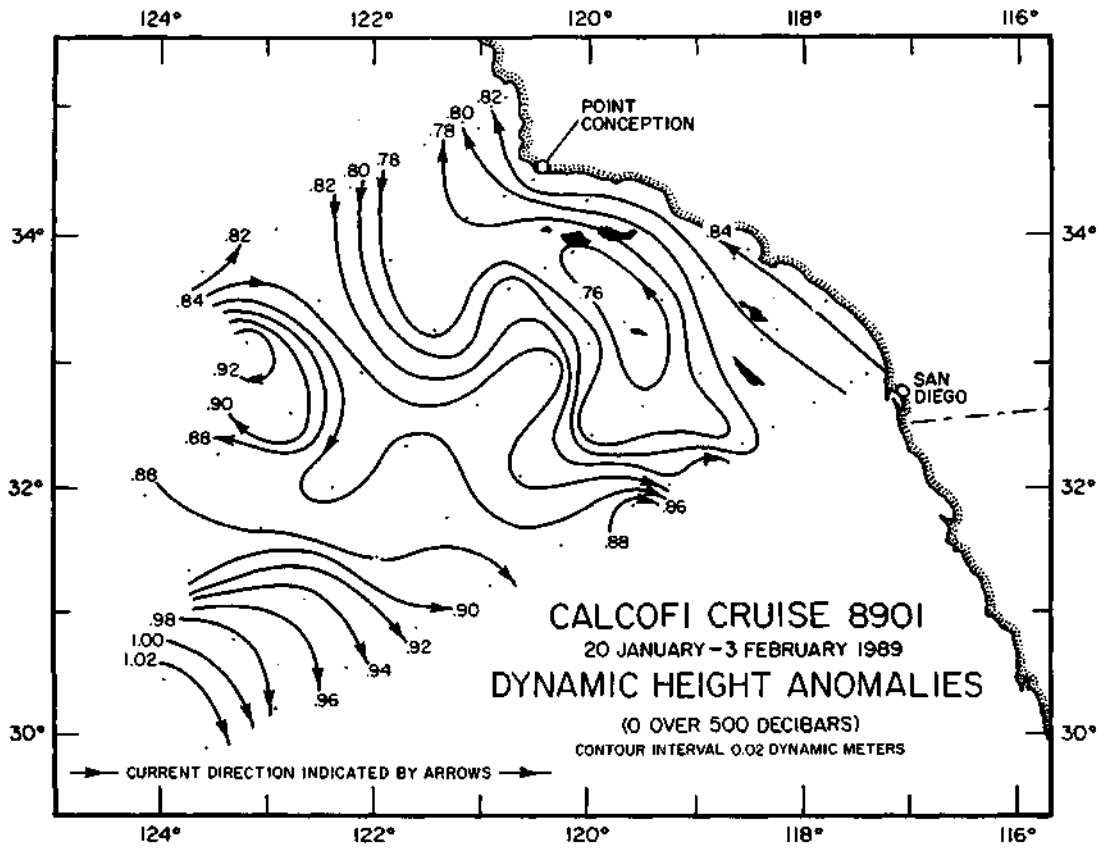

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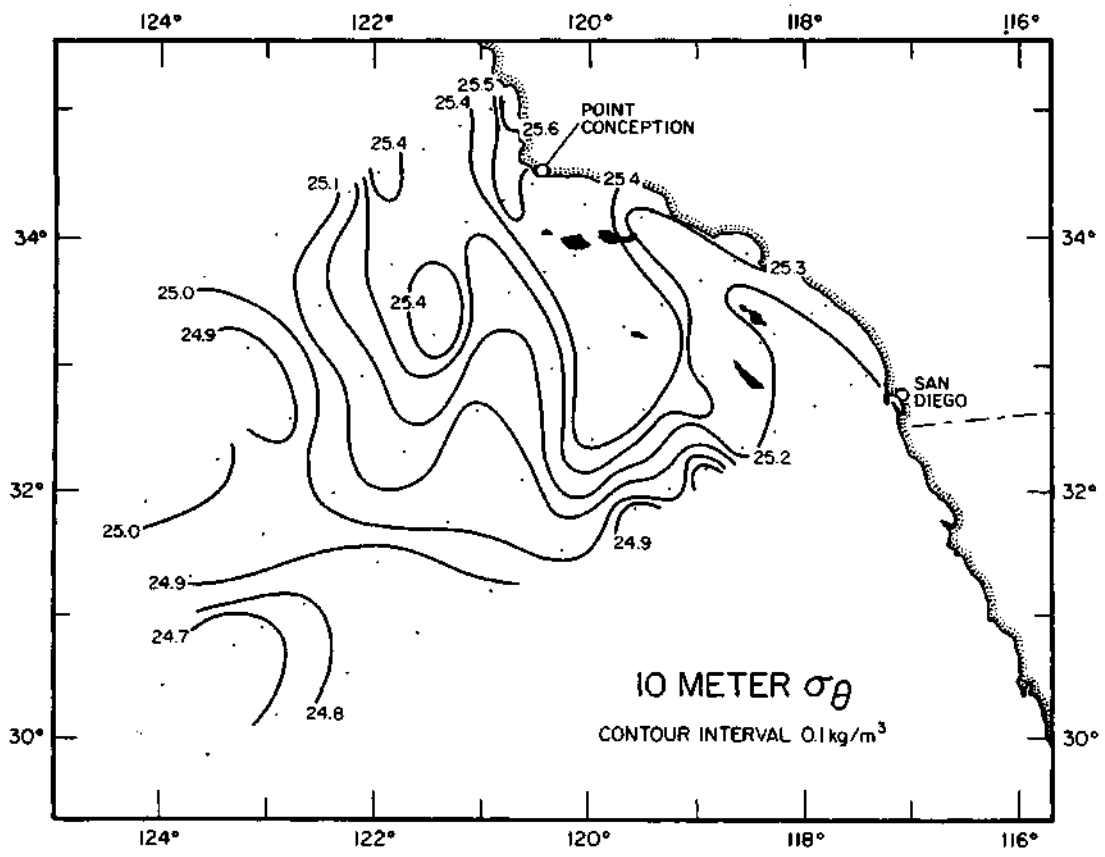

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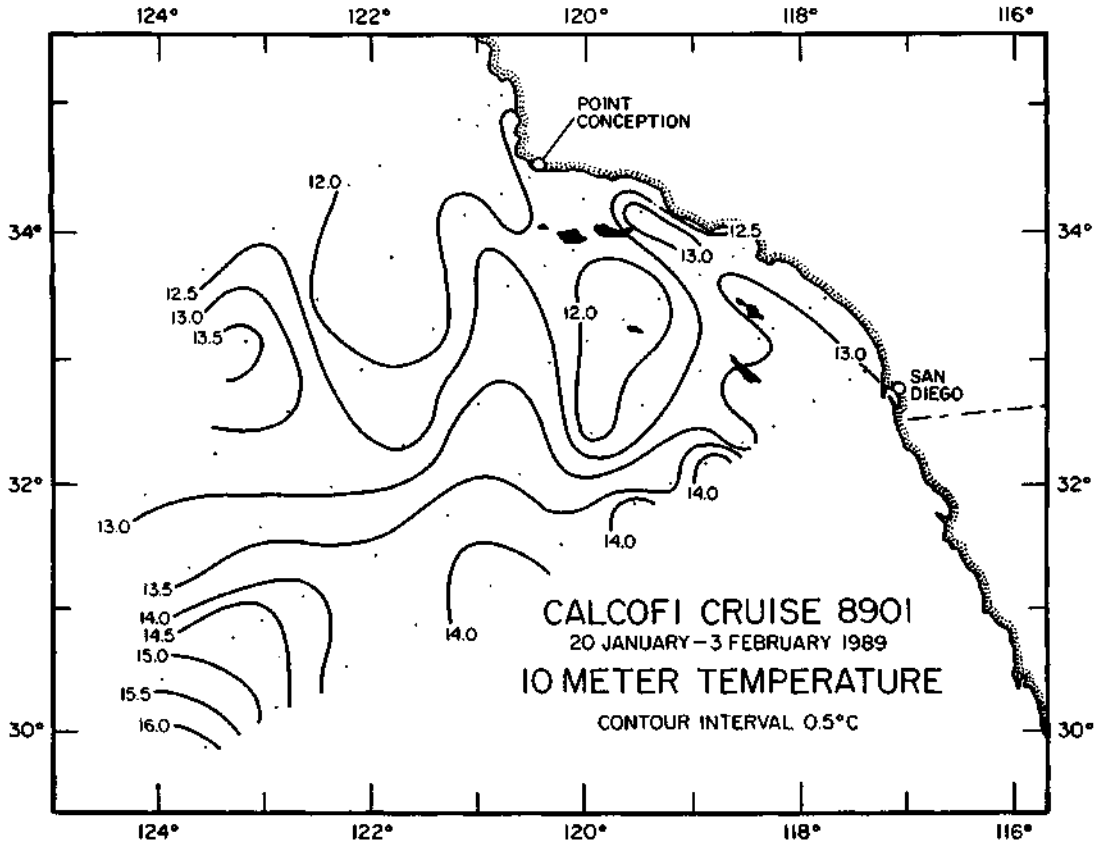

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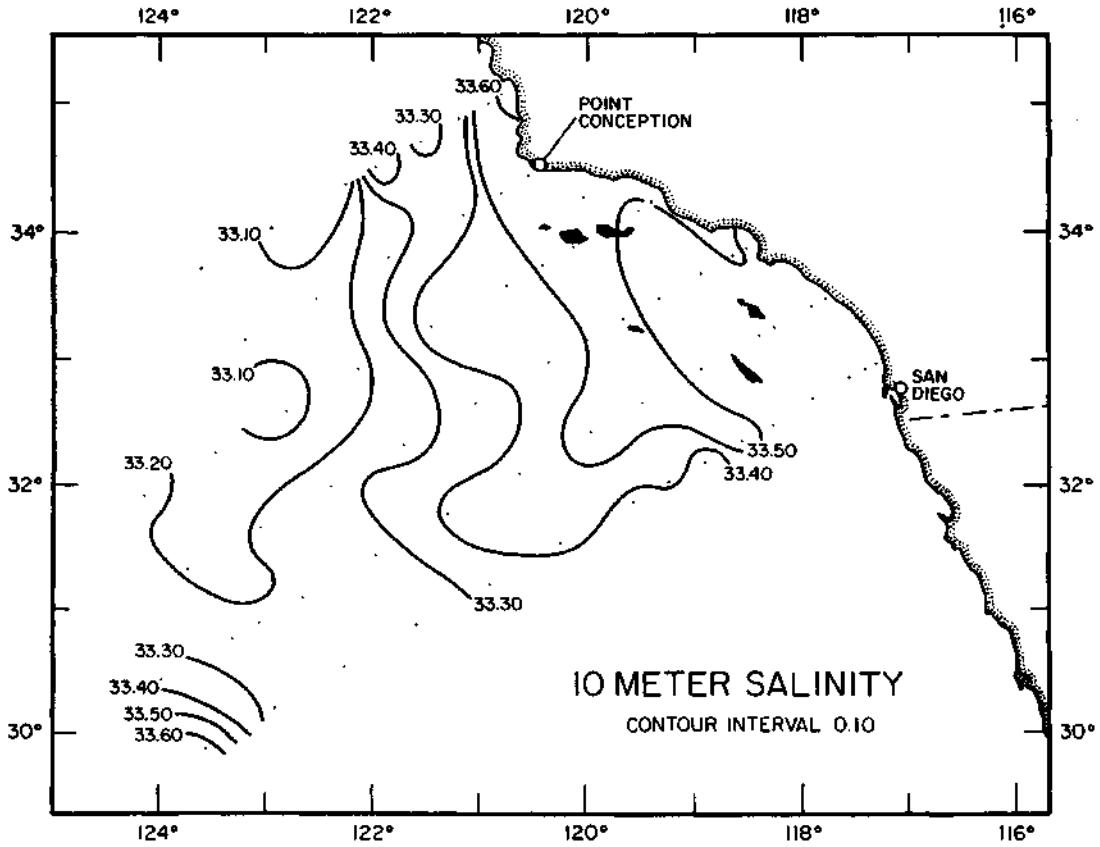

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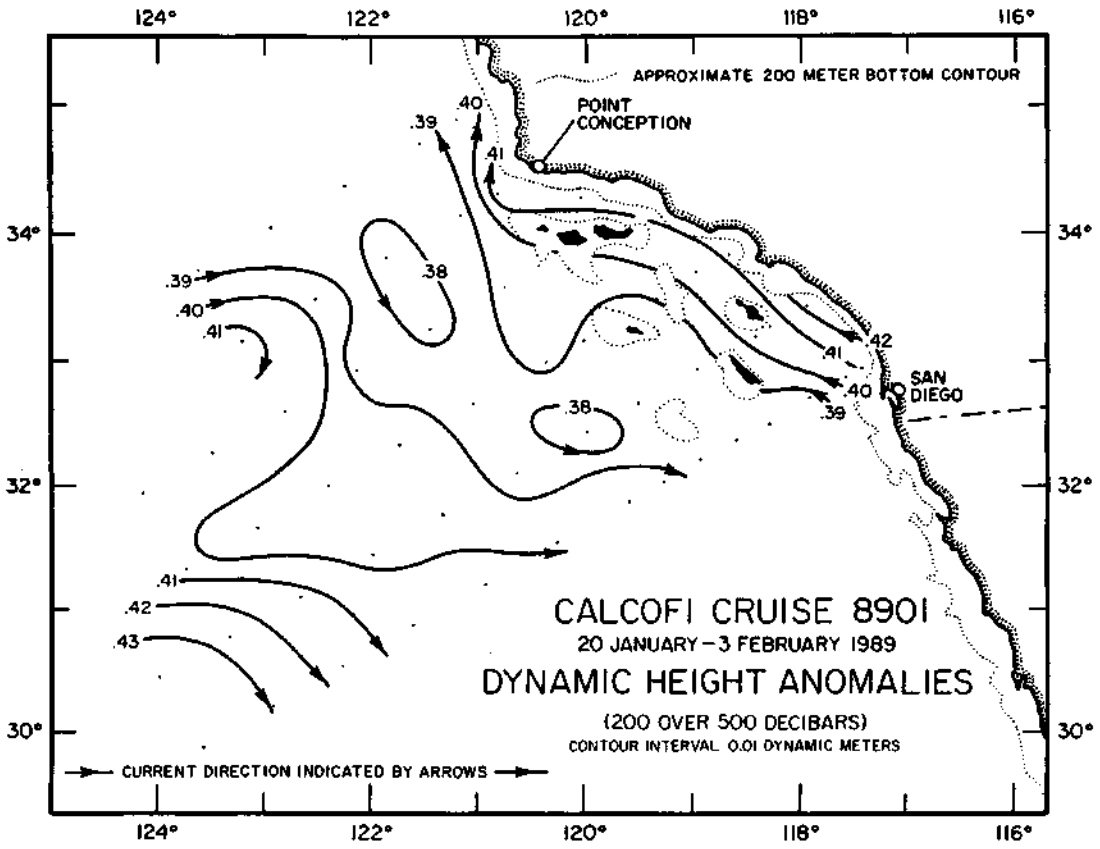

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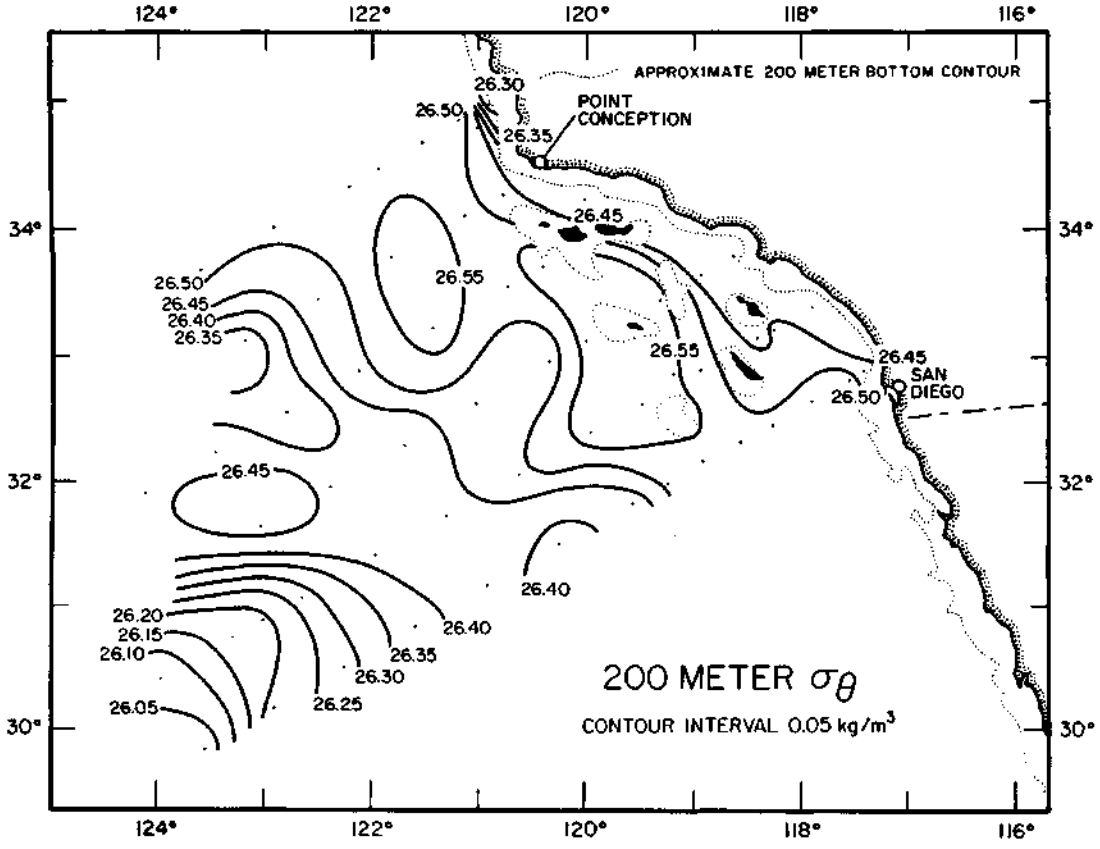

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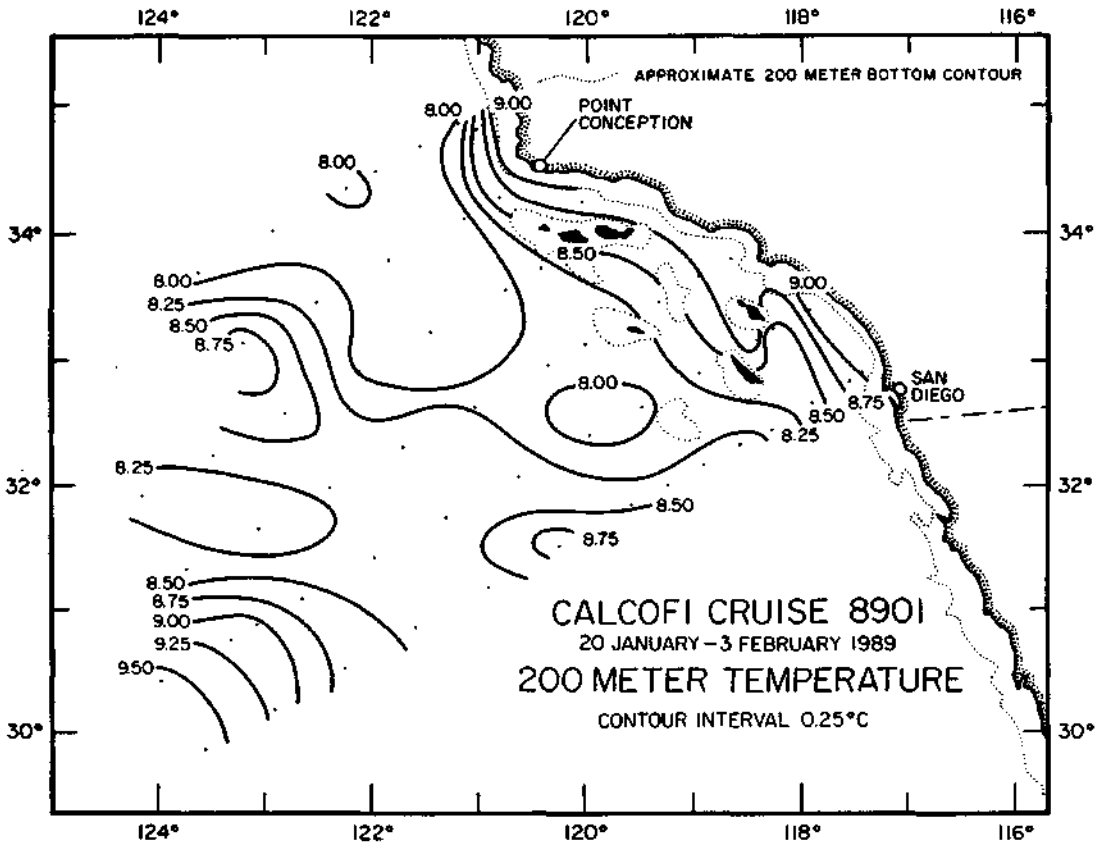

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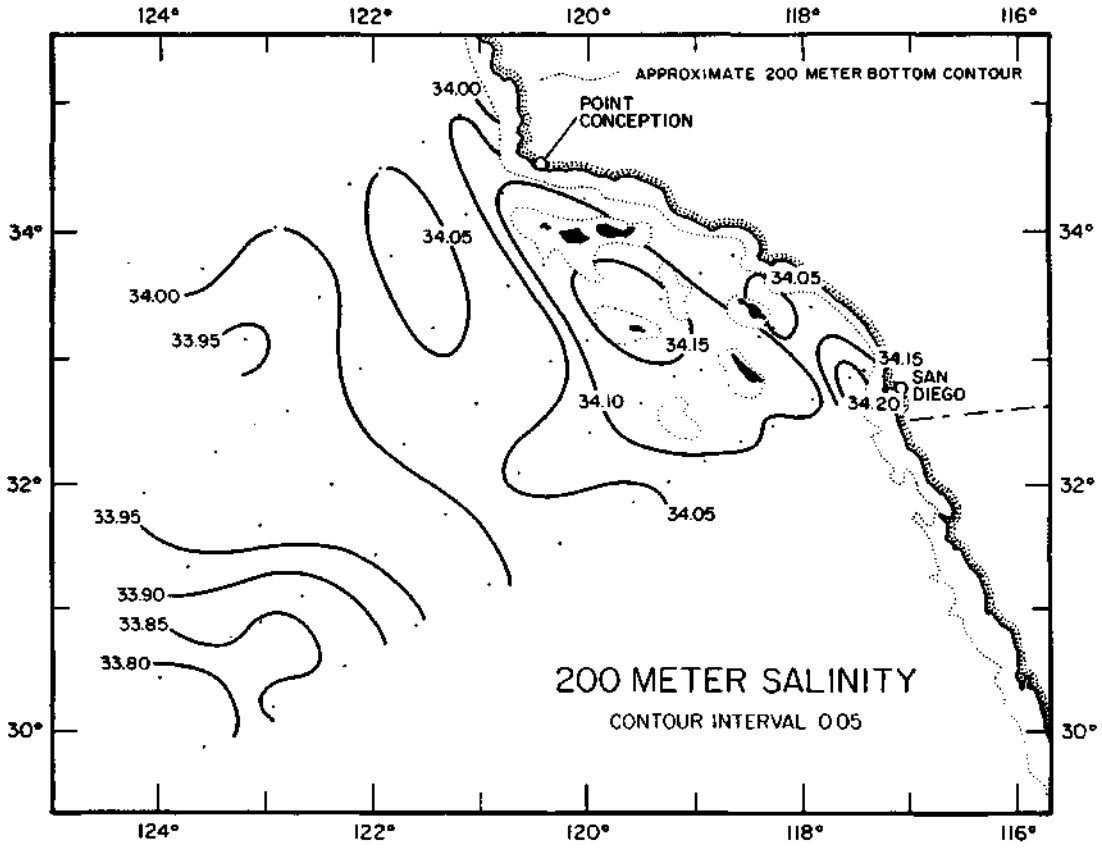

FIGURE 10

PERSONNEL

CalCOFI Cruise 8901

SHIP'S CAPTAIN

Wayne E. Ellis, RV *David Starr Jordan*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participation (Leg)
Flerx, William C. (in charge)	Fishery Biologist, NMFS	I, II
Abramenkoff, Dimitry N.	Fishery Biologist, NMFS	I, II
Anderson, George C.	Staff Research Associate, SIO	I, II
Charter, Richard L.	Computer Specialist, NMFS	I
Costello, James P.	Staff Research Associate, SIO	I, II
Cynar, Skip J.	Graduate Student, SIO	I
Gruber, Dennis W.	Marine Technician, SIO	II
Hays, Amy E.	Biological Technician, NMFS	I
Lee, Tongsup	Graduate Student, SIO	II
Lowell, William R.	Staff Research Associate, SIO	I, II
Meyer, Cindy A.	Computer Programmer, NMFS	I, II
Miller, Susan M.	Biological Technician, NMFS	I, II
Mullin, Michael M.	Professor, Director of MLRG, SIO	I, II
Russell, Robert W.	Graduate Student, UCI	I, II
Stowe, Kirk	Student, UCI	I

Leg I: San Diego to Dana Point, CA, 20-26 January 1989

Leg II: Dana Point to San Diego, CA, 26 January - 3 February 1989

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
35 5.3 N	120 46.6 W	03/02/89	0829 UTC	64 M	290	05 KT			1021.5 MB	11.0 C	8.4 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 D.BAR
1	0	11.52	11.52	33.642	25.624	235.4	0.000	6.94	112.6	3.8	0.45	2.4	0.11	7.84	1.74	0
1	9	11.54	11.54	33.641	25.620	236.0	0.021	6.96	112.9	4.1	0.46	2.4	0.10	8.50	1.86	9
	10 ISL	11.54	11.54	33.642	25.621	236.0	0.024	6.96	112.9	4.1	0.46	2.4	0.10	8.48	1.88	10
1	19	11.51	11.51	33.640	25.625	235.8	0.045	6.92	112.2	4.2	0.45	2.5	0.11	8.28	2.02	19
	20 ISL	11.50	11.50	33.640	25.627	235.6	0.047	6.87	111.4	4.3	0.47	2.7	0.11	8.36	2.04	20
1	28	11.43	11.43	33.640	25.640	234.6	0.066	6.45	104.4	5.3	0.64	4.2	0.13	8.78	2.11	28
	30 ISL	11.42	11.42	33.641	25.643	234.4	0.071	6.41	103.7	5.4	0.65	4.4	0.13	8.66	2.08	30
1	38	11.37	11.37	33.645	25.655	233.4	0.089	6.22	100.5	6.3	0.68	5.3	0.16	7.62	1.90	38
1	49	11.23	11.22	33.658	25.691	230.2	0.115	5.38	86.7	10.4	0.95	8.8	0.23	5.23	1.73	49
	50 ISL	11.21	11.20	33.659	25.695	229.8	0.117	5.31	85.5	11.0	0.99	9.1	0.24	5.32	2.03	50
1	59	11.07	11.06	33.672	25.731	226.7	0.138	4.63	74.4	15.9	1.34	11.3	0.28	6.11	4.71	59

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
35 1.3 N	120 55.1 W	03/02/89	0602 UTC	231 M	270	06 KT			1022.0 MB	10.8 C	8.7 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 D.BAR
	0 ISL	12.10	12.10	33.567	25.458	251.2	0.000	6.66	109.3	3.9	0.36	1.7	0.07	9.12	0.92	0
1	1	12.10	12.10	33.567	25.458	251.2	0.003	6.66	109.3	3.9	0.36	1.7	0.07	9.12	0.92	1
1	10	11.99	11.99	33.567	25.479	249.5	0.025	6.56	107.4	4.3	0.46	2.4	0.09	9.12	1.51	10
1	20	11.81	11.81	33.596	25.535	244.3	0.050	6.90	112.6	3.8	0.36	2.1	0.12	10.34	1.53	20
1	30	11.63	11.63	33.603	25.574	240.9	0.074	6.14	99.8	5.4	0.55	4.7	0.17	9.95	1.99	30
1	40	11.49	11.48	33.615	25.610	237.8	0.098	5.47	88.6	8.7	0.84	7.5	0.24	4.55	1.44	40
1	50	11.30	11.29	33.637	25.662	233.0	0.121	4.79	77.3	12.2	1.19	11.2	0.30	1.69	1.24	50
1	60	11.11	11.10	33.658	25.713	228.4	0.145	4.28	68.8	14.9	1.33	13.7	0.34	0.74	1.00	60
1	70	10.89	10.88	33.699	25.784	221.8	0.167	3.77	60.3	18.2	1.52	16.9	0.32	0.37	0.68	71
	75 ISL	10.82	10.81	33.714	25.808	219.6	0.178	3.61	57.7	19.0	1.57	17.8	0.27	0.30	0.57	76
1	84	10.69	10.68	33.746	25.856	215.3	0.198	3.38	53.9	20.4	1.64	19.1	0.17	0.24	0.43	85
	100 ISL	10.16	10.15	33.850	26.029	199.1	0.231	2.91	45.9	25.5	1.85	22.2	0.15	0.12	0.43	101
1	104	10.03	10.02	33.876	26.072	195.2	0.239	2.81	44.2	26.8	1.90	22.9	0.14	0.10	0.43	105
1	124	9.80	9.79	33.917	26.143	188.8	0.277	2.62	41.0	29.2	1.89	23.9	0.17	0.10	0.59	125
	125 ISL	9.79	9.78	33.919	26.146	188.5	0.279	2.61	40.8	29.3	1.90	24.0	0.17	0.10	0.58	126
1	144	9.63	9.61	33.946	26.194	184.4	0.314	2.50	39.0	30.8	2.02	25.0	0.16	0.08	0.39	145
	150 ISL	9.58	9.56	33.954	26.208	183.1	0.325	2.47	38.5	31.2	2.04	25.2	0.14	0.07	0.38	151
1	173	9.45	9.43	33.978	26.249	179.7	0.367	2.40	37.3	32.2	2.09	25.8	0.08	0.06	0.35	174
	200 ISL	9.43	9.41	33.985	26.258	179.4	0.416	2.34	36.3	32.9	2.10	26.0	0.11	0.07	0.36	202
1	206	9.42	9.40	33.986	26.261	179.2	0.426	2.33	36.2	33.1	2.10	26.0	0.12	0.07	0.36	208

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 77 54

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 50.9 N	121 1.8 W	03/02/89	1247 UTC	476 M	200	07 KT			1020.4 MB	11.0 C	9.5 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 D.BAR
1	0	11.79	11.79	33.505	25.468	250.3	0.000	6.32	103.0	8.3	0.76	5.7	0.20	1.36	0.46	0
1	9	11.71	11.71	33.508	25.485	248.8	0.022	6.32	102.8	8.5	0.76	5.7	0.20	1.35	0.44	9
	10 ISL	11.71	11.71	33.513	25.489	248.5	0.025	6.32	102.8	8.5	0.76	5.7	0.20	1.30	0.45	10
1	19	11.68	11.68	33.554	25.527	245.1	0.047	6.29	102.3	8.3	0.79	6.0	0.18	0.83	0.49	19
	20 ISL	11.67	11.67	33.555	25.529	244.9	0.050	6.27	102.0	8.3	0.80	6.1	0.18	0.84	0.51	20
1	29	11.54	11.54	33.560	25.558	242.4	0.072	6.03	97.8	8.7	0.89	7.3	0.21	0.88	0.72	29
	30 ISL	11.52	11.52	33.564	25.564	241.8	0.074	6.00	97.3	8.9	0.90	7.5	0.21	0.87	0.74	30
1	39	11.32	11.32	33.598	25.628	236.0	0.095	5.74	92.7	10.6	1.02	9.3	0.23	0.74	0.89	39
1	49	11.24	11.23	33.611	25.652	233.9	0.119	5.61	90.4	11.1	1.07	9.9	0.23	0.66	1.02	49
	50 ISL	11.24	11.23	33.611	25.652	233.9	0.121	5.61	90.4	11.1	1.07	9.9	0.23	0.66	0.99	50
1	59	11.22	11.21	33.610	25.656	233.8	0.142	5.60	90.2	11.2	1.07	10.0	0.23	0.65	0.73	59
1	69	11.20	11.19	33.614	25.662	233.4	0.166	5.51	88.7	11.9	1.11	10.5	0.23	0.53	0.77	70
	75 ISL	11.07	11.06	33.625	25.694	230.5	0.180	5.24	84.1	13.4	1.20	12.0	0.26	0.50	0.72	76
1	83	10.78	10.77	33.651	25.766	223.8	0.198	4.72	75.3	16.3	1.36	14.9	0.28	0.44	0.61	84
1	98	9.85	9.84	33.740	25.995	202.2	0.230	3.46	54.1	23.7	1.75	21.8	0.05	0.11	0.35	99
	100 ISL	9.78	9.77	33.755	26.019	200.0	0.234	3.37	52.6	24.4	1.78	22.3	0.05	0.11	0.33	101
1	118	9.38	9.37	33.884	26.186	184.5	0.268	2.89	44.8	29.1	1.95	24.8	0.02	0.07	0.25	119
	125 ISL	9.27	9.26	33.916	26.229	180.5	0.281	2.77	42.8	30.2	1.99	25.4	0.02	0.06	0.25	126
1	138	9.09	9.08	33.959	26.291	174.8	0.304	2.64	40.7	31.8	2.05	26.2	0.02	0.05	0.24	139
	150 ISL	8.85	8.83	33.979	26.345	169.9	0.325	2.62	40.1	33.4	2.08	27.0	0.02	0.05	0.22	151
1	168	8.51	8.49	33.996	26.411	163.8	0.355	2.59	39.4	35.5	2.11	28.0	0.01	0.05	0.18	169
1	199	8.28	8.26	34.029	26.473	158.5	0.405	2.47	37.4	38.5	2.19	28.7	0.01	0.03	0.12	201
	200 ISL	8.27	8.25	34.030	26.475	158.3	0.407	2.47	37.4	38.6	2.19	28.7	0.01			202
1	233	7.84	7.82	34.057	26.560	150.6	0.457	2.34	35.1	43.6	2.29	30.1	0.01			235
	250 ISL	7.60	7.58	34.065	26.602	146.9	0.483	2.19	32.6	46.8	2.36	31.1	0.01			252
1	283	7.19	7.16	34.083	26.674	140.4	0.530	1.83	27.0	53.0	2.52	33.2	0.00			285
	300 ISL	7.08	7.05	34.099	26.702	137.9	0.554	1.65	24.3	55.3	2.59	34.0	0.00			302
1	331	6.93	6.90	34.127	26.745	134.3	0.596	1.34	19.7	59.3	2.72	35.2	0.00			334
1	390	6.44	6.40	34.159	26.836	126.2	0.673	0.91	13.2	68.0	2.91	37.7	0.00			393
	400 ISL	6.37	6.33	34.161	26.847	125.2	0.685	0.88	12.7	68.2	2.91	37.7	0.00			403
1	428	6.23	6.19	34.174	26.876	122.8	0.720	0.81	11.7	68.7	2.91	37.7	0.00			432
1	460	6.20	6.16	34.220	26.916	119.4	0.759	0.60	8.7	76.7	3.07	38.5	0.02			464

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 53.5 N	121 11.8 W	03/02/89	0245 UTC	574 M	290	10 KT			1021.1 MB	10.4 C	7.8 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 D.BAR
	0	ISL	11.77	11.77	33.355	25.355	261.0	0.000	6.33	103.0	7.5	0.73	4.6	0.14	0.70	0.34	0
1	3		11.77	11.77	33.355	25.355	261.0	0.008	6.33	103.0	7.5	0.73	4.6	0.14	0.70	0.34	3
	10	ISL	11.76	11.76	33.354	25.356	261.1	0.026	6.34	103.2	7.4	0.73	4.6	0.14	0.71	0.28	10
1	13		11.75	11.75	33.352	25.357	261.1	0.034	6.34	103.1	7.4	0.73	4.6	0.14	0.71	0.27	13
	20	ISL	11.72	11.72	33.353	25.363	260.7	0.052	6.32	102.7	7.5	0.72	4.7	0.14	0.84	0.41	20
1	23		11.70	11.70	33.351	25.365	260.6	0.060	6.31	102.5	7.5	0.72	4.7	0.14	0.86	0.46	23
	30	ISL	11.58	11.58	33.404	25.429	254.7	0.078	6.00	97.3	8.8	0.86	6.7	0.32	0.53	0.37	30
1	33		11.53	11.53	33.430	25.458	251.9	0.086	5.86	94.9	9.4	0.92	7.6	0.41	0.37	0.32	33
1	43		11.45	11.44	33.468	25.503	248.0	0.111	5.72	92.5	10.0	0.99	8.7	0.58	0.24	0.40	43
	50	ISL	11.30	11.29	33.514	25.566	242.1	0.128	5.51	88.9	11.5	1.09	10.4	0.51	0.18	0.25	50
2	52		11.24	11.23	33.525	25.586	240.3	0.133	5.42	87.3	12.0	1.13	11.0	0.49	0.17	0.21	52
2	61		10.78	10.77	33.532	25.673	232.1	0.154	4.82	76.9	14.5	1.31	14.3	0.19	0.08	0.26	61
2	71		10.56	10.55	33.614	25.776	222.6	0.177	4.25	67.5	17.5	1.46	17.2	0.08	0.06	0.19	72
	75	ISL	10.32	10.31	33.653	25.848	215.8	0.185	3.95	62.4	19.5	1.57	18.9	0.05	0.05	0.16	76
2	85		9.72	9.71	33.743	26.019	199.7	0.206	3.31	51.6	24.3	1.82	22.7	0.02	0.03	0.12	86
2	99		9.54	9.53	33.794	26.089	193.3	0.234	3.12	48.5	26.2	1.90	23.9	0.01	0.03	0.13	100
	100	ISL	9.52	9.51	33.798	26.095	192.7	0.236	3.11	48.3	26.4	1.90	24.0	0.01	0.03	0.13	101
2	119		9.08	9.07	33.880	26.231	180.2	0.271	2.89	44.5	30.0	1.98	25.7	0.00	0.01	0.10	120
	125	ISL	8.96	8.95	33.904	26.269	176.7	0.282	2.84	43.6	31.0	2.01	26.1	0.00	0.01	0.09	126
2	144		8.63	8.61	33.968	26.371	167.3	0.314	2.72	41.5	34.1	2.10	27.2	0.00	0.00	0.08	145
	150	ISL	8.54	8.52	33.982	26.396	165.0	0.324	2.68	40.8	35.0	2.12	27.5	0.00	0.00	0.07	151
2	173		8.23	8.21	34.022	26.474	157.9	0.362	2.53	38.2	38.4	2.20	28.8	0.01	0.00	0.06	174
	200	ISL	7.94	7.92	34.058	26.546	151.4	0.403	2.27	34.1	42.2	2.33	30.2	0.00	0.00	0.06	202
2	203		7.91	7.89	34.061	26.553	150.8	0.408	2.24	33.6	42.6	2.34	30.3	0.00	0.00	0.06	205
2	231		7.71	7.69	34.077	26.595	147.3	0.450	2.05	30.6	45.3	2.42	31.4	0.00			233
	250	ISL	7.59	7.57	34.086	26.620	145.2	0.477	1.95	29.0	47.0	2.47	31.9	0.00			252
2	271		7.45	7.42	34.096	26.648	142.8	0.508	1.83	27.2	49.3	2.53	32.5	0.00			273
	300	ISL	7.18	7.15	34.115	26.701	138.1	0.548	1.54	22.7	54.3	2.65	34.1	0.00			303
2	325		6.95	6.92	34.134	26.748	133.9	0.582	1.29	18.9	58.9	2.76	35.5	0.00			328
2	383		6.68	6.64	34.170	26.813	128.4	0.658	0.95	13.9	65.9	2.92	37.0	0.00			386
	400	ISL	6.58	6.54	34.177	26.832	126.8	0.680	0.87	12.7	67.8	2.96	37.5	0.00			403
2	447		6.29	6.25	34.201	26.890	121.8	0.738	0.68	9.8	73.4	3.05	38.7	0.00			451
	500	ISL	6.04	6.00	34.253	26.963	115.4	0.801	0.48	6.9	81.1	3.15	39.4	0.00			504
2	512		5.98	5.94	34.265	26.980	113.9	0.815	0.44	6.3	82.8	3.17	39.6	0.00			517

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LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 43.3 N	121 32.9 W	02/02/89	2243 UTC	926 M	320	09 KT	340 05 09	1	1020.9 MB	11.2 C	8.3 C	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 D.BAR
	0	ISL	11.62	11.62	33.280	25.325	263.9	0.000	6.36	103.1	3.5	0.67	4.6	0.13	1.09	0.24	0
1	1		11.62	11.62	33.280	25.325	263.9	0.003	6.36	103.1	3.5	0.67	4.6	0.13	1.09	0.24	1
1	10		11.60	11.60	33.290	25.336	263.0	0.026	6.37	103.3	3.7	0.73	4.8	0.14	0.95	0.24	10
1	19		11.39	11.39	33.410	25.468	250.7	0.049	6.12	98.8	6.0	0.88	7.4	0.21	0.73	0.30	19
	20	ISL	11.35	11.35	33.413	25.478	249.8	0.052	6.08	98.1	6.2	0.89	7.6	0.22	0.70	0.30	20
1	30		10.87	10.87	33.429	25.576	240.6	0.076	5.59	89.3	8.5	1.05	10.3	0.28	0.44	0.30	30
1	40		10.48	10.48	33.501	25.701	229.0	0.100	4.82	76.4	13.1	1.31	15.1	0.16	0.15	0.18	40
1	50		9.94	9.93	33.558	25.837	216.2	0.122	4.20	65.8	17.3	1.52	18.9	0.03	0.07	0.14	50
1	60		9.86	9.85	33.665	25.935	207.2	0.143	3.57	55.8	20.8	1.72	21.7	0.02	0.03	0.12	60
1	70		9.55	9.54	33.734	26.040	197.4	0.164	3.34	51.9	23.8	1.87	23.7	0.01	0.02	0.11	71
	75	ISL	9.40	9.39	33.753	26.079	193.7	0.173	3.28	50.8	24.8	1.90	24.3	0.01	0.02	0.10	76
1	84		9.17	9.16	33.779	26.137	188.4	0.191	3.22	49.6	26.3	1.93	24.9	0.00	0.01	0.08	85
1	100		9.03	9.02	33.849	26.214	181.4	0.220	3.11	47.8	28.5	1.97	25.5	0.00	0.00	0.12	101
1	120		8.90	8.89	33.923	26.293	174.2	0.256	2.85	43.7	31.6	2.08	26.8	0.00	0.00	0.11	121
	125	ISL	8.85	8.84	33.934	26.309	172.8	0.264	2.82	43.2	32.0	2.09	27.0	0.00	0.00	0.10	126
1	144		8.64	8.62	33.966	26.367	167.6	0.297	2.76	42.1	33.5	2.10	27.7	0.00	0.00	0.07	145
	150	ISL	8.55	8.53	33.978	26.391	165.5	0.307	2.73	41.5	34.4	2.12	28.0	0.00	0.00	0.06	151
1	174		8.21	8.19	34.023	26.478	157.5	0.345	2.59	39.1	38.4	2.22	29.1	0.00	0.00	0.05	175
	200	ISL	7.95	7.93	34.047	26.536	152.4	0.386	2.45	36.8	41.8	2.31	30.2	0.01	0.00	0.04	202
1	205		7.90	7.88	34.050	26.546	151.6	0.393	2.41	36.1	42.6	2.33	30.5	0.01	0.00	0.04	207
1	234		7.47	7.45	34.085	26.636	143.3	0.436	1.96	29.1	49.9	2.52	32.9	0.00			236
	250	ISL	7.29	7.27	34.095	26.669	140.3	0.459	1.78	26.3	53.2	2.60	33.9	0.00			252
1	273		7.07	7.04	34.106	26.709	136.9	0.491	1.58	23.3	57.2	2.70	35.0	0.00			275
	300	ISL	6.87	6.84	34.121	26.748	133.4	0.527	1.36	19.9	61.3	2.80	36.2	0.00			302
1	328		6.67	6.64	34.135	26.786	130.1	0.564	1.16	16.9	64.9	2.90	37.3	0.00			331
1	386		6.15	6.12	34.163	26.877	122.0	0.637	0.82	11.8	71.4	3.07	39.5	0.00			389
	400	ISL	6.05	6.02	34.170	26.895	120.4	0.654	0.76	10.9	73.8	3.10	39.9	0.00			403
1	447		5.77	5.73	34.198	26.953	115.3	0.710	0.58	8.3	81.4	3.18	41.0	0.00			451
	500	ISL	5.63	5.59	34.249	27.011	110.4	0.769	0.43	6.1	85.9	3.26	41.7	0.00			504
1	512		5.60	5.56	34.260	27.023	109.4	0.783	0.39	5.5	86.9	3.28	41.9	0.00			517

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 23.3 N	122 14.6 W	02/02/89	1601 UTC	4114 M	300	14 KT	320 04 08	1	1020.0 MB	11.6 C	9.3 C	7/8	SC

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 D.BAR
	0 ISL	11.91	11.91	33.094	25.126	282.7	0.000	6.28	102.3	4.3	0.55	2.1	0.07	0.65	0.24	0
1	1	11.91	11.91	33.094	25.126	282.8	0.003	6.28	102.3	4.3	0.55	2.1	0.07	0.65	0.24	1
	10 ISL	11.90	11.90	33.093	25.128	282.9	0.028	6.29	102.5	4.1	0.56	2.1	0.07	0.65	0.22	10
1	16	11.90	11.90	33.092	25.127	283.1	0.045	6.30	102.6	4.0	0.57	2.1	0.07	0.65	0.21	16
	20 ISL	11.87	11.87	33.098	25.137	282.2	0.057	6.27	102.1	4.1	0.58	2.3	0.08	0.62	0.21	20
	30 ISL	11.80	11.80	33.114	25.163	280.0	0.085	6.19	100.6	4.6	0.62	3.1	0.11	0.49	0.21	30
1	32	11.78	11.78	33.117	25.169	279.4	0.090	6.17	100.3	4.8	0.63	3.4	0.12	0.46	0.21	32
1	42	11.49	11.48	33.222	25.304	266.8	0.118	6.14	99.2	5.9	0.75	5.2	0.20	0.26	0.20	42
	50 ISL	11.23	11.22	33.219	25.349	262.7	0.139	5.82	93.5	7.2	0.86	7.1	0.19	0.20	0.17	50
1	51	11.20	11.19	33.217	25.353	262.4	0.141	5.77	92.7	7.4	0.87	7.4	0.19	0.20	0.17	51
1	60	10.84	10.83	33.267	25.456	252.7	0.165	5.22	83.2	9.5	1.02	10.1	0.05	0.10	0.12	60
1	70	10.20	10.19	33.323	25.611	238.2	0.189	4.88	76.7	12.4	1.18	13.0	0.01	0.05	0.08	71
	75 ISL	10.05	10.04	33.365	25.669	232.8	0.201	4.72	74.0	13.7	1.26	14.3	0.01	0.04	0.08	76
1	79	9.97	9.96	33.402	25.711	228.8	0.210	4.59	71.8	14.7	1.33	15.4	0.01	0.04	0.08	80
1	95	9.56	9.55	33.544	25.890	212.1	0.245	4.05	62.9	19.6	1.59	19.6	0.01	0.02	0.06	96
	100 ISL	9.51	9.50	33.611	25.951	206.4	0.256	3.79	58.8	21.3	1.68	21.0	0.01	0.02	0.07	101
1	II0	9.43	9.42	33.733	26.059	196.3	0.276	3.35	51.9	24.2	1.83	23.3	0.01	0.01	0.08	HI
1	124	9.25	9.24	33.796	26.138	189.1	0.303	3.22	49.7	26.3	1.83	24.1	0.01	0.01	0.07	125
	125 ISL	9.23	9.22	33.801	26.145	188.5	0.305	3.21	49.5	26.5	1.84	24.2	0.01	0.01	0.07	126
1	149	8.80	8.78	33.910	26.299	174.2	0.348	2.98	45.6	30.9	1.98	26.0	0.00	0.00	0.04	150
	150 ISL	8.78	8.76	33.914	26.305	173.6	0.350	2.98	45.6	31.0	1.98	26.0	0.00	0.00	0.04	151
1	174	8.42	8.40	33.982	26.414	163.6	0.391	2.94	44.6	34.3	2.03	26.8	0.01	0.00	0.05	175
	200 ISL	8.03	8.01	34.032	26.512	154.7	0.432	2.70	40.6	39.2	2.16	28.5	0.00	0.00	0.05	202
1	204	7.97	7.95	34.038	26.526	153.4	0.438	2.65	39.8	40.0	2.18	28.8	0.00	0.00	0.05	206
1	229	7.68	7.66	34.068	26.592	147.5	0.476	2.24	33.4	45.5	2.36	30.8	0.00			231
	250 ISL	7.36	7.34	34.070	26.640	143.2	0.506	2.06	30.5	49.3	2.45	32.1	0.00			252
1	271	7.04	7.01	34.068	26.683	139.2	0.536	1.94	28.5	52.8	2.52	33.2	0.00			273
	300 ISL	6.78	6.75	34.082	26.729	135.1	0.576	1.67	24.4	57.3	2.63	34.7	0.00			302
1	326	6.59	6.56	34.099	26.768	131.7	0.610	1.42	20.7	61.3	2.73	35.9	0.00			329
1	385	6.08	6.05	34.133	26.862	123.3	0.686	0.93	13.4	71.0	2.97	38.7	0.00			388
	400 ISL	5.99	5.96	34.151	26.887	121.0	0.704	0.80	11.5	73.5	3.02	39.3	0.00			403
1	448	5.74	5.70	34.212	26.967	113.9	0.760	0.47	6.7	81.1	3.16	40.7	0.00			452
	500 ISL	5.49	5.45	34.252	27.030	108.4	0.818	0.36	5.1	87.0	3.24	41.5	0.00			504
1	515	5.42	5.38	34.264	27.048	106.8	0.834	0.33	4.7	88.7	3.26	41.7	0.00			520

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 3.3 N	122 56.5 W	02/02/89	1053 UTC	4114 M	310	11 KT			1019.0 MB	10.7 C	10.7 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 D.BAR
1	0	12.74	12.74	33.103	24.975	297.1	0.000	6.21	103.0	3.7	0.45	0.8	0.03	0.44	0.13	0
	10 ISL	12.50	12.50	33.098	25.018	293.3	0.030	6.23	102.8	4.0	0.49	1.2	0.05	0.45	0.15	10
1	16	12.35	12.35	33.096	25.045	290.9	0.047	6.24	102.6	4.1	0.51	1.5	0.06	0.45	0.16	16
	20 ISL	12.24	12.24	33.109	25.076	288.0	0.059	6.18	101.4	4.4	0.53	1.9	0.08	0.48	0.18	20
	30 ISL	11.89	11.89	33.156	25.179	278.5	0.087	6.04	98.4	5.5	0.64	3.6	0.13	0.52	0.23	30
1	31	11.85	11.85	33.162	25.191	277.3	0.090	6.03	98.2	5.7	0.65	3.8	0.14	0.52	0.23	31
1	40	11.37	11.37	33.213	25.319	265.3	0.114	6.06	97.7	7.5	0.82	6.3	0.20	0.47	0.24	40
1	50	11.17	11.16	33.242	25.378	260.0	0.140	5.78	92.8	8.3	0.90	7.8	0.20	0.38	0.21	50
1	61	11.05	11.04	33.304	25.448	253.6	0.169	5.75	92.1	9.2	0.95	8.8	0.26	0.25	0.18	61
1	71	10.78	10.77	33.312	25.502	248.6	0.194	5.29	84.2	10.3	1.07	10.7	0.06	0.14	0.17	72
	75 ISL	10.77	10.76	33.338	25.524	246.6	0.204	5.30	84.4	10.6	1.09	11.0	0.09	0.12	0.15	76
1	79	10.74	10.73	33.367	25.552	244.1	0.213	5.32	84.7	11.1	1.11	11.3	0.14	0.11	0.12	80
1	95	9.77	9.76	33.423	25.761	224.3	0.251	4.52	70.4	16.3	1.40	16.3	0.01	0.03	0.08	96
	100 ISL	9.65	9.64	33.472	25.819	218.9	0.262	4.37	67.9	17.5	1.45	17.3	0.01	0.02	0.07	101
1	II0	9.50	9.49	33.587	25.934	208.2	0.283	4.09	63.4	20.1	1.56	19.3	0.01	0.01	0.05	HI
1	125	9.08	9.07	33.750	26.129	189.9	0.313	3.49	53.7	25.6	1.82	23.3	0.01	0.01	0.06	126
1	150	8.40	8.38	33.876	26.334	170.8	0.358	4.08	61.8	26.7	1.68	22.0	0.00	0.01	0.04	151
1	175	7.98	7.96	33.956	26.460	159.2	0.400	3.40	51.1	34.0	1.94	25.9	0.00	0.01	0.04	176
	200 ISL	7.85	7.83	34.008	26.520	153.9	0.439	2.87	43.0	38.6	2.13	28.2	0.00	0.00	0.03	202
1	205	7.84	7.82	34.016	26.528	153.2	0.446	2.77	41.5	39.4	2.16	28.6	0.00	0.00	0.03	207
1	234	7.69	7.67	34.055	26.581	148.7	0.490	2.14	31.9	44.3	2.37	31.1	0.00			236
	250 ISL	7.35	7.33	34.039	26.617	145.3	0.514	2.22	32.9	46.9	2.38	31.4	0.00			252
1	273	6.83	6.80	34.017	26.671	140.2	0.547	2.38	34.8	50.8	2.39	31.7	0.00			275
	300 ISL	6.66	6.63	34.055	26.724	135.5	0.584	1.84	26.8	56.1	2.58	34.1	0.00			302
1	327	6.58	6.55	34.103	26.773	131.3	0.620	1.20	17.5	61.5	2.79	36.8	0.00			330
1	384	5.97	5.94	34.119	26.865	122.9	0.692	0.92	13.2	71.6	2.95	38.9	0.00			387
	400 ISL	5.89	5.86	34.134	26.886	121.0	0.712	0.84	12.0	73.8	2.99	39.3	0.00			403
1	448	5.70	5.66	34.184	26.950	115.5	0.769	0.62	8.8	79.9	3.10	40.3	0.00			452
	500 ISL	5.39	5.35	34.223	27.019	109.3	0.827	0.44	6.2	86.4	3.19	41.4	0.00			504
1	516	5.30	5.26	34.236	27.040	107.5	0.844	0.39	5.5	88.4	3.22	41.7	0.00			521

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 43.2 N	123 38.1 W	02/02/89	0425 UTC	3924 M	310	08 KT			1018.8 MB	12.0 C	10.8 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 D.BAR
	0	ISL	12.50	12.50	33.094	25.015	293.4	0.000	6.21	102.5	5.0	0.52	1.6	0.05	0.51	0.12	0
1	1		12.50	12.50	33.094	25.015	293.4	0.003	6.21	102.5	5.0	0.52	1.6	0.05	0.51	0.12	1
	10	ISL	12.19	12.19	33.112	25.088	286.6	0.029	6.25	102.5	5.7	0.57	2.3	0.07	0.50	0.14	10
1	18		11.83	11.83	33.138	25.176	278.5	0.052	6.29	102.4	6.6	0.64	3.3	0.11	0.48	0.15	18
	20	ISL	11.80	11.80	33.142	25.184	277.7	0.057	6.29	102.3	6.7	0.65	3.4	0.12	0.48	0.16	20
	30	ISL	11.68	11.68	33.160	25.221	274.5	0.085	6.25	101.4	6.9	0.68	4.0	0.17	0.48	0.24	30
1	34		11.65	11.65	33.167	25.232	273.5	0.096	6.22	100.8	7.0	0.69	4.2	0.19	0.48	0.27	34
1	43		11.54	11.53	33.185	25.267	270.4	0.120	6.12	99.0	7.5	0.75	5.0	0.26	0.40	0.31	43
	50	ISL	11.40	11.39	33.200	25.304	267.1	0.139	6.00	96.8	8.0	0.80	5.9	0.29	0.35	0.26	50
1	53		11.30	11.29	33.217	25.335	264.1	0.147	5.90	95.0	8.2	0.85	6.7	0.31	0.32	0.23	53
1	62		10.73	10.72	33.360	25.548	244.0	0.170	5.17	82.3	13.2	1.21	12.8	0.04	0.22	0.18	62
1	71		10.19	10.18	33.466	25.724	227.5	0.191	4.41	69.4	18.4	1.49	17.5	0.01	0.09	0.11	72
	75	ISL	10.05	10.04	33.542	25.807	219.6	0.200	4.03	63.3	20.3	1.59	19.1	0.01	0.08	0.11	76
1	81		9.88	9.87	33.652	25.922	208.9	0.213	3.53	55.2	22.7	1.72	21.1	0.01	0.07	0.12	82
1	96		9.26	9.25	33.743	26.094	192.7	0.243	3.30	51.0	26.8	1.87	23.9	0.01	0.02	0.09	97
	100	ISL	9.17	9.16	33.769	26.129	189.4	0.251	3.19	49.2	27.9	1.91	24.6	0.01	0.02	0.10	101
1	112		8.97	8.96	33.836	26.214	181.6	0.273	2.96	45.4	30.4	1.99	25.8	0.00	0.01	0.11	113
	125	ISL	8.76	8.75	33.870	26.273	176.1	0.296	3.19	48.7	30.8	1.93	25.2	0.00	0.01	0.06	126
1	126		8.74	8.73	33.872	26.278	175.7	0.298	3.21	49.0	30.8	1.92	25.1	0.00	0.01	0.06	127
	150	ISL	8.40	8.38	33.965	26.404	164.2	0.339	2.89	43.8	35.4	2.07	27.1	0.00	0.01	0.04	151
1	151		8.39	8.37	33.969	26.408	163.8	0.340	2.87	43.5	35.6	2.08	27.2	0.00	0.01	0.04	152
1	177		8.12	8.10	33.993	26.468	158.5	0.382	2.85	43.0	37.4	2.11	27.7	0.00	0.00	0.04	178
	200	ISL	7.87	7.85	34.033	26.537	152.3	0.418	2.56	38.4	41.3	2.23	29.3	0.00	0.00	0.04	202
1	206		7.80	7.78	34.042	26.554	150.7	0.427	2.47	37.0	42.5	2.27	29.8	0.00	0.00	0.04	208
1	234		7.48	7.46	34.050	26.607	146.1	0.469	2.20	32.7	47.2	2.39	31.5	0.00			236
	250	ISL	7.26	7.24	34.053	26.640	143.0	0.492	2.07	30.6	50.2	2.46	32.4	0.00			252
1	274		6.97	6.94	34.063	26.688	138.7	0.526	1.87	27.5	54.5	2.56	33.6	0.00			276
	300	ISL	6.87	6.84	34.102	26.733	134.8	0.561	1.50	22.0	58.3	2.69	34.9	0.00			302
1	329		6.77	6.74	34.139	26.776	131.2	0.600	1.13	16.5	62.2	2.82	36.3	0.00			332
1	387		6.00	5.97	34.103	26.848	124.6	0.674	1.06	15.2	71.1	2.92	38.4	0.00			390
	400	ISL	5.88	5.85	34.104	26.864	123.1	0.690	1.00	14.3	73.2	2.95	38.9	0.00			403
1	450		5.51	5.47	34.128	26.929	117.3	0.750	0.74	10.5	81.3	3.09	40.6	0.00			454
	500	ISL	5.21	5.17	34.172	26.999	110.9	0.807	0.54	7.6	88.5	3.18	41.5	0.00			504
1	516		5.12	5.08	34.186	27.021	109.0	0.825	0.47	6.6	90.8	3.21	41.8	0.00			521

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 26.9 N	120 31.5 W	31/01/89	2327 UTC	81 M	280	06 KT	290 02 09	1	1016.1 MB	11.9 C	10.7 C	1/8	CI

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 D.BAR
	0	ISL	12.14	12.14	33.565	25.449	252.1	0.000	6.61	108.6	5.7	0.39	2.2	0.10	9.56	1.00	0
1	1		12.14	12.14	33.565	25.449	252.1	0.003	6.61	108.6	5.7	0.39	2.2	0.10	9.56	1.00	1
	10	ISL	12.08	12.08	33.567	25.462	251.1	0.025	6.20	101.7	6.9	0.61	3.7	0.13	5.82	1.13	10
1	11		12.07	12.07	33.567	25.464	250.9	0.028	6.13	100.5	7.1	0.64	3.9	0.14	5.25	1.15	11
	20	ISL	11.83	11.83	33.577	25.517	246.1	0.050	5.74	93.7	8.6	0.70	5.2	0.19	2.67	1.05	20
1	21		11.80	11.80	33.578	25.523	245.5	0.052	5.70	93.0	8.8	0.70	5.3	0.20	2.49	1.03	21
	30	ISL	11.72	11.72	33.584	25.543	243.8	0.075	5.56	90.5	9.4	0.72	5.9	0.21	2.36	0.89	30
1	31		11.72	11.72	33.585	25.544	243.8	0.077	5.55	90.4	9.4	0.72	6.0	0.21	2.34	0.88	31
1	41		11.67	11.66	33.596	25.562	242.3	0.101	5.43	88.3	10.0	0.78	6.9	0.22	1.97	0.91	41
	50	ISL	11.60	11.59	33.608	25.584	240.4	0.123	5.30	86.1	10.9	0.96	8.1	0.22	2.37	1.02	50
1	51		11.58	11.57	33.611	25.590	239.9	0.125	5.28	85.7	11.1	0.99	8.3	0.22	2.39	1.03	51
1	60		11.26	11.25	33.668	25.693	230.3	0.147	4.59	74.0	15.0	1.23	11.9	0.24	1.41	1.14	60
1	70		11.05	11.04	33.696	25.753	224.8	0.169	4.15	66.6	17.7	1.40	14.5	0.24	0.77	1.05	71

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 18.9 N	120 48.2 W	01/02/89	0236 UTC	7 93 M	280	11 KT			1015.6 MB	10.6 C	9.4 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 D.BAR
	0	ISL	12.09	12.09	33.594	25.481	249.0	0.000	7.19	118.0	2.5	0.37	1.0	0.05	8.34	1.11	0
1	2		12.09	12.09	33.594	25.481	249.1	0.005	7.19	118.0	2.5	0.37	1.0	0.05	8.34	1.11	2
	10	ISL	11.89	11.89	33.592	25.517	245.8	0.025	6.69	109.3	3.9	0.47	2.6	0.08	9.87	1.41	10
1	12		11.81	11.81	33.595	25.534	244.2	0.030	6.46	105.4	4.2	0.49	3.5	0.10	10.06	1.48	12
	20	ISL	11.48	11.48	33.642	25.632	235.1	0.049	5.18	83.9	10.6	0.97	9.8	0.20	6.17	1.16	20
1	22		11.40	11.40	33.656	25.658	232.8	0.054	4.86	78.6	12.3	1.10	11.5	0.22	4.97	1.04	22
	30	ISL	11.12	11.12	33.687	25.733	225.8	0.072	4.27	68.7	15.9	1.33	14.8	0.22	2.48	0.73	30
1	32		11.05	11.05	33.696	25.752	224.0	0.076	4.16	66.8	16.6	1.37	15.4	0.22	2.04	0.66	32
1	41		10.60	10.60	33.780	25.897	210.4	0.096	3.39	53.9	21.0	1.64	19.6	0.15	0.78	0.48	41
	50	ISL	10.40	10.39	33.810	25.956	205.0	0.115	3.13	49.6	22.8	1.62	20.9	0.10	0.59	0.44	50
1	51		10.38	10.37	33.814	25.962	204.4	0.117	3.11	49.3	23.0	1.62	21.0	0.09	0.57	0.44	51
1	61		9.90	9.89	33.926	26.132	188.5	0.136	2.66	41.7	27.1	1.97	24.2	0.03	0.45	0.32	61
1	71		9.76	9.75	33.958	26.180	184.1	0.155	2.56	40.0	28.7	2.01	24.9	0.02	0.51	0.31	72
	75	ISL	9.66	9.65	33.969	26.206	181.8	0.162	2.54	39.6	29.3	2.03	25.2	0.02	0.47	0.29	76
1	84		9.43	9.42	33.990	26.260	176.8	0.178	2.50	38.8	30.5	2.08	25.8	0.01	0.35	0.24	85
1	99		9.31	9.30	33.999	26.287	174.5	0.205	2.47	38.2	31.4	2.10	26.2	0.01	0.35	0.22	100
	100	ISL	9.30	9.29	34.000	26.289	174.3	0.206	2.47	38.2	31.4	2.10	26.2	0.01	0.34	0.21	101
1	119		9.21	9.20	34.027	26.325	171.3	0.239	2.37	36.6	32.3	2.16	26.8	0.01	0.09	0.11	120
	125	ISL	9.18	9.17	34.032	26.334	170.5	0.250	2.35	36.3	32.6	2.16	26.9	0.01	0.16	0.13	126
1	143		9.08	9.06	34.045	26.360	168.4	0.280	2.29	35.3	33.8	2.17	27.3	0.01	0.39	0.20	144
	150	ISL	9.04	9.02	34.052	26.372	167.4	0.292	2.25	34.6	34.3	2.19	27.5	0.01	0.33	0.19	151
1	173		8.91	8.89	34.077	26.413	164.0	0.330	2.10	32.2	36.4	2.26	28.3	0.01	0.06	0.12	174
	200	ISL	8.71	8.69	34.108	26.469	159.1	0.374	1.96	30.0	39.3	2.34	29.1	0.00	0.10	0.09	202
1	202		8.70	8.68	34.110	26.472	158.8	0.377	1.95	29.8	39.5	2.35	29.2	0.00	0.10	0.09	204
1	231		8.60	8.58	34.152	26.521	154.7	0.422	1.74	26.5	41.1	2.42	30.0	0.00			233
	250	ISL	8.47	8.44	34.168	26.554	151.9	0.451	1.63	24.8	42.3	2.46	30.5	0.00			252
1	269		8.32	8.29	34.180	26.586	149.1	0.480	1.54	23.3	43.7	2.51	31.0	0.00			**271**
	300	ISL	8.11	8.08	34.195	26.630	145.4	0.526	1.38	20.8	46.7	2.59	32.0	0.00			**302**
1	325		7.95	7.92	34.204	26.661	142.9	0.562	1.25	18.8	49.5	2.65	32.8	0.00			**328**
1	383		7.53	7.49	34.221	26.736	136.5	0.643	1.00	14.9	56.3	2.79	34.4	0.00			**386**
	400	ISL	7.35	7.31	34.227	26.767	133.7	0.666	0.92	13.6	58.9	2.84	35.0	0.00			**403**
1	448		6.82	6.78	34.236	26.848	126.4	0.728	0.71	10.4	66.7	2.97	36.9	0.00			**452**
	500	ISL	6.28	6.24	34.223	26.909	120.7	0.792	0.60	8.7	73.9	3.06	38.7	0.00			**504**
1	516		6.12	6.07	34.220	26.927	119.1	0.811	0.56	8.1	76.1	3.09	39.3	0.00			**521**

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 9.0 N	121 9.0 W	01/02/89	0555 UTC	2227 M	280	15 KT			1015.8 MB	11.1 C	9.8 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 D.BAR**
	0	ISL	12.29	12.29	33.402	25.294	266.8	0.000	6.30	103.7	4.9	0.60	3.0	0.11	0.77	0.23	0
1	1		12.29	12.29	33.402	25.294	266.8	0.003	6.30	103.7	4.9	0.60	3.0	0.11	0.77	0.23	1
	10	ISL	12.23	12.23	33.403	25.306	265.9	0.027	6.29	103.4	4.8	0.63	3.2	0.13	0.83	0.25	10
1	11		12.21	12.21	33.401	25.308	265.7	0.029	6.29	103.4	4.8	0.63	3.2	0.13	0.84	0.26	11
	20	ISL	11.99	11.99	33.406	25.354	261.5	0.053	6.18	101.1	5.9	0.72	4.7	0.18	0.82	0.32	20
1	21		11.96	11.96	33.407	25.361	261.0	0.056	6.16	100.7	6.0	0.73	4.9	0.18	0.82	0.33	21
	30	ISL	11.79	11.79	33.432	25.412	256.3	0.079	5.93	96.6	6.8	0.83	6.7	0.15	0.82	0.29	30
1	31		11.76	11.76	33.436	25.421	255.5	0.081	5.90	96.0	6.9	0.84	6.9	0.15	0.82	0.28	31
1	42		11.21	11.20	33.517	25.584	240.2	0.109	5.31	85.5	9.6	1.09	10.9	0.15	0.48	0.26	42
1	50		10.84	10.83	33.583	25.702	229.1	0.128	5.04	80.5	12.7	1.26	13.6	0.14	0.24	0.20	50
1	61		10.59	10.58	33.579	25.743	225.5	0.153	4.67	74.2	13.9	1.37	15.4	0.11	0.19	0.17	61
1	72		10.59	10.58	33.689	25.829	217.6	0.177	4.50	71.5	17.1	1.46	16.6	0.22	0.17	0.17	73
	75	ISL	10.47	10.46	33.718	25.873	213.5	0.183	4.23	67.1	18.6	1.53	17.8	0.18	0.16	0.16	76
1	85		9.98	9.97	33.801	26.021	199.5	0.204	3.28	51.5	23.3	1.79	22.0	0.01	0.12	0.12	86
	100	ISL	9.58	9.57	33.855	26.130	189.5	0.233	2.94	45.8	26.4	1.93	24.2	0.00	0.04	0.08	101
1	101		9.56	9.55	33.857	26.135	189.0	0.235	2.92	45.4	26.5	1.93	24.3	0.00	0.04	0.08	102
1	121		9.19	9.18	33.929	26.252	178.3	0.272	2.73	42.1	30.5	2.03	25.9	0.00	0.02	0.07	122
	125	ISL	9.11	9.10	33.940	26.273	176.3	0.279	2.71	41.8	31.1	2.04	26.1	0.00	0.02	0.07	126
2	145		8.72	8.70	33.988	26.372	167.2	0.313	2.66	40.6	33.7	2.09	26.9	0.00	0.03	0.08	146
	150	ISL	8.65	8.63	33.999	26.392	165.4	0.322	2.63	40.1	34.4	2.10	27.1	0.00	0.04	0.08	151
2	176		8.33	8.31	34.041	26.474	158.0	0.364	2.49	37.7	37.9	2.18	28.3	0.00	0.06	0.06	177
	200	ISL	7.97	7.95	34.049	26.535	152.5	0.401	2.47	37.1	40.8	2.24	29.3	0.00	0.06	0.05	202
2	205		7.90	7.88	34.049	26.545	151.6	0.408	2.46	36.9	41.5	2.25	29.5	0.00	0.06	0.05	207
2	235		7.56	7.54	34.071	26.612	145.7	0.453	2.14	31.9	46.6	2.39	31.2	0.00			237
	250	ISL	7.50	7.48	34.102	26.645	142.7	0.475	1.86	27.7	49.2	2.50	32.1	0.00			252
2	274		7.46	7.43	34.158	26.695	138.4	0.508	1.38	20.5	53.2	2.67	33.5	0.00			276
	300	ISL	7.36	7.33	34.207	26.748	133.8	0.544	1.02	15.1	57.0	2.80	34.7	0.00			302
2	329		7.21	7.18	34.247	26.801	129.1	0.582	0.75	11.1	60.8	2.91	35.7	0.00			332
2	387		6.72	6.68	34.258	26.877	122.5	0.655	0.59	8.6	67.7	3.03	37.3	0.00			3 90
	400	ISL	6.63	6.59	34.260	26.891	121.3	0.671	0.56	8.2	69.1	3.05	37.6	0.00			403
2	452		6.28	6.24	34.271	26.946	116.5	0.733	0.47	6.8	74.7	3.10	38.8	0.00			456
	500	ISL	5.91	5.87	34.285	27.005	111.3	0.787	0.39	5.6	80.8	3.16	39.9	0.00			504
2	520		5.75	5.71	34.291	27.029	109.1	0.809	0.35	5.0	83.3	3.19	40.4	0.00			525

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 48.9 N	121 50.7 W	01/02/89	1141 UTC	3885 M	270	10 KT			1016.0 MB	10.5 C	9.2 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 D.BAR
	0	ISL	11.68	11.68	33.277	25.311	265.1	0.000	6.28	102.0	7.9	0.68	4.6	0.14	0.72	0.17	0
1	2		11.68	11.68	33.277	25.311	265.2	0.005	6.28	102.0	7.9	0.68	4.6	0.14	0.72	0.17	2
	10	ISL	11.62	11.62	33.297	25.338	262.8	0.026	6.23	101.0	8.0	0.73	5.0	0.16	0.66	0.19	10
1	12		11.60	11.60	33.305	25.348	262.0	0.032	6.22	100.8	8.1	0.74	5.1	0.16	0.65	0.20	12
	20	ISL	11.60	11.60	33.338	25.374	259.7	0.053	6.24	101.2	8.3	0.75	5.3	0.17	0.77	0.22	20
1	23		11.60	11.60	33.367	25.396	257.6	0.060	6.25	101.4	8.4	0.75	5.4	0.17	0.82	0.23	23
	30	ISL	11.56	11.56	33.517	25.521	246.0	0.078	6.13	99.4	10.0	0.86	7.3	0.15	1.25	0.43	30
1	31		11.55	11.55	33.541	25.541	244.1	0.080	6.11	99.1	10.3	0.88	7.6	0.15	1.30	0.46	31
1	41		11.18	11.17	33.630	25.678	231.3	0.104	5.80	93.4	13.4	1.12	11.3	0.22	0.72	0.34	41
	50	ISL	11.05	11.04	33.641	25.710	228.4	0.125	5.51	88.4	14.0	1.19	12.4	0.25	0.46	0.30	50
1	51		11.03	11.02	33.641	25.714	228.1	0.127	5.46	87.6	14.1	1.20	12.5	0.25	0.44	0.30	51
1	60		10.55	10.54	33.695	25.840	216.2	0.147	4.49	71.3	17.9	1.45	16.7	0.29	0.19	0.22	60
1	70		9.93	9.92	33.718	25.964	204.6	0.168	3.70	58.0	21.7	1.69	21.0	0.11	0.11	0.15	71
	75	ISL	9.66	9.65	33.742	26.028	198.6	0.178	3.45	53.8	23.5	1.77	22.5	0.06	0.08	0.12	76
1	84		9.30	9.29	33.791	26.125	189.5	0.196	3.16	48.9	26.7	1.88	24.3	0.01	0.05	0.09	85
1	98		9.20	9.19	33.858	26.194	183.3	0.222	2.93	45.2	31.7	1.96	25.2	0.01	0.02	0.09	99
	100	ISL	9.20	9.19	33.870	26.203	182.4	0.225	2.89	44.6	32.1	1.97	25.3	0.01	0.02	0.09	101
1	116		9.14	9.13	33.958	26.282	175.2	0.254	2.62	40.4	34.6	2.07	26.2	0.01	0.02	0.08	117
	125	ISL	9.00	8.99	33.982	26.323	171.5	0.270	2.58	39.7	35.8	2.09	26.7	0.01	0.02	0.08	126
1	142		8.73	8.71	34.016	26.393	165.2	0.298	2.53	38.7	37.4	2.13	27.5	0.01	0.02	0.08	143
	150	ISL	8.73	8.71	34.045	26.416	163.2	0.311	2.39	36.5	37.5	2.18	27.9	0.01	0.03	0.08	151
1	170		8.68	8.66	34.102	26.468	158.5	0.344	2.09	31.9	38.5	2.29	28.9	0.01	0.04	0.08	171
1	200		7.96	7.94	34.078	26.559	150.3	0.390	2.28	34.3	46.6	2.31	29.9	0.01	0.03	0.06	202
1	228		8.08	8.06	34.180	26.622	144.9	0.431	1.48	22.3	50.2	2.56	31.8	0.00			230
	250	ISL	7.88	7.85	34.205	26.671	140.5	0.463	1.24	18.6	52.0	2.66	32.7	0.00			252
1	266		7.64	7.61	34.208	26.708	137.1	0.485	1.18	17.6	53.5	2.70	33.2	0.00			268
	300	ISL	7.05	7.02	34.210	26.794	129.3	0.530	1.19	17.5	59.5	2.77	35.0	0.00			302
1	319		6.76	6.73	34.209	26.833	125.7	0.554	1.19	17.4	63.1	2.80	36.0	0.00			322
1	375		6.56	6.53	34.147 U			0.624	0.67	9.8	70.4	3.01	37.7	0.00			378
	400	ISL	6.31	6.27	34.221	26.902	120.0	0.654	0.58	8.4	73.7	3.06	38.6	0.00			403
1	436		5.95	5.91	34.236	26.960	114.6	0.697	0.51	7.3	78.0	3.12	39.8	0.00			440
	500	ISL	5.81	5.77	34.300	27.029	108.9	0.768	0.37	5.3	83.7	3.20	40.4	0.00			504
1	501		5.81	5.77	34.301	27.030	108.8	0.769	0.37	5.3	83.8	3.20	40.4	0.00			505

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 29.0 N	122 32.0 W	01/02/89	1648 UTC	3733 M	320	14 KT	330 04 07	1	1017.1 MB	11.5 C	11.0 C	5/8	SC

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 D.BAR
	0	ISL	11.87	11.87	33.168	25.191	276.6	0.000	6.16	100.4	7.2	0.66	3.7	0.12	0.63	0.19	0
1	1		11.87	11.87	33.168	25.191	276.6	0.003	6.16	100.4	7.2	0.66	3.7	0.12	0.63	0.19	1
	10	ISL	11.85	11.85	33.168	25.195	276.4	0.028	6.16	100.3	6.9	0.67	3.8	0.12	0.59	0.17	10
1	11		11.85	11.85	33.168	25.195	276.4	0.030	6.16	100.3	6.9	0.67	3.8	0.12	0.59	0.17	11
	20	ISL	11.92	11.92	33.300	25.285	268.1	0.055	6.23	101.7	7.8	0.72	4.2	0.14	0.69	0.24	20
1	21		11.93	11.93	33.315	25.295	267.2	0.058	6.24	101.9	7.9	0.72	4.3	0.14	0.70	0.25	21
	30	ISL	11.88	11.88	33.330	25.316	265.4	0.082	6.18	100.8	7.7	0.72	4.6	0.14	0.74	0.26	30
1	31		11.87	11.87	33.329	25.317	265.4	0.084	6.17	100.6	7.7	0.72	4.6	0.14	0.74	0.26	31
1	40		11.84	11.83	33.354	25.342	263.2	0.108	6.16	100.4	7.9	0.73	4.8	0.15	0.72	0.29	40
	50	ISL	11.56	11.55	33.326	25.373	260.5	0.134	5.64	91.4	8.3	0.79	6.3	0.09	0.29	0.18	50
1	51		11.53	11.52	33.324	25.376	260.2	0.137	5.59	90.5	8.4	0.80	6.5	0.09	0.24	0.17	51
1	61		11.37	11.36	33.367	25.439	254.4	0.163	5.59	90.2	10.0	0.93	8.3	0.22	0.18	0.18	61
1	71		11.32	11.31	33.427	25.495	249.3	0.188	5.32	85.8	11.2	1.02	10.0	0.25	0.13	0.17	72
	75	ISL	11.15	11.14	33.426	25.525	246.6	0.198	5.08	81.6	12.1	1.10	11.3	0.19	0.12	0.16	76
1	85		10.59	10.58	33.424	25.623	237.4	0.222	4.49	71.3	14.8	1.30	14.7	0.02	0.09	0.12	86
1	100		9.92	9.91	33.520	25.812	219.7	0.256	4.19	65.6	18.3	1.49	17.9	0.01	0.03	0.07	101
1	120		9.23	9.22	33.652	26.028	199.4	0.298	3.95	60.9	23.3	1.64	20.8	0.01	0.01	0.04	121
	125	ISL	9.10	9.09	33.682	26.073	195.3	0.308	3.96	60.9	23.8	1.64	20.9	0.01	0.01	0.04	126
1	145		8.69	8.67	33.794	26.225	181.1	0.346	4.02	61.3	25.7	1.65	21.5	0.01	0.01	0.03	146
	150	ISL	8.63	8.61	33.820	26.255	178.4	0.355	3.87	58.9	27.0	1.70	22.3	0.01	0.01	0.03	151
1	175		8.41	8.39	33.927	26.373	167.6	0.398	3.01	45.6	33.9	2.00	26.4	0.03	0.01	0.04	176
	200	ISL	8.09	8.07	33.990	26.471	158.7	0.439	2.77	41.7	38.3	2.12	28.2	0.01	0.02	0.04	202
1	206		8.01	7.99	33.999	26.490	156.9	0.448	2.75	41.3	39.2	2.14	28.4	0.00	0.02	0.04	208
1	234		7.68	7.66	34.017	26.552	151.3	0.491	2.56	38.2	42.9	2.24	29.8	0.00			236
	250	ISL	7.50	7.48	34.024	26.584	148.5	0.515	2.43	36.1	45.3	2.30	30.6	0.00			252
1	274		7.25	7.22	34.035	26.628	144.6	0.550	2.19	32.4	49.2	2.41	32.0	0.00			276
	300	ISL	6.97	6.94	34.057	26.684	139.5	0.587	1.83	26.9	54.4	2.55	33.8	0.00			302
1	328		6.68	6.65	34.083	26.744	134.1	0.626	1.44	21.0	60.1	2.71	35.7	0.00			331
1	387		6.16	6.13	34.133	26.852	124.4	0.702	0.86	12.4	70.6	2.95	38.6	0.00			3 90
	400	ISL	6.09	6.05	34.141	26.867	123.0	0.718	0.79	11.4	72.6	2.99	39.1	0.00			403
1	450		6.19 U		34.135			0.779	0.61	8.7	79.4	3.09	40.4	0.00			454
	500	ISL	5.55	5.51	34.206	26.986	112.6	0.837	0.45	6.4	84.9	3.17	41.2	0.00			504
1	523		5.42	5.38	34.222	27.015	110.0	0.863	0.38	5.4	87.5	3.20	41.5	0.00			528

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 9.1 N	123 13.3 W	01/02/89	2246 UTC	A305 M	340	12 KT	3 4 0 0 5 0 8	1	1017.0 MB	11.2 C	11.1 C	7/8	SC

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 D.BAR
1	0	13.72	13.72	33.147	24.814	312.5	0.000	6.07	102.8	1.3	0.39	0.0	0.00	0.63	0.14	0
	10 ISL	13.63	13.63	33.140	24.827	311.5	0.031	6.08	102.8	1.4	0.40	0.0	0.00	0.50	0.13	10
1	15	13.59	13.59	33.136	24.832	311.2	0.047	6.09	102.8	1.4	0.40	0.0	0.00	0.44	0.12	15
	20 ISL	13.58	13.58	33.134	24.833	311.2	0.062	6.08	102.6	1.7	0.40	0.0	0.00	0.44	0.12	20
1	30	13.57	13.57	33.131	24.833	311.5	0.093	6.07	102.4	2.4	0.40	0.0	0.00	0.45	0.14	30
1	39	13.53	13.52	33.125	24.836	311.4	0.121	6.10	102.9	2.6	0.40	0.1	0.00	0.43	0.15	39
1	49	13.51	13.50	33.121	24.838	311.6	0.153	6.06	102.1	2.7	0.40	0.1	0.01	0.43	0.14	49
	50 ISL	13.51	13.50	33.120	24.837	311.7	0.156	6.06	102.1	2.7	0.40	0.1	0.01	0.43	0.14	50
1	59	13.46	13.45	33.115	24.843	311.3	0.184	6.07	102.2	2.6	0.40	0.2	0.01	0.41	0.13	59
1	69	13.43	13.42	33.116	24.850	310.9	0.215	6.05	101.8	2.5	0.43	0.3	0.03	0.36	0.16	70
	75 ISL	13.08	13.07	33.125	24.927	303.7	0.233	6.00	100.2	3.2	0.49	1.2	0.11	0.28	0.15	76
1	77	12.96	12.95	33.134	24.958	300.8	0.239	5.98	99.6	3.5	0.51	1.5	0.14	0.25	0.14	78
1	92	12.73	12.72	33.351	25.172	280.9	0.283	5.72	95.0	4.5	0.51	2.3	0.04	0.16	0.11	93
	100 ISL	12.41	12.40	33.355	25.237	274.8	0.305	5.65	93.2	5.2	0.57	3.1	0.03	0.13	0.10	101
1	107	12.04	12.03	33.330	25.288	270.1	0.324	5.60	91.6	6.0	0.66	4.3	0.03	0.10	0.09	108
1	121	11.12	11.11	33.311	25.442	255.5	0.361	5.40	86.6	9.0	0.93	8.7	0.03	0.06	0.07	122
	125 ISL	10.94	10.92	33.359	25.511	249.0	0.371	5.12	81.8	10.8	1.06	10.7	0.03	0.06	0.07	126
1	145	10.24	10.22	33.662	25.870	215.3	0.418	3.56	56.1	20.7	1.67	20.4	0.01	0.07	0.09	146
	150 ISL	10.07	10.05	33.706	25.933	209.3	0.428	3.38	53.1	22.3	1.75	21.6	0.01	0.06	0.08	151
1	170	9.48	9.46	33.829	26.127	191.1	0.468	2.99	46.4	27.2	1.92	24.5	0.00	0.01	0.05	17 1
1	199	8.90	8.88	33.941	26.308	174.4	0.521	2.77	42.5	31.3	2.04	26.4	0.00	0.01	0.05	201
	200 ISL	8.88	8.86	33.944	26.314	173.8	0.523	2.77	42.5	31.5	2.04	26.5	0.00			202
1	227	8.35	8.33	34.010	26.448	161.5	0.568	2.71	41.1	35.7	2.11	27.8	0.00			229
	250 ISL	7.96	7.93	34.021	26.515	155.3	0.605	2.70	40.5	38.8	2.16	28.7	0.00			**252**
1	267	7.70	7.67	34.020	26.552	151.9	0.631	2.69	40.2	41.3	2.20	29.4	0.00			**269**
	300 ISL	7.29	7.26	34.043	26.629	145.0	0.680	2.27	33.6	47.7	2.38	31.7	0.00			**302**
1	320	7.06	7.03	34.057	26.672	141.1	0.708	1.97	29.0	52.0	2.50	33.2	0.00			3**23**
1	378	6.23	6.20	34.066	26.790	130.1	0.787	1.45	20.9	64.3	2.75	36.9	0.00			**381**
	400 ISL	6.01	5.98	34.089	26.836	125.9	0.815	1.23	17.7	68.8	2.85	38.1	0.00			**403**
1	442	5.66	5.62	34.135	26.916	118.5	0.867	0.86	12.2	76.9	3.01	40.0	0.00			**446**
	500 ISL	5.27	5.23	34.156	26.980	112.9	0.934	0.63	8.9	85.7	3.12	41.4	0.00			**504**
1	511	5.20	5.16	34.160	26.991	111.8	0.946	0.59	8.3	87.4	3.14	41.7	0.00			**515**

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 16.5 N	120 1.5 W	31/01/89	1844 UTC	567 M	270	05 KT	230 02 05	1	1018.5 MB	12.7 C	12.0 C	1/8	CI

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 7 8	SIGMA THETA	SVA	DYN HT	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 D.BAR
1	0 A	12.37	12.37	33.535	25.382	258.5	0.000	6.28	103.6	4.8	0.54	2.9	0.14	5.04	0.43	0
1	10	12.16	12.16	33.569	25.448	252.4	0.026	6.77	111.2	3.5	0.45	1.9	0.08	6.45	0.77	10
1	18	11.85	11.85	33.594	25.526	245.1	0.045	6.91	112.8	1.8	0.45	1.5	0.05	13.56	1.72	18
	20 ISL	11.76	11.76	33.600	25.548	243.2	0.050	6.81	111.0	2.1	0.50	2.1	0.06	12.80	1.64	20
	30 ISL	11.38	11.38	33.626	25.638	234.8	0.074	6.14	99.3	4.7	0.80	5.7	0.12	6.13	1.23	30
1	33	11.28	11.28	33.634	25.663	232.5	0.081	5.89	95.0	5.9	0.90	7.0	0.15	3.20	1.11	33
1	48	11.05	11.04	33.674	25.736	225.9	0.116	5.28	84.8	9.6	1.13	10.3	0.19	2.23	0.94	48
	50 ISL	10.96	10.95	33.687	25.762	223.5	0.120	5.03	80.6	11.2	1.21	11.6	0.20	2.01	0.89	50
1	63	10.38	10.37	33.774	25.932	207.6	0.148	3.51	55.6	21.1	1.70	19.9	0.24	0.71	0.59	63
	75 ISL	10.22	10.21	33.799	25.979	203.4	0.173	3.31	52.2	22.6	1.76	21.0	0.17	0.50	0.50	76
1	77	10.21	10.20	33.801	25.982	203.1	0.177	3.28	51.7	22.9	1.77	21.2	0.15	0.46	0.50	78
1	92	10.06	10.05	33.850	26.046	197.3	0.207	2.97	46.7	24.8	1.84	22.6	0.05	0.35	0.48	93
	100 ISL	9.97	9.96	33.877	26.082	194.1	0.223	2.85	44.7	25.8	1.87	23.2	0.04	0.28	0.46	101
1	107	9.88	9.87	33.902	26.117	190.9	0.236	2.76	43.3	26.8	1.90	23.7	0.03	0.22	0.44	108
	125 ISL	9.58	9.57	33.977	26.226	180.9	0.269	2.50	38.9	30.2	2.04	25.3	0.01	0.11	0.43	126
1	132	9.46	9.45	34.003	26.266	177.2	0.282	2.40	37.3	31.5	2.09	25.9	0.01	0.08	0.42	133
	150 ISL	9.30	9.28	34.031	26.314	172.9	0.314	2.22	34.4	33.6	2.16	26.8	0.00	0.08	0.35	151
1	162	9.22	9.20	34.041	26.335	171.2	0.334	2.13	32.9	34.6	2.20	27.3	0.00	0.08	0.30	163
1	191	9.04	9.02	34.088	26.401	165.5	0.383	1.93	29.7	37.0	2.31	28.4	0.00	0.09	0.31	193
	200 ISL	8.99	8.97	34.099	26.418	164.0	0.398	1.88	28.9	37.7	2.33	28.7	0.00	0.08	0.31	202
1	229	8.80	8.78	34.127	26.470	159.6	0.445	1.70	26.0	40.6	2.40	29.6	0.00	0.04	0.29	231
	250 ISL	8.51	8.48	34.143	26.528	154.4	0.478	1.54	23.4	44.4	2.49	30.6	0.00	0.03	0.24	252
1	280	8.08	8.05	34.160	26.607	147.3	0.523	1.32	19.9	50.1	2.63	32.1	0.00	0.02	0.18	282
	300 ISL	7.89	7.86	34.163	26.637	144.6	0.552	1.25	18.8	52.2	2.68	32.8	0.00			302
1	329	7.65	7.62	34.168	26.677	141.2	0.594	1.11	16.6	56.1	2.76	33.6	0.00			332
1	377	7.15	7.11	34.205	26.777	132.2	0.659	0.51	7.5	70.0	3.10	34.7	0.00			3 80
	400 ISL	6.90	6.86	34.216	26.820	128.2	0.689	0.42	6.2	73.9	3.15	34.9	0.00			**403**
1	416	6.74	6.70	34.223	26.848	125.8	0.709	0.37	5.4	77.1	3.19	35.1	0.00			**420**
1	456	6.43	6.39	34.239	26.902	121.0	0.759	0.11	1.6	94.0	3.45	31.7	0.00			**460**
1	484	6.38	6.34	34.245	26.913	120.2	0.793	0.08	1.2	98.7	3.56	30.1	0.00			**488**
	500 ISL	6.34	6.29	34.249	26.922	119.6	0.812	0.10	1.4	101.3	3.66	28.6	0.00			**504**
1	503	6.33	6.28	34.250	26.924	119.5	0.815	0.10	1.4	101.8	3.68	28.3	0.00			**507**
1	524	6.32	6.27	34.260	26.933	118.9	0.840	0.09	1.3	104.0	3.74	27.1	0.00			**529**
1	543	6.31	6.26	34.253	26.929	119.5	0.863	0.09	1.3	105.3	3.79	27.1	0.01			**548**
1	558	6.29	6.24	34.256	26.93 4	119.2	0.881	0.08	1.2	107.2	3.87	26.3	0.11			**563**

A) SANTA BARBARA BASIN STATION.

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 13.6 N	119 24.5 W	31/01/89	1359 UTC	36 M	340	05 KT			1017.4 MB	12.8 C	11.8 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 D.BAR
	0	ISL	12.67	12.67	33.504	25.300	266.3	0.000	6.38	105.9	3.0	0.40	1.8	0.09	4.23	0.41	0
1	1		12.67	12.67	33.504	25.300	266.3	0.003	6.38	105.9	3.0	0.40	1.8	0.09	4.23	0.41	1
	10	ISL	12.49	12.49	33.508	25.338	262.9	0.026	6.46	106.9	2.4	0.42	1.8	0.06	8.42	0.63	10
1	11		12.46	12.46	33.509	25.344	262.3	0.029	6.46	106.8	2.3	0.42	1.8	0.06	8.92	0.65	11
	20	ISL	12.38	12.38	33.512	25.362	260.8	0.053	6.27	103.5	3.2	0.48	2.7	0.11	6.58	0.45	20
1	21		12.37	12.37	33.512	25.364	260.7	0.055	6.25	103.1	3.3	0.49	2.8	0.11	6.32	0.43	21

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 10.7 N	119 30.4 W	31/01/89	1202 UTC	109 M	270	05 KT			1017.5 MB	13.7 C	10.0 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 D.BAR
1	0		13.15	13.15	33.483	25.188	276.8	0.000	6.24	104.6	4.2	0.44	1.0	0.04	1.09	0.32	0
1	9		13.02	13.02	33.482	25.214	274.7	0.025	6.27	104.9	4.1	0.44	1.0	0.04	1.09	0.33	9
	10	ISL	13.01	13.01	33.482	25.216	274.5	0.028	6.26	104.7	4.1	0.44	1.0	0.04	1.10	0.34	10
1	19		12.91	12.91	33.480	25.234	273.0	0.052	6.21	103.6	4.0	0.47	1.4	0.06	1.17	0.40	19
	20	ISL	12.85	12.85	33.479	25.245	271.9	0.055	6.12	102.0	4.2	0.51	2.0	0.08	1.10	0.39	20
1	29		12.17	12.17	33.491	25.386	258.7	0.079	5.14	84.4	7.6	0.92	8.2	0.27	0.45	0.28	29
	30	ISL	12.09	12.09	33.500	25.408	256.6	0.081	5.03	82.5	8.2	0.97	8.9	0.27	0.44	0.27	30
1	39		11.48	11.48	33.583	25.587	239.9	0.104	4.25	68.8	12.8	1.32	13.7	0.29	0.33	0.23	39
1	50		11.43	11.42	33.614	25.620	237.0	0.130	4.28	69.3	13.6	1.34	13.3	0.29	0.64	0.31	50
1	60		11.34	11.33	33.626	25.646	234.8	0.154	4.08	65.9	14.5	1.40	14.5	0.30	0.50	0.27	60
1	71		10.92	10.91	33.694	25.775	222.8	0.179	3.40	54.4	18.5	1.62	19.0	0.09	0.11	0.16	72
	75	ISL	10.84	10.83	33.716	25.806	219.9	0.188	3.30	52.8	19.4	1.66	19.6	0.09	0.11	0.18	76
1	84		10.65	10.64	33.765	25.878	213.2	0.207	3.07	48.9	21.4	1.76	20.8	0.10	0.11	0.24	85

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 52.7 N	120 8.0 W	31/01/89	0616 UTC	104 M	030	07 KT			1019.2 MB	12.9 C	11.3 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 D.BAR
	0	ISL	12.56	12.56	33.551	25.357	260.8	0.000	6.14	101.7	7.5	0.71	5.0	0.11	1.02	0.18	0
1	1		12.56	12.56	33.551	25.357	260.8	0.003	6.14	101.7	7.5	0.71	5.0	0.11	1.02	0.18	1
	10	ISL	12.22	12.22	33.547	25.420	255.1	0.026	6.13	100.8	7.6	0.73	5.3	0.11	1.11	0.25	10
1	11		12.17	12.17	33.547	25.429	254.2	0.028	6.13	100.7	7.6	0.73	5.3	0.11	1.12	0.26	11
	20	ISL	12.01	12.01	33.577	25.483	249.3	0.051	5.64	92.4	9.2	0.87	7.2	0.12	0.99	0.33	20
1	21		11.98	11.98	33.582	25.493	248.4	0.054	5.56	91.0	9.5	0.90	7.6	0.12	0.98	0.33	21
	30	ISL	10.99	10.99	33.645	25.723	226.7	0.075	4.51	72.3	14.3	1.25	13.3	0.13	0.52	0.27	30
1	31		10.88	10.88	33.653	25.749	224.2	0.077	4.39	70.2	14.9	1.29	14.0	0.13	0.47	0.26	31
1	42		10.81	10.80	33.720	25.814	218.3	0.101	3.65	58.3	18.6	1.55	18.2	0.10	0.25	0.21	42
	50	ISL	10.55	10.54	33.779	25.906	209.8	0.119	3.14	49.9	21.4	1.74	20.9	0.04	0.12	0.14	50
1	52		10.47	10.46	33.794	25.931	207.4	0.123	3.04	48.2	22.1	1.78	21.5	0.03	0.09	0.13	52
1	61		10.18	10.17	33.849	26.024	198.7	0.141	2.87	45.3	24.7	1.86	22.6	0.03	0.05	0.11	61
1	72		10.19	10.18	33.853	26.026	198.8	0.163	2.89	45.6	24.7	1.79	22.3	0.04	0.06	0.15	73
	75	ISL	10.17	10.16	33.856	26.032	198.3	0.169	2.89	45.6	24.9	1.81	22.4	0.04	0.06	0.15	76
1	87		10.10	10.09	33.866	26.052	196.7	0.193	2.87	45.2	25.8	1.87	22.9	0.04	0.06	0.14	88

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 44.7 N	120 24.6 W	31/01/89	0259 UTC	968 M	310	12 KT			1018.9 MB	12.8 C	12.0 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 D.BAR
	0	ISL	12.22	12.22	33.554	25.425	254.3	0.000	6.08	100.0	7.7	0.74	5.6	0.12	1.12	0.25	0
1	2		12.22	12.22	33.554	25.425	254.4	0.005	6.08	100.0	7.7	0.74	5.6	0.12	1.12	0.25	2
	10	ISL	12.13	12.13	33.557	25.445	252.7	0.025	6.06	99.5	7.9	0.76	5.8	0.13	0.96	0.36	10
1	12		12.08	12.08	33.551	25.450	252.3	0.030	6.06	99.4	8.0	0.76	5.9	0.13	0.93	0.40	12
	20	ISL	11.73	11.73	33.552	25.516	246.2	0.050	5.96	97.0	9.6	0.88	7.7	0.20	1.09	0.44	20
1	21		11.68	11.68	33.552	25.525	245.3	0.053	5.94	96.6	9.8	0.90	8.0	0.21	1.11	0.45	21
	30	ISL	11.35	11.35	33.567	25.598	238.6	0.075	5.61	90.6	11.8	1.06	10.5	0.32	0.83	0.60	30
1	31		11.31	11.31	33.569	25.607	237.8	0.077	5.55	89.6	12.1	1.08	10.8	0.33	0.78	0.61	31
1	40		10.76	10.76	33.593	25.724	226.8	0.098	4.72	75.3	16.1	1.34	15.4	0.21	0.31	0.31	40
1	50		10.08	10.07	33.641	25.879	212.3	0.120	3.94	61.9	19.5	1.58	19.5	0.05	0.13	0.23	50
1	59		9.98	9.97	33.655	25.907	209.8	0.139	3.87	60.7	20.1	1.61	20.0	0.04	0.11	0.19	59
1	69		9.77	9.76	33.699	25.976	203.4	0.159	3.58	55.9	23.3	1.71	21.6	0.02	0.06	0.13	70
	75	ISL	9.63	9.62	33.712	26.010	200.3	0.172	3.49	54.3	24.3	1.74	22.2	0.01	0.05	0.13	76
1	82		9.48	9.47	33.733	26.051	196.6	0.186	3.40	52.8	25.4	1.77	22.9	0.01	0.04	0.12	83
1	97		9.23	9.22	33.861	26.192	183.5	0.214	3.01	46.5	29.4	1.92	24.9	0.00	0.02	0.09	98
	100	ISL	9.19	9.18	33.875	26.209	181.9	0.219	2.97	45.8	29.8	1.94	25.1	0.00	0.02	0.09	101
1	117		9.02	9.01	33.931	26.280	175.4	0.250	2.80	43.1	32.0	2.02	26.0	0.00	0.02	0.07	118
	125	ISL	8.93	8.92	33.965	26.321	171.7	0.264	2.67	41.0	33.6	2.07	26.6	0.00	0.03	0.06	126
1	141		8.75	8.74	34.030	26.401	164.4	0.291	2.42	37.0	36.9	2.18	27.8	0.00	0.04	0.06	142
	150	ISL	8.63	8.61	34.056	26.440	160.9	0.305	2.32	35.4	38.5	2.22	28.4	0.00	0.04	0.06	151
1	171		8.38	8.36	34.104	26.516	154.0	0.338	2.10	31.9	42.0	2.31	29.5	0.00	0.02	0.07	172
	200	ISL	8.24	8.22	34.145	26.570	149.4	0.382	1.78	26.9	46.1	2.43	30.8	0.00	0.01	0.04	202
1	201		8.24	8.22	34.146	26.571	149.3	0.384	1.77	26.8	46.2	2.43	30.8	0.00	0.01	0.04	203
1	229		7.96	7.94	34.149	26.615	145.5	0.425	1.66	24.9	48.6	2.51	31.8	0.00			231
	250	ISL	7.81	7.79	34.180	26.662	141.4	0.455	1.37	20.5	51.5	2.62	32.9	0.00			252
1	269		7.70	7.67	34.212	26.703	137.7	0.482	1.09	16.3	54.3	2.73	33.8	0.00			**271**
	300	ISL	7.53	7.50	34.233	26.745	134.2	0.524	0.92	13.7	57.2	2.81	34.6	0.00			302
1	325		7.40	7.37	34.239	26.768	132.4	0.557	0.86	12.8	59.2	2.85	35.1	0.00			**328**
1	383		7.02	6.98	34.245	26.826	127.5	0.633	0.71	10.4	64.6	2.94	36.6	0.00			**386**
	400	ISL	6.88	6.84	34.248	26.848	125.6	0.654	0.66	9.7	66.4	2.97	37.1	0.00			**403**
1	448		6.47	6.43	34.253	26.907	120.4	0.713	0.55	8.0	72.0	3.04	38.4	0.00			**452**
	500	ISL	6.01	5.97	34.248	26.963	115.3	0.774	0.48	6.9	79.7	3.12	39.8	0.00			**504**
1	514		5.89	5.85	34.247	26.977	114.0	0.790	0.46	6.6	81.8	3.14	40.2	0.00			518

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 34.7 N	120 45.3 W	30/01/89	2303 UTC	1367 M	330	12 KT	3 40 03 11	0	1018.9 MB	15.0 C	13.3 C	0/8	

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 D.BAR
	0	ISL	12.99	12.99	33.451	25.196	276.1	0.000	6.20	103.6	4.7	0.61	1.7	0.09	1.91	0.20	0
1	1		12.99	12.99	33.451	25.196	276.2	0.003	6.20	103.6	4.7	0.61	1.7	0.09	1.91	0.20	1
	10	ISL	12.79	12.79	33.447	25.232	272.9	0.027	6.19	103.0	4.8	0.60	1.8	0.09	1.09	0.20	10
1	11		12.76	12.76	33.447	25.238	272.4	0.030	6.19	102.9	4.8	0.60	1.8	0.09	0.98	0.20	11
	20	ISL	12.59	12.59	33.448	25.272	269.4	0.055	6.20	102.7	4.8	0.60	1.9	0.10	1.11	0.25	20
1	21		12.57	12.57	33.448	25.276	269.0	0.057	6.20	102.7	4.8	0.60	1.9	0.10	1.12	0.26	21
	30	ISL	12.50	12.50	33.448	25.290	267.9	0.081	6.19	102.4	5.0	0.61	2.1	0.10	1.07	0.26	30
1	32		12.49	12.49	33.448	25.292	267.8	0.087	6.18	102.2	5.0	0.61	2.1	0.10	1.06	0.26	32
1	41		12.44	12.43	33.446	25.300	267.3	0.111	6.13	101.2	4.9	0.61	2.2	0.10	0.95	0.35	41
	50	ISL	12.29	12.28	33.453	25.335	264.2	0.135	6.10	100.4	5.6	0.66	2.6	0.13	0.90	0.27	50
1	51		12.26	12.25	33.452	25.339	263.8	0.137	6.10	100.4	5.7	0.66	2.6	0.13	0.89	0.26	51
1	60		11.69	11.68	33.405	25.410	257.2	0.161	5.51	89.5	8.2	0.91	6.8	0.19	0.28	0.16	60
1	70		10.82	10.81	33.468	25.616	237.7	0.186	4.60	73.4	13.4	1.26	13.1	0.03	0.11	0.11	71
	75	ISL	10.55	10.54	33.498	25.687	231.1	0.197	4.36	69.2	15.1	1.37	14.9	0.03	0.09	0.10	76
1	85		10.17	10.16	33.578	25.815	219.1	0.220	3.99	62.8	18.3	1.54	17.7	0.02	0.05	0.09	86
1	99		9.67	9.66	33.783	26.059	196.2	0.249	3.21	50.0	25.3	1.84	22.6	0.02	0.02	0.06	100
	100	ISL	9.65	9.64	33.790	26.068	195.4	0.251	3.20	49.9	25.5	1.84	22.7	0.02	0.02	0.06	101
1	120		9.28	9.27	33.855	26.179	185.1	0.289	3.03	46.8	27.9	1.91	24.1	0.01	0.01	0.04	121
	125	ISL	9.17	9.16	33.874	26.212	182.1	0.298	3.00	46.3	28.7	1.93	24.5	0.01	0.01	0.04	126
1	145		8.74	8.72	33.946	26.336	170.6	0.333	2.90	44.3	32.2	2.02	25.8	0.01	0.01	0.04	146
	150	ISL	8.65	8.63	33.959	26.361	168.3	0.342	2.89	44.1	32.9	2.03	26.0	0.01	0.01	0.04	151
1	176		8.26	8.24	34.010	26.461	159.2	0.384	2.81	42.5	36.4	2.09	27.1	0.01	0.00	0.03	177
	200	ISL	7.96	7.94	34.036	26.526	153.4	0.422	2.64	39.7	40.4	2.18	28.4	0.00	0.00	0.02	202
1	205		7.90	7.88	34.039	26.537	152.4	0.430	2.60	39.0	41.2	2.20	28.7	0.00	0.00	0.02	207
1	235		7.62	7.60	34.056	26.591	147.6	0.475	2.35	35.0	45.6	2.32	30.2	0.00			237
	250	ISL	7.49	7.47	34.063	26.616	145.5	0.497	2.22	33.0	47.6	2.38	31.0	0.00			252
1	274		7.27	7.24	34.072	26.654	142.2	0.531	2.02	29.9	51.0	2.47	32.2	0.00			276
	300	ISL	7.01	6.98	34.078	26.695	138.5	0.568	1.79	26.3	55.1	2.57	33.6	0.00			302
1	329		6.73	6.70	34.093	26.745	134.1	0.607	1.51	22.0	60.2	2.69	35.1	0.00			332
1	387		6.32	6.29	34.180	26.868	122.9	0.682	0.84	12.2	71.4	2.95	38.1	0.00			390
	400	ISL	6.20	6.16	34.181	26.885	121.5	0.698	0.78	11.3	73.1	2.98	38.6	0.00			403
1	451		5.75	5.71	34.180	26.941	116.5	0.758	0.64	9.1	79.3	3.07	40.0	0.00			455
	500	ISL	5.51	5.47	34.232	27.011	110.2	0.814	0.44	6.2	86.3	3.16	41.2	0.00			504
1	516		5.43	5.39	34.249	27.035	108.1	0.831	0.38	5.4	88.6	3.19	41.6	0.00			520

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 14.6 N	121 26.6 W	30/01/89	1640 UTC	3651 M	310	13 KT	320 03 08	1	1021.0 MB	13.0 C	12.0 C	1/8	CI

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 D.BAR
1	0		11.91	11.91	33.410	25.372	259.4	0.000	6.25	102.1	7.8	0.67	4.4	0.12	1.01	0.21	0
	10	ISL	11.71	11.71	33.481	25.464	250.8	0.026	6.26	101.8	9.3	0.77	6.0	0.14	1.07	0.25	10
1	16		11.59	11.59	33.523	25.519	245.7	0.040	6.27	101.8	10.2	0.83	6.9	0.15	1.11	0.27	16
	20	ISL	11.46	11.46	33.566	25.577	240.4	0.050	6.18	100.0	11.3	0.91	8.2	0.17	1.14	0.33	20
1	30		11.17	11.17	33.653	25.697	229.2	0.074	5.95	95.8	13.7	1.10	11.2	0.21	1.20	0.43	30
1	40		11.12	11.12	33.655	25.708	228.4	0.096	5.84	93.9	13.8	1.14	11.7	0.23	0.76	0.33	40
1	50		11.11	11.10	33.658	25.713	228.2	0.119	5.76	92.6	13.9	1.15	11.9	0.24	0.60	0.32	50
1	61		10.79	10.78	33.701	25.803	219.8	0.144	4.84	77.3	17.3	1.37	15.2	0.26	0.24	0.21	61
1	71		10.23	10.22	33.777	25.960	205.1	0.165	3.70	58.4	22.3	1.65	19.9	0.21	0.16	0.17	72
	75	ISL	10.06	10.05	33.803	26.009	200.5	0.173	3.44	54.1	23.9	1.73	21.2	0.15	0.14	0.15	76
1	81		9.85	9.84	33.836	26.070	194.8	0.185	3.17	49.6	26.0	1.82	22.8	0.07	0.11	0.12	82
1	96		9.38	9.37	33.890	26.190	183.6	0.214	2.85	44.2	28.9	1.96	25.0	0.01	0.03	0.11	97
	100	ISL	9.27	9.26	33.910	26.224	180.5	0.221	2.78	43.0	29.9	1.99	25.5	0.01	0.03	0.10	101
1	110		9.07	9.06	33.960	26.295	173.9	0.239	2.64	40.6	32.2	2.06	26.4	0.02	0.02	0.08	111
	125	ISL	8.97	8.96	34.010	26.350	168.9	0.264	2.46	37.8	34.5	2.14	27.2	0.01	0.02	0.08	126
1	126		8.96	8.95	34.012	26.353	168.7	0.266	2.45	37.6	34.6	2.14	27.2	0.01	0.02	0.08	127
	150	ISL	8.32	8.30	34.016	26.456	159.2	0.305	2.62	39.7	37.4	2.15	28.2	0.01	0.02	0.07	151
1	151		8.29	8.27	34.015	26.459	158.9	0.307	2.63	39.8	37.5	2.15	28.2	0.01	0.02	0.07	152
1	176		8.07	8.05	34.043	26.515	154.0	0.346	2.41	36.3	40.5	2.23	29.3	0.02	0.01	0.08	177
	200	ISL	7.88	7.86	34.071	26.565	149.6	0.382	2.16	32.4	44.0	2.33	30.5	0.01	0.01	0.06	202
1	206		7.83	7.81	34.077	26.577	148.6	0.391	2.10	31.5	44.9	2.36	30.8	0.01	0.01	0.06	208
1	235		7.47	7.45	34.085	26.636	143.3	0.434	1.93	28.7	49.7	2.47	32.3	0.01			237
	250	ISL	7.29	7.27	34.091	26.666	140.6	0.455	1.78	26.3	52.6	2.53	33.1	0.01			252
1	274		7.01	6.98	34.101	26.713	136.4	0.488	1.53	22.5	57.2	2.63	34.5	0.01			276
	300	ISL	6.74	6.71	34.113	26.759	132.3	0.523	1.31	19.1	61.5	2.74	35.8	0.01			302
1	328		6.48	6.45	34.125	26.803	128.3	0.560	1.11	16.1	65.8	2.85	37.1	0.01			331
1	385		5.98	5.95	34.138	26.878	121.7	0.631	0.85	12.2	74.9	2.97	39.1	0.00			388
	400	ISL	5.97	5.94	34.164	26.900	119.8	0.649	0.75	10.8	76.3	3.01	39.3	0.00			403
1	449		5.94	5.90	34.253	26.975	113.4	0.706	0.43	6.2	80.7	3.13	39.7	0.00			453
	500	ISL	5.64	5.60	34.297	27.047	107.0	0.762	0.32	4.6	87.8	3.21	40.8	0.00			504
1	520		5.52	5.48	34.315	27.076	104.3	0.783	0.28	4.0	90.6	3.24	41.2	0.00			525

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 54.7 N	122 7.6 W	30/01/89	1104 UTC	4190 M	310	14 KT			1021.0 MB	10.0 C	9.8 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 D.BAR
	0 ISL	12.20	12.20	33.154	25.118	283.5	0.000	6.22	102.0	4.2	0.55	2.2	0.08	0.64	0.15	0
1	2	12.20	12.20	33.154	25.118	283.5	0.006	6.22	102.0	4.2	0.55	2.2	0.08	0.64	0.15	2
	10 ISL	12.17	12.17	33.156	25.126	283.0	0.028	6.24	102.3	4.2	0.56	2.3	0.08	0.65	0.16	10
1	18	12.13	12.13	33.159	25.136	282.3	0.051	6.25	102.4	4.3	0.57	2.3	0.08	0.66	0.18	18
	20 ISL	12.13	12.13	33.161	25.138	282.2	0.057	6.25	102.4	4.3	0.57	2.3	0.08	0.66	0.19	20
	30 ISL	12.11	12.11	33.167	25.146	281.6	0.085	6.23	102.0	4.3	0.55	2.1	0.08	0.68	0.22	30
1	33	12.11	12.11	33.168	25.147	281.6	0.093	6.22	101.8	4.3	0.54	2.1	0.08	0.68	0.22	33
1	42	12.12	12.11	33.176	25.152	281.4	0.119	6.20	101.5	4.4	0.54	2.1	0.09	0.62	0.20	42
	50 ISL	12.29	12.28	33.242	25.171	279.8	0.141	6.11	100.5	4.3	0.55	2.2	0.11	0.45	0.18	50
1	52	12.33	12.32	33.259	25.176	279.3	0.147	6.08	100.1	4.3	0.56	2.3	0.11	0.41	0.18	52
1	63	12.31	12.30	33.264	25.184	278.8	0.177	6.00	98.7	4.6	0.62	2.9	0.12	0.29	0.16	63
1	72	11.96	11.95	33.353	25.320	266.1	0.202	5.59	91.3	5.9	0.66	4.7	0.08	0.13	0.11	73
	75 ISL	11.68	11.67	33.336	25.359	262.5	0.210	5.50	89.3	7.0	0.76	6.2	0.06	0.11	0.10	76
1	81	11.06	11.05	33.293	25.438	255.0	0.225	5.34	85.5	9.6	0.99	9.6	0.03	0.08	0.09	82
1	96	10.02	10.01	33.387	25.692	231.0	0.262	4.74	74.3	14.6	1.28	14.8	0.01	0.03	0.05	97
	100 ISL	9.97	9.96	33.456	25.754	225.2	0.271	4.48	70.1	16.4	1.39	16.5	0.01	0.03	0.05	101
1	U0	9.85	9.84	33.605	25.890	212.4	0.293	3.85	60.2	20.7	1.64	20.4	0.01	0.03	0.07	HI
	125 ISL	9.63	9.62	33.729	26.024	200.0	0.324	3.40	52.9	24.7	1.79	22.9	0.01	0.01	0.07	126
1	126	9.61	9.60	33.735	26.032	199.3	0.326	3.38	52.6	24.9	1.79	23.0	0.01	0.01	0.07	127
	150 ISL	8.89	8.87	33.855	26.242	179.7	0.371	3.10	47.5	30.6	1.97	26.0	0.01	0.01	0.04	151
1	151	8.86	8.84	33.859	26.250	179.0	0.373	3.10	47.5	30.8	1.98	26.1	0.01	0.01	0.04	152
1	176	8.46	8.44	33.977	26.404	164.6	0.416	2.92	44.3	35.3	2.07	27.4	0.01	0.00	0.04	177
	200 ISL	7.99	7.97	34.006	26.498	156.0	0.454	2.76	41.5	39.9	2.17	29.1	0.00	0.00	0.03	202
1	204	7.91	7.89	34.007	26.510	154.9	0.461	2.73	40.9	40.7	2.19	29.4	0.00	0.00	0.03	206
1	234	7.52	7.50	34.029	26.584	148.2	0.506	2.49	37.0	46.2	2.31	31.0	0.00			236
	250 ISL	7.30	7.28	34.038	26.623	144.7	0.529	2.32	34.3	49.6	2.40	32.1	0.00			252
1	272	7.01	6.98	34.050	26.673	140.2	0.561	2.06	30.3	54.4	2.52	33.7	0.00			**274**
	300 ISL	6.70	6.67	34.066	26.728	135.2	0.599	1.73	25.2	60.1	2.67	35.6	0.00			**302**
1	328	6.43	6.40	34.083	26.777	130.8	0.637	1.41	20.4	65.5	2.81	37.3	0.00			**331**
1	385	5.99	5.96	34.125	26.867	122.8	0.709	0.92	13.2	75.3	3.02	39.9	0.00			3**88**
	400 ISL	5.86	5.83	34.132	26.889	120.8	0.727	0.83	11.9	77.7	3.06	40.5	0.00			**403**
1	450	5.53	5.49	34.169	26.959	114.5	0.786	0.59	8.4	84.7	3.18	41.9	0.00			**454**
	500 ISL	5.51	5.47	34.251	27.027	108.8	0.842	0.40	5.7	88.8	3.26	42.2	0.00			**504**
1	516	5.51	5.47	34.277	27.047	107.0	0.859	0.34	4.8	90.1	3.29	42.3	0.00			**520**

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD **AMT**	TYPE
32 34.7 N	122 48.7 W	30/01/89	0512 UTC	3924 M	030	08 KT			1022.5 MB	12.0 C	11.7 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 **D.BAR**
	0 ISL	13.07	13.07	33.063	24.879	306.2	0.000	6.14	102.5	4.9	0.41	0.5	0.04	0.40	0.12	0
1	1	13.07	13.07	33.063	24.879	306.3	0.003	6.14	102.5	4.9	0.41	0.5	0.04	0.40	0.12	1
	10 ISL	13.04	13.04	33.064	24.886	305.8	0.031	6.15	102.6	4.8	0.43	0.5	0.04	0.40	0.12	10
1	16	13.02	13.02	33.065	24.891	305.5	0.049	6.16	102.7	4.7	0.44	0.5	0.04	0.41	0.12	16
	20 ISL	13.01	13.01	33.067	24.895	305.3	0.061	6.16	102.7	4.7	**0.44**	0.5	0.04	0.41	0.13	20
	30 ISL	12.99	12.99	33.072	24.903	304.8	0.092	6.16	102.7	4.5	0.42	0.5	0.04	0.43	0.15	30
1	32	12.99	12.99	33.073	24.904	304.8	0.098	6.16	102.7	4.5	0.42	0.5	0.04	0.43	0.15	32
1	41	12.98	12.97	33.073	24.906	304.8	0.125	6.15	102.5	3.8	0.42	0.5	0.04	0.44	0.16	41
	50 ISL	12.98	12.97	33.076	24.909	304.8	0.153	6.13	102.2	4.0	0.44	0.5	0.04	0.42	0.16	50
1	51	12.98	12.97	33.076	24.909	304.8	0.156	6.13	102.2	4.0	**0.44**	0.5	0.04	0.42	0.16	51
1	60	12.85	12.84	33.074	24.933	302.7	0.183	6.13	101.9	4.1	0.47	0.9	0.06	0.40	0.18	60
1	70	12.71	12.70	33.086	24.970	299.5	0.213	6.11	101.3	4.3	0.51	1.2	0.08	0.30	0.18	71
	75 ISL	12.52	12.51	33.122	25.034	293.4	0.228	6.06	100.0	4.8	0.55	1.9	**0.14**	0.24	0.15	76
1	79	12.35	12.34	33.154	25.092	288.0	0.240	6.01	98.9	5.2	0.59	2.6	0.19	0.19	0.13	80
1	95	11.84	11.83	33.213	25.234	274.8	0.285	5.72	93.1	6.3	0.69	4.8	**0.14**	0.10	0.15	96
	100 ISL	11.65	11.64	33.244	25.293	269.3	0.298	5.64	91.5	6.7	0.72	5.5	0.10	0.08	0.13	101
1	U0	11.23	11.22	33.332	25.438	255.7	0.324	5.31	85.4	8.6	0.87	8.1	0.02	0.06	0.09	111
1	125	10.46	10.45	33.550	25.744	226.8	0.361	4.01	63.5	16.6	1.48	17.6	0.01	0.07	0.10	126
1	150	9.63	9.61	33.803	26.082	195.1	0.413	3.08	48.0	25.8	1.88	24.0	0.00	0.01	0.05	151
1	174	9.05	9.03	33.937	26.281	176.5	0.458	2.70	41.5	31.8	2.04	26.4	0.00	0.00	0.05	175
	200 ISL	8.66	8.64	33.982	26.378	167.7	0.503	2.74	41.8	33.9	2.06	27.1	0.00	0.01	0.04	202
1	205	8.59	8.57	33.984	26.390	166.6	0.511	2.75	41.9	34.2	2.06	27.1	0.00	0.01	0.04	207
1	233	8.06	8.04	34.013	26.494	157.1	0.556	2.72	40.9	38.5	2.14	28.4	0.00			235
	250 ISL	7.86	7.84	34.028	26.535	153.3	0.583	2.62	39.3	40.8	2.20	29.1	0.00			**252**
1	273	7.64	7.61	34.045	26.580	149.3	0.618	2.42	36.1	44.1	2.29	30.2	0.00			**275**
	300 ISL	7.27	7.24	34.059	26.644	143.5	0.657	2.14	31.6	49.5	2.42	31.9	0.00			**302**
1	327	6.92	6.89	34.074	26.705	138.0	0.695	1.83	26.8	55.3	2.56	33.8	0.00			**330**
1	386	6.46	6.43	34.132	26.812	128.3	0.774	1.08	15.7	65.9	2.84	37.2	0.00			**389**
	400 ISL	6.36	6.32	34.148	26.838	126.0	0.791	0.95	13.8	68.3	2.89	37.8	0.00			**403**
1	449	6.06	6.02	34.202	26.920	118.8	0.851	0.60	8.6	75.6	3.03	39.3	0.00			**453**
	500 ISL	5.86	5.82	34.249	26.982	113.3	0.9U	0.45	6.4	80.9	3.12	40.1	0.00			**504**
1	514	5.80	5.76	34.262	27.000	111.8	0.926	0.41	5.9	82.4	3.14	40.3	0.00			**518**

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 14.7 N	123 29.5 W	29/01/89	2335 UTC	4343 M	030 07 KT	300 05 08	1	1021.1 MB	12.2 C	11.1 C	6/8 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 D.BAR
1	0	12.78	12.78	33.138	24.994	295.3	0.000	6.21	103.1	3.7	0.47	1.2	0.05	0.52	0.15	0
	10 ISL	12.61	12.61	33.137	25.027	292.5	0.029	6.22	102.9	3.6	0.47	1.2	0.06	0.56	0.18	10
1	15	12.53	12.53	33.136	25.042	291.2	0.044	6.23	102.9	3.6	0.47	1.2	0.06	0.58	0.20	15
	20 ISL	12.52	12.52	33.137	25.045	291.0	0.059	6.23	102.9	3.6	0.47	1.2	0.06	0.61	0.21	20
	30 ISL	12.49	12.49	33.141	25.054	290.4	0.088	6.21	102.5	3.6	0.49	1.4	0.07	0.66	0.24	30
1	31	12.49	12.49	33.142	25.054	290.4	0.091	6.21	102.5	3.6	0.49	1.4	0.07	0.66	0.24	31
1	39	12.50	12.49	33.178	25.081	288.1	0.114	6.19	102.2	3.7	0.51	1.6	0.07	0.55	0.26	39
1	50	12.52	12.51	33.208	25.100	286.5	0.145	6.13	101.3	3.6	0.54	1.8	0.09	0.42	0.21	50
1	60	12.54	12.53	33.217	25.104	286.5	0.174	6.11	101.0	4.0	0.54	1.9	0.09	0.36	0.22	60
1	69	12.04	12.03	33.154	25.150	282.2	0.199	5.95	97.3	4.4	0.64	3.4	0.21	0.11	0.11	70
	75 ISL	11.76	11.75	33.137	25.189	278.6	0.216	5.83	94.7	5.2	0.67	4.5	0.15	0.10	0.12	76
1	78	11.62	11.61	33.138	25.216	276.1	0.225	5.76	93.3	5.7	0.69	5.2	0.11	0.09	0.12	79
1	94	10.49	10.48	33.277	25.526	246.8	0.266	5.07	80.2	10.8	1.07	11.3	0.01	0.05	0.07	95
	100 ISL	10.22	10.21	33.350	25.629	237.1	0.281	4.83	76.0	12.9	1.20	13.5	0.01	0.04	0.06	101
1	109	9.89	9.88	33.464	25.774	223.5	0.302	4.50	70.3	16.2	1.38	16.5	0.00	0.02	0.06	110
1	124	9.29	9.28	33.628	26.000	202.2	0.334	4.11	63.5	21.3	1.56	20.0	0.00	0.01	0.04	125
	125 ISL	9.26	9.25	33.637	26.012	201.1	0.336	4.08	63.0	21.6	1.57	20.2	0.00	0.01	0.04	126
1	147	8.82	8.80	33.812	26.219	181.7	0.378	3.45	52.8	27.3	1.84	24.1	0.00	0.00	0.04	148
	150 ISL	8.80	8.78	33.832	26.238	180.0	0.383	3.38	51.7	27.9	1.86	24.4	0.00	0.00	0.04	151
1	172	8.69	8.67	33.943	26.342	170.5	0.422	3.03	46.2	31.3	1.96	25.9	0.00	0.00	0.04	173
	200 ISL	8.36	8.34	33.989	26.429	162.7	0.468	3.06	46.4	34.1	2.00	26.6	0.00	0.00	0.04	202
1	202	8.33	8.31	33.990	26.435	162.2	0.472	3.06	46.3	34.3 A	2.00 A	26.6 A	0.00 A	0.00	0.04	204
1	232	8.02	8.00	34.032	26.514	155.1	0.519	2.67	40.2	39.3 A	2.18 A	28.7 A	0.00 A			234
	250 ISL	7.86	7.84	34.047	26.550	151.9	0.547	2.52	37.8	41.5	2.24	29.5	0.00			252
1	272	7.66	7.63	34.060	26.589	148.5	0.580	2.36	35.2	44.3	2.31	30.5	0.00			274
	300 ISL	7.32	7.29	34.069	26.645	143.5	0.621	2.09	30.9	49.2	2.42	32.1	0.00			302
1	327	6.98	6.95	34.077	26.699	138.6	0.659	1.81	26.6	54.3	2.54	33.8	0.00			330
1	384	6.43	6.40	34.115	26.803	129.2	0.735	1.25	18.1	64.4	2.79	36.9	0.00			387
	400 ISL	6.32	6.28	34.124	26.824	127.3	0.756	1.13	16.3	66.7	2.85	37.5	0.00			403
1	448	6.06	6.02	34.158	26.885	122.0	0.816	0.81	11.6	72.6	2.99	39.0	0.00			452
	500 ISL	5.90	5.86	34.225	26.958	115.7	0.877	0.53	7.6	78.0	3.10	39.9	0.00			504
1	515	5.86	5.82	34.245	26.979	113.8	0.895	0.45	6.4	79.5	3.13	40.1	0.00			519

A) THE NUTRIENT SAMPLES AT 202 AND 232 METERS APPEAR TO HAVE BEEN REVERSED. THEY ARE ASSUMED TO NOW BE IN THE CORRECT ORDER.

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
31 54.7 N	124 10.1 W	29/01/89	1718 UTC	4114 M	020 12 KT	350 05 04	2	1023.2 MB	12.2 C	10.1 C	8/8 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 D.BAR
1	0	12.89	12.89	33.231	25.045	290.5	0.000	6.11	101.7	3.0	0.44	1.0	0.06	0.57	0.20	0
	10 ISL	12.88	12.88	33.231	25.047	290.5	0.029	6.10	101.6	2.9	0.44	1.1	0.06	0.56	0.21	10
1	15	12.88	12.88	33.231	25.047	290.6	0.044	6.10	101.6	2.8	0.51 U	1.1	0.06	0.56	0.21	15
	20 ISL	12.88	12.88	33.231	25.047	290.8	0.058	6.10	101.6	2.7	0.43	1.0	0.06	0.56	0.22	20
1	29	12.89	12.89	33.231	25.046	291.2	0.084	6.10	101.6	2.7	0.43	0.9	0.06	0.56	0.23	29
	30 ISL	12.89	12.89	33.231	25.046	291.2	0.087	6.10	101.6	2.7	0.43	0.9	0.06	0.56	0.23	30
1	39	12.86	12.85	33.233	25.053	290.7	0.113	6.10	101.5	2.8	0.44	1.0	0.06	0.54	0.20	39
1	50	12.83	12.82	33.249	25.072	289.2	0.145	6.07	101.0	3.0	0.48	1.3	0.08	0.43	0.22	50
1	60	12.81	12.80	33.270	25.092	287.6	0.174	6.06	100.8	3.1	0.51	1.6	0.09	0.37	0.19	60
1	75	12.77	12.76	33.279	25.108	286.5	0.217	6.04	100.3	3.2	0.51	1.7	0.09	0.32	0.21	76
1	90	11.46	11.45	33.207	25.299	268.4	0.259	5.48	88.5	6.3	0.76	6.5	0.01	0.08	0.11	91
	100 ISL	10.55	10.54	33.314	25.544	245.2	0.284	4.86	77.0	11.4	1.10	12.2	0.00	0.07	0.10	101
1	104	10.24	10.23	33.368	25.640	236.2	0.294	4.63	72.9	13.4	1.23	14.4	0.00	0.07	0.10	105
1	120	9.83	9.82	33.465	25.785	222.7	0.331	4.32	67.4	16.9	1.42	17.5	0.00	0.02	0.05	121
	125 ISL	9.72	9.71	33.533	25.856	216.0	0.342	4.11	64.0	18.6	1.50	18.9	0.00	0.02	0.05	126
1	139	9.41	9.39	33.721	26.054	197.4	0.371	3.50	54.2	23.3	1.73	22.6	0.00	0.01	0.04	140
	150 ISL	9.10	9.08	33.783	26.152	188.2	0.392	3.26	50.2	26.0	1.84	24.4	0.00	0.00	0.03	151
1	157	8.91	8.89	33.808	26.202	183.6	0.405	3.16	48.4	27.4	1.89	25.2	0.00	0.00	0.03	158
1	184	8.42	8.40	33.928	26.372	167.8	0.452	2.99	45.4	32.0	1.98	26.8	0.00	0.00	0.03	185
	200 ISL	8.11	8.09	33.961	26.445	161.1	0.479	2.99	45.0	34.9	2.02	27.5	0.00	0.00	0.03	202
1	217	7.81	7.79	33.980	26.504	155.7	0.506	2.98	44.6	37.8	2.06	28.1	0.00	0.00	0.02	219
	250 ISL	7.48	7.46	34.010	26.575	149.3	0.556	2.81	41.7	42.5	2.13	29.4	0.00			252
1	251	7.47	7.45	34.010	26.577	149.2	0.557	2.80	41.6	42.6	2.13	29.4	0.00			253
1	290	6.94	6.91	34.015	26.655	142.1	0.614	2.44	35.8	50.0	2.31	31.9	0.00			292
	300 ISL	6.83	6.80	34.017	26.672	140.6	0.628	2.36	34.5	51.6	2.35	32.4	0.00			302
1	343	6.40	6.37	34.029	26.738	134.6	0.688	2.03	29.4	58.2	2.53	34.5	0.00			346
	400 ISL	5.85	5.82	34.049	26.824	126.8	0.762	1.52	21.7	68.1	2.77	37.4	0.00			403
1	406	5.80	5.77	34.052	26.833	126.1	0.770	1.47	21.0	69.2	2.79	37.7	0.00			409
1	473	5.29	5.25	34.103	26.935	116.7	0.851	0.93	13.1	80.3	3.02	40.5	0.00			477
	500 ISL	5.16	5.12	34.137	26.977	112.9	0.882	0.77	10.8	84.5	3.09	41.2	0.00			504
1	553	4.89	4.85	34.204	27.062	105.2	0.940	0.45	6.3	92.8	3.24	42.7	0.00			558

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 53.4 N	118 29.6 W	27/01/89	0004 UTC	60 M	020 21 KT	320 01 09	0	1018.5 MB	18.0 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/L	OXY PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
	0 ISL	12.60	12.60	33.487	25.300	266.2	0.000	7.56	125.3	3.0	0.29	0.3	0.03	7.67	0.59	0
1	1	12.60	12.60	33.487	25.300	266.2	0.003	7.56	125.3	3.0	0.29	0.3	0.03	7.67	0.59	1
	10 ISL	12.53	12.53	33.490	25.316	265.0	0.027	7.46	123.5	3.0	0.28	0.5	0.04	9.77	0.84	10
1	11	12.51	12.51	33.488	25.318	264.7	0.029	7.45	123.3	3.0	0.28	0.5	0.04	10.01	0.88	11
	20 ISL	12.26	12.26	33.499	25.375	259.6	0.053	6.32	104.0	3.2	0.56	3.7	0.13	8.41	1.08	20
1	21	12.23	12.23	33.501	25.382	258.9	0.055	6.17	101.5	3.2	0.60	4.1	0.14	8.23	1.09	21
	30 ISL	11.96	11.96	33.507	25.438	253.8	0.078	5.34	87.3	6.2	1.00	7.2	0.22	2.82	0.82	30
1	31	11.93	11.93	33.509	25.446	253.2	0.081	5.26	86.0	6.7	1.04	7.6	0.23	2.23	0.78	31
1	41	11.62	11.61	33.553	25.538	244.6	0.106	4.47	72.6	11.4	1.32	11.3	0.28	0.70	0.58	41
	50 ISL	11.44	11.43	33.586	25.597	239.2	0.128	4.08	66.0	14.0	1.45	13.3	0.30	0.72	0.63	50
1	51	11.42	11.41	33.590	25.603	238.6	0.130	4.04	65.3	14.3	1.46	13.5	0.30	0.72	0.63	51

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 49.5 N	118 37.7 W	27/01/89	0210 UTC	681 M	060	12 KT	310 01 10	0	1018.1 MB	15.6 C	12.8 C	0/8

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 D.BAR
	0	ISL	12.88	12.88	33.506	25.260	270.0	0.000	6.65	110.9	4.0	0.38	1.2	0.05	3.25	0.58	0
1	1		12.88	12.88	33.506	25.260	270.1	0.003	6.65	110.9	4.0	0.38	1.2	0.05	3.25	0.58	1
	10	ISL	12.84	12.84	33.504	25.266	269.7	0.027	6.67	111.1	3.9	0.37	1.1	0.05	3.50	0.63	10
1	11		12.84	12.84	33.504	25.266	269.7	0.030	6.67	111.1	3.9	0.37	1.1	0.05	3.53	0.64	11
	20	ISL	12.64	12.64	33.494	25.298	266.9	0.054	6.64	110.2	3.1	0.36	1.2	0.05	5.19	0.98	20
1	21		12.61	12.61	33.493	25.303	266.5	0.057	6.64	110.1	3.0	0.36	1.2	0.05	5.25	1.01	21
	30	ISL	12.12	12.12	33.494	25.398	257.6	0.080	5.46	89.6	6.3	0.83	6.4	0.30	1.03	0.63	30
1	31		12.07	12.07	33.495	25.408	256.7	0.083	5.32	87.2	6.7	0.89	7.0	0.33	0.51	0.58	31
1	41		11.83	11.82	33.510	25.465	251.5	0.108	4.79	78.1	9.2	1.10	9.9	0.46	0.35	0.46	41
	50	ISL	11.43	11.42	33.589	25.601	238.8	0.130	3.95	63.9	14.1	1.35	15.2	0.30	0.25	0.23	50
1	52		11.35	11.34	33.608	25.630	236.1	0.135	3.77	60.9	15.2	1.40	16.3	0.25	0.23	0.19	52
1	62		11.24	11.23	33.655	25.687	230.9	0.158	3.47	55.9	17.4	1.49	17.8	0.08	0.18	0.21	62
1	72		10.95	10.94	33.655	25.739	226.2	0.181	3.51	56.2	17.8	1.50	18.4	0.09	0.14	0.18	73
	75	ISL	10.89	10.88	33.663	25.756	224.6	0.188	3.48	55.7	18.2	1.52	18.7	0.08	0.13	0.18	76
1	86		10.70	10.69	33.698	25.817	219.1	0.212	3.36	53.5	19.8	1.59	19.7	0.04	0.09	0.17	87
	100	ISL	10.33	10.32	33.725	25.903	211.2	0.242	3.37	53.3	21.0	1.62	20.5	0.02	0.06	0.10	101
1	101		10.30	10.29	33.728	25.910	210.5	0.244	3.37	53.2	21.1	1.62	20.6	0.02	0.06	0.09	102
1	121		9.86	9.85	33.843	26.075	195.2	0.285	3.10	48.5	25.2	1.76	22.7	0.01	0.03	0.08	122
	125	ISL	9.82	9.81	33.861	26.096	193.3	0.293	3.04	47.6	25.8	1.79	23.0	0.01	0.03	0.08	126
1	146		9.65	9.63	33.940	26.186	185.2	0.333	2.76	43.0	28.6	1.91	24.5	0.00	0.02	0.07	147
	150	ISL	9.61	9.59	33.953	26.203	183.6	0.340	2.75	42.8	29.1	1.92	24.7	0.00	0.02	0.07	151
1	175		9.27	9.25	34.019	26.310	173.9	0.385	2.69	41.6	32.1	1.96	25.7	0.00	0.01	0.05	176
	200	ISL	8.76	8.74	34.059	26.423	163.5	0.427	2.60	39.8	35.2	2.04	27.0	0.01	0.01	0.04	202
1	205		8.66	8.64	34.066	26.444	161.6	0.435	2.58	39.4	35.9	2.06	27.3	0.01	0.01	0.04	207
1	233		8.39	8.37	34.125	26.532	153.6	0.479	2.11	32.0	41.3	2.26	29.3	0.00			23 5
	250	ISL	8.17	8.14	34.145	26.581	149.2	0.505	1.86	28.1	44.5	2.37	30.6	0.00			252
1	273		7.88	7.85	34.165	26.640	143.8	0.538	1.56	23.4	48.4	2.49	32.1	0.00			275
	300	ISL	7.69	7.66	34.193	26.690	139.5	0.577	1.28	19.1	52.2	2.61	33.3	0.00			302
1	328		7.57	7.54	34.219	26.728	136.3	0.615	1.05	15.6	55.4	2.71	34.1	0.00			331
1	386		7.37	7.33	34.253	26.784	131.9	0.693	0.76	11.3	59.8	2.82	35.3	0.00			389
	400	ISL	7.31	7.27	34.259	26.797	130.8	0.711	0.71	10.5	60.9	2.85	35.6	0.00			403
1	450		7.05	7.01	34.278	26.849	126.5	0.776	0.56	8.2	65.5	2.94	36.6	0.00			454
	500	ISL	6.65	6.60	34.300	26.921	120.0	0.837	0.42	6.1	72.2	3.04	37.7	0.00			504
1	520		6.49	6.44	34.309	26.950	117.5	0.861	0.36	5.2	74.9	3.08	38.2	0.00			525

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 87 39.5

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 40.5 N	118 56.4 W	27/01/89	0606 UTC	896 M	03 0	18 KT			1019.2 MB	13.3 C	11.2 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 D.BAR
1	0	A	12.87	12.87	33.491	25.250	271.0	0.000	6.25	104.2	4.1	0.45	1.5	0.05	1.45	0.31	0
1	10		12.86	12.86	33.490	25.252	271.1	0.027	6.30	105.0	3.9	0.47	1.5	0.05	1.47	0.40	10
1	19		12.63	12.63	33.509	25.312	265.6	0.051	6.00	99.5	4.6	0.57	3.0	0.08	0.98	0.34	19
	20	ISL	12.61	12.61	33.510	25.316	265.2	0.054	5.99	99.3	4.7	0.57	3.2	0.09	0.94	0.34	20
1	30		12.39	12.39	33.523	25.369	260.4	0.080	5.52	91.1	6.0	0.74	5.6	0.17	0.62	0.37	30
1	40		11.22	11.22	33.630	25.671	232.0	0.105	3.80	61.2	15.0	1.39	16.5	0.06	0.23	0.18	40
1	50		10.89	10.88	33.667	25.759	223.8	0.128	3.59	57.4	17.0	1.51	18.5	0.03	0.14	0.16	50
1	61		10.65	10.64	33.792	25.899	210.7	0.151	2.94	46.8	21.2	1.62	20.8	0.01	0.04	0.15	61
1	75		10.48	10.47	33.888	26.003	201.1	0.180	2.60	41.3	24.2	1.87	22.8	0.00	0.02	0.07	76
1	89		10.25	10.24	33.889	26.044	197.5	0.208	2.71	42.8	24.7	1.57	21.9	0.01	0.02	0.07	90
	100	ISL	9.99	9.98	33.916	26.110	191.5	0.230	2.71	42.6	25.8	1.56	22.2	0.01	0.01	0.07	101
1	103		9.93	9.92	33.924	26.126	190.0	0.235	2.71	42.5	26.1	1.56	22.3	0.01	0.01	0.07	104
1	124		9.87	9.86	33.940	26.149	188.3	0.275	2.66	41.7	26.9	1.61	22.5	0.01	0.01	0.05	125
	125	ISL	9.84	9.83	33.943	26.156	187.6	0.277	2.66	41.7	27.0	1.62	22.6	0.01	0.01	0.05	126
1	148		9.19	9.17	34.013	26.318	172.5	0.318	2.63	40.6	30.3	1.98	25.9	0.00	0.01	0.04	149
	150	ISL	9.16	9.14	34.016	26.325	171.9	0.322	2.62	40.4	30.5	1.99	26.0	0.00	0.01	0.04	151
1	179		8.85	8.83	34.045	26.397	165.5	0.371	2.45	37.6	33.5	2.06	27.3	0.00	0.00	0.05	180
	200	ISL	8.68	8.66	34.073	26.446	161.2	0.405	2.38	36.3	35.5	2.11	27.9	0.00	0.01	0.06	202
1	209		8.61	8.59	34.087	26.468	159.3	0.419	2.32	35.4	36.6	2.14	28.2	0.00	0.01	0.06	211
1	238		8.30	8.28	34.152	26.567	150.4	0.464	1.84	27.9	42.5	2.34	30.2	0.00			240
	250	ISL	8.18	8.15	34.168	26.598	147.6	0.482	1.68	25.4	44.4	2.40	30.9	0.00			252
1	273		7.98	7.95	34.189	26.644	143.5	0.516	1.42	21.4	47.7	2.50	32.1	0.00			275
	300	ISL	7.82	7.79	34.209	26.684	140.2	0.554	1.21	18.1	51.1	2.57	33.0	0.00			302
1	313		7.75	7.72	34.217	26.700	138.8	0.572	1.13	16.9	52.6	2.59	33.4	0.00			316
1	368		7.41	7.37	34.249	26.775	132.4	0.647	0.80	11.9	58.6	2.74	35.2	0.00			371
	400	ISL	7.21	7.17	34.265	26.816	128.9	0.689	0.65	9.6	61.8	2.80	36.0	0.00			403
1	432		6.98	6.94	34.282	26.862	124.9	0.729	0.53	7.8	65.4	2.86	36.7	0.00			436
	500	ISL	6.37	6.32	34.325	26.978	114.4	0.811	0.34	4.9	76.6	3.00	38.4	0.00			504
1	502		6.35	6.30	34.326	26.981	114.1	0.813	0.34	4.9	76.9	3.00	38.4	0.00			506
1	581		5.81	5.76	34.347	27.067	106.4	0.900	0.23	3.3	87.6	3.08	39.4	0.00			586
	600	ISL	5.71	5.66	34.353	27.084	104.9	0.920	0.22	3.1	89.5	3.10	39.5	0.00			605
1	656		5.49	5.43	34.369	27.124	101.6	0.978	0.19	2.7	94.2	3.15	39.7	0.00			662
	700	ISL	5.36	5.30	34.378	27.147	99.8	1.022	0.18	2.5	97.2	3.17	39.4	0.00			706
1	723		5.30	5.24	34.382	27.158	99.0	1.045	0.18	2.5	99.8	3.18	39.3	0.00			730
1	786		5.16	5.09	34.394	27.184	97.0	1.107	0.14	2.0	116.3	3.26	37.4	0.00			793
	800	ISL	5.14	5.07	34.397	27.189	96.7	1.120	0.13	1.8	117.8	3.27	37.1	0.00			808
1	843		5.10	5.03	34.398	27.195	96.6	1.162	0.09	1.3	121.8	3.29	34.8	0.00			851
1	886		5.08	5.01	34.381	27.184	98.1	1.204	0.05	0.7	129.7	3.53	29.1	0.05			894

A) SANTA MONICA BASIN STATION.

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 29.4 N	119 19.1 W	27/01/89	1712 UTC	1705 M	270 07 KT	280 03 07	0	1021.8 MB	12.6 C	11.8 C	0/8

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 D.BAR
1	0		11.70	11.70	33.489	25.472	249.8	0.000	5.84	95.0	8.9	0.85	7.9	0.13	0.97	0.17	0
1	10		11.68	11.68	33.488	25.475	249.8	0.025	5.86	95.3	8.7	0.85	7.9	0.14	1.08	0.18	10
1	19		11.64	11.64	33.499	25.491	248.5	0.047	5.69	92.4	9.3	0.90	8.5	0.14	0.88	0.24	19
	20	ISL	11.63	11.63	33.499	25.493	248.3	0.050	5.67	92.1	9.4	0.90	8.5	0.14	0.86	0.24	20
1	29		11.50	11.50	33.545	25.553	242.8	0.072	5.38	87.2	10.9	0.99	9.9	0.17	0.68	0.24	29
	30	ISL	11.44	11.44	33.553	25.571	241.2	0.074	5.31	85.9	11.3	1.01	10.3	0.17	0.65	0.24	30
1	38		10.87	10.87	33.606	25.714	227.7	0.093	4.71	75.3	14.8	1.23	14.0	0.17	0.38	0.24	38
1	48		10.42	10.41	33.595	25.785	221.2	0.116	4.20	66.5	16.8	1.42	17.0	0.08	0.22	0.17	48
	50	ISL	10.38	10.37	33.615	25.807	219.1	0.120	4.13	65.3	17.5	1.44	17.4	0.08	0.21	0.16	50
1	57		10.19	10.18	33.712	25.916	209.0	0.135	3.83	60.4	20.6	1.55	19.1	0.10	0.16	0.15	57
1	67		9.40	9.39	33.857	26.161	185.8	0.155	3.02	46.8	27.5	1.87	24.1	0.03	0.04	0.12	68
	75	ISL	9.31	9.30	33.882	26.195	182.7	0.169	2.90	44.9	28.6	1.90	24.6	0.02	0.03	0.09	76
1	79		9.26	9.25	33.895	26.213	181.1	0.177	2.84	43.9	29.2	1.91	24.9	0.02	0.03	0.08	80
1	94		9.14	9.13	33.937	26.265	176.4	0.204	2.72	41.9	30.7	1.98	25.8	0.02	0.03	0.07	95
	100	ISL	9.07	9.06	33.956	26.291	174.0	0.214	2.65	40.8	31.6	2.01	26.2	0.02	0.03	0.07	101
1	113		8.92	8.91	34.001	26.351	168.6	0.236	2.49	38.2	33.6	2.08	27.1	0.01	0.02	0.06	114
	125	ISL	8.89	8.88	34.047	26.392	165.0	0.256	2.35	36.1	34.8	2.13	27.6	0.00	0.01	0.05	126
1	138		8.88	8.87	34.091	26.428	161.8	0.278	2.22	34.1	35.9	2.17	28.1	0.00	0.01	0.05	139
	150	ISL	8.81	8.79	34.110	26.454	159.6	0.297	2.13	32.6	37.0	2.20	28.5	0.00	0.01	0.05	151
1	167		8.67	8.65	34.127	26.490	156.5	0.324	1.98	30.2	38.9	2.25	29.1	0.00	0.01	0.05	168
1	195		8.36	8.34	34.174	26.574	148.9	0.367	1.59	24.1	44.2	2.42	31.0	0.00	0.00	0.04	197
	200	ISL	8.31	8.29	34.179	26.586	147.9	0.374	1.54	23.3	45.0	2.44	31.3	0.00			202
1	225		8.08	8.06	34.199	26.636	143.4	0.410	1.33	20.1	48.5	2.52	32.3	0.00			227
	250	ISL	7.94	7.91	34.213	26.669	140.8	0.446	1.20	18.0	50.8	2.59	33.0	0.00			252
1	264		7.87	7.84	34.219	26.684	139.6	0.465	1.14	17.1	51.9	2.62	33.3	0.00			**266**
	300	ISL	7.65	7.62	34.234	26.728	135.9	0.515	0.97	14.5	55.3	2.70	34.3	0.00			**302**
1	318		7.53	7.50	34.242	26.752	133.8	0.539	0.89	13.3	57.1	2.74	34.8	0.00			321
1	376		7.17	7.13	34.276	26.830	127.2	0.615	0.61	9.0	63.6	2.88	36.2	0.00			**379**
	400	ISL	7.00	6.96	34.286	26.862	124.4	0.645	0.53	7.8	66.4	2.93	36.8	0.00			**403**
1	441		6.71	6.67	34.299	26.912	120.1	0.695	0.43	6.3	71.2	3.01	37.8	0.00			**445**
	500	ISL	6.38	6.33	34.316	26.969	115.2	0.765	0.34	4.9	77.1	3.07	38.7	0.00			**504**
1	509		6.33	6.28	34.319	26.978	114.4	0.775	0.33	4.8	78.0	3.08	38.8	0.00			**513**

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 19.4 N	119 39.8 W	27/01/89	2141 UTC	83 M	280 13 KT	270 03 07	0	1021.2 MB	12.9 C	11.8 C	0/8

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 D.BAR
	0	ISL	12.08	12.08	33.510	25.417	255.1	0.000	5.94	97.4	8.3	0.80	7.0	0.14	0.98	0.14	0
1	1		12.08	12.08	33.510	25.417	255.1	0.003	5.94	97.4	8.3	0.80	7.0	0.14	0.98	0.14	1
	10	ISL	11.88	11.88	33.512	25.457	251.5	0.025	5.87	95.9	8.4	0.81	7.2	0.15	0.97	0.20	10
1	11		11.85	11.85	33.512	25.463	251.0	0.028	5.86	95.6	8.4	0.81	7.2	0.15	0.97	0.21	11
	20	ISL	11.78	11.78	33.504	25.469	250.6	0.050	5.87	95.6	8.5	0.82	7.3	0.14	0.93	0.22	20
1	21		11.78	11.78	33.504	25.469	250.6	0.053	5.87	95.6	8.5	0.82	7.3	0.14	0.92	0.22	21
	30	ISL	11.73	11.73	33.497	25.474	250.4	0.075	5.82	94.7	8.6	0.83	7.5	0.14	0.91	0.23	30
1	31		11.72	11.72	33.496	25.475	250.4	0.078	5.81	94.5	8.6	0.83	7.5	0.14	0.91	0.23	31
1	41		11.36	11.35	33.609	25.629	235.9	0.102	5.09	82.2	12.7	1.09	11.6	0.19	0.50	0.32	41
	50	ISL	11.16	11.15	33.631	25.682	231.0	0.123	4.83	77.7	14.2	1.21	13.1	0.18	0.43	0.20	50
1	51		11.14	11.13	33.632	25.687	230.6	0.126	4.81	77.4	14.3	1.22	13.2	0.18	0.42	0.19	51
1	61		10.85	10.84	33.672	25.770	223.0	0.148	4.43	70.8	16.8	1.33	15.5	0.18	0.37	0.23	61
	75	ISL	10.00	9.99	33.812	26.026	198.8	0.178	3.40	53.4	24.4	1.69	21.3	0.10	0.09	0.16	76
1	76		9.94	9.93	33.822	26.044	197.1	0.180	3.33	52.2	24.9	1.72	21.7	0.09	0.07	0.16	77

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 9.4 N	120 0.4 W	28/01/89	0139 UTC	1223 M	280 17 KT	3 00 04 07	1	1021.7 MB	11.8 C	10.9 C	6/8 SC

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 D.BAR
	0	ISL	11.96	11.96	33.501	25.433	253.6	0.000	5.94	97.2	9.4	0.79	7.2	0.14	0.78	0.21	0
1	1		11.96	11.96	33.501	25.433	253.6	0.003	5.94	97.2	9.4	0.79	7.2	0.14	0.78	0.21	1
	10	ISL	11.77	11.77	33.505	25.472	250.1	0.025	5.87	95.6	9.7	0.80	7.6	0.15	0.99	0.27	10
1	11		11.74	11.74	33.505	25.478	249.6	0.028	5.86	95.4	9.7	0.80	7.6	0.15	1.02	0.28	11
	20	ISL	11.72	11.72	33.508	25.484	249.2	0.050	5.85	95.2	9.8	0.82	7.7	0.15	1.04	0.29	20
1	21		11.72	11.72	33.508	25.484	249.3	0.053	5.85	95.2	9.8	0.82	7.7	0.15	1.04	0.29	21
	30	ISL	11.71	11.71	33.507	25.485	249.4	0.075	5.84	95.0	9.7	0.82	7.8	0.16	1.01	0.29	30
1	31		11.71	11.71	33.507	25.485	249.4	0.078	5.84	95.0	9.7	0.82	7.8	0.16	1.01	0.29	31
1	41		11.69	11.68	33.506	25.488	249.3	0.103	5.78	94.0	9.7	0.82	7.8	0.16	0.95	0.31	41
	50	ISL	11.65	11.64	33.515	25.503	248.2	0.125	5.71	92.8	9.9	0.85	7.9	0.18	0.86	0.35	50
1	52		11.63	11.62	33.515	25.507	247.8	0.130	5.69	92.4	10.0	0.86	7.9	0.18	0.82	0,35	52
1	62		11.45	11.44	33.578	25.589	240.3	0.154	5.17	83.7	12.2	1.02	11.0	0.20	0.43	0.24	62
1	72		10.68	10.67	33.671	25.799	220.4	0.177	4.24	67.5	17.9	1.36	16.6	0.18	0.21	0.24	73
	75	ISL	10.48	10.47	33.708	25.863	214.4	0.184	3.97	63.0	19.6	1.45	18.1	0.15	0.18	0.21	76
1	86		9.91	9.90	33.827	26.053	196.5	0.206	3.22	50.5	24.6	1.71	22.3	0.03	0.12	0.11	87
	100	ISL	9.70	9.69	33.861	26.115	190.9	0.234	3.07	47.9	25.6	1.77	23.3	0.01	0.06	0.09	101
1	101		9.70	9.69	33.861	26.115	190.9	0.235	3.06	47.8	25.7	1.77	23.4	0.01	0.06	0.09	102
1	121		9.39	9.38	33.952	26.237	179.7	0.272	2.78	43.1	29.2	1.89	25.1	0.01	0.01	0.06	122
	125	ISL	9.32	9.31	33.969	26.262	177.4	0.280	2.73	42.3	29.9	1.91	25.4	0.01	0.01	0.06	126
1	146		8.97	8.95	34.047	26.380	166.6	0.316	2.46	37.8	33.7	2.04	27.0	0.00	0.01	0.06	147
	150	ISL	8.90	8.88	34.060	26.401	164.6	0.322	2.39	36.7	34.6	2.07	27.4	0.00	0.01	0.06	151
1	176		8.43	8.41	34.119	26.520	153.7	0.364	2.00	30.4	40.3	2.25	29.7	0.00	0.01	0.05	177
	200	ISL	8.04	8.02	34.125	26.584	147.9	0.400	1.91	28.8	44.3	2.32	30.8	0.00	0.00	0.04	202
1	206		7.96	7.94	34.124	26.595	146.9	0.409	1.90	28.6	45.2	2.33	31.0	0.00	0.00	0.04	208
1	235		7.71	7.69	34.139	26.644	142.7	0.451	1.70	25.4	48.5	2.41	32.2	0.00			237
	250	ISL	7.58	7.56	34.164	26.682	139.2	0.472	1.59	23.7	51.1	2.50	33.1	0.00			**252**
1	274		7.38	7.35	34.204	26.743	133.9	0.505	1.41	20.9	55.4	2.65	34.5	0.00			**276**
	300	ISL	7.17	7.14	34.211	26.778	130.8	0.539	1.16	17.1	58.6	2.72	35.4	0.00			**302**
1	329		6.95	6.92	34.207	26.805	128.5	0.577	0.90	13.2	61.8	2.76	36.2	0.00			**332**
1	386		6.50	6.46	34.227	26.882	121.8	0.648	0.66	9.6	69.0	2.90	38.0	0.00			**389**
	400	ISL	6.44	6.40	34.234	26.896	120.7	0.665	0.61	8.9	70.3	2.92	38.3	0.00			**403**
1	450		6.24	6.20	34.264	26.946	116.5	0.724	0.46	6.6	74.8	3.00	39.2	0.00			**454**
	500	ISL	5.98	5.94	34.302	27.009	110.9	0.781	0.36	5.2	80.2	3.07	40.2	0.00			**504**
1	517		5.89	5.84	34.315	27.031	109.0	0.800	0.32	4.6	82.0	3.10	40.5	0.00			**521**

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 59.A N	120 20.9 W	28/01/89	0543 UTC	83 5 M	290	14 KT			1023.0 MB	12.0 C	10.5 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 D.BAR
1	0		12.89	12.89	33.438	25.205	275.2	0.000	6.07	101.2	4.2	0.49	2.5	0.07	0.50	0.17	0
	10	ISL	12.87	12.87	33.436	25.208	275.2	0.028	6.08	101.3	4.3	0.49	2.5	0.07	0.51	0.16	10
1	11		12.87	12.87	33.436	25.208	275.2	0.030	6.08	101.3	4.3	0.49	2.5	0.07	0.51	0.16	11
	20	ISL	12.89	12.89	33.432	25.201	276.2	0.055	6.07	101.2	4.1	0.50	2.5	0.07	0.53	0.15	20
1	21		12.89	12.89	33.432	25.201	276.2	0.058	6.07	101.2	4.1	0.50	2.5	0.07	0.53	0.15	21
	30	ISL	12.86	12.86	33.435	25.210	275.6	0.083	6.09	101.5	4.3	0.50	2.6	0.07	0.54	0.17	30
1	31		12.86	12.86	33.435	25.210	275.6	0.085	6.09	101.5	4.3	0.50	2.6	0.07	0.54	0.17	31
1	39		12.83	12.82	33.434	25.215	275.3	0.107	6.06	100.9	4.2	0.51	2.6	0.08	0.59	0.20	39
1	50		12.81	12.80	33.432	25.218	275.4	0.138	6.05	100.7	4.5	0.47	2.6	0.08	0.58	0.21	50
1	61		12.79	12.78	33.434	25.223	275.1	0.168	6.02	100.1	4.4	0.52	2.7	0.09	0.52	0.19	61
1	70		12.58	12.57	33.432	25.263	271.6	0.193	5.96	98.7	5.0	0.57	3.4	0.12	0.40	0.19	71
	75	ISL	12.31	12.30	33.435	25.317	266.5	0.206	5.86	96.5	6.1	0.65	4.8	0.17	0.30	0.17	76
1	85		11.69	11.68	33.455	25.450	254.1	0.232	5.56	90.4	9.0	0.86	8.3	0.25	0.14	0.12	86
1	100		11.06	11.05	33.519	25.614	238.7	0.269	4.97	79.7	12.7	1.12	12.7	0.17	0.13	0.13	101
1	118		9.72	9.71	33.743	26.020	200.3	0.309	3.40	53.0	22.7	1.67	22.2	0.00	0.03	0.06	119
	125	ISL	9.44	9.43	33.803	26.113	191.6	0.322	3.27	50.7	25.4	1.77	23.2	0.00	0.03	0.06	126
1	143		9.02	9.00	33.904	26.260	177.9	0.356	2.92	44.9	30.1	1.88	25.6	0.00	0.02	0.05	144
	150	ISL	8.92	8.90	33.924	26.291	175.0	0.368	2.91	44.6	30.9	1.90	25.9	0.00	0.02	0.05	151
1	173		8.68	8.66	33.960	26.357	169.1	0.407	2.87	43.8	32.4	1.93	26.5	0.00	0.01	0.04	174
	200	ISL	8.25	8.23	34.012	26.464	159.4	0.452	2.79	42.2	36.3	2.02	27.6	0.00	0.01	0.03	202
1	203		8.20	8.18	34.017	26.475	158.3	0.457	2.77	41.8	36.8	2.03	27.8	0.00	0.01	0.03	205
1	231		7.78	7.76	34.050	26.564	150.3	0.500	2.43	36.3	42.7	2.18	29.9	0.00			233
	250	ISL	7.54	7.52	34.058	26.605	146.6	0.528	2.28	33.9	45.7	2.25	30.9	0.00			252
1	272		7.29	7.26	34.063	26.644	143.1	0.560	2.12	31.4	48.9	2.33	31.9	0.00			**274**
	300	ISL	6.96	6.93	34.080	26.704	137.7	0.599	1.79	26.3	54.1	2.48	33.8	0.00			302
1	325		6.71	6.68	34.102	26.755	133.0	0.633	1.47	21.5	58.7	2.61	35.4	0.00			**328**
1	383		6.45	6.42	34.177	26.849	124.8	0.708	0.87	12.6	67.4	2.83	37.6	0.00			**386**
	400	ISL	6.31	6.27	34.188	26.876	122.4	0.729	0.77	11.1	70.1	2.88	38.2	0.00			**403**
1	447		5.93	5.89	34.216	26.947	116.0	0.785	0.57	8.2	77.1	2.99	39.7	0.00			**451**
	500	ISL	5.67	5.63	34.278	27.029	108.7	0.844	0.37	5.3	83.7	3.07	40.8	0.00			**504**
1	519		5.57	5.53	34.300	27.058	106.1	0.865	0.30	4.3	86.0	3.10	41.2	0.00			524

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 39.4 N	121 2.1 W	28/01/89	1136 UTC	3733 M	330	15 KT			1023.1 MB	11.5 C	10.4 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 D.BAR
1	0		13.07	13.07	33.339	25.093	285.9	0.000	6.09	101.9	2.9	0.41	1.0	0.06	0.47	0.14	0
	10	ISL	13.05	13.05	33.339	25.097	285.8	0.029	6.10	102.0	2.8	0.42	1.0	0.06	0.48	0.14	10
1	15		13.04	13.04	33.339	25.099	285.7	0.043	6.10	102.0	2.8	0.42	1.0	0.06	0.48	0.14	15
	20	ISL	12.98	12.98	33.332	25.106	285.2	0.057	6.09	101.7	2.8	0.42	1.1	0.07	0.49	0.15	20
1	29		12.88	12.88	33.319	25.116	284.5	0.083	6.08	101.3	2.8	0.42	1.4	0.08	0.50	0.18	29
	30	ISL	12.87	12.87	33.318	25.117	284.4	0.086	6.08	101.3	2.7	0.42	1.4	0.08	0.50	0.18	30
1	39		12.83	12.82	33.316	25.124	284.0	0.111	6.07	101.0	2.3	0.42	1.4	0.08	0.49	0.18	39
1	50		12.84	12.83	33.320	25.125	284.2	0.142	6.07	101.0	2.4	0.43	1.5	0.08	0.50	0.18	50
1	59		12.78	12.77	33.316	25.134	283.6	0.168	6.01	99.9	2.4	0.49	1.9	0.09	0.37	0.17	59
1	70		12.60	12.59	33.318	25.171	280.3	0.199	5.87	97.2	2.1	0.53	2.9	0.10	0.27	0.15	71
	75	ISL	12.33	12.32	33.327	25.230	274.8	0.213	5.72	94.2	2.9	0.61	4.3	0.11	0.22	0.14	76
1	81		11.93	11.92	33.347	25.321	266.2	0.229	5.48	89.5	4.5	0.74	6.5	0.12	0.16	0.12	82
1	95		10.97	10.96	33.430	25.561	243.6	0.265	4.61	73.8	10.1	1.12	13.2	0.03	0.08	0.11	96
	100	ISL	10.74	10.73	33.477	25.638	236.4	0.277	4.35	69.3	12.3	1.25	15.2	0.02	0.06	0.10	101
1	U0		10.33	10.32	33.580	25.790	222.1	0.300	3.92	61.9	16.7	1.46	18.7	0.01	0.04	0.08	HI
	125	ISL	9.64	9.63	33.721	26.016	200.8	0.331	3.49	54.3	22.5	1.65	22.2	0.01	0.02	0.05	126
1	126		9.60	9.59	33.730	26.030	199.5	0.333	3.47	54.0	22.8	1.66	22.4	0.01	0.02	0.05	127
	150	ISL	9.17	9.15	33.891	26.226	181.3	0.379	2.85	44.0	29.2	1.89	25.7	0.01	0.01	0.04	151
1	151		9.16	9.14	33.896	26.231	180.8	0.381	2.83	43.6	29.4	1.90	25.8	0.01	0.01	0.04	152
1	176		8.67	8.65	33.971	26.367	168.2	0.425	2.79	42.6	33.6	1.96	26.9	0.01	0.00	0.04	177
	200	ISL	8.21	8.19	34.022	26.478	158.0	0.464	2.68	40.5	38.2	2.04	28.2	0.01	0.00	0.04	202
1	206		8.10	8.08	34.031	26.501	155.9	0.473	2.65	39.9	39.4	2.06	28.5	0.01	0.00	0.04	208
1	235		7.64	7.62	34.051	26.585	148.3	0.517	2.46	36.7	45.6	2.17	30.0	0.01			237
	250	ISL	7.50	7.48	34.070	26.620	145.1	0.539	2.20	32.7	48.4	2.27	31.2	0.01			252
1	274		7.30	7.27	34.100	26.672	140.5	0.574	1.75	25.9	52.7	2.45	33.2	0.01			**276**
	300	ISL	6.99	6.96	34.111	26.724	135.8	0.609	1.49	21.9	57.2	2.57	34.8	0.01			**302**
1	329		6.64	6.61	34.117	26.776	131.1	0.648	1.29	18.8	62.1	2.67	36.2	0.00			**332**
1	386		6.09	6.06	34.143	26.869	122.7	0.720	0.90	12.9	71.5	2.86	38.7	0.00			**389**
	400	ISL	5.98	5.95	34.155	26.892	120.6	0.738	0.81	11.6	73.7	2.90	39.2	0.00			**403**
1	450		5.65	5.61	34.204	26.972	113.4	0.796	0.54	7.7	81.3	3.02	40.6	0.00			**454**
	500	ISL	5.38	5.34	34.248	27.040	107.4	0.851	0.40	5.7	88.9	3.09	41.6	0.00			**504**
1	516		5.29	5.25	34.262	27.062	105.4	0.868	0.35	4.9	91.3	3.11	41.9	0.00			**520**

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 19.4 N	121 42.9 W	28/01/89	1746 UTC	4114 M	310	19 KT	320 05 09	2	1024.7 MB	11.2 C	9.3 C	8/8	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 D.BAR
	0	ISL	12.51	12.51	33.296	25.169	278.6	0.000	6.13	101.3	4.2	0.51	2.0	0.08	0.66	0.25	0
1	1		12.51	12.51	33.296	25.169	278.7	0.003	6.13	101.3	4.2	0.51	2.0	0.08	0.66	0.25	1
	10	ISL	12.50	12.50	33.296	25.172	278.7	0.028	6.13	101.3	4.1	0.51	2.0	0.08	0.67	0.22	10
1	17		12.49	12.49	33.296	25.174	278.7	0.047	6.14	101.4	4.1	0.51	2.0	0.08	0.67	0.19	17
	20	ISL	12.49	12.49	33.296	25.174	278.8	0.056	6.14	101.4	4.1	0.51	2.0	0.08	0.67	0.19	20
	30	ISL	12.50	12.50	33.295	25.171	279.3	0.084	6.15	101.6	4.2	0.51	2.1	0.08	0.66	0.20	30
1	31		12.50	12.50	33.295	25.171	279.3	0.086	6.15	101.6	4.2	0.51	2.1	0.08	0.66	0.20	31
1	40		12.49	12.48	33.294	25.172	279.4	0.112	6.15	101.6	4.2	0.51	2.1	0.08	0.65	0.20	40
1	50		12.51	12.50	33.296	25.171	279.8	0.140	6.13	101.3	4.2	0.51	2.1	0.08	0.64	0.20	50
1	60		12.45	12.44	33.305	25.189	278.3	0.167	6.12	101.0	4.4	0.54	2.4	0.10	0.60	0.24	60
1	70		12.35	12.34	33.316	25.217	275.9	0.195	6.08	100.1	4.4	0.55	2.7	0.12	0.47	0.22	71
	75	ISL	12.30	12.29	33.324	25.233	274.5	0.209	6.07	99.9	4.4	0.56	2.9	0.13	0.39	0.21	76
1	80		12.22	12.21	33.331	25.254	272.6	0.223	6.06	99.5	4.4	0.58	3.3	0.14	0.31	0.19	81
1	95		11.76	11.75	33.323	25.334	265.3	0.263	5.67	92.2	7.3	0.80	6.6	0.19	0.14	0.12	96
	100	ISL	11.42	11.41	33.377	25.439	255.4	0.276	5.30	85.6	9.7	0.96	9.4	0.15	0.12	0.12	101
1	UO		10.68	10.67	33.516	25.679	232.7	0.300	4.46	71.0	15.0	1.30	15.4	0.05	0.10	0.12	HI
1	124		9.98	9.97	33.662	25.913	210.6	0.331	3.61	56.6	21.3	1.61	20.9	0.01	0.04	0.09	125
	125	ISL	9.93	9.92	33.670	25.928	209.2	0.333	3.60	56.4	21.6	1.62	21.1	0.01	0.04	0.09	126
1	150		8.92	8.90	33.829	26.217	182.1	0.382	3.35	51.4	27.5	1.79	24.1	0.00	0.01	0.04	151
1	173		8.77	8.75	33.966	26.348	170.0	0.423	2.71	41.4	32.9	1.99	27.1	0.00	0.00	0.04	174
	200	ISL	8.43	8.41	34.003	26.430	162.7	0.468	2.77	42.0	34.8	2.01	27.5	0.00	0.00	0.03	202
1	203		8.39	8.37	34.004	26.437	162.1	0.473	2.78	42.2	35.0	2.01	27.5	0.00	0.00	0.03	205
1	231		8.03	8.01	34.064	26.538	152.8	0.517	2.32	34.9	40.7	2.20	29.7	0.01			233
	250	ISL	7.72	7.70	34.081	26.597	147.4	0.545	2.09	31.2	44.7	2.31	31.1	0.01			**252**
1	268		7.42	7.39	34.088	26.646	142.9	0.571	1.92	28.5	48.3	2.39	32.3	0.00			**270**
	300	ISL	7.03	7.00	34.091	26.703	137.8	0.616	1.72	25.3	53.1	2.50	33.8	0.00			**302**
1	322		6.81	6.78	34.092	26.734	135.1	0.646	1.59	23.3	56.3	2.57	34.8	0.00			**325**
1	378		6.24	6.21	34.134	26.842	125.2	0.719	1.00	14.4	67.5	2.82	38.1	0.00			**381**
	400	ISL	6.09	6.05	34.156	26.879	121.9	0.746	0.82	11.8	71.2	2.89	38.9	0.00			**403**
1	443		5.88	5.84	34.203	26.943	116.3	0.798	0.56	8.0	77.4	3.00	40.0	0.00			**447**
	500	ISL	5.75	5.71	34.267	27.010	110.6	0.862	0.38	5.4	83.3	3.10	40.6	0.00			**504**
1	514		5.72	5.68	34.283	27.027	109.2	0.878	0.33	4.7	84.8	3.12	40.8	0.00			**518**

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 59.4 N	122 23.7 W	28/01/89	2345 UTC	3985 M	340	22 KT	300 06 08	2	1022.3 MB	11.7 C	10.2 C	8/8	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 D.BAR
	0	ISL	12.97	12.97	33.301	25.083	286.8	0.000	6.15	102.6	4.0	0.39	1.1	0.03	0.59	0.17	0
1	1		12.97	12.97	33.301	25.083	286.9	0.003	6.15	102.6	4.0	0.39	1.1	0.03	0.59	0.17	1
	10	ISL	12.97	12.97	33.297	25.081	287.4	0.029	6.15	102.6	3.9	0.39	l.l	0.03	0.59	0.18	10
1	16		12.96	12.96	33.294	25.080	287.5	0.046	6.15	102.6	3.8	0.39	1.1	0.03	0.59	0.19	16
	20	ISL	12.96	12.96	33.294	25.080	287.6	0.057	6.15	102.6	3.8	0.39	1.1	0.03	0.59	0.20	20
	30	ISL	12.95	12.95	33.293	25.082	287.8	0.086	6.15	102.6	3.7	0.39	1.2	0.03	0.58	0.22	30
1	31		12.95	12.95	33.293	25.082	287.8	0.089	6.15	102.6	3.7	0.39	1.2	0.03	0.58	0.22	31
1	41		12.87	12.86	33.294	25.099	286.4	0.118	6.08	101.2	3.6	0.43	1.5	0.07	0.42	0.20	41
	50	ISL	12.83	12.82	33.283	25.098	286.7	0.144	6.03	100.3	3.7	0.46	1.7	0.09	0.35	0.18	50
1	52		12.82	12.81	33.282	25.099	286.7	0.149	6.02	100.1	3.7	0.46	1.7	0.09	0.34	0.18	52
1	61		12.83	12.82	33.290	25.104	286.5	0.175	6.06	100.8	3.6	0.44	1.7	0.08	0.34	0.18	61
	75	ISL	12.74	12.73	33.291	25.123	285.0	0.215	5.90	98.0	4.3	0.52	2.8	0.11	0.23	0.16	76
1	76		12.73	12.72	33.291	25.125	284.9	0.218	5.89	97.8	4.3	0.53	2.9	0.11	0.22	0.16	77
1	89		11.14	11.13	33.403	25.509	248.4	0.253	4.70	75.5	11.3	1.11	13.0	0.01	0.10	0.16	90
	100	ISL	10.48	10.47	33.479	25.685	231.9	0.279	4.32	68.4	15.7	1.29	16.3	0.01	0.05	0.10	101
1	104		10.32	10.31	33.508	25.735	227.1	0.288	4.24	66.9	17.1	1.33	17.0	0.01	0.04	0.07	105
1	119		9.54	9.53	33.678	25.999	202.3	0.320	3.72	57.8	23.0	1.61	21.7	0.00	0.02	0.05	120
	125	ISL	9.36	9.35	33.714	26.056	196.9	0.332	3.64	56.3	24.0	1.65	22.4	0.00	0.02	0.05	126
1	140		9.06	9.04	33.776	26.153	188.0	0.361	3.53	54.3	25.7	1.70	23.3	0.00	0.01	0.04	141
	150	ISL	8.85	8.83	33.830	26.228	180.9	0.380	3.40	52.0	27.9	1.77	24.4	0.00	0.00	0.04	151
1	159		8.70	8.68	33.877	26.289	175.4	0.396	3.27	49.9	30.0	1.83	25.4	0.00	0.00	0.04	160
1	184		8.52	8.50	33.966	26.387	166.5	0.439	2.87	43.6	34.0	1.96	27.1	0.00	0.00	0.04	185
	200	ISL	8.27	8.25	33.997	26.449	160.8	0.465	2.77	41.9	36.7	2.02	28.1	0.00	0.00	0.04	202
1	218		7.96	7.94	34.017	26.511	155.1	0.493	2.70	40.5	39.6	2.07	29.1	0.00	0.01	0.03	220
	250	ISL	7.63	7.61	34.037	26.575	149.4	0.542	2.51	37.4	44.0	2.18	30.5	0.00			252
1	252		7.61	7.59	34.038	26.579	149.1	0.545	2.49	37.1	44.3	2.19	30.6	0.00			**254**
1	291		7.08	7.05	34.069	26.678	140.0	0.601	1.92	28.3	52.4	2.43	33.4	0.00			**293**
	300	ISL	6.98	6.95	34.079	26.700	138.0	0.614	1.78	26.1	54.4	2.49	34.1	0.00			**302**
1	346		6.52	6.49	34.127	26.800	128.9	0.675	1.14	16.6	63.8	2.74	37.1	0.00			**349**
	400	ISL	6.11	6.07	34.148	26.870	122.8	0.743	0.85	12.2	70.9	2.89	39.0	0.00			**403**
1	409		6.05	6.01	34.151	26.880	121.9	0.754	0.83	11.9	72.0	2.91	39.2	0.00			**412**
1	477		5.56	5.52	34.204	26.983	112.6	0,834	0.51	7.2	83.3	3.07	41.2	0.00			**481**
	500	ISL	5.48	5.44	34.230	27.013	110.0	0.859	0.45	6.4	85.7	3.10	41.5	0.00			**504**
1	555		5.30	5.25	34.294	27.086	103.6	0.918	0.30	4.2	91.6	3.17	42.1	0.00			**560**

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
31 39.4 N	123 4.2 W	29/01/89	0524 UTC	3738 M	330	17 KT			1022.1 MB	11.9 C	10.8 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 D.BAR
	0	ISL	13.34	13.34	33.207	24.937	300.8	0.000	6.06	101.9	2.0	0.37	0.5	0.05	0.39	0.15	0
1	1		13.34	13.34	33.207	24.937	3 00.8	0.003	6.06	101.9	2.0	0.37	0.5	0.05	0.39	0.15	1
	10	ISL	13.34	13.34	33.206	24.937	301.1	0.030	6.06	101.8	2.0	0.36	0.5	0.04	0.39	0.15	10
1	16		13.34	13.34	33.206	24.937	301.2	0.048	6.06	101.8	1.9	0.35	0.5	0.04	0.39	0.15	16
	20	ISL	13.34	13.34	33.206	24.937	301.3	0.060	6.06	101.8	1.8	0.35	0.5	0.04	0.39	0.15	20
1	30		13.34	13.34	33.206	24.937	301.6	0.090	6.05	101.7	1.7	0.35	0.5	0.05	0.39	0.16	30
1	41		13.10	13.09	33.215	24.992	296.6	0.123	6.04	101.0	2.0	0.39	0.9	0.09	0.36	0.17	41
	50	ISL	12.95	12.94	33.272	25.066	289.8	0.150	6.08	101.4	2.2	0.43	1.4	0.07	0.50	0.18	50
1	51		12.94	12.93	33.279	25.074	289.1	0.153	6.09	101.5	2.2	0.43	1.4	0.07	0.51	0.18	51
1	61		12.92	12.91	33.295	25.090	287.8	0.181	6.11	101.8	2.2	0.43	1.4	0.06	0.46	0.18	61
	75	ISL	12.78	12.77	33.289	25.113	286.0	0.222	6.06	100.7	2.5	0.45	1.6	0.07	0.36	0.17	76
1	76		12.77	12.76	33.289	25.115	285.8	0.224	6.06	100.7	2.5	0.45	1.6	0.07	0.35	0.17	77
1	90		11.95	11.94	33.263	25.252	273.0	0.264	5.52	90.1	5.2	0.62	5.6	0.08	0.11	0.12	91
	100	ISL	11.27	11.26	33.321	25.422	256.9	0.290	5.28	85.0	6.7	0.76	7.9	0.03	0.07	0.07	101
1	105		10.93	10.92	33.366	25.518	247.9	0.303	5.14	82.1	7.9	0.85	9.3	0.01	0.05	0.05	106
1	120		9.99	9.98	33.513	25.795	221.7	0.338	4.27	66.9	15.8	1.35	17.2	0.00	0.03	0.05	121
	125	ISL	9.71	9.70	33.570	25.886	213.1	0.349	4.08	63.6	18.2	1.44	18.9	0.00	0.02	0.05	126
1	140		9.03	9.01	33.728	26.120	191.1	0.379	3.71	57.0	23.9	1.61	22.2	0.00	0.01	0.03	141
	150	ISL	8.79	8.77	33.797	26.212	182.5	0.398	3.59	54.9	26.2	1.69	23.4	0.00	0.01	0.03	151
1	160		8.63	8.61	33.849	26.278	176.4	0.416	3.53	53.8	27.8	1.74	24.0	0.00	0.01	0.03	161
1	185		8.24	8.22	33.952	26.418	163.4	0.458	3.48	52.6	30.9	1.79	25.0	0.00	0.01	0.02	186
	200	ISL	8.03	8.01	33.988	26.478	157.9	0.482	3.31	49.8	33.9	1.87	26.1	0.00	0.01	0.02	202
1	219		7.79	7.77	34.010	26.531	153.2	0.512	3.09	46.2	37.5	1.97	27.5	0.00	0.01	0.02	221
	250	ISL	7.42	7.40	34.001	26.577	149.1	0.559	3.10	46.0	40.4	2.00	28.2	0.00			252
1	253		7.39	7.37	34.000	26.580	148.8	0.563	3.10	45.9	40.7	2.01	28.3	0.00			255
1	294		7.00	6.97	34.052	26.676	140.2	0.622	2.10	30.8	50.8	2.38	32.7	0.00			296
	300	ISL	6.94	6.91	34.057	26.688	139.1	0.631	2.00	29.3	52.0	2.42	33.2	0.00			302
1	348		6.48	6.45	34.088	26.775	131.4	0.696	1.41	20.5	61.0	2.63	36.2	0.00			351
	400	ISL	5.99	5.96	34.117	26.861	123.5	0.762	1.00	14.3	70.2	2.82	38.4	0.00			**403**
1	411		5.90	5.86	34.125	26.878	121.9	0.775	0.93	13.3	72.0	2.85	38.8	0.00			**414**
1	478		5.66	5.62	34.230	26.992	111.9	0.854	0.45	6.4	81.7	3.06	40.4	0.00			**482**
	500	ISL	5.57	5.53	34.251	27.019	109.5	0.878	0.40	5.7	84.0	3.08	40.8	0.00			**504**
1	559		5.33	5.28	34.307	27.093	103.0	0.941	0.28	4.0	90.2	3.13	41.7	0.00			**564**

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 87 IIO

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
31 19.4 N	123 44.6 W	29/01/89	1115 UTC	4194 M	330	11 KT			1021.5 MB	12.2 C	10.3 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 D.BAR
	0	ISL	13.42	13.42	33.193	24.910	3 03.3	0.000	6.08	102.3	2.2	0.35	0.1	0.01	0.40	0.15	0
1	1		13.42	13.42	33.193	24.910	303.3	0.003	6.08	102.3	2.2	0.35	0.1	0.01	0.40	0.15	1
	10	ISL	13.41	13.41	33.190	24.910	303.6	0.030	6.09	102.5	2.2	0.35	0.1	0.01	0.39	0.14	10
1	16		13.41	13.41	33.188	24.909	3 03.9	0.049	6.09	102.5	2.2	0.35	0.1	0.01	0.39	0.14	16
	20	ISL	13.41	13.41	33.188	24.909	304.0	0.061	6.09	102.5	2.2	0.35	0.1	0.01	0.39	0.14	20
	30	ISL	13.42	13.42	33.189	24.908	304.3	0.091	6.09	102.5	2.2	0.35	0.1	0.01	0.40	0.15	30
1	31		13.42	13.42	33.189	24.908	304.4	0.094	6.09	102.5	2.2	0.35	0.1	0.01	0.40	0.15	31
1	41		13.37	13.36	33.190	24.919	3 03.6	0.125	6.10	102.6	2.4	0.36	0.2	0.02	0.01 U	0.02 U	41
	50	ISL	13.20	13.19	33.196	24.958	300.1	0.152	6.07	101.7	2.7	0.39	0.4	0.05	0.36	0.17	50
1	52		13.17	13.16	33.197	24.965	299.5	0.158	6.06	101.5	2.7	0.39	0.5	0.06	0.36	0.17	52
1	61		13.19	13.18	33.195	24.959	300.3	0.185	6.06	101.5	2.6	0.38	0.6	0.06	0.36	0.17	61
	75	ISL	12.48	12.47	33.194	25.098	287.4	0.226	5.81	95.9	4.0	0.55	3.0	0.17	0.19	0.14	76
1	76		12.41	12.40	33.196	25.113	286.0	0.229	5.79	95.4	4.1	0.56	3.2	0.18	0.18	0.14	77
1	91		11.63	11.62	33.300	25.340	264.6	0.270	5.46	88.5	5.9	0.65	5.5	0.03	0.08	0.08	92
	100	ISL	11.36	11.35	33.372	25.446	254.7	0.293	4.94	79.7	9.1	0.94	9.9	0.02	0.07	0.09	101
1	107		11.16	11.15	33.437	25.533	246.6	0.311	4.50	72.3	12.0	1.19	13.6	0.02	0.07	0.10	108
1	120		10.62	10.61	33.588	2 5.746	226.5	0.342	3.95	62.8	16.6	1.43	17.9	0.01	0.05	0.09	121
	125	ISL	10.28	10.27	33.604	25.817	219.8	0.353	4.08	64.4	17.0	1.41	17.8	0.01	0.04	0.07	126
1	140		9.33	9.31	33.639	26.003	202.3	0.385	4.46	68.9	18.3	1.35	17.5	0.01	0.01	0.03	141
	150	ISL	9.08	9.06	33.721	26.107	192.5	0.404	3.90	60.0	22.9	1.58	21.0	0.01	0.00	0.03	151
1	160		8.95	8.93	33.806	26.194	184.4	0.423	3.23	49.5	27.7	1.84	24.8	0.00	0.00	0.03	161
1	184		8.61	8.59	33.901	26.322	172.7	0.466	2.93	44.6	31.9	1.95	26.8	0.00	0.00	0.03	185
	200	ISL	8.34	8.32	33.942	26.395	165.9	0.493	3.00	45.4	33.6	1.95	26.9	0.00	0.00	0.03	202
1	220		8.00	7.98	33.975	26.472	158.8	0.526	3.13	47.0	35.7	1.94	27.0	0.00	0.00	0.02	222
	250	ISL	7.52	7.50	33.997	26.560	150.8	0.572	2.97	44.1	41.1	2.04	28.7	0.00			252
1	254		7.46	7.44	33.998	26.569	150.0	0.578	2.93	43.5	41.9	2.06	29.0	0.00			**256**
1	293		6.98	6.95	34.017	26.651	142.5	0.635	2.33	34.2	50.3	2.31	32.2	0.00			**295**
	300	ISL	6.90	6.87	34.022	26.666	141.2	0.645	2.23	32.7	51.8	2.35	32.7	0.00			**302**
1	347		6.40	6.37	34.057	26.761	132.6	0.709	1.63	23.6	61.4	2.60	35.8	0.00			3 **50**
	400	ISL	5.87	5.84	34.090	26.854	124.0	0.777	1.13	16.2	71.7	2.83	38.6	0.00			**403**
1	410		5.78	5.75	34.097	26.871	122.5	0.790	1.05	15.0	73.6	2.87	39.1	0.00			**413**
1	478		5.27	5.23	34.156	26.979	112.6	0.870	0.63	8.9	85.7	3.03	41.3	0.01			**482**
	500	ISL	5.14	5.10	34.171	27.007	110.2	0.894	0.58	8.2	88.7	3.06	41.7	0.01			**504**
1	554		4.82	4.78	34.209	27.074	104.1	0.952	0.44	6.1	95.9	3.14	42.8	0.00			**559**

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 29.0 N	117 46.1 W	26/01/89	1451 UTC	68 M	020	15 KT	050 01 01	0	1018.7 MB	13.2 C	8.1 C	0/8

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 D.BAR
	0	ISL	12.92	12.92	33.484	25.235	272.4	0.000	6.22	103.8	4.4	0.44	1.6	0.09	0.95	0.22	0
1	1		12.92	12.92	33.484	25.235	272.4	0.003	6.22	103.8	4.4	0.44	1.6	0.09	0.95	0.22	1
	10	ISL	12.91	12.91	33.482	25.236	272.6	0.027	6.22	103.8	4.2	0.44	1.6	0.09	0.92	0.21	10
1	11		12.91	12.91	33.482	25.236	272.6	0.030	6.22	103.8	4.2	0.44	1.6	0.09	0.91	0.21	11
	20	ISL	12.70	12.70	33.468	25.266	270.0	0.054	6.00	99.7	5.1	0.58	2.8	0.15	0.87	0.33	20
1	21		12.67	12.67	33.467	25.271	269.5	0.057	5.97	99.1	5.2	0.60	2.9	0.16	0.86	0.34	21
	30	ISL	12.57	12.57	33.494	25.312	265.9	0.081	5.87	97.2	5.5	0.62	3.0	0.16	0.59	0.31	30
1	31		12.56	12.56	33.497	25.316	265.5	0.084	5.85	96.9	5.5	0.62	3.0	0.16	0.56	0.30	31
1	41		12.26	12.25	33.495	25.373	260.4	0.110	5.38	88.5	7.3	0.76	6.1	0.22	0.39	0.30	41
	50	ISL	11.93	11.92	33.502	25.441	254.1	0.133	4.82	78.8	9.7	1.01	10.2	0.21	0.32	0.26	50
1	51		11.89	11.88	33.503	25.449	253.3	0.136	4.76	77.7	10.0	1.04	10.7	0.21	0.31	0.25	51

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 25.1 N	117 54.3 W	26/01/89	1221 UTC	630 M	060	08 KT			1018.2 MB	14.8 C	9.4 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 D.BAR
	0	ISL	12.81	12.81	33.472	25.247	271.2	0.000	6.57	109.4	3.1	0.30	0.0	0.01	1.40	0.59	0
1	1		12.81	12.81	33.472	25.247	271.2	0.003	6.57	109.4	3.1	0.30	0.0	0.01	1.40	0.59	1
	10	ISL	12.79	12.79	33.470	25.250	271.2	0.027	6.57	109.3	3.0	0.29	0.0	0.01	1.42	0.62	10
1	12		12.79	12.79	33.469	25.249	271.4	0.033	6.57	109.3	3.0	0.29	0.0	0.01	1.43	0.62	12
	20	ISL	12.66	12.66	33.468	25.274	269.2	0.054	6.26	103.9	3.2	0.40	1.3	0.07	1.43	0.58	20
1	22		12.62	12.62	33.467	25.281	268.6	0.060	6.16	102.1	3.3	0.44	1.7	0.10	1.43	0.57	22
	30	ISL	12.45	12.45	33.470	25.317	265.4	0.081	5.79	95.7	4.1	0.57	3.5	0.28	0.66	0.50	30
1	32		12.37	12.37	33.462	25.326	264.6	0.086	5.65	93.2	4.3	0.63	4.3	0.32	0.46	0.47	32
1	42		11.46	11.45	33.534	25.552	243.2	0.112	4.23	68.5	11.9	1.23	14.2	0.20	0.19	0.24	42
	50	ISL	11.09	11.08	33.576	25.652	233.9	0.131	4.08	65.5	14.3	1.35	16.5	0.06	0.11	0.17	50
1	52		11.03	11.02	33.584	25.669	232.4	0.135	4.04	64.8	14.6	1.36	16.6	0.03	0.10	0.16	52
1	62		10.67	10.66	33.618	25.760	223.9	0.158	3.84	61.1	16.3	1.45	18.2	0.02	0.06	0.12	62
1	72		10.45	10.44	33.647	25.821	218.3	0.180	3.75	59.4	17.5	1.50	18.9	0.02	0.04	0.10	73
	75	ISL	10.40	10.39	33.669	25.846	215.9	0.187	3.66	57.9	18.3	1.53	19.3	0.02	0.04	0.10	76
1	86		10.25	10.24	33.758	25.942	207.1	0.210	3.28	51.8	21.5	1.67	21.0	0.02	0.05	0.11	87
	100	ISL	10.00	9.99	33.835	26.045	197.7	0.238	3.06	48.1	23.6	1.77	22.5	0.01	0.02	0.08	101
1	101		9.98	9.97	33.840	26.052	197.0	0.240	3.05	47.9	23.7	1.78	22.6	0.01	0.02	0.08	102
1	119		9.66	9.65	33.955	26.195	183.7	0.275	2.74	42.7	27.7	1.92	24.5	0.01	0.01	0.05	120
	125	ISL	9.62	9.61	33.958	26.204	182.9	0.286	2.72	42.4	28.2	1.93	24.6	0.01	0.01	0.05	126
1	145		9.56	9.54	33.984	26.235	180.5	0.322	2.67	41.6	29.2	1.95	25.0	0.01	0.01	0.06	146
	150	ISL	9.53	9.51	33.997	26.250	179.1	0.331	2.62	40.8	29.7	1.97	25.2	0.01	0.01	0.06	151
1	176		9.34	9.32	34.063	26.333	171.7	0.377	2.39	37.0	32.8	2.08	26.4	0.01	0.01	0.06	177
	200	ISL	9.01	8.99	34.090	26.408	165.0	0.417	2.34	36.0	34.9	2.12	27.4	0.01	0.02	0.04	202
1	206		8.94	8.92	34.097	26.424	163.5	0.427	2.32	35.6	35.4	2.13	27.6	0.01	0.02	0.03	208
1	235		8.94	8.91	34.172	26.484	158.5	0.474	1.90	29.2	38.3	2.33	28.7	0.01			237
	250	ISL	8.89	8.86	34.199	26.513	156.0	0.497	1.73	26.6	39.8	2.38	29.2	0.01			252
1	273		8.74	8.71	34.223	26.556	152.4	0.533	1.53	23.4	42.2	2.43	30.1	0.01			275
	300	ISL	8.31	8.28	34.212	26.614	147.2	0.573	1.44	21.8	45.8	2.50	31.4	0.01			302
1	329		7.83	7.80	34.196	26.673	141.8	0.615	1.36	20.4	49.9	2.58	32.8	0.01			**332**
1	387		7.44	7.40	34.242	26.766	133.7	0.695	0.89	13.2	58.0	2.78	34.8	0.01			390
	400	ISL	7.35	7.31	34.250	26.785	132.0	0.712	0.81	12.0	59.7	2.82	35.3	0.01			**403**
1	450		6.97	6.93	34.276	26.859	125.5	0.776	0.55	8.1	66.1	2.94	36.9	0.01			**454**
	500	ISL	6.57	6.52	34.300	26.932	118.9	0.838	0.41	6.0	72.5	3.03	38.2	0.01			**504**
1	517		6.43	6.38	34.308	26.957	116.7	0.858	0.36	5.2	74.7	3.06	38.7	0.01			**522**

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 15.1 N	118 15.0 W	26/01/89	0806 UTC	46 5 M	020	11 KT			1018.8 MB	14.9 C	10.9 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	PHAEO UG/L	PRESS D.BAR
	0	ISL	13.29	13.29	33.477	25.156	279.9	0.000	6.18	103.9	4.2	0.39	1.4	0.05	0.41	0.12	0
1	1		13.29	13.29	33.477	25.156	279.9	0.003	6.18	103.9	4.2	0.39	1.4	0.05	0.41	0.12	1
1	10		13.26	13.26	33.480	25.164	279.4	0.028	6.20	104.2	4.2	0.40	1.4	0.05	0.39	0.12	10
1	20		13.27	13.27	33.477	25.161	280.0	0.056	6.22	104.6	4.1	0.44	1.4	0.05	0.41	0.11	20
	30	ISL	13.11	13.11	33.476	25.192	277.3	0.084	6.18	103.5	4.4	0.43	1.9	0.07	0.55	0.20	30
1	31		13.09	13.09	33.476	25.196	277.0	0.087	6.18	103.5	4.4	0.43	1.9	0.07	0.56	0.21	31
1	40		12.86	12.85	33.479	25.244	272.6	0.111	5.85	97.5	4.9	0.55	3.5	0.15	0.59	0.32	40
	50	ISL	12.44	12.43	33.482	25.328	264.8	0.138	5.26	86.9	7.0	0.78	7.5	0.20	0.53	0.28	50
1	51		12.37	12.36	33.484	2 5.343	263.4	0.141	5.18	85.4	7.4	0.81	8.1	0.21	0.52	0.28	51
1	61		11.19	11.18	33.543	25.609	238.3	0.166	4.18	67.3	13.4	1.28	15.4	0.02	0.24	0.18	61
1	71		10.75	10.74	33.612	25.741	225.9	0.189	3.87	61.7	15.7	1.39	17.5	0.02	0.14	0.14	72
	75	ISL	10.61	10.60	33.634	25.783	222.0	0.198	3.77	59.9	16.7	1.44	18.2	0.02	0.11	0.12	76
1	86		10.27	10.26	33.692	25.887	212.3	0.222	3.55	56.0	19.4	1.56	20.0	0.01	0.04	0.07	87
1	98		9.87	9.86	33.759	26.007	201.1	0.247	3.43	53.7	21.8	1.64	21.4	0.01	0.01	0.05	99
	100	ISL	9.81	9.80	33.770	26.026	199.4	0.251	3.42	53.5	22.1	1.65	21.6	0.01	0.01	0.05	101
1	119		9.38	9.37	33.860	26.167	186.3	0.287	3.38	52.4	24.8	1.71	22.8	0.01	0.00	0.04	120
	125	ISL	9.30	9.29	33.884	26.199	183.4	0.299	3.32	51.4	25.6	1.74	23.2	0.01	0.00	0.04	126
1	144		9.10	9.08	33.946	26.280	176.0	0.333	3.12	48.1	27.9	1.83	24.5	0.00	0.00	0.03	145
	150	ISL	9.04	9.02	33.959	26.299	174.3	0.343	3.09	47.5	28.5	1.85	24.7	0.00	0.00	0.03	151
1	173		8.80	8.78	33.997	26.368	168.2	0.383	3.00	45.9	30.8	1.90	25.6	0.00	0.00	0.03	174
	200	ISL	8.43	8.41	34.039	26.458	160.0	0.427	2.83	43.0	34.6	2.00	27.0	0.00	0.00	0.03	202
1	202		8.41	8.39	34.042	26.463	159.5	0.430	2.81	42.6	34.9	2.01	27.1	0.00	0.00	0.03	204
1	237		8.26	8.24	34.102	26.534	153.5	0.485	2.28	34.5	39.9	2.21	29.2	0.01			239
	250	ISL	8.16	8.13	34.127	26.568	150.4	0.505	2.03	30.6	42.5	2.30	30.2	0.01			252
1	286		7.84	7.81	34.189	26.665	141.7	0.557	1.41	21.1	49.4	2.53	32.7	0.01			**288**
	300	ISL	7.75	7.72	34.201	26.688	139.7	0.577	1.28	19.1	51.2	2.59	33.3	0.01			**302**
1	340		7.49	7.46	34.223	26.743	135.0	0.632	1.02	15.2	55.6	2.71	34.5	0.00			343
	400	ISL	7.00	6.96	34.267	26.847	125.8	0.710	0.62	9.1	63.8	2.90	36.7	0.00			**403**
1	403		6.98	6.94	34.270	26.852	125.4	0.714	0.60	8.8	64.2	2.91	36.8	0.00			**406**

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 11.X N	118 23.1 W	26/01/89	0512 UTC	1205 M	230	07 KT			1018.5 MB	14.2 C	12.8 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 D.BAR
	0	ISL	13.04	13.04	33.493	25.2X8	274.0	0.000	6.30	105.4	5.0	0.42	1.8	0.07	1.15	0.29	0
1	1		13.04	13.04	33.493	25.218	274.0	0.003	6.30	105.4	5.0	0.42	1.8	0.07	1.15	0.29	1
	10	ISL	12.84	12.84	33.492	25.257	270.5	0.027	6.31	105.1	4.9	0.43	1.9	0.07	1.31	0.36	10
1	11		12.81	12.81	33.492	25.263	270.0	0.030	6.31	105.1	4.9	0.43	1.9	0.07	1.33	0.37	11
	20	ISL	12.70	12.70	33.499	25.290	267.7	0.054	6.20	X03.0	5.4	0.47	2.4	0.09	X.30	0.33	20
1	21		12.69	12.69	33.500	25.293	267.4	0.057	6.18	102.6	5.5	0.48	2.5	0.09	1.30	0.32	21
	30	ISL	12.65	12.65	33.504	25.304	266.6	0.081	6.09	101.1	5.7	0.50	2.9	0.X0	1.06	0.33	30
1	31		12.65	12.65	33.505	25.305	266.6	0.084	6.08	100.9	5.7	0.50	2.9	0.10	1.01	0.33	31
1	40		11.82	11.81	33.533	25.485	249.6	0.107	4.73	77.1	10.8	1.02	10.9	0.24	0.36	0.31	40
	50	ISL	11.47	11.46	33.602	25.604	238.6	0.131	4.08	66.1	14.3	1.24	14.4	0.19	0.26	0.20	50
1	51		11.45	11.44	33.612	25.615	237.5	0.134	4.03	65.2	14.7	X.26	14.7	0.X9	0.25	0.19	51
1	60		11.06	11.05	33.737	25.783	221.7	0.154	3.01	48.4	20.3	1.61	19.7	0.03	0.X9	0.15	60
1	70		10.55	10.54	33.771	25.900	210.8	0.176	3.14	49.9	21.6	1.59	20.5	0.03	0.06	0.09	71
	75	ISL	10.42	10.41	33.792	25.939	207.2	0.186	3.08	48.8	22.3	1.64	21.1	0.02	0.05	0.09	76
1	83		10.28	10.27	33.822	25.987	202.8	0.203	2.96	46.8	23.4	1.73	22.1	0.0X	0.03	0.08	84
X	98		9.99	9.98	33.848	26.056	196.5	0.233	2.96	46.5	24.5	X.75	22.8	0.0X	0.02	0.07	99
	X00	ISL	9.98	9.97	33.850	26.060	196.2	0.237	2.95	46.3	24.6	X.75	22.9	0.0X	0.02	0.07	X0I
X	XX8		9.87	9.86	33.893	26.XX2	191.6	0.271	2.86	44.8	26.5	X.79	23.6	0.01	0.0X	0.05	XX9
	X25	ISL	9.76	9.75	33.939	26.X67	186.6	0.285	2.7X	42.4	28.0	X.86	24.4	0.01	0.01	0.06	126
1	143		9.45	9.43	34.058	26.311	173.2	0.317	2.32	36.0	32.1	2.05	26.4	0.00	0.01	0.08	144
	150	ISL	9.37	9.35	34.075	26.337	170.8	0.329	2.29	35.5	33.0	2.07	26.7	0.00	0.01	0.07	151
1	175		9.12	9.10	34.095	26.394	165.9	0.371	2.20	33.9	35.3	2.12	27.4	0.00	0.01	0.04	176
	200	ISL	8.90	8.88	34.118	26.447	161.3	0.412	2.10	32.2	37.3	2.18	28.2	0.00	0.00	0.04	202
1	206		8.84	8.82	34.123	26.460	160.1	0.422	2.07	31.7	37.8	2.20	28.4	0.00	0.00	0.04	208
2	230		8.57	8.55	34.142	26.518	155.0	0.460	1.94	29.6	40.4	2.26	29.3	0.00			232
	250	ISL	8.29	8.26	34.155	26.571	150.2	0.490	1.79	27.1	43.6	2.34	30.4	0.00			252
2	271		8.01	7.98	34.168	26.623	145.5	0.521	1.61	24.2	47.3	2.43	31.6	0.00			273
	300	ISL	7.76	7.73	34.188	26.676	140.9	0.563	X.36	20.3	5X.5	2.54	32.9	0.0X			302
2	326		7.58	7.55	34.207	26.7X7	137.3	0.599	1.14	17.0	55.0	2.63	33.9	0.0X			329
2	385		7.10	7.06	34.258	26.826	127.7	0.677	0.67	9.9	63.6	2.84	36.2	0.00			388
	400	ISL	7.00	6.96	34.265	26.845	126.0	0.696	0.61	9.0	65.3	2.87	36.6	0.00			403
2	449		6.67	6.63	34.284	26.905	120.8	0.756	0.47	6.9	70.9	2.95	37.9	0.01			**453**
	500	ISL	6.26	6.22	34.3X6	26.985	XI3.6	0.8X6	0.33	4.8	78.0	3.05	39.2	0.00			**504**
2	5X8		6.XX	6.06	34.328	27.0X4	XX0.9	0.836	0.28	4.0	80.5	3.09	39.6	0.00			**523**

RV DAVID STARR JORDAN | CALCOFI CRUISE 890X | STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 55.X N	XX8 56.0 W	25/0X/89	2356 UTC	1742 M	320	06 KT	290 04 06	0	1017.3 MB	15.0 C	13.3 C	0/8	

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 D.BAR
	0	ISL	13.07	13.07	33.485	25.206	275.1	0.000	6.15	103.0	5.3	0.49	2.6	0.10	0.47	0.18	0
1	2		13.07	13.07	33.485	25.206	275.2	0.006	6.15	103.0	5.3	0.49	2.6	0.10	0.47	0.18	2
	10	ISL	12.96	12.96	33.484	25.227	273.4	0.027	6.17	103.1	5.2	0.49	2.6	0.09	0.49	0.18	X0
X	13		X2.9I	12.91	33.484	25.237	272.5	0.036	6.18	103.X	5.2	0.49	2.6	0.09	0.50	0.X8	13
	20	ISL	X2.89	12.89	33.484	25.24X	272.3	0.055	6.16	102.7	5.2	0.50	2.7	0.09	0.49	0.20	20
X	21		12.88	12.88	33.484	25.243	272.2	0.057	6.16	102.7	5.2	0.50	2.7	0.09	0.49	0.2X	21
	30	ISL	12.66	12.66	33.505	25.303	266.7	0.082	5.84	96.9	6.3	0.63	4.7	0.25	0.52	0.29	30
X	32		12.59	12.59	33.5X1	25.32X	265.0	0.087	5.74	95.1	6.6	0.67	5.3	0.29	0.53	0.30	32
I	42		12.25	12.24	33.536	25.406	257.2	0.113	5.3X	87.4	8.5	0.85	8.3	0.35	0.46	0.26	42
	50	ISL	11.90	11.89	33.549	25.483	250.1	0.133	4.92	80.4	X0.6	X.0X	XX.0	0.X6	0.33	0.20	50
I	52		11.79	11.78	33.553	25.506	247.9	0.138	4.81	78.4	XX.3	X.06	XX.8	0.XI	0.30	0.18	52
I	62		11.00	10.99	33.602	25.689	230.7	0.162	4.09	65.6	X5.5	X.34	X6.5	0.03	0.X8	0.15	62
X	72		10.70	10.69	33.644	25.775	222.7	0.X85	3.81	60.7	17.8	1.46	18.4	0.02	0.12	0.12	73
	75	ISL	10.58	10.57	33.663	25.810	219.4	0.192	3.71	59.0	18.6	1.50	19.1	0.02	0.10	0.12	76
1	86		10.11	10.10	33.744	25.955	205.9	0.215	3.35	52.7	21.7	1.65	21.4	0.0X	0.05	0.X0	87
I	100		9.66	9.65	33.850	26.XX3	X91.1	0.243	3.09	48.2	25.7	1.77	23.3	0.01	0.01	0.05	101
1	120		9.27	9.26	33.977	26.276	175.9	0.279	2.76	42.7	30.2	1.94	25.4	0.01	0.01	0.06	121
	125	ISL	9.18	9.17	33.996	26.306	173.2	0.288	2.69	41.5	31.3	1.97	25.9	0.01	0.01	0.06	126
1	145		8.85	8.83	34.046	26.398	164.8	0.322	2.48	38.0	34.9	2.08	27.3	0.00	0.01	0.04	146
	150	ISL	8.79	8.77	34.052	26.412	163.6	0.330	2.47	37.8	35.4	2.09	27.5	0.00	0.01	0.04	151
1	174		8.57	8.55	34.074	26.463	159.1	0.369	2.40	36.6	37.4	2.15	28.1	0.00	0.01	0.04	175
	200	ISL	8.39	8.37	34.120	26.528	153.4	0.410	1.98	30.0	41.3	2.31	29.8	0.00	0.00	0.05	202
1	204		8.37	8.35	34.127	26.536	152.7	0.416	X.91	29.0	42.0	2.34	30.1	0.00	0.00	0.05	206
1	232		8.19	8.17	34.173	26.600	147.1	0.458	1.57	23.7	45.8	2.48	31.3	0.00			234
	250	ISL	8.00	7.97	34.197	26.647	142.8	0.484	1.34	20.2	49.0	2.58	32.3	0.00			252
1	272		7.75	7.72	34.221	26.703	137.8	0.515	1.08	16.2	53.0	2.70	33.5	0.00			274
	300	ISL	7.53	7.50	34.237	26.748	133.9	0.553	0.89	13.3	56.5	2.79	34.6	0.00			302
1	328		7.32	7.29	34.247	26.786	130.7	0.590	0.77	11.4	59.6	2.86	35.4	0.00			**331**
I	385		6.82	6.78	34.278	26.880	X22.3	0.662	0.51	7.5	67.2	3.01	37.1	0.01			**388**
	400	ISL	6.73	6.69	34.283	26.896	120.9	0.680	0.47	6.9	68.5	3.04	37.4	0.01			**403**
1	449		6.46	6.42	34.299	26.945	1X6.8	0.738	0.39	5.7	72.5	3.10	38.4	0.00			**453**
	500	ISL	6.X6	6.X2	34.32X	27.002	111.9	0.797	0.32	4.6	78.3	3.15	39.3	0.00			**504**
1	517		6.06	6.01	34.329	27.021	110.2	0.8X6	0.29	4.2	80.2	3.17	39.6	0.00			**521**

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 39.1 N	119 29.0 W	25/01/89	1810 UTC	1347 M	250	05 KT	300 06 07	0	1018.9 MB	1A.9 C	13.A C	0/8

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	POA UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
	0	ISL	12.22	12.22	33.578	25.AA3	252.6	0.000	6.0A	99.A	8.6	0.7A	6.1	0.15	0.86	0.29	0
1	1		12.22	12.22	33.578	25.AA3	252.6	0.003	6.0A	99.A	8.6	0.7A	6.1	0.15	0.86	0.29	1
	10	ISL	12.16	12.16	33.57A	25.A52	252.0	0.025	6.05	99.A	8.6	0.75	6.1	0.15	0.96	0.32	10
1	11		12.15	12.15	33.57A	25.A5A	251.8	0.028	6.05	99.A	8.6	0.75	6.1	0.15	0.97	0.32	11
	20	ISL	12.1A	12.1A	33.578	25.A59	251.6	0.050	6.02	98.9	8.6	0.73	6.3	0.16	0.87	0.30	20
1	21		12.1A	12.1A	33.579	25.A60	251.5	0.053	6.01	98.7	8.6	0.73	6.3	0.16	0.85	0.30	21
	30	ISL	12.09	12.09	33.581	25.A71	250.7	0.076	5.93	97.3	8.5	0.75	6.8	0.17	0.67	0.30	30
1	31		12.08	12.08	33.581	25.A73	250.5	0.078	5.92	97.1	8.5	0.75	6.8	0.17	0.65	0.30	31
1	A2		11.50	11.A9	33.609	25.603	238.A	0.105	5.00	81.0	12.3	1.00	11.A	0.26	0.29	0.21	A2
	50	ISL	10.86	10.85	33.676	25.771	222.6	0.123	A.18	66.8	17.2	1.35	16.3	0.19	0.15	0.13	50
1	52		10.72	10.71	33.692	25.808	219.1	0.128	A.01	63.9	18.3	1.A3	17.A	0.17	0.13	0.12	52
1	61		10.52	10.51	33.710	25.857	21A.6	0.1A7	3.81	60.5	19.A	1.50	18.5	0.11	0.10	0.12	61
1	72		10.07	10.06	33.759	25.973	203.8	0.170	3.A3	53.9	22.0	1.65	21.2	0.03	0.0A	0.09	73
	75	ISL	9.95	9.9A	33.778	26.008	200.5	0.176	3.36	52.7	22.7	1.68	21.7	0.03	0.03	0.08	76
1	87		9.5A	9.53	33.858	26.139	188.3	0.200	3.17	A9.3	25.6	1.78	23.2	0.03	0.02	0.06	88
1	100		9.20	9.19	33.936	26.255	177.5	0.223	3.02	A6.6	28.7	1.85	2A.6	0.02	0.00	0.0A	101
1	120		8.8A	8.83	3A.021	26.379	166.1	0.258	2.80	A2.9	32.6	1.98	26.1	0.01	0.00	0.05	121
	125	ISL	8.7A	8.73	3A.03A	26.A05	163.7	0.266	2.75	A2.0	33.8	2.01	26.5	0.01	0.00	0.05	126
1	1A6		8.36	8.3A	3A.068	26.A90	155.9	0.300	2.53	38.A	38.5	2.12	28.1	0.02	0.00	0.03	1A7
	150	ISL	8.33	8.31	3A.073	26.A99	155.1	0.306	2.A9	37.7	39.0	2.1A	28.3	0.02	0.00	0.03	151
1	177		8.16	8.14	3A.097	26.5A4	151.4	0.347	2.24	33.8	Al.8	2.2A	29.A	0.02	0.00	0.03	178
	200	ISL	7.9A	7.92	3A.115	26.591	1A7.2	0.382	1.98	29.7	A5.1	2.36	30.7	0.01	0.00	0.03	202
1	206		7.89	7.87	3A.121	26.603	1A6.2	0.390	1.90	28.5	46.1	2.39	31.1	0.01	0.00	0.03	208
1	235		7.79	7.77	34.173	26.659	141.3	0.432	1.46	21.9	50.7	2.5A	32.5	0.00			237
	250	ISL	7.69	7.67	34.187	26.685	139.1	0.453	1.31	19.6	52.6	2.60	33.1	0.00			252
1	274		7.52	7.49	34.203	26.722	135.9	0.486	1.14	17.0	55.2	2.69	34.0	0.01			276
	300	ISL	7.43	7.40	34.221	26.749	133.7	0.521	0.99	14.7	57.3	2.75	34.6	0.01			**302**
1	329		7.31	7.28	34.240	26.782	131.1	0.560	0.84	12.4	60.0	2.81	35.3	0.01			**332**
1	386		6.75	6.71	34.276	26.888	121.5	0.632	0.51	7.5	69.4	2.99	37.6	0.00			**389**
	400	ISL	6.69	6.65	34.281	26.900	120.6	0.648	0.47	6.9	70.4	3.01	37.8	0.00			**403**
1	449		6.53	6.49	34.294	26.932	118.1	0.707	0.40	5.8	73.5	3.05	38.3	0.00			**453**
	500	ISL	6.13	6.09	34.318	27.003	111.7	0.766	0.31	4.5	80.3	3.12	39.6	0.00			504
1	519		5.98	5.93	34.328	27.030	109.3	0.787	0.28	4.0	82.9	3.15	40.1	0.00			523

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 25.0 N	119 57.6 W	25/01/89	1323 UTC	1112 M	310	15 KT			1016.1 MB	12.3 C	11.0 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 D.BAR
	0	ISL	11.98	11.98	33.566	25.480	249.1	0.000	5.84	95.6	9.6	0.84	7.5	0.19	0.71	0.29	0
1	3		11.98	11.98	33.566	25.480	249.2	0.007	5.84	95.6	9.6	0.84	7.5	0.19	0.71	0.29	3
	10	ISL	11.97	11.97	33.564	25.480	249.3	0.025	5.84	95.6	9.5	0.84	7.5	0.19	0.73	0.28	10
1	12		11.97	11.97	33.563	25.480	249.5	0.030	5.84	95.6	9.5	0.84	7.5	0.19	0.73	0.28	12
	20	ISL	11.98	11.98	33.564	25.479	249.7	0.050	5.85	95.8	9.5	0.85	7.5	0.18	0.70	0.27	20
1	23		11.98	11.98	33.565	25.480	249.7	0.057	5.85	95.8	9.5	0.85	7.5	0.18	0.69	0.26	23
	30	ISL	11.97	11.97	33.564	25.481	2A9.8	0.075	5.8A	95.6	9.A	0.85	7.6	0.18	0.58	0.21	30
1	33		11.97	11.97	33.563	25.A80	2A9.9	0.082	5.8A	95.6	9.4	0.85	7.7	0.18	0.55	0.20	33
1	43		11.95	11.94	33.563	25.484	249.8	0.107	5.83	95.4	9.3	0.85	7.7	0.18	0.72	0.29	43
	50	ISL	11.81	11.80	33.573	25.518	246.7	0.125	5.61	91.5	10.1	0.91	8.8	0.21	0.62	0.26	50
1	53		11.75	11.74	33.578	25.533	245.4	0.132	5.51	89.8	10.5	0.94	9.2	0.22	0.53	0.24	53
1	62		10.51	10.50	33.692	25.845	215.8	0.153	3.66	58.1	19.1	1.54	19.3	0.03	0.14	0.11	62
	75	ISL	9.70	9.69	33.797	26.065	195.1	0.180	3.27	51.0	23.9	1.72	22.4	0.01	0.04	0.07	76
1	77		9.65	9.64	33.809	26.082	193.5	0.183	3.21	50.0	24.2	1.75	22.9	0.01	0.02	0.06	78
1	91		9.35	9.34	33.907	26.208	181.8	0.210	2.85	44.1	28.0	1.91	24.9	0.01	0.01	0.06	92
	100	ISL	9.18	9.17	33.945	26.265	176.5	0.226	2.79	43.1	29.8	1.96	25.7	0.01	0.01	0.06	101
1	112		8.97	8.96	33.976	26.323	171.2	0.247	2.70	41.5	31.5	1.99	26.2	0.01	0.01	0.05	113
	125	ISL	8.79	8.78	33.992	26.364	167.6	0.269	2.77	42.4	32.6	1.98	26.3	0.01	0.01	0.04	126
1	132		8.70	8.69	33.998	26.383	165.9	0.280	2.82	43.1	33.1	1.98	26.4	0.01	0.01	0.04	133
	150	ISL	8.44	8.42	34.027	26.AA6	160.2	0.310	2.7A	Al.6	35.A	2.0A	27.2	0.02	0.00	0.05	151
1	157		8.3A	8.32	3A.039	26.A71	157.9	0.321	2.71	Al.1	36.5	2.07	27.6	0.02	0.00	0.05	158
1	187		8.08	8.06	3A.075	26.539	152.0	0.367	2.37	35.7	Al.2	2.20	29.3	0.01	0.01	0.0A	188
	200	ISL	7.91	7.89	3A.092	26.577	1A8.5	0.387	2.17	32.6	AA.0	2.29	30.3	0.01	0.01	0.04	202
1	221		7.64	7.62	34.123	26.641	142.7	0.417	1.83	27.3	48.6	2.44	31.9	0.00	0.00	0.03	223
	250	ISL	7.48	7.46	34.175	26.705	137.0	0.458	1.34	19.9	53.5	2.62	33.6	0.00			252
1	256		7.46	7.44	34.184	26.715	136.2	0.466	1.26	18.7	54.4	2.65	33.9	0.00			258
1	296		7.12	7.09	34.185	26.764	132.0	0.520	1.09	16.1	59.0	2.74	35.1	0.00			298
	300	ISL	7.09	7.06	34.184	26.768	131.7	0.525	1.08	15.9	59.4	2.75	35.2	0.00			302
1	349		6.71	6.68	34.184	26.820	127.3	0.589	0.94	13.7	64.2	2.83	36.6	0.00			352
	400	ISL	6.44	6.40	34.236	26.897	120.6	0.652	0.62	9.0	70.2	2.98	38.2	0.00			403
1	413		6.37	6.33	3A.250	26.917	118.8	0.667	0.5A	7.8	71.8	3.02	38.6	0.00			A16
1	A80		5.87	5.83	3A.269	26.997	111.7	0.7A5	0.39	5.6	80.8	3.12	40.3	0.00			A8A
	500	ISL	5.75	5.71	3A.283	27.023	109.A	0.767	0.36	5.1	83.2	3.1A	A0.6	0.00			50A
1	556		5.A0	5.35	3A.32A	27.098	102.6	0.826	0.28	A.0	90.0	3.21	Al.5	0.00			561

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LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 5.0 N	120 38.3 W	25/01/89	0427 UTC	3733 M	330	25 KT			1016.9 MB	13.5 C	10.6 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 D.BAR
	0	ISL	13.50	13.50	33.A01	25.055	289.5	0.000	6.00	101.3	3.3	0.A3	0.9	0.05	0.A6	0.16	0
1	1		13.50	13.50	33.401	25.055	289.6	0.003	6.00	101.3	3.3	0.A3	0.9	0.05	0.A6	0.16	1
1	10		13.A8	13.A8	33.A02	25.060	289.3	0.029	6.03	101.8	3.1	0.42	0.8	0.0A	0.A9	0.19	10
1	16		13.50	13.50	33.A02	25.056	289.9	0.0A6	6.03	101.8	3.0	0.A2	0.8	0.0A	0.47	0.15	16
	20	ISL	13.50	13.50	33.402	25.056	290.0	0.058	6.02	101.6	3.0	0.A2	0.8	0.0A	0.47	0.15	20
1	22	A	13.50	13.50													22
	30	ISL	13.49	13.49	33.404	25.060	289.9	0.087	6.01	101.A	2.9	0.A3	0.8	0.0A	0.A7	0.16	30
1	31	P	13.A9	13.A9	33.A0A	25.060	289.9	0.090	6.01	101.A	2.9	0.A3	0.8	0.0A	0.47	0.16	31
1	37	P	13.50	13.49	33.404	25.058	290.3	0.107	6.01	101.5	3.1	0.40	0.8	0.05	0.48	0.16	37
1	44	P	13.51	13.50	33.404	25.056	290.6	0.128	6.01	101.5	3.1	0.43	0.8	0.05	0.A8	0.18	AA
	50	ISL	13.A6	13.A5	33.A0A	25.067	289.8	0.145	6.02	101.5	3.0	0.42	0.8	0.05	0.47	0.17	50
1	55	P	13.42	13.41	33.404	25.075	289.2	0.159	6.03	101.6	3.0	0.42	0.9	0.05	0.46	0.16	55
1	67	P	12.96	12.95	33.A03	25.166	280.7	0.19A	5.97	99.6	3.5	0.A3	1.0	0.05	0.A5	0.16	68
	75	ISL	11.93	11.92	33.360	25.331	265.1	0.215	5.A8	89.5	6.A	0.70	5.5	0.03	0.28	0.17	76
1	82	P	10.98	10.97	33.350	25.A97	2A9.A	0.233	A.96	79.3	9.7	0.98	10.3	0.02	0.12	0.18	83
1	98	P	10.07	10.06	33.531	25.795	221.2	0.271	4.17	65.5	16.4	1.38	17.2	0.01	0.06	0.07	99
	100	ISL	10.01	10.00	33.550	25.820	218.9	0.276	4.09	64.1	17.0	1.A1	17.8	0.01	0.05	0.07	101
1	119	P	9.56	9.55	33.707	26.018	200.A	0.315	3.53	5A.9	22.3	1.6A	21.6	0.01	0.02	0.0A	120
	125	ISL	9.38	9.37	33.752	26.083	19A.A	0.327	3.39	52.5	2A.1	1.71	22.6	0.01	0.02	0.0A	126
1	1A5	P	8.87	8.85	33.879	26.26A	177.5	0.36A	3.0A	A6.6	29.3	1.88	25.2	0.01	0.01	0.03	1A6
	150	ISL	8.81	8.79	33.903	26.292	17A.9	0.373	3.00	45.9	30.1	1.90	25.5	0.01	0.01	0.03	151
1	176	P	8.60	8.58	33.999	26.400	165.1	0.417	2.85	A3.A	33.7	1.98	26.6	0.01	0.01	0.03	177
	200	ISL	8.30	8.28	34.061	26.495	156.5	0.456	2.59	39.2	38.4	2.11	28.1	0.00			202
1	209	P	8.19	8.17	34.081	26.527	153.5	0.A70	2.A6	37.2	A0.3	2.17	28.8	0.00			211
1	241	P	7.94	7.92	34.156	26.624	144.8	0.518	1.74	26.1	47.2	2.43	31.4	0.00			243
	250	ISL	7.86	7.83	34.170	26.647	142.8	0.531	1.59	23.8	48.8	2.49	32.0	0.00			252
1	297	P	7.A2	7.39	3A.218	26.7A8	133.8	0.596	1.06	15.7	56.5	2.72	3A.3	0.00			299
	300	ISL	7.39	7.36	3A.219	26.753	133.3	0.600	1.04	15.4	57.0	2.73	34.4	0.00			302
1	357	P	6.82	6.79	34.240	26.849	12A.7	0.673	0.71	10.A	65.A	2.89	36.7	0.00			360
	A00	ISL	6.52	6.A8	3A.266	26.910	119.A	0.726	0.52	7.6	70.5	2.99	38.0	0.00			**403**
1	A17	P	6.Al	6.37	3A.278	26.93A	117.3	0.7A6	0.A6	6.7	72.A	3.03	38.A	0.00			420
1	475	P	6.0A	6.00	3A.313	27.010	110.6	0.812	0.32	A.6	79.1	3.13	39.6	0.00			479
	500	ISL	5.91	5.87	34.325	27.036	108.3	0.839	0.27	3.9	81.5	3.17	40.0	0.00			**504**

A) A POSTTRIP MAY HAVE STARTED WITH THIS BOTTLE CAUSING THE FOLLOWING DEPTHS TO BE SLIGHTLY UNCERTAIN. DATA FROM THIS STATION SHOULD BE USED WITH CAUTION.

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
31 45.1 N	121 18.9 W	24/01/89	1722 UTC	3543 M	310	25 KT	310 09 06	2	1020.2 MB	12.5 C	10.7 C	8/8 SC

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 D.BAR
	0	ISL	13.83	13.83	33.414	24.997	295.0	0.000	5.97	101.5	2.1	0.37	0.6	0.03	0.45	0.17	0
1	3		13.83	13.83	33.414	24.998	295.1	0.009	5.97	101.5	2.1	0.37	0.6	0.03	0.45	0.17	3
	10	ISL	13.81	13.81	33.413	25.001	294.9	0.030	5.97	101.4	2.1	0.37	0.4	0.03	0.AA	0.16	10
1	19		13.79	13.79	33.A12	25.005	29A.9	0.056	5.96	101.2	2.0	0.38	0.0	0.03	0.A3	0.15	19
	20	ISL	13.79	13.79	33.A12	25.005	29A.9	0.059	5.96	101.2	2.0	0.38	0.0	0.03	0.A3	0.15	20
	30	ISL	13.81	13.81	33.A13	25.002	295.A	0.089	5.96	101.3	2.0	0.3A	0.0	0.03	0.44	0.16	30
1	34		13.82	13.82	33.413	25.000	295.7	0.100	5.96	101.3	2.0	0.33	0.0	0.03	0.44	0.16	34
2	42		13.80	13.79	33.409	25.001	295.9	0.124	5.96	101.2	2.1	0.35	0.0	0.04	0.44	0.20	42
2	50		13.81	13.80	33.408	24.998	296.3	0.148	5.96	101.3	2.1	0.34	0.0	0.03	0.A7	0.18	50
2	60		13.83	13.82	33.A06	2A.993	297.1	0.177	5.96	101.3	2.1	0.38	0.0	0.03	0.A2	0.15	60
2	75		12.56	12.55	33.283	25.151	282.3	0.221	5.67	93.8	3.8	0.53	2.A	0.09	0.2A	0.18	76
2	88		11.50	11.A9	33.368	25.A17	257.2	0.256	A.93	79.8	8.A	0.97	10.0	0.03	0.11	0.13	89
	100	ISL	10.8A	10.83	33.A85	25.627	237.A	0.286	4.36	69.6	13.0	1.26	14.7	0.01	0.06	0.11	101
2	103		10.71	10.70	33.513	25.672	233.3	0.293	4.25	67.7	14.1	1.31	15.6	0.01	0.06	0.10	104
2	117		10.17	10.16	33.581	25.818	219.6	0.324	3.94	62.0	17.6	1.47	18.3	0.01	0.04	0.06	118
	125	ISL	9.90	9.89	33.6A0	25.910	211.0	0.3A2	3.70	57.9	19.9	1.57	20.0	0.01	0.03	0.06	126
2	136		9.59	9.57	33.72A	26.027	200.0	0.36A	3.A0	52.9	22.8	1.70	22.0	0.01	0.02	0.05	137
	150	ISL	9.31	9.29	33.797	26.130	190.5	0.391	3.19	A9.3	25.6	1.80	23.5	0.00	0.01	0.04	151
2	156		9.20	9.18	33.824	26.168	186.9	0.403	3.13	48.3	26.6	1.83	24.0	0.00	0.01	0.03	157
2	180		8.70	8.68	33.935	26.335	171.A	0.AA6	2.96	A5.2	30.9	1.91	25.7	0.00	0.00	0.0A	181
	200	ISL	8.37	8.35	33.991	26.A29	162.7	0.A79	2.88	A3.6	3A.1	1.97	26.6	0.00	0.00	0.03	202
2	214		8.18	8.16	34.017	26.479	158.2	0.502	2.81	42.4	36.4	2.02	27.3	0.00	0.00	0.02	216
2	246		7.79	7.77	34.058	26.569	150.1	0.551	2.40	35.9	42.7	2.20	29.6	0.00			248
	250	ISL	7.7A	7.72	3A.062	26.579	149.1	0.557	2.34	35.0	43.5	2.22	29.9	0.00			252
2	283		7.37	7.34	34.090	26.655	142.3	0.605	1.90	28.2	50.3	2.42	32.2	0.00			285
	300	ISL	7.19	7.16	34.100	26.688	139.4	0.629	1.71	25.2	53.3	2.50	33.2	0.00			302
2	336		6.83	6.80	34.118	26.752	133.6	0.678	1.37	20.1	59.3	2.64	35.1	0.00			339
2	397		6.30	6.26	34.151	26.848	125.0	0.757	0.93	13.4	68.8	2.84	37.7	0.00			**400**
	400	ISL	6.28	6.2A	3A.15A	26.853	12A.5	0.761	0.91	13.1	69.2	2.85	37.8	0.00			A03
2	A62		5.87	5.83	3A.213	26.952	115.7	0.835	0.55	7.9	77.9	3.02	39.6	0.00			**466**
	500	ISL	5.64	5.60	34.2A9	27.009	110.5	0.878	0.AA	6.3	84.0	3.08	40.5	0.00			**504**
2	536		5.42	5.38	34.284	27.064	105.6	0.917	0.33	4.7	89.7	3.14	41.4	0.00			**541**

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 2A.9 N	121 58.8 W	2A/01/89	0835 UTC	3928 M	300	30 KT			1018.2 MB	13.2 C	12.0 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 D.BAR
	0 ISL	13.61	13.61	33.223	2A.895	30A.8	0.000	6.03	101.9	2.0	0.39	0.2	0.02	0.38	0.15	0
1	2	13.61	13.61	33.223	2A.895	30A.8	0.006	6.03	101.9	2.0	0.39	0.2	0.02	0.38	0.15	2
	10 ISL	13.60	13.60	33.222	2A.896	30A.9	0.030	6.0A	102.1	1.8	0.38	0.2	0.02	0.37	0.13	10
1	16	13.58	13.58	33.222	2A.901	30A.7	0.0A9	6.05	102.2	1.7	0.37	0.2	0.02	0.36	0.11	16
	20 ISL	13.57	13.57	33.223	2A.903	30A.5	0.061	6.05	102.2	1.8	0.37	0.2	0.02	0.36	0.12	20
	30 ISL	13.5A	13.5A	33.227	2A.913	303.9	0.091	6.0A	101.9	2.1	0.39	0.3	0.03	0.38	0.13	30
1	33	13.53	13.53	33.228	2A.916	3 03.7	0.100	6.0A	101.9	2.2	0.A0	0.4	0.03	0.39	0.1A	33
1	A2	13.31	13.30	33.237	2A.967	299.0	0.128	6.06	101.8	2.2	0.A2	0.6	0.05	0.Al	0.17	A2
	50 ISL	13.18	13.17	33.2A5	25.000	296.1	0.151	6.06	101.5	2.A	0.AA	0.8	0.07	0. A3	0.19	50
1	52	13.16	13.15	33.2A7	25.005	295.7	0.157	6.06	101.5	2.A	0.A5	0.9	0.07	0.A3	0.19	52
1	61	13.10	13.09	33.257	25.025	29A.0	0.18A	5.99	100.2	2.5	0.A5	1.0	0.09	0.28	0.1A	61
1	71	12.A8	12.47	33.30A	25.183	279.2	0.213	5.65	93.3	A.l	0.5A	3.2	0.03	0.1A	0.13	72
	75 ISL	12.09	12.08	33.295	25.250	272.8	0.22A	5.5A	90.7	5.0	0.61	A.5	0.03	0.11	0.12	76
1	80	11.61	11.60	33.285	25.332	265.1	0.237	5.A2	87.9	6.2	0.71	6.3	0.02	0.08	0.11	81
1	93	10.90	10.89	33.358	25.517	2A7.7	0.270	5.10	81.A	9.2	0.91	9.8	0.02	0.05	0.05	9A
	100 ISL	10.53	10.52	33.397	25.612	238.7	0.287	A.91	77.8	11.1	1.03	11.8	0.02	0.0A	0.05	101
1	109	10.13	10.12	33.A55	25.726	228.1	0.308	A.63	72.8	13.8	1.20	1A.4	0.01	0.03	0.04	I10
	125 ISL	9.83	9.82	33.609	25.897	212.1	0.3AA	3.92	61.2	19.4	1.50	19.2	0.00	0.02	0.05	126
1	134	9.70	9.68	33.694	25.985	203.9	0.362	3.57	55.6	22.4	1.6A	21.A	0.00	0.02	0.05	135
	150 ISL	9.13	9.11	33.786	26.150	188.5	0.394	3.51	54.0	26.0	1.70	23.2	0.00	0.01	0.04	151
1	159	8.82	8.80	33.827	26.231	180.9	0.410	3.47	53.1	27.4	1.74	23.6	0.00	0.00	0.03	160
1	184	8.50	8.48	33.927	26.359	169.1	0.454	3.57	54.2	29.6	1.76	23.9	0.00	0.01	0.03	185
	200 ISL	8.29	8.27	33.96A	26.A20	163.5	0.A81	3.51	53.1	31.7	1.78	2A.A	0.00	0.01	0.02	202
1	215	8.10	8.08	33.987	26.467	159.3	0.505	3.46	52.1	3A.1	1.83	25.1	0.00	0.01	0.02	217
	250 ISL	7.62	7.60	3A.023	26.566	150.3	0.559	2.85	A2.5	Al.7	2.09	28.5	0.00			252
1	25A	7.57	7.55	34.026	26.575	149.4	0.565	2.77	41.2	42.6	2.13	28.9	0.00			256
	300 ISL	7.11	7.08	34.065	26.671	140.9	0.632	2.01	29.6	51.6	2.43	32.5	0.00			302
1	302	7.09	7.06	34.067	26.676	140.4	0.635	1.98	29.1	52.0	2.44	32.6	0.00			**304**
1	359	6.57	6.54	34.124	26.791	130.0	0.712	1.17	17.0	64.6	2.77	36.5	0.00			**362**
	400 ISL	6.20	6.16	34.154	26.864	123.5	0.764	0.84	12.1	72.0	2.92	38.4	0.01			**403**
1	426	5.99	5.95	3A.173	26.905	119.7	0.795	0.70	10.0	76.1	2.99	39.3	0.01			**430**
1	A98	5.60	5.56	34.249	27.014	110.0	0.878	0.38	5.4	86.1	3.14	40.8	0.00			**502**
	500 ISL	5.59	5.55	34.250	27.016	109.8	0.880	0.38	5.A	86.3	3.1A	A0.8	0.00			**504**
1	579	5.18	5.13	3A.299	27.10A	102.0	0.96A	0.28	3.9	95.0	3.22	A2.1	0.00			**584**

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 5.0 N	122 39.6 W	24/01/89	0036 UTC	4118 M	310	26 KT	310 08 07	1	1017.0 MB	1A.8 C	12.5 C	6/8	SC

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 D.BAR
	0 ISL	14.09	14.09	33.205	24.782	315.5	0.000	6.00	102.4	3.0	0.37	0.0	0.01	0.28	0.09	0
1	2	14.09	14.09	33.205	24.782	315.5	0.006	6.00	102.4	3.0	0.37	0.0	0.01	0.28	0.09	2
	10 ISL	14.08	14.08	33.201	24.781	315.8	0.032	6.01	102.6	2.9	0.36	0.0	0.00	0.27	0.09	10
1	15	14.07	14.07	33.199	24.782	315.9	0.047	6.01	102.5	2.9	0.35	0.0	0.00	0.27	0.09	15
	20 ISL	14.08	14.08	33.200	24.781	316.2	0.063	6.01	102.6	2.9	0.35	0.0	0.00	0.28	0.09	20
	30 ISL	14.09	14.09	33.201	24.780	316.6	0.095	6.01	102.6	2.9	0.35	0.0	0.01	0.29	0.09	30
1	31	14.09	1A.09	33.201	24.780	316.6	0.098	6.01	102.6	2.9	0.35	0.0	0.01	0.29	0.09	31
1	40	14.06	14.05	33.195	24.782	316.7	0.126	6.01	102.5	2.9	0.36	0.0	0.01	0.29	0.10	40
	50 ISL	13.74	13.73	33.141	24.806	314.6	0.158	6.09	103.2	2.8	0.39	0.2	0.04	0.34	0.15	50
1	51	13.70	13.69	33.135	24.810	314.3	0.161	6.10	103.2	2.8	0.39	0.2	0.05	0.34	0.16	51
1	61	13.32	13.31	33.128	24.882	307.7	0.192	6.03	101.2	3.0	0.41	0.7	0.11	0.31	0.19	61
	75 ISL	13.20	13.19	33.171	24.939	302.6	0.235	5.99	100.3	3.5	0.49	1.3	0.18	0.22	0.14	76
1	76	13.19	13.18	33.175	24.944	302.1	0.238	5.99	100.3	3.5	0.50	1.3	0.18	0.21	0.13	77
1	90	12.74	12.73	33.208	25.059	291.5	0.280	5.86	97.2	3.7	0.51	2.3	0.17	0.13	0.12	91
	100 ISL	12.56	12.55	33.270	25.142	283.9	0.308	5.70	94.3	4.1	0.52	2.7	0.08	0.11	0.11	101
1	105	12.46	12.45	33.302	25.186	279.8	0.322	5.61	92.6	4.4	0.53	3.0	0.03	0.10	0.11	106
1	120	11.84	11.82	33.359	25.348	264.6	0.363	5.43	88.5	6.1	0.65	5.A	0.02	0.05	0.07	121
	125 ISL	11.58	11.56	33.369	25.A0A	259.A	0.376	5.3A	86.5	7.2	0.73	6.7	0.02	0.0A	0.06	126
1	1A0	10.73	10.71	33.All	25.589	2A1.9	0.A1A	A.97	79.1	11.5	1.01	11.A	0.01	0.02	0.03	1A1
	150 ISL	10.16	10.14	33.471	25.734	228.2	0.437	4.65	73.1	15.0	1.21	14.6	0.01	0.01	0.02	151
1	160	9.65	9.63	33.5A8	25.880	21A.5	0.A60	A.31	67.0	18.6	1.39	17.7	0.01	0.01	0.02	161
1	183	8.91	8.89	33.758	26.163	187.8	0.506	3.68	56.A	25.5	1.69	22.7	0.01	0.00	0.02	18A
	200 ISL	8.60	8.58	33.861	26.292	175.8	0.537	3.60	5A.8	28.5	1.77	2A.1	0.02	0.00	0.02	202
1	220	8.32	8.30	33.939	26.396	166.2	0.571	3.51	53.1	31.6	1.82	25.0	0.03	0.00	0.02	222
	250 ISL	7.81	7.79	3A.000	26.520	15A.7	0.619	3.13	A6.8	38.7	1.99	27.6	0.01			252
1	253	7.76	7.73	3A.003	26.530	153.8	0.62A	3.09	A6.2	39.A	2.01	27.8	0.01			255
1	293	7.16	7.13	3A.011	26.622	1A5.5	0.68A	2.81	Al.A	A6.2	2.18	29.8	0.00			295
	300 ISL	7.08	7.05	3A.016	26.637	1AA.1	0.69A	2.70	39.7	A7.6	2.22	30.3	0.00			302
1	3A9	6.6A	6.61	3A.055	26.727	136.0	0.762	1.88	27.A	57.8	2.54	34.3	0.00			352
	400 ISL	6.18	6.1A	3A.09A	26.819	127.7	0.830	1.28	18.A	67.1	2.79	37.3	0.00			**403**
1	A13	6.06	6.02	3A.103	26.8A1	125.7	0.8A6	1.16	16.7	69.A	2.8A	37.9	0.00			**416**
1	A83	5.33	5.29	3A.1A0	26.960	11A.6	0.930	0.7A	10.5	83.6	3.0A	A0.9	0.00			**487**
	500 ISL	5.26	5.22	3A.15A	26.979	112.9	0.9A9	0.68	9.6	85.8	3.07	Al.2	0.00			**504**
1	56A	5.01	A.96	3A.207	27.051	106.6	1.020	0.AA	6.2	93.9	3.18	A2.2	0.00			**569**

LATITUDE LONGITUDE DAY/MO/YR MESSENGER

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 57.4 N	117 18.2 W	20/01/89	0733 UTC	64 M	090	05 KT			1021.0 MB	12.9 C	10.7 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 D.BAR
	0	ISL	12.99	12.99	33.475	25.214	274.4	0.000	6.20	103.6	4.6	0.46	1.4	0.08	1.17	0.29	0
1	1		12.99	12.99	33.475	25.214	274.4	0.003	6.20	103.6	4.6	0.46	1.4	0.08	1.17	0.29	1
	10	ISL	12.88	12.88	33.475	25.236	272.5	0.027	6.23	103.9	4.8	0.48	1.7	0.09	1.02	0.30	10
1	11		12.86	12.86	33.475	25.240	272.2	0.030	6.23	103.8	4.8	0.49	1.7	0.09	1.01	0.30	11
	20	ISL	12.70	12.70	33.472	25.269	269.7	0.054	6.06	100.7	4.4	0.57	2.2	0.14	1.21	0.46	20
1	21		12.67	12.67	33.472	25.275	269.1	0.057	6.04	100.3	4.4	0.58	2.3	0.14	1.22	0.47	21
	30	ISL	11.97	11.97	33.471	25.409	256.6	0.081	4.91	80.3	9.0	1.02	10.1	0.15	0.45	0.35	30
1	31		11.87	11.87	33.474	25.430	254.7	0.083	4.77	77.9	9.7	1.07	11.1	0.15	0.36	0.33	31
1	41		11.01	11.01	33.575	25.666	232.4	0.108	4.01	64.3	14.8	1.41	16.3	0.09	0.23	0.17	41
	50	ISL	11.01	11.00	33.620	25.701	229.3	0.129	3.66	58.7	17.0	1.51	17.0	0.21	0.28	0.23	50
1	51		11.01	11.00	33.625	25.705	228.9	0.131	3.62	58.1	17.2	1.52	17.1	0.22	0.28	0.24	51

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 54.8 N	117 23.6 W	20/01/89	1013 UTC	357 M	090	09 KT			1016.0 MB	13.8 C	11.9 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	PHAEO UG/L	PRESS D.BAR
	0	ISL	13.16	13.16	33.472	25.178	277.8	0.000	6.18	103.7	4.6	0.52	1.6	0.06	0.53	0.12	0
1	1		13.16	13.16	33.472	25.178	277.8	0.003	6.18	103.6	4.6	0.52	1.6	0.06	0.53	0.12	1
1	10		13.09	13.09	33.467	25.188	277.1	0.028	6.23	104.3	4.6	0.52	1.4	0.06	0.70	0.19	10
1	20		13.05	13.05	33.469	25.198	276.4	0.055	6.21	103.9	4.7	0.66 U	1.4	0.06	0.82	0.26	20
1	30		12.90	12.90	33.469	25.228	273.8	0.083	6.05	100.9	4.7	0.59	2.5	0.11	1.02	0.37	30
1	41		12.47	12.46	33.491	25.329	264.5	0.113	5.43	89.8	7.4	0.85	6.8	0.24	0.63	0.25	41
	50	ISL	11.96	11.95	33.496	25.430	255.1	0.136	4.88	79.8	9.6	1.06	10.6	0.15	0.39	0.21	50
1	52		11.82	11.81	33.499	25.459	252.4	0.141	4.76	77.6	10.2	1.11	11.5	0.12	0.34	0.20	52
1	62		10.85	10.84	33.547	25.672	232.2	0.165	4.16	66.4	14.6	1.36	16.0	0.04	0.12	0.12	62
1	71		10.58	10.57	33.696	25.836	216.9	0.185	3.45	54.8	19.4	1.61	19.5	0.13	0.10	0.13	72
	75	ISL	10.35	10.34	33.717	25.892	211.6	0.194	3.47	54.9	20.3	1.63	20.2	0.11	0.08	0.11	76
1	85		9.84	9.83	33.745	26.001	201.4	0.215	3.52	55.1	21.6	1.67	21.0	0.03	0.02	0.05	86
	100	ISL	9.83	9.82	33.879	26.108	191.6	0.244	3.00	47.0	25.8	1.85	23.1	0.04	0.02	0.08	101
1	101		9.83	9.82	33.885	26.112	191.2	0.246	2.96	46.3	26.0	1.86	23.2	0.04	0.02	0.08	102
1	121		9.46	9.45	33.890	26.178	185.4	0.284	3.19	49.5	26.2	1.81	23.3	0.02	0.01	0.04	122
	125	ISL	9.46	9.45	33.902	26.187	184.5	0.291	3.16	49.1	26.5	1.83	23.5	0.02	0.01	0.04	126
1	146		9.43	9.41	33.971	26.246	179.4	0.329	2.83	43.9	29.0	1.97	24.8	0.02	0.01	0.04	147
	150	ISL	9.42	9.40	33.993	26.265	177.7	0.336	2.72	42.2	29.7	2.01	25.2	0.02	0.01	0.04	151
1	176		9.32	9.30	34.127	26.387	166.7	0.381	2.08	32.2	34.6	2.22	27.5	0.02	0.01	0.04	177
	200	ISL	9.09	9.07	34.169	26.457	160.4	0.420	1.89	29.1	37.1	2.30	28.5	0.02	0.00	0.03	202
1	206		9.02	9.00	34.174	26.472	159.1	0.430	1.87	28.8	37.7	2.31	28.7	0.02	0.00	0.03	208
1	234		8.79	8.76	34.210	26.537	153.4	0.474	1.60	24.5	41.7	2.45	29.9	0.08			236
	250	ISL	8.73	8.70	34.217	26.552	152.2	0.498	1.55	23.7	42.6	2.46	30.1	0.07			252
1	273		8.64	8.61	34.220	26.569	151.1	0.533	1.52	23.2	43.4	2.47	30.4	0.06			275
	300	ISL	8.42	8.39	34.231	26.612	147.4	0.573	1.36	20.7	45.7	2.54	31.2	0.04			302
1	328		8.15	8.12	34.243	26.662	143.0	0.614	1.17	17.7	48.7	2.63	32.3	0.03			331
1	386		7.61	7.57	34.252	26.749	135.4	0.695	0.90	13.4	55.0	2.77	34.4	0.02			3 89
	400	ISL	7.46	7.42	34.253	26.772	133.4	0.714	0.84	12.5	57.0	2.80	34.9	0.03			403
1	449		6.96	6.92	34.262	26.849	126.4	0.777	0.62	9.1	64.9	2.91	36.7	0.06			453
	500	ISL	6.52	6.47	34.304	26.942	118.0	0.840	0.40	5.8	73.5	3.05	38.2	0.03			504
1	517		6.37	6.32	34.318	26.972	115.2	0.859	0.33	4.8	76.3	3.09	38.7	0.02			521

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 51.0 N	117 31.8 W	20/01/89	1328 UTC	482 M	090	04 KT			1016.5 MB	14.1 C	12.8 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 D.BAR
	0	ISL	13.51	13.51	33.441	25.084	286.8	0.000	6.10	103.0	3.4	0.43	0.7	0.04	0.52	0.11	0
1	1		13.51	13.51	33.441	25.084	286.8	0.003	6.10	103.0	3.4	0.43	0.7	0.04	0.52	0.11	1
	10	ISL	13.19	13.19	33.460	25.163	279.5	0.028	6.11	102.5	4.3	0.51	1.6	0.07	0.53	0.18	10
1	11		13.14	13.14	33.463	25.175	278.4	0.031	6.11	102.4	4.4	0.52	1.7	0.07	0.53	0.19	11
1	20		13.02	13.02	33.478	25.211	275.2	0.056	6.11	102.2	4.7	0.51	2.1	0.09	0.53	0.18	20
1	30		12.88	12.88	33.483	25.243	272.5	0.083	6.04	100.7	4.7	0.55	2.5	0.11	0.49	0.21	30
1	41		12.76	12.75	33.486	25.269	270.2	0.113	5.81	96.6	5.4	0.64	3.7	0.16	0.44	0.21	41
	50	ISL	12.42	12.41	33.491	25.339	263.8	0.137	5.40	89.2	7.3	0.83	6.6	0.27	0.31	0.18	50
1	51		12.36	12.35	33.493	25.352	262.6	0.140	5.33	87.9	7.6	0.86	7.1	0.28	0.29	0.17	51
1	61		11.21	11.20	33.544	25.606	238.6	0.165	4.29	69.1	13.2	1.26	14.5	0.04	0.12	0.12	61
1	70		10.71	10.70	33.611	25.747	225.3	0.186	3.91	62.3	16.1	1.41	16.8	0.02	0.07	0.09	71
	75	ISL	10.51	10.50	33.643	25.807	219.7	0.197	3.73	59.2	17.6	1.48	17.8	0.02	0.05	0.08	76
1	85		10.19	10.18	33.703	25.909	210.2	0.219	3.48	54.8	20.3	1.60	19.7	0.02	0.03	0.06	86
1	100		9.72	9.71	33.789	26.056	196.5	0.249	3.38	52.7	22.9	1.71	22.9	0.02	0.01	0.05	101
1	120		9.33	9.32	33.877	26.188	184.3	0.287	3.38	52.3	25.1	1.73	23.7	0.02	0.01	0.02	121
	125	ISL	9.27	9.26	33.893	26.211	182.2	0.296	3.34	51.6	25.7	1.75	24.0	0.02	0.01	0.02	126
1	145		9.09	9.07	33.957	26.290	175.1	0.332	3.06	47.1	28.4	1.86	25.5	0.01	0.00	0.03	146
	150	ISL	9.05	9.03	33.979	26.314	172.9	0.341	2.95	45.4	29.3	1.90	26.0	0.01	0.00	0.03	151
1	175		8.95	8.93	34.095	26.421	163.3	0.383	2.33	35.8	34.3	2.13	28.2	0.01	0.00	0.03	176
	200	ISL	8.98	8.96	34.203	26.501	156.2	0.423	1.70	26.2	39.1	2.34	29.8	0.02	0.00	0.04	202
1	205		8.99	8.97	34.221	26.514	155.1	0.430	1.60	24.6	39.9	2.37	30.0	0.02	0.00	0.04	207
1	234		8.65	8.63	34.222	26.568	150.4	0.475	1.48	22.6	43.3	2.44	30.8	0.01			236
	250	ISL	8.51	8.48	34.230	26.596	148.0	0.499	1.39	21.2	44.6	2.49	31.3	0.02			252
1	274		8.33	8.30	34.243	26.634	144.7	0.534	1.25	19.0	46.2	2.56	32.0	0.03			276
	300	ISL	8.18	8.15	34.251	26.664	142.3	0.571	1.14	17.2	48.3	2.61	32.3	0.02			302
1	328		8.02	7.99	34.256	26.692	140.1	0.611	1.04	15.7	50.9	2.66	32.7	0.01			331
1	387		7.48	7.44	34.266	26.779	132.5	0.691	0.79	11.7	58.9	2.80	35.1	0.01			3 90
	400	ISL	7.33	7.29	34.270	26.803	130.2	0.708	0.72	10.7	61.0	2.84	35.7	0.01			403
1	451		6.77	6.73	34.291	26.898	121.6	0.772	0.49	7.2	69.0	2.98	37.7	0.01			455
	500	ISL	6.45	6.40	34.309	26.955	116.7	0.831	0.40	5.8	74.1	3.05	38.8	0.00			504
1	520		6.32	6.27	34.316	26.977	114.7	0.854	0.36	5.2	76.2	3.08	39.2	0.00			525

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 41.0 N	117 52.5 W	20/01/89	1745 UTC	616 M	030	10 KT	3 00 02 10	2	1018.8 MB	15.7 C	13.9 C	8/8	CS

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 D.BAR
	0	ISL	13.37	13.37	33.480	25.142	281.2	0.000	6.09	102.6	4.1	0.53	2.0	0.07	0.46	0.12	0
1	1		13.37	13.37	33.480	2 5.142	281.3	0.003	6.09	102.6	4.1	0.53	2.0	0.07	0.46	0.12	1
	10	ISL	13.19	13.19	33.483	25.181	277.8	0.028	6.10	102.4	4.5	0.53	2.4	0.09	0.39	0.15	10
1	11		13.16	13.16	33.483	25.187	277.3	0.031	6.10	102.3	4.5	0.53	2.4	0.09	0.38	0.15	11
	20	ISL	13.06	13.06	33.480	25.205	275.8	0.056	6.08	101.8	4.4	0.54	2.4	0.09	0.44	0.13	20
1	21		13.05	13.05	33.480	25.207	275.7	0.058	6.08	101.7	4.4	0.54	2.4	0.09	0.45	0.13	21
	30	ISL	13.03	13.03	33.479	25.210	275.6	0.083	6.10	102.0	4.2	0.52	2.4	0.09	0.51	0.17	30
1	31		13.02	13.02	33.479	25.212	275.4	0.086	6.10	102.0	4.2	0.52	2.4	0.09	0.51	0.18	31
1	41		12.81	12.80	33.470	25.247	272.4	0.113	5.86	97.6	4.9	0.62	3.5	0.13	0.52	0.25	41
1	50		11.48	11.47	33.505	25.526	245.9	0.137	4.41	71.4	11.7	1.20	13.7	0.08	0.25	0.18	50
1	59		11.37	11.36	33.517	25.556	243.3	0.159	4.32	69.8	12.3	1.26	14.4	0.07	0.23	0.23	59
1	70		11.00	10.99	33.560	25.656	234.0	0.185	4.08	65.4	14.4	1.37	16.4	0.05	0.16	0.16	71
	75	ISL	10.80	10.79	33.598	25.721	227.9	0.196	3.93	62.7	15.7	1.43	17.5	0.04	0.12	0.13	76
1	84		10.43	10.42	33.674	25.845	216.3	0.216	3.65	57.8	18.3	1.54	19.4	0.03	0.06	0.09	85
1	99		9.93	9.92	33.768	26.004	201.5	0.248	3.31	51.9	22.5	1.71	22.0	0.02	0.02	0.05	100
	100	ISL	9.91	9.90	33.775	26.013	200.6	0.250	3.28	51.4	22.8	1.72	22.2	0.02	0.02	0.05	101
1	118		9.53	9.52	33.895	26.170	186.0	0.285	2.86	44.5	27.5	1.90	24.7	0.01	0.01	0.04	119
	125	ISL	9.34	9.33	33.923	26.223	181.1	0.297	2.88	44.6	28.7	1.92	25.1	0.01	0.01	0.04	126
1	144		8.89	8.87	33.979	26.339	170.4	0.331	2.92	44.8	31.3	1.95	25.7	0.01	0.01	0.03	145
	150	ISL	8.82	8.80	34.001	26.367	167.8	0.341	2.83	43.3	32.5	1.99	26.2	0.01	0.01	0.03	151
1	175		8.62	8.60	34.078	26.459	159.5	0.382	2.40	36.6	36.9	2.15	28.1	0.01	0.00	0.03	176
	200	ISL	8.42	8.40	34.104	26.510	155.0	0.421	2.24	34.0	39.0	2.22	29.0	0.01	0.00	0.03	202
1	204		8.38	8.36	34.106	26.518	154.4	0.427	2.22	33.7	39.4	2.23	29.2	0.01	0.00	0.03	206
1	234		7.86	7.84	34.134	26.618	145.2	0.472	1.84	27.6	46.0	2.40	31.5	0.01			236
	250	ISL	7.75	7.73	34.145	26.643	143.1	0.495	1.69	25.3	48.0	2.46	32.1	0.01			252
1	274		7.66	7.63	34.160	26.668	141.1	0.530	1.49	22.2	50.4	2.53	32.8	0.01			276
	300	ISL	7.47	7.44	34.174	26.707	137.8	0.566	1.30	19.3	53.4	2.61	33.8	0.01			302
1	328		7.22	7.19	34.192	26.756	133.4	0.604	1.09	16.1	57.2	2.70	35.1	0.01			331
1	386		6.65	6.61	34.256	26.885	121.7	0.678	0.58	8.5	68.8	2.94	37.9	0.00			389
	400	ISL	6.58	6.54	34.267	26.903	120.1	0.695	0.52	7.6	70.3	2.97	38.2	0.00			403
1	449		6.38	6.34	34.298	26.955	115.8	0.752	0.39	5.7	74.5	3.04	38.9	0.00			453
	500	ISL	6.09	6.05	34.326	27.014	110.6	0.810	0.29	4.2	80.3	3.13	39.9	0.01			504
1	517		5.99	5.94	34.335	27.034	108.8	0.829	0.26	3.7	82.2	3.16	40.2	0.01			521

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 93 41

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 28.2 N	118 14.6 W	20/01/89	2249 UTC	1391 M	030	08 KT	290 02 08	2	1015.9 MB	14.7 C	13.6 C	8/8	CS

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 D.BAR
1	0		13.51	13.51	33.480	25.114	283.9	0.000	6.10	103.1	4.4	0.52	2.5	0.09	0.38	0.10	0
1	10		13.15	13.15	33.477	25.184	277.5	0.028	6.14	103.0	4.8	0.51	2.4	0.09	0.60	0.19	10
1	19		13.03	13.03	33.474	25.206	275.7	0.053	6.12	102.4	4.7	0.51	2.5	0.09	0.45	0.22	19
	20	ISL	13.02	13.02	33.474	25.208	275.5	0.056	6.12	102.3	4.7	0.51	2.5	0.09	0.45	0.22	20
1	30		12.98	12.98	33.475	25.217	274.9	0.083	6.08	101.6	4.4	0.52	2.7	0.09	0.51	0.25	30
1	40		12.93	12.92	33.473	25.226	274.4	0.111	5.99	100.0	4.4	0.54	3.0	0.11	0.51	0.26	40
1	50		12.70	12.69	33.477	25.274	270.0	0.138	5.67	94.2	5.5	0.68	5.0	0.16	0.42	0.20	50
1	60		11.88	11.87	33.534	25.475	251.1	0.164	4.85	79.2	9.6	1.05	11.5	0.13	0.24	0.15	60
1	70		11.37	11.36	33.520	25.559	243.3	0.189	4.47	72.2	11.7	1.19	14.0	0.06	0.19	0.16	71
	75	ISL	11.05	11.04	33.561	25.648	234.9	0.201	4.17	66.9	13.6	1.31	16.0	0.04	0.15	0.14	76
1	83		10.55	10.54	33.655	25.810	219.6	0.219	3.69	58.6	17.1	1.51	19.1	0.02	0.08	0.09	84
1	99		9.87	9.86	33.826	26.059	196.2	0.252	3.19	50.0	23.0	1.73	22.6	0.01	0.01	0.06	100
	100	ISL	9.86	9.85	33.830	26.064	195.8	0.254	3.19	49.9	23.1	1.73	22.7	0.01	0.01	0.06	101
1	118		9.71	9.70	33.867	26.118	191.0	0.289	3.10	48.4	24.5	1.76	23.3	0.01	0.01	0.03	119
	125	ISL	9.52	9.51	33.904	26.179	185.3	0.302	3.02	46.9	26.1	1.81	24.1	0.01	0.01	0.03	126
1	142		9.00	8.98	33.999	26.337	170.6	0.332	2.82	43.4	30.6	1.95	26.1	0.01	0.00	0.03	143
	150	ISL	8.85	8.83	34.020	26.377	166.8	0.346	2.76	42.3	31.9	1.99	26.6	0.01	0.00	0.03	151
1	173		8.52	8.50	34.055	26.456	159.7	0.383	2.58	39.3	35.4	2.07	27.8	0.01	0.00	0.03	174
	200	ISL	8.13	8.11	34.094	26.546	151.5	0.425	2.24	33.8	40.9	2.22	29.7	0.01	0.00	0.03	202
1	202		8.10	8.08	34.096	26.552	151.0	0.428	2.21	33.3	41.3	2.23	29.8	0.01	0.00	0.03	204
1	231		7.89	7.87	34.140	26.618	145.1	0.471	1.78	26.7	45.9	2.42	31.5	0.01			233
	250	ISL	7.80	7.78	34.154	26.643	143.1	0.499	1.60	24.0	47.7	2.48	32.2	0.01			252
2	271		7.67	7.64	34.163	26.669	140.9	0.529	1.45	21.6	49.7	2.53	33.0	0.01			273
	300	ISL	7.27	7.24	34.172	26.733	135.1	0.569	1.22	18.0	55.2	2.66	34.6	0.01			302
2	325		6.92	6.89	34.185	26.792	129.7	0.602	1.02	15.0	60.1	2.77	36.0	0.01			328
2	383		6.73	6.69	34.257	26.875	122.6	0.675	0.58	8.5	66.8	2.93	37.5	0.00			386
	400	ISL	6.66	6.62	34.270	26.895	121.0	0.696	0.51	7.4	68.4	2.97	37.9	0.00			403
2	447		6.45	6.41	34.298	26.945	116.7	0.751	0.38	5.5	72.7	3.05	38.8	0.01			451
	500	ISL	6.16	6.12	34.322	27.002	111.8	0.812	0.30	4.3	78.6	3.11	39.8	0.01			504
2	515		6.08	6.03	34.329	27.018	110.5	0.829	0.28	4.0	80.3	3.13	40.1	0.01			519

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 20.6 N	118 33.0 W	21/01/89	0409 UTC	1367 M	030	03 KT			1017.1 MB	14.7 C	13.3 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 D.BAR
	0	ISL	13.05	13.05	33.536	25.250	271.0	0.000	6.20	103.8	4.6	0.60	3.7	0.10	0.76	0.14	0
1	1		13.05	13.05	33.536	25.250	271.0	0.003	6.20	103.8	4.6	0.60	3.7	0.10	0.76	0.14	1
	10	ISL	12.81	12.81	33.532	25.294	267.0	0.027	6.22	103.6	4.7	0.60	3.7	0.10	0.88	0.21	10
1	11		12.77	12.77	33.532	25.302	266.3	0.030	6.22	103.5	4.7	0.60	3.7	0.10	0.90	0.22	11
	20	ISL	12.58	12.58	33.561	25.362	260.9	0.053	6.10	101.1	5.1	0.66	4.3	0.10	0.86	0.31	20
1	21		12.56	12.56	33.565	25.369	260.2	0.056	6.08	100.8	5.1	0.67	4.4	0.10	0.85	0.32	21
	30	ISL	12.40	12.40	33.581	25.412	256.3	0.079	5.83	96.3	5.1	0.72	5.5	0.13	0.51	0.25	30
1	31		12.38	12.38	33.583	25.418	255.8	0.082	5.80	95.8	5.1	0.73	5.6	0.13	0.47	0.24	31
1	40		11.15	11.15	33.603	25.662	232.7	0.104	4.29	69.0	13.5	1.29	15.0	0.15	0.23	0.15	40
1	50		10.64	10.63	33.650	25.790	220.8	0.126	3.80	60.5	17.3	1.49	18.5	0.03	0.17	0.12	50
1	59		10.42	10.41	33.678	25.850	215.3	0.146	3.66	58.0	18.5	1.55	19.6	0.03	0.13	0.10	59
1	70		10.07	10.06	33.752	25.967	204.3	0.169	3.32	52.2	22.5	1.69	21.7	0.02	0.07	0.08	71
	75	ISL	9.97	9.96	33.776	26.003	201.0	0.179	3.24	50.8	23.4	1.72	22.2	0.02	0.05	0.07	76
1	83		9.85	9.84	33.802	26.044	197.3	0.195	3.18	49.8	24.1	1.75	22.7	0.02	0.03	0.06	84
1	98		9.76	9.75	33.812	26.067	195.4	0.225	3.18	49.7	24.6	1.76	22.9	0.02	0.02	0.06	99
	100	ISL	9.72	9.71	33.823	26.082	194.0	0.229	3.15	49.2	25.0	1.77	23.1	0.02	0.02	0.06	101
1	119		9.28	9.27	33.941	26.246	178.7	0.264	2.83	43.8	29.7	1.92	25.2	0.01	0.00	0.04	120
	125	ISL	9.19	9.18	33.963	26.278	175.8	0.275	2.77	42.8	30.7	1.95	25.6	0.01	0.00	0.04	126
1	144		8.95	8.93	34.008	26.352	169.2	0.307	2.64	40.5	33.3	2.03	26.6	0.01	0.00	0.03	145
	150	ISL	8.85	8.83	34.017	26.375	167.1	0.317	2.62	40.2	34.1	2.05	26.9	0.01	0.00	0.03	151
1	175		8.49	8.47	34.052	26.458	159.5	0.358	2.52	38.3	37.6	2.12	27.9	0.01	0.01	0.03	176
	200	ISL	8.34	8.32	34.105	26.523	153.8	0.397	2.21	33.5	41.8	2.24	29.3	0.01	0.00	0.03	202
1	204		8.32	8.30	34.113	26.533	153.0	0.404	2.15	32.6	42.5	2.26	29.5	0.01	0.00	0.03	206
1	235		8.09	8.07	34.154	26.600	147.1	0.450	1.75	26.4	47.1	2.43	31.1	0.00			237
	250	ISL	7.91	7.88	34.176	26.644	143.1	0.472	1.51	22.7	50.6	2.53	32.1	0.00			252
1	274		7.61	7.58	34.206	26.712	137.0	0.505	1.17	17.4	56.2	2.67	33.7	0.00			276
	300	ISL	7.36	7.33	34.217	26.756	133.0	0.541	0.99	14.7	59.7	2.76	34.8	0.00			302
1	329		7.14	7.11	34.222	26.791	130.0	0.579	0.88	13.0	62.4	2.82	35.7	0.00			332
1	388		6.85	6.81	34.256	26.858	124.4	0.654	0.62	9.1	67.2	2.94	37.2	0.00			391
	400	ISL	6.78	6.74	34.262	26.873	123.2	0.669	0.58	8.5	68.2	2.96	37.4	0.00			403
1	449		6.46	6.42	34.286	26.935	117.8	0.728	0.43	6.2	72.7	3.05	38.4	0.00			453
	500	ISL	6.13	6.09	34.313	26.999	112.1	0.786	0.34	4.9	79.5	3.12	39.6	0.00			504
1	513		6.04	5.99	34.320	27.016	110.6	0.801	0.32	4.6	81.2	3.14	39.9	0.00			517

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 10.9 N	118 53.5 W	21/01/89	0820 UTC	1508 M	010	14 KT			1016.1 MB	15.0 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	PHAEO UG/L	PRESS D.BAR
	0	ISL	14.49	14.49	33.369	24.825	311.4	0.000	5.90	101.6	2.2	0.37	0.1	0.00	0.15	0.05	0
1	1		14.49	14.49	33.369	24.825	311.5	0.003	5.90	101.6	2.2	0.37	0.1	0.00	0.15	0.05	1
1	10		14.47	14.47	33.368	24.829	311.4	0.031	5.91	101.8	2.2	0.36	0.1	0.00	0.14	0.04	10
1	20		14.28	14.28	33.395	24.890	305.8	0.062	5.98	102.6	2.5	0.37	0.1	0.00	0.24	0.08	20
	30	ISL	13.23	13.23	33.314	25.043	291.5	0.092	5.85	98.2	3.5	0.49	1.8	0.06	0.60	0.23	30
1	31		13.12	13.12	33.305	25.058	290.1	0.095	5.83	97.6	3.6	0.51	2.0	0.07	0.63	0.24	31
1	42		12.51	12.50	33.278	25.156	281.0	0.126	5.56	91.9	4.9	0.67	4.6	0.06	0.35	0.25	42
	50	ISL	12.35	12.34	33.449	25.320	265.6	0.148	5.62	92.6	7.2	0.79	6.4	0.31	0.19	0.15	50
1	51		12.33	12.32	33.470	25.340	263.7	0.151	5.63	92.8	7.5	0.80	6.6	0.34	0.18	0.14	51
I	60		11.97	11.96	33.481	25.417	256.6	0.174	5.37	87.8	8.9	0.90	8.5	0.28	0.16	0.15	60
1	71		11.30	11.29	33.525	25.575	241.8	0.202	4.56	73.5	8.2 U	0.90 U	8.5U	0.28 U	0.08	0.12	72
	75	ISL	10.92	10.91	33.560	25.671	232.7	0.211	4.29	68.6	14.4	1.30	15.5	0.11	0.06	0.10	76
1	85		10.04	10.03	33.667	25.906	210.4	0.233	3.74	58.7	18.7	1.57	20.2	0.01	0.03	0.05	86
1	100		9.60	9.59	33.796	26.081	194.1	0.264	3.41	53.1	23.1	1.72	22.6	0.01	0.01	0.03	101
1	120		9.35	9.34	33.905	26.207	182.5	0.301	3.13	48.5	27.2	1.84	24.3	0.01	0.01	0.03	121
	125	ISL	9.26	9.25	33.922	26.235	179.9	0.310	3.11	48.1	28.1	1.86	24.6	0.01	0.01	0.03	126
1	145		8.92	8.90	33.974	26.330	171.2	0.345	3.02	46.3	31.3	1.93	25.8	0.01	0.00	0.03	146
	150	ISL	8.87	8.85	33.989	26.350	169.4	0.354	2.95	45.2	32.1	1.96	26.2	0.01	0.00	0.03	151
1	175		8.67	8.65	34.055	26.433	162.0	0.395	2.55	38.9	36.3	2.13	28.0	0.01	0.00	0.03	176
	200	ISL	8.30	8.28	34.093	26.520	154.1	0.435	2.29	34.7	41.7	2.25	29.7	0.01	0.00	0.03	202
1	205		8.23	8.21	34.099	26.535	152.7	0.442	2.24	33.9	42.7	2.28	30.0	0.01	0.00	0.03	207
1	234		7.96	7.94	34.146	26.613	145.8	0.486	1.74	26.2	46.2	2.48	32.0	0.01			236
	250	ISL	7.85	7.83	34.157	26.638	143.6	0.509	1.61	24.1	47.9	2.54	32.7	0.01			252
1	274		7.69	7.66	34.171	26.672	140.7	0.543	1.46	21.8	50.9	2.62	33.5	0.00			276
	300	ISL	7.47	7.44	34.207	26.733	135.3	0.579	1.12	16.6	55.8	2.77	34.9	0.00			302
1	329		7.23	7.20	34.247	26.798	129.4	0.617	0.76	11.2	61.5	2.93	36.5	0.00			332
1	387		6.83	6.79	34.278	26.878	122.5	0.690	0.52	7.6	68.6	3.04	38.1	0.00			390
	400	ISL	6.73	6.69	34.283	26.896	120.9	0.706	0.48	7.0	70.3	3.06	38.4	0.00			403
1	449		6.38	6.34	34.302	26.958	115.5	0.764	0.36	5.2	76.6	3.14	39.6	0.00			453
	500	ISL	6.08	6.04	34.322	27.012	110.8	0.822	0.31	4.5	82.2	3.21	40.5	0.00			504
1	516		5.99	5.94	34.328	27.029	109.4	0.839	0.29	4.2	83.9	3.23	40.8	0.00			520

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 0.8 N	119 14.0 W	21/01/89	1222 UTC	1487 M	020	07 KT			1016.2 MB	14.8 C	12.9 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	PHAEO UG/L	PRESS D.BAR
	0	ISL	13.55	13.55	33.444	25.078	287.3	0.000	6.11	103.3	2.5	0.43	1.1	0.04	0.70	0.16	0
1	1		13.55	13.55	33.444	25.078	287.4	0.003	6.11	103.3	2.5	0.43	1.1	0.04	0.70	0.16	1
	10	ISL	13.48	13.48	33.443	25.092	286.3	0.029	6.09	102.8	2.5	0.44	1.1	0.04	0.72	0.18	10
1	11		13.47	13.47	33.443	25.094	286.1	0.032	6.09	102.8	2.5	0.44	1.1	0.04	0.72	0.18	11
	20	ISL	13.40	13.40	33.442	25.107	285.1	0.057	6.08	102.5	2.2	0.35	1.1	0.04	0.79	0.25	20
1	21		13.39	13.39	33.441	25.109	285.0	0.060	6.08	102.4	2.2	0.34	1.1	0.04	0.80	0.26	21
	30	ISL	13.12	13.12	33.431	25.155	280.8	0.086	5.97	100.0	3.0	0.42	2.3	0.07	0.82	0.26	30
1	31		13.07	13.07	33.430	25.164	280.0	0.088	5.95	99.6	3.2	0.44	2.5	0.08	0.82	0.26	31
1	41		12.36	12.35	33.435	25.307	266.6	0.116	5.42	89.4	6.0	0.62	6.8	0.15	0.60	0.25	41
1	50		12.20	12.19	33.518	25.402	257.8	0.139	6.01	98.8	6.6	0.74	6.0	0.17	0.60	0.32	50
1	60		12.02	12.01	33.523	25.440	254.4	0.165	5.75	94.2	7.1	0.83	7.5	0.23	0.35	0.25	60
1	70		11.69	11.68	33.539	25.515	247.6	0.190	5.22	84.9	9.8	0.99	10.2	0.24	0.19	0.17	71
	75	ISL	11.39	11.38	33.571	25.595	240.0	0.202	4.75	76.8	12.3	1.14	12.8	0.18	0.14	0.14	76
1	84		10.78	10.77	33.648	25.764	224.1	0.223	3.91	62.4	17.2	1.43	17.6	0.06	0.08	0.11	85
1	99		9.99	9.98	33.779	26.003	201.6	0.255	3.21	50.4	23.2	1.71	22.2	0.01	0.04	0.07	100
	100	ISL	9.95	9.94	33.787	26.016	200.4	0.257	3.18	49.9	23.6	1.72	22.4	0.01	0.04	0.07	101
1	119		9.42	9.41	33.910	26.200	183.2	0.293	2.77	43.0	29.1	1.92	25.2	0.01	0.01	0.04	120
	125	ISL	9.30	9.29	33.934	26.238	179.7	0.304	2.70	41.8	30.2	1.95	25.7	0.01	0.01	0.04	126
1	143		9.01	8.99	33.984	26.324	171.8	0.336	2.61	40.1	32.6	2.01	26.6	0.01	0.01	0.03	144
	150	ISL	8.89	8.87	34.001	26.356	168.9	0.348	2.64	40.5	33.3	2.01	26.7	0.01	0.01	0.03	151
1	173		8.53	8.51	34.050	26.451	160.2	0.386	2.69	40.9	35.8	2.04	27.2	0.01	0.00	0.02	174
	200	ISL	8.28	8.26	34.096	26.525	153.6	0.428	2.34	35.4	39.8	2.19	28.8	0.01	0.00	0.02	202
1	203		8.26	8.24	34.101	26.53 2	153.0	0.433	2.29	34.6	40.3	2.21	29.0	0.01	0.00	0.02	205
1	232		8.25	8.23	34.158	26.579	149.1	0.477	1.82	27.5	43.5	2.37	30.4	0.01			234
	250	ISL	8.05	8.02	34.168	26.617	145.7	0.503	1.65	24.9	46.3	2.45	31.3	0.01			252
1	272		7.72	7.69	34.169	26.667	141.2	0.535	1.50	22.4	50.0	2.53	32.5	0.00			274
	300	ISL	7.31	7.28	34.165	26.722	136.2	0.573	1.34	19.8	55.0	2.62	33.9	0.00			302
1	325		6.99	6.96	34.164	26.766	132.2	0.607	1.20	17.6	59.2	2.70	35.1	0.00			328
1	384		6.65	6.61	34.210	26.849	125.1	0.683	0.80	11.7	66.7	2.87	37.1	0.00			387
	400	ISL	6.54	6.50	34.219	26.871	123.2	0.703	0.72	10.5	68.6	2.91	37.6	0.00			403
1	448		6.23	6.19	34.249	26.935	117.5	0.761	0.53	7.7	74.0	3.01	38.8	0.01			452
	500	ISL	6.04	6.00	34.299	26.999	112.0	0.820	0.37	5.3	79.5	3.10	39.7	0.00			504
1	515		5.98	5.93	34.314	27.019	110.3	0.837	0.33	4.7	81.1	3.12	39.9	0.00			519

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 50.8 N	119 34.3 W	21/01/89	1624 UTC	1908 M	350	14 KT	3 00 04 12	1	1016.1 MB	14.7 C	13.8 C	6/8	SC

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 D.BAR
1	0		14.12	14.12	33.344	24.883	305.9	0.000	5.98	102.2	2.6	0.36	0.1	0.00	0.26	0.07	0
1	10		14.09	14.09	33.344	24.890	305.5	0.031	5.99	102.3	3.1	0.39	0.1	0.00	0.26	0.09	10
	20	ISL	13.99	13.99	33.359	24.922	302.7	0.061	6.00	102.3	2.8	0.39	0.0	0.01	0.43	0.16	20
1	21		13.98	13.98	33.363	24.928	302.2	0.064	6.00	102.3	2.8	0.39	0.0	0.01	0.45	0.17	21
1	30		13.86	13.86	33.425	25.001	295.5	0.091	5.95	101.2	3.0	0.42	0.6	0.04	0.56	0.26	30
1	40		13.75	13.74	33.424	25.023	293.7	0.120	5.88	99.8	3.2	0.44	0.9	0.07	0.51	0.26	40
	50	ISL	13.58	13.57	33.412	25.048	291.6	0.150	5.97	101.0	3.1	0.45	1.2	0.06	0.51	0.28	50
1	52		13.52	13.51	33.408	25.058	290.7	0.155	5.98	101.0	3.1	0.45	1.3	0.06	0.51	0.28	52
1	61		13.08	13.07	33.383	25.127	284.3	0.181	5.86	98.0	4.5	0.60	2.9	0.10	0.35	0.20	61
1	71		12.64	12.63	33.369	25.203	277.4	0.209	5.72	94.8	5.6	0.63	4.1	0.12	0.28	0.18	72
	75	ISL	12.32	12.31	33.340	25.242	273.7	0.220	5.60	92.2	6.1	0.67	5.0	0.10	0.23	0.17	76
1	86		11.44	11.43	33.281	25.360	262.5	0.250	5.23	84.5	8.0	0.85	8.2	0.03	0.11	0.14	87
1	100		10.99	10.98	33.352	25.497	249.8	0.286	4.81	77.0	11.4	1.12	12.6	0.02	0.08	0.10	101
1	120		10.68	10.67	33.630	25.768	224.4	0.333	3.92	62.4	18.0	1.46	18.0	0.02	0.05	0.07	121
	125	ISL	10.50	10.49	33.676	25.836	218.1	0.344	3.80	60.3	19.7	1.53	19.2	0.02	0.04	0.06	126
1	146		9.67	9.65	33.826	26.094	193.9	0.388	3.92 U		26.2	1.77	23.1	0.01	0.01	0.04	147
	150	ISL	9.56	9.54	33.854	26.134	190.2	0.395	3.36	52.3	27.2	1.80	23.6	0.01	0.01	0.04	151
1	174		9.00	8.98	33.982	26.324	172.4	0.439	3.20	49.2	31.9	1.92	25.5	0.01	0.00	0.02	175
	200	ISL	8.52	8.50	34.020	26.429	162.8	0.482	2.88	43.8	35.8	2.01	26.8	0.01	0.00	0.03	202
1	204		8.45	8.43	34.021	26.441	161.7	0.489	2.83	43.0	36.3	2.02	27.0	0.01	0.00	0.03	206
1	233		7.89	7.87	34.054	26.551	151.6	0.534	2.55	38.2	40.7	2.18	29.2	0.00			235
	250	ISL	7.77	7.75	34.073	26.583	148.7	0.560	2.34	35.0	43.3	2.26	30.1	0.00			252
1	273		7.68	7.65	34.097	26.616	146.0	0.594	2.04	30.5	47.0	2.36	31.3	0.00			275
	300	ISL	7.45	7.42	34.127	26.673	141.0	0.632	1.66	24.7	51.5	2.51	32.9	0.00			302
1	326		7.22	7.19	34.157	26.729	135.9	0.668	1.31	19.4	56.1	2.65	34.5	0.00			329
1	384		6.79	6.75	34.230	26.846	125.5	0.744	0.71	10.4	66.7	2.91	37.1	0.00			387
	400	ISL	6.67	6.63	34.239	26.869	123.4	0.764	0.62	9.0	68.8	2.95	37.6	0.00			403
1	449		6.33	6.29	34.260	26.931	118.0	0.823	0.47	6.8	74.2	3.03	38.8	0.00			453
	500	ISL	6.06	6.02	34.297	26.995	112.4	0.882	0.37	5.3	79.8	3.11	39.9	0.00			504
1	517		5.97	5.92	34.310	27.017	110.5	0.901	0.33	4.7	81.6	3.14	40.2	0.00			521

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 30.8 N	120 14.8 W	21/01/89	2302 UTC	A018 M	330	15 KT	290 03 06	1	1015.9 MB	15.2 C	14.0 C	6/8	SC

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 D.BAR
	0	ISL	13.87	13.87	33.420	24.994	295.3	0.000	6.04	102.8	1.7	0.40	0.6	0.05	0.63	0.13	0
1	1		13.87	13.87	33.420	24.994	295.4	0.003	6.04	102.8	1.7	0.40	0.6	0.05	0.63	0.13	1
1	9		13.78	13.78	33.416	25.010	294.1	0.027	6.06	102.9	2.2	0.40	0.6	0.04	0.66	0.14	9
	10	ISL	13.77	13.77	33.415	25.011	294.0	0.029	6.06	102.9	2.2	0.40	0.6	0.04	0.67	0.14	10
	20	ISL	13.65	13.65	33.419	25.039	291.6	0.059	6.02	102.0	2.2	0.43	0.9	0.05	0.72	0.19	20
1	21		13.64	13.64	33.420	25.042	291.4	0.062	6.02	101.9	2.2	0.43	0.9	0.05	0.72	0.20	21
1	30		13.12	13.12	33.340	25.085	287.5	0.088	5.72	95.8	3.0	0.53	2.8	0.11	0.48	0.25	30
1	40		12.71	12.70	33.308	25.141	282.4	0.116	5.60	92.9	3.8	0.60	3.9	0.12	0.35	0.22	40
1	50		12.29	12.28	33.287	25.206	276.5	0.144	5.52	90.8	4.6	0.66	4.9	0.12	0.29	0.25	50
1	60		11.93	11.92	33.281	25.269	270.7	0.172	5.37	87.6	5.5	0.74	6.4	0.08	0.27	0.25	60
1	69		11.71	11.70	33.309	25.332	264.9	0.196	5.23	85.0	6.4	0.81	7.6	0.06	0.14	0.23	70
	75	ISL	11.59	11.58	33.322	25.365	261.9	0.211	5.16	83.6	6.9	0.85	8.3	0.06	0.13	0.20	76
1	83		11.39	11.38	33.343	25.417	257.0	0.232	5.04	81.3	8.0	0.92	9.6	0.05	0.12	0.15	84
1	99		10.58	10.57	33.426	25.626	237.4	0.272	4.53	71.9	12.4	1.22	14.5	0.02	0.06	0.09	100
	100	ISL	10.55	10.54	33.432	25.636	236.5	0.274	4.50	71.4	12.6	1.24	14.8	0.02	0.06	0.09	101
1	118		10.12	10.11	33.566	25.815	219.9	0.315	3.96	62.2	16.2	1.47	18.8	0.02	0.04	0.05	119
	125	ISL	9.96	9.95	33.642	25.901	211.8	0.330	3.75	58.8	18.2	1.55	20.1	0.02	0.03	0.05	126
1	142		9.62	9.60	33.820	26.097	193.5	0.365	3.32	51.7	23.1	1.70	22.5	0.02	0.01	0.04	143
	150	ISL	9.47	9.45	33.865	26.157	187.9	0.380	3.21	49.8	24.7	1.75	23.2	0.02	0.01	0.04	151
1	174		9.10	9.08	33.947	26.281	176.5	0.424	3.01	46.4	28.6	1.87	24.8	0.01	0.00	0.03	175
	200	ISL	8.80	8.78	34.021	26.387	166.9	0.468	2.78	42.6	32.8	1.99	26.4	0.01	0.00	0.03	202
1	202		8.78	8.76	34.026	26.394	166.3	0.472	2.76	42.2	33.1	2.00	26.5	0.01	0.00	0.03	204
1	232		8.36	8.34	34.082	26.503	156.4	0.520	2.42	36.7	38.1	2.16	28.5	0.01			234
	250	ISL	8.14	8.11	34.130	26.574	149.8	0.548	2.00	30.2	42.9	2.32	30.2	0.01			252
1	272		7.90	7.87	34.184	26.652	142.7	0.580	1.49	22.4	48.7	2.51	32.2	0.00			274
	300	ISL	7.70	7.67	34.206	26.699	138.7	0.619	1.22	18.2	52.3	2.62	33.4	0.00			**302**
1	327		7.53	7.50	34.211	26.728	136.3	0.656	1.09	16.2	54.8	2.69	34.2	0.00			**330**
1	384		7.01	6.97	34.243	26.826	127.5	0.732	0.72	10.6	63.2	2.86	36.3	0.00			**387**
	400	ISL	6.83	6.79	34.254	26.860	124.5	0.752	0.62	9.1	66.2	2.92	37.0	0.00			**403**
1	447		6.34	6.30	34.289	26.953	116.0	0.808	0.38	**5.5**	74.2	3.06	38.9	0.00			**451**
	500	ISL	6.13	6.09	34.329	27.012	110.9	0.868	0.28	4.0	78.7	3.12	39.8	0.00			**504**
1	514		6.08	6.03	34.340	27.027	109.6	0.884	0.25	3.6	79.9	3.14	40.0	0.00			**518**

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 10.8 N	120 55.2 W	22/01/89	0444 UTC	3924 M	330	16 KT			1017.0 MB	14.0 C	13.1 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 D.BAR
	0	ISL	14.27	14.27	33.339	24.848	309.2	0.000	5.96	102.2	2.9	0.37	0.0	0.00	0.18	0.05	0
1	2		14.27	14.27	33.339	24.848	309.3	0.006	5.96	102.2	2.9	0.37	0.0	0.00	0.18	0.05	2
	10	ISL	14.25	14.25	33.340	24.853	309.0	0.031	5.98	102.5	2.8	0.37	0.0	0.00	0.19	0.05	10
1	12		14.24	14.24	33.339	24.855	308.9	0.037	5.99	102.6	2.8	0.37	0.0	0.00	0.20	0.05	12
	20	ISL	14.16	14.16	33.340	24.872	307.5	0.062	6.02	103.0	2.8	0.37	0.0	0.00	0.23	0.07	20
1	21		14.15	14.15	33.341	24.875	307.2	0.065	6.02	103.0	2.8	0.37	0.0	0.00	0.23	0.07	21
	30	ISL	14.02	14.02	33.357	24.915	303.7	0.092	6.05	103.2	2.7	0.37	0.0	0.00	0.41	0.16	30
1	31		14.01	14.01	33.359	24.919	303.4	0.095	6.05	103.2	2.7	0.37	0.0	0.00	0.43	0.17	31
1	41		13.98	13.97	33.359	24.925	303.1	0.126	5.98	101.9	2.6	0.38	0.1	0.02	0.41	0.19	41
	50	ISL	13.99	13.98	33.360	24.924	303.4	0.153	5.99	102.1	2.5	0.38	0.1	0.01	0.44	0.18	50
1	51		13.99	13.98	33.360	24.924	303.4	0.156	5.99	102.1	2.5	0.38	0.1	0.01	0.44	0.18	51
1	61		13.94	13.93	33.358	24.933	302.9	0.186	5.99	102.0	2.3	0.38	0.1	0.02	0.45	0.21	61
1	70		13.67	13.66	33.343	24.977	298.9	0.213	5.87	99.4	3.0	0.44	1.0	0.07	0.30	0.15	71
	75	ISL	13.02	13.01	33.322	25.092	288.0	0.228	5.60	93.5	4.6	0.59	3.6	0.06	0.22	0.15	76
1	83		11.87	11.86	33.310	25.303	267.9	0.250	5.14	83.8	7.5	0.86	8.4	0.02	0.13	0.16	84
1	99		10.89	10.88	33.401	25.553	244.5	0.291	4.80	76.7	11.1	1.06	12.2	0.01	0.07	0.10	100
	100	ISL	10.83	10.82	33.408	25.569	243.0	0.294	4.77	76.1	11.4	1.08	12.5	0.01	0.07	0.10	101
1	U7		9.97	9.96	33.540	25.820	219.3	0.333	4.21	66.0	17.2	1.38	17.5	0.01	0.03	0.04	118
	125	ISL	9.70	9.69	33.606	25.916	210.3	0.350	3.98	62.0	19.5	1.49	19.3	0.01	0.02	0.04	126
1	144		9.23	9.21	33.752	26.107	192.4	0.388	3.53	54.5	24.4	1.70	22.7	0.01	0.01	0.03	145
	150	ISL	9.11	9.09	33.792	26.158	187.7	0.400	3.42	52.6	25.7	1.75	23.5	0.01	0.01	0.03	151
1	173		8.72	8.70	33.915	26.316	173.1	0.441	3.10	47.3	30.3	1.89	25.6	0.01	0.00	0.03	174
	200	ISL	8.38	8.36	33.989	26.426	163.0	0.487	2.94	44.6	34.7	1.97	26.9	0.00	0.00	0.03	202
1	202		8.36	8.34	33.993	26.432	162.4	0.490	2.93	44.4	35.0	1.97	27.0	0.00	0.00	0.03	204
1	231		7.90	7.88	34.032	26.532	153.3	0.536	2.72	40.8	39.6	2.09	28.6	0.01			233
	250	ISL	7.66	7.64	34.048	26.580	149.0	0.564	2.51	37.4	43.2	2.19	29.9	0.01			252
1	276		7.37	7.34	34.062	26.632	144.3	0.603	2.20	32.6	48.0	2.33	31.6	0.01			278
	300	ISL	7.13	7.10	34.072	26.674	140.6	0.637	1.93	28.4	51.6	2.44	32.9	0.01			302
1	325		6.90	6.87	34.084	26.715	137.0	0.672	1.66	24.3	55.3	2.55	34.2	0.01			328
1	384		6.47	6.44	34.143	26.820	127.6	0.750	1.03	15.0	65.4	2.81	37.3	0.00			387
	400	ISL	6.34	6.30	34.155	26.846	125.3	0.770	0.91	13.2	67.9	2.86	37.9	0.00			403
1	453		5.92	5.88	34.190	26.928	117.9	0.834	0.63	9.0	75.7	3.00	39.5	0.00			457
	500	ISL	5.61	5.57	34.226	26.995	111.9	0.888	0.47	6.7	82.3	3.10	40.7	0.00			504
1	517		5.50	5.46	34.239	27.019	109.7	0.907	0.41	5.8	84.7	3.13	41.1	0.00			521

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
30 51.3 N	121 35.8 W	22/01/89	1030 UTC	4201 M	340	15 KT			1017.4 MB	12.9 C	12.0 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	D.BAR
1	0		13.83	13.83	33.238	24.861	307.9	0.000	6.02	102.2	3.7	0.36	0.0	0.00	0.30	0.12	0
1	10		13.80	13.80	33.233	24.864	308.0	0.031	6.04	102.5	3.3	0.36	0.0	0.00	0.29	0.10	10
1	20		13.85	13.85	33.248	24.866	308.1	0.062	6.03	102.4	3.3	0.36	0.0	0.00	0.29	0.10	20
1	30		13.90	13.90	33.281	24.881	306.9	0.092	6.02	102.4	3.8	0.37	0.0	0.00	0.29	0.10	30
1	41		13.84	13.83	33.308	24.915	304.0	0.126	6.04	102.6	3.8	0.36	0.0	0.00	0.37	0.14	41
	50	ISL	13.86	13.85	33.320	24.920	303.8	0.153	6.04	102.7	3.7	0.36	0.0	0.00	0.42	0.15	50
1	51		13.86	13.85	33.321	24.921	303.8	0.156	6.04	102.7	3.7	0.36	0.0	0.00	0.42	0.15	51
1	60		13.78	13.77	33.324	24.940	302.2	0.184	6.00	101.8	3.7	0.40	0.1	0.03	0.40	0.19	60
1	71		13.48	13.47	33.297	24.980	298.6	0.217	5.90	99.5	4.1	0.42	0.8	0.12	0.28	0.20	72
	75	ISL	13.28	13.27	33.283	25.010	295.9	0.229	5.85	98.2	4.3	0.44	1.2	0.11	0.24	0.19	76
1	86		12.60	12.59	33.263	25.129	284.8	0.260	5.66	93.7	5.1	0.54	2.9	0.08	0.15	0.15	87
1	100		11.56	11.55	33.315	25.365	262.5	0.299	5.34	86.5	7.7	0.74	6.7	0.02	0.08	0.10	101
1	121		10.45	10.44	33.401	25.630	237.5	0.351	4.78	75.6	13.0	1.10	12.9	0.01	0.03	0.05	122
	125	ISL	10.26	10.25	33.431	25.686	232.3	0.361	4.65	73.3	14.4	1.18	14.1	0.01	0.02	0.04	126
1	145		9.46	9.44	33.602	25.953	207.2	0.405	4.10	63.5	20.8	1.49	19.3	0.00	0.01	0.02	146
	150	ISL	9.34	9.32	33.644	26.005	202.3	0.415	4.07	62.9	21.8	1.51	19.9	0.00	0.01	0.02	151
1	175		8.90	8.88	33.826	26.218	182.4	0.463	3.89	59.6	25.5	1.60	21.7	0.00	0.00	0.02	176
	200	ISL	8.44	8.42	33.945	26.383	167.1	0.507	3.88	58.9	29.5	1.65	22.8	0.00	0.00	0.02	202
1	206		8.34	8.32	33.964	26.413	164.3	0.517	3.88	58.8	30.6	1.67	23.2	0.00	0.00	0.02	208
1	235		7.97	7.95	34.013	26.507	155.8	0.563	3.07	46.1	37.9	1.98	27.2	0.00			237
	250	ISL	7.81	7.79	34.034	26.547	152.2	0.586	2.70	40.4	41.2	2.12	29.0	0.00			252
1	274		7.56	7.53	34.061	26.605	147.0	0.622	2.21	32.9	46.1	2.30	31.3	0.00			**276**
	300	ISL	7.27	7.24	34.077	26.659	142.2	0.660	1.91	28.2	51.0	2.43	32.9	0.00			**302**
1	328		6.97	6.94	34.093	26.713	137.3	0.699	1.67	24.5	56.1	2.55	34.3	0.00			**331**
1	385		6.50	6.47	34.165	26.833	126.4	0.774	0.92	13.4	66.6	2.85	37.6	0.00			**388**
	400	ISL	6.35	6.31	34.172	26.858	124.1	0.793	0.82	11.9	69.4	2.90	38.3	0.00			**403**
1	449		5.90	5.86	34.197	26.936	117.1	0.852	0.60	8.6	77.8	3.03	39.9	0.00			**453**
	500	ISL	5.67	5.63	34.269	27.021	109.4	0.910	0.39	5.6	84.1	3.14	40.7	0.00			**504**
1	516		5.60	5.56	34.292	27.048	107.0	0.927	0.33	4.7	86.1	3.18	41.0	0.00			**520**

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
30 30.8 N	122 15.5 W	22/01/89	1629 UTC	3738 M	310	12 KT	300 05 08	1	1018.0 MB	13.0 C	11.8 C	7/8	CB

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	D.BAR
	0	ISL	13.67	13.67	33.224	24.883	305.9	0.000	6.07	102.7	2.1	0.37	0.1	0.02	0.47	0.12	0
1	1		13.67	13.67	33.224	24.883	305.9	0.003	6.07	102.7	2.1	0.37	0.1	0.02	0.47	0.12	1
	10	ISL	13.66	13.66	33.223	24.885	306.0	0.031	6.08	102.9	2.2	0.37	0.1	0.02	0.48	0.12	10
1	15		13.65	13.65	33.222	24.886	306.0	0.046	6.08	102.9	2.2	0.37	0.1	0.02	0.49	0.12	15
	20	ISL	13.64	13.64	33.222	24.889	305.9	0.061	6.08	102.8	2.2	0.37	0.1	0.02	0.49	0.12	20
	30	ISL	13.63	13.63	33.222	24.891	306.0	0.092	6.08	102.8	2.3	0.38	0.1	0.02	0.51	0.12	30
1	31		13.63	13.63	33.222	24.891	306.0	0.095	6.08	102.8	2.3	0.38	0.1	0.02	0.51	0.12	31
1	40		13.55	13.54	33.219	24.905	304.9	0.122	6.07	102.5	2.3	0.39	0.2	0.04	0.54	0.20	40
1	50		13.50	13.49	33.222	24.918	304.0	0.153	6.02	101.5	2.4	0.40	0.5	0.07	0.47	0.21	50
1	60		13.37	13.36	33.232	24.952	301.0	0.183	5.97	100.4	2.8	0.43	0.8	0.14	0.33	0.16	60
1	72		13.17	13.16	33.246	25.003	296.4	0.219	5.90	98.8	3.0	0.45	1.3	0.15	0.25	0.13	73
	75	ISL	13.14	13.13	33.252	25.014	295.5	0.228	5.88	98.4	3.0	0.45	1.4	0.15	0.22	0.13	76
1	81		13.05	13.04	33.262	25.040	293.2	0.245	5.85	97.7	3.1	0.46	1.6	0.15	0.16	0.12	82
1	96		12.57	12.56	33.244	25.120	285.8	0.289	5.74	94.9	4.0	0.54	2.9	0.08	0.13	0.12	97
	100	ISL	12.40	12.39	33.242	25.151	283.0	0.300	5.70	93.9	4.3	0.57	3.4	0.06	0.12	0.12	101
1	HI		11.90	11.89	33.239	25.243	274.4	0.331	5.56	90.6	5.3	0.65	5.0	0.03	0.08	0.11	112
	125	ISL	11.28	11.26	33.243	25.361	263.4	0.369	5.39	86.7	6.8	0.77	7.0	0.02	0.06	0.07	126
1	126		11.24	11.22	33.245	25.369	262.6	0.371	5.38	86.5	6.9	0.78	7.2	0.02	0.06	0.07	127
	150	ISL	10.21	10.19	33.426	25.691	232.3	0.431	4.72	74.3	12.2	1.17	14.0	0.01	0.02	0.05	151
1	151		10.17	10.15	33.436	25.705	231.0	0.433	4.69	73.7	12.5	1.19	14.3	0.01	0.02	0.05	152
1	177		9.20	9.18	33.667	26.046	198.9	0.489	3.99	61.5	21.4	1.54	20.4	0.01	0.01	0.03	178
	200	ISL	8.67	8.65	33.857	26.278	177.1	0.532	3.61	55.0	27.6	1.72	23.4	0.00	0.00	0.02	202
1	205		8.58	8.56	33.891	26.319	173.3	0.541	3.58	54.5	28.6	1.74	23.8	0.00	0.00	0.02	207
1	235		8.17	8.15	33.976	26.448	161.4	0.591	3.91	59.0	31.6	1.68	23.4	0.00			237
	250	ISL	7.94	7.91	33.992	26.495	157.2	0.615	3.73	56.0	34.6	1.76	24.6	0.00			252
1	276		7.52	7.49	34.000	26.562	151.0	0.655	3.24	48.2	40.7	1.96	27.5	0.00			278
	300	ISL	7.13	7.10	33.998	26.616	146.1	0.691	2.96	43.6	46.0	2.10	29.4	0.00			302
1	330		6.72	6.69	34.004	26.676	140.5	0.734	2.58	37.6	52.5	2.28	31.7	0.00			333
1	389		6.38	6.35	34.106	26.802	129.3	0.813	1.24	18.0	65.3	2.73	36.8	0.00			392
	400	ISL	6.30	6.26	34.118	26.822	127.5	0.827	1.11	16.0	67.2	2.78	37.4	0.00			403
1	455		5.92	5.88	34.167	26.909	119.6	0.895	0.72	10.3	75.6	2.97	39.4	0.00			459
	500	ISL	5.65	5.61	34.211	26.978	113.5	0.948	0.52	7.4	81.3	3.07	40.5	0.00			504
1	521		5.53	5.49	34.232	27.009	110.7	0.971	0.43	6.1	84.0	3.12	41.0	0.00			525

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
30 10.8 N	122 55.5 W	22/01/89	2229 UTC	4310 M	240	06 KT	300 03 08	1	1016.1 MB	14.9 C	12.8 C	5/8	CI

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 D.BAR
	0 ISL	14.54	14.54	33.217	24.697	323.6	0.000	5.96	102.7	1.9	0.36	0.2	0.00	0.19	0.05	0
1	1	14.54	14.54	33.217	24.697	323.6	0.003	5.96	102.7	1.9	0.36	0.2	0.00	0.19	0.05	1
	10 ISL	14.48	14.48	33.215	24.708	322.8	0.032	5.95	102.4	1.9	0.36	0.1	0.01	0.18	0.05	10
1	16	14.42	14.42	33.214	24.720	321.8	0.052	5.95	102.2	1.9	0.36	0.1	0.01	0.18	0.06	16
	20 ISL	14.40	14.40	33.214	24.725	321.5	0.065	5.96	102.4	1.9	0.36	0.1	0.01	0.19	0.06	20
	30 ISL	14.34	14.34	33.213	24.737	320.7	0.097	5.97	102.4	1.9	0.35	0.1	0.00	0.21	0.07	30
1	32	14.32	14.32	33.212	24.741	320.4	0.103	5.98	102.6	1.9	0.35	0.1	0.00	0.21	0.07	32
1	41	14.19	14.18	33.208	24.765	318.3	0.132	6.00	102.6	2.0	0.35	0.1	0.00	0.28	0.12	41
	50 ISL	14.15	14.14	33.207	24.773	317.8	0.160	6.00	102.5	2.0	0.36	0.2	0.00	0.33	0.14	50
1	52	14.15	14.14	33.207	24.773	317.9	0.167	6.00	102.5	2.0	0.36	0,2	0.00	0.33	0.14	52
1	61	14.13	14.12	33.205	24.776	317.8	0.195	5.97	102.0	2.0	0.36	0.1	0.01	0.31	0.14	61
1	71	14.07	14.06	33.202	24.786	317.2	0.227	5.98	102.0	2.0	0.36	0.2	0.01	0.25	0.11	72
	75 ISL	14.02	14.01	33.207	24.800	315.9	0.240	5.98	101.9	2.0	0.36	0.2	0.04	0.24	0.11	76
1	80	13.92	13.91	33.217	24.829	313.3	0.256	5.96	101.4	2.1	0.37	0.3	0.09	0.22	0.12	81
1	96	13.05	13.04	33.287	25.059	291.7	0.304	5.82	97.3	3.2	0.44	1.4	0.08	0.14	0.13	97
	100 ISL	12.87	12.86	33.291	25.098	288.1	0.316	5.79	96.4	3.4	0.45	1.7	0.06	0.12	0.12	101
1	U0	12.39	12.38	33.294	25.194	279.2	0.344	5.70	93.9	4.0	0.50	2.9	0.02	0.09	0.09	HI
1	125	11.50	11.48	33.322	25.382	261.4	0.384	5.44	88.0	6.2	0.70	6.4	0.01	0.04	0.05	126
1	150	11.01	10.99	33.635	25.715	230.3	0.446	4.87	78.1	10.6	0.94	11.1	0.01	0.02	0.03	151
1	175	9.94	9.92	33.712	25.960	207.3	0.501	4.40	68.9	16.3	1.28	16.7	0.01	0.01	0.02	176
	200 ISL	9.22	9.20	33.876	26.207	184.1	0.550	4.17	64.4	21.8	1.46	19.9	0.01	0.00	0.01	202
1	205	9.11	9.09	33.907	26.249	180.2	0.559	4.14	63.8	22.8	1.48	20.3	0.01	0.00	0.01	207
1	234	8.66	8.64	33.966	26.366	169.5	0.609	4.06	61.9	26.2	1.58	21.8	0.01			236
	250 ISL	8.39	8.36	33.982	26.420	164.5	0.636	3.99	60.5	29.0	1.63	22.7	0.01			252
1	273	8.01	7.98	33.993	26.486	158.5	0.673	3.83	57.6	33.5	1.72	24.3	0.01			275
	300 ISL	7.56	7.53	33.994	26.552	152.4	0.715	3.55	52.8	39.0	1.86	26.5	0.01			302
1	328	7.14	7.11	34.001	26.617	146.4	0.757	3.10	45.7	45.3	2.06	29.1	0.01			331
1	386	6.58	6.54	34.087	26.761	133.3	0.838	1.51	22.0	61.7	2.63	35.8	0.01			389
	400 ISL	6.44	6.40	34.101	26.791	130.6	0.857	1.31	19.0	64.8	2.71	36.7	0.01			403
1	448	6.03	5.99	34.144	26.878	122.7	0.917	0.91	13.1	73.4	2.90	38.9	0.00			452
	500 ISL	5.75	5.71	34.194	26.952	116.0	0.979	0.62	8.8	80.0	3.04	40.3	0.00			504
1	513	5.68	5.64	34.207	26.971	114.3	0.994	0.55	7.8	81.7	3.07	40.6	0.00			517

RV DAVID STARR JORDAN CALCOFI CRUISE 8901 STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
29 50.8 N	123 35.2 W	23/01/89	0407 UTC	3928 M	330	11 KT			1018.3 MB	14.6 C	12.1 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 D.BAR
1	0	16.20	16.20	33.617	24.639	329.1	0.000	5.71	102.0	2.9	0.28	0.1	0.00	0.09	0.03	0
	10 ISL	16.18	16.18	33.616	24.644	329.0	0.033	5.70	101.7	2.8	0.28	0.1	0.00	0.10	0.03	10
1	15	16.17	16.17	33.616	24.646	329.0	0.049	5.70	101.7	2.8	0.28	0.1	0.00	0.11	0.03	15
	20 ISL	16.17	16.17	33.618	24.648	329.0	0.066	5.70	101.7	2.8	0.28	0.1	0.00	0.11	0.03	20
1	29	16.18	16.18	33.620	24.647	329.3	0.095	5.71	101.9	2.8	0.28	0.1	0.00	0.11	0.03	29
	30 ISL	16.18	16.18	33.620	24.647	329.3	0.099	5.71	101.9	2.8	0.28	0.1	0.00	0.11	0.03	30
1	40	16.16	16.15	33.618	24.651	329.3	0.132	5.71	101.9	2.7	0.28	0.1	0.00	0.11	0.04	40
1	48	16.17	16.16	33.625	24.654	329.3	0.158	5.70	101.7	2.6	0.28	0.1	0.00	0.12	0.04	48
	50 ISL	16.17	16.16	33.626	24.655	329.2	0.165	5.70	101.7	2.6	0.28	0.1	0.00	0.12	0.04	50
1	58	16.19	16.18	33.629	24.653	329.7	0.191	5.70	101.7	2.5	0.28	0.1	0.00	0.12	0.04	58
1	68	16.24	16.23	33.646	24.655	329.8	0.224	5.68	101.5	2.4	0.28	0.0	0.00	0.13	0.04	69
	75 ISL	16.33	16.32	33.678	24.659	329.7	0.247	5.67	101.5	2.6	0.27	0.0	0.00	0.13	0.04	76
1	78	16.37	16.36	33.693	24.662	329.5	0.257	5.66	101.4	2.7	0.27	0.0	0.00	0.13	0.04	79
1	91	16.52	16.51	33.741	24.665	329.7	0.300	5.65	101.6	2.6	0.27	0.0	0.00	0.14	0.04	92
	100 ISL	16.25	16.23	33.683	24.682	328.3	0.329	5.69	101.7	2.7	0.28	0.1	0.02	0.15	0.07	101
1	105	15.94	15.92	33.605	24.693	327.4	0.346	5.71	101.4	2.7	0.29	0.1	0.03	0.16	0.10	106
1	120	14.24	14.22	33.536	25.010	297.3	0.393	5.62	96.4	3.2	0.39	1.0	0.10	0.18	0.20	121
	125 ISL	13.85	13.83	33.536	25.091	289.7	0.407	5.56	94.6	3.5	0.43	1.7	0.09	0.16	0.19	126
1	146	12.53	12.51	33.569	25.381	262.4	0.465	5.23	86.6	5.8	0.65	6.0	0.01	0.07	0.08	147
	150 ISL	12.26	12.24	33.570	25.433	257.4	0.476	5.16	84.9	6.5	0.70	6.9	0.01	0.06	0.07	151
1	170	11.00	10.98	33.597	25.687	233.4	0.525	4.79	76.8	10.8	0.98	11.6	0.00	0.03	0.04	171
1	200	9.73	9.71	33.774	26.044	199.8	0.590	4.38	68.3	18.1	1.28	17.1	0.00	0.01	0.02	202
1	228	8.87	8.85	33.914	26.292	176.4	0.642	4.07	62.3	24.9	1.54	21.1	0.00			230
	250 ISL	8.45	8.42	33.975	26.405	165.9	0.680	3.61	54.8	30.6	1.75	24.0	0.00			**252**
1	269	8.17	8.14	34.003	26.470	160.0	0.711	3.22	48.6	35.2	1.91	26.1	0.00			**271**
	300 ISL	7.70	7.67	34.015	26.549	152.8	0.759	3.07	45.8	40.2	2.02	27.8	0.00			**302**
1	324	7.37	7.34	34.013	26.594	148.7	0.796	2.98	44.1	43.8	2.09	28.8	0.00			**327**
1	383	6.77	6.73	34.053	26.709	138.3	0.880	1.90	27.8	56.4	2.51	33.9	0.00			3 86
	400 ISL	6.57	6.53	34.065	26.745	135.0	0.904	1.66	24.1	60.4	2.61	35.1	0.00			**403**
1	446	6.03	5.99	34.100	26.843	125.9	0.964	1.15	16.5	70.9	2.84	37.9	0.00			**450**
	500 ISL	5.56	5.52	34.140	26.933	117.6	1.029	0.78	11.1	80.8	3.01	40.1	0.00			**504**
1	511	5.46	5.42	34.149	26.952	115.8	1.042	0.70	9.9	82.8	3.05	40.6	0.00			**515**

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
30 10.8 N	122 55.5 W	22/01/89	2229 UTC	4310 M	240	06 KT	300 03 08	1	1016.1 MB	14.9 C	12.8 C	5/8	CI

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 D.BAR
	0 ISL	14.54	14.54	33.217	24.697	323.6	0.000	5.96	102.7	1.9	0.36	0.2	0.00	0.19	0.05	0
1	1	14.54	14.54	33.217	24.697	323.6	0.003	5.96	102.7	1.9	0.36	0.2	0.00	0.19	0.05	1
	10 ISL	14.48	14.48	33.215	24.708	322.8	0.032	5.95	102.4	1.9	0.36	0.1	0.01	0.18	0.05	10
1	16	14.42	14.42	33.214	24.720	321.8	0.052	5.95	102.2	1.9	0.36	0.1	0.01	0.18	0.06	16
	20 ISL	14.40	14.40	33.214	24.725	321.5	0.065	5.96	102.4	1.9	0.36	0.1	0.01	0.19	0.06	20
	30 ISL	14.34	14.34	33.213	24.737	320.7	0.097	5.97	102.4	1.9	0.35	0.1	0.00	0.21	0.07	30
1	32	14.32	14.32	33.212	24.741	320.4	0.103	5.98	102.6	1.9	0.35	0.1	0.00	0.21	0.07	32
1	41	14.19	14.18	33.208	24.765	318.3	0.132	6.00	102.6	2.0	0.35	0.1	0.00	0.28	0.12	41
	50 ISL	14.15	14.14	33.207	24.773	317.8	0.160	6.00	102.5	2.0	0.36	0.2	0.00	0.33	0.14	50
1	52	14.15	14.14	33.207	24.773	317.9	0.167	6.00	102.5	2.0	0.36	0.2	0.00	0.33	0.14	52
1	61	14.13	14.12	33.205	24.776	317.8	0.195	5.97	102.0	2.0	0.36	0.1	0.01	0.31	0.14	61
1	71	14.07	14.06	33.202	24.786	317.2	0.227	5.98	102.0	2.0	0.36	0.2	0.01	0.25	0.11	72
	75 ISL	14.02	14.01	33.207	24.800	315.9	0.240	5.98	101.9	2.0	0.36	0.2	0.04	0.24	0.11	76
1	80	13.92	13.91	33.217	24.829	313.3	0.256	5.96	101.4	2.1	0.37	0.3	0.09	0.22	0.12	81
1	96	13.05	13.04	33.287	25.059	291.7	0.304	5.82	97.3	3.2	0.44	1.4	0.08	0.14	0.13	97
	100 ISL	12.87	12.86	33.291	25.098	288.1	0.316	5.79	96.4	3.4	0.45	1.7	0.06	0.12	0.12	101
1	110	12.39	12.38	33.294	25.194	279.2	0.344	5.70	93.9	4.0	0.50	2.9	0.02	0.09	0.09	HI
1	125	11.50	11.48	33.322	25.382	261.4	0.384	5.44	88.0	6.2	0.70	6.4	0.01	0.04	0.05	126
1	150	11.01	10.99	33.635	25.715	230.3	0.446	4.87	78.1	10.6	0.94	11.1	0.01	0.02	0.03	151
1	175	9.94	9.92	33.712	25.960	207.3	0.501	4.40	68.9	16.3	1.28	16.7	0.01	0.01	0.02	176
	200 ISL	9.22	9.20	33.876	26.207	184.1	0.550	4.17	64.4	21.8	1.46	19.9	0.01	0.00	0.01	202
1	205	9.11	9.09	33.907	26.249	180.2	0.559	4.14	63.8	22.8	1.48	20.3	0.01	0.00	0.01	207
1	234	8.66	8.64	33.966	26.366	169.5	0.609	4.06	61.9	26.2	1.58	21.8	0.01			236
	250 ISL	8.39	8.36	33.982	26.420	164.5	0.636	3.99	60.5	29.0	1.63	22.7	0.01			252
1	273	8.01	7.98	33.993	26.486	158.5	0.673	3.83	57.6	33.5	1.72	24.3	0.01			275
	300 ISL	7.56	7.53	33.994	26.552	152.4	0.715	3.55	52.8	39.0	1.86	26.5	0.01			302
1	328	7.14	7.11	34.001	26.617	146.4	0.757	3.10	45.7	45.3	2.06	29.1	0.01			331
1	386	6.58	6.54	34.087	26.761	133.3	0.838	1.51	22.0	61.7	2.63	35.8	0.01			389
	400 ISL	6.44	6.40	34.101	26.791	130.6	0.857	1.31	19.0	64.8	2.71	36.7	0.01			403
1	448	6.03	5.99	34.144	26.878	122.7	0.917	0.91	13.1	73.4	2.90	38.9	0.00			452
	500 ISL	5.75	5.71	34.194	26.952	116.0	0.979	0.62	8.8	80.0	3.04	40.3	0.00			504
1	513	5.68	5.64	34.207	26.971	114.3	0.994	0.55	7.8	81.7	3.07	40.6	0.00			517

RV DAVID STARR JORDAN | CALCOFI CRUISE 8901 | STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
29 50.8 N	123 35.2 W	23/01/89	0407 UTC	3928 M	330	11 KT			1018.3 MB	14.6 C	12.1 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 D.BAR
1	0	16.20	16.20	33.617	24.639	329.1	0.000	5.71	102.0	2.9	0.28	0.1	0.00	0.09	0.03	0
	10 ISL	16.18	16.18	33.616	24.644	329.0	0.033	5.70	101.7	2.8	0.28	0.1	0.00	0.10	0.03	10
1	15	16.17	16.17	33.616	24.646	329.0	0.049	5.70	101.7	2.8	0.28	0.1	0.00	0.11	0.03	15
	20 ISL	16.17	16.17	33.618	24.648	329.0	0.066	5.70	101.7	2.8	0.28	0.1	0.00	0.11	0.03	20
1	29	16.18	16.18	33.620	24.647	329.3	0.095	5.71	101.9	2.8	0.28	0.1	0.00	0.11	0.03	29
	30 ISL	16.18	16.18	33.620	24.647	329.3	0.099	5.71	101.9	2.8	0.28	0.1	0.00	0.11	0.03	30
1	40	16.16	16.15	33.618	24.651	329.3	0.132	5.71	101.9	2.7	0.28	0.1	0.00	0.11	0.04	40
1	48	16.17	16.16	33.625	24.654	329.3	0.158	5.70	101.7	2.6	0.28	0.1	0.00	0.12	0.04	48
	50 ISL	16.17	16.16	33.626	24.655	329.2	0.165	5.70	101.7	2.6	0.28	0.1	0.00	0.12	0.04	50
1	58	16.19	16.18	33.629	24.653	329.7	0.191	5.70	101.7	2.5	0.28	0.1	0.00	0.12	0.04	58
1	68	16.24	16.23	33.646	24.655	329.8	0.224	5.68	101.5	2.4	0.28	0.0	0.00	0.13	0.04	69
	75 ISL	16.33	16.32	33.678	24.659	329.7	0.247	5.67	101.5	2.6	0.27	0.0	0.00	0.13	0.04	76
1	78	16.37	16.36	33.693	24.662	329.5	0.257	5.66	101.4	2.7	0.27	0.0	0.00	0.13	0.04	79
1	91	16.52	16.51	33.741	24.665	329.7	0.300	5.65	101.6	2.6	0.27	0.0	0.00	0.14	0.04	92
	100 ISL	16.25	16.23	33.683	24.682	328.3	0.329	5.69	101.7	2.7	0.28	0.1	0.02	0.15	0.07	101
1	105	15.94	15.92	33.605	24.693	327.4	0.346	5.71	101.4	2.7	0.29	0.1	0.03	0.16	0.10	106
1	120	14.24	14.22	33.536	25.010	297.3	0.393	5.62	96.4	3.2	0.39	1.0	0.10	0.18	0.20	121
	125 ISL	13.85	13.83	33.536	25.091	289.7	0.407	5.56	94.6	3.5	0.43	1.7	0.09	0.16	0.19	126
1	146	12.53	12.51	33.569	25.381	262.4	0.465	5.23	86.6	5.8	0.65	6.0	0.01	0.07	0.08	147
	150 ISL	12.26	12.24	33.570	25.433	257.4	0.476	5.16	84.9	6.5	0.70	6.9	0.01	0.06	0.07	151
1	170	11.00	10.98	33.597	25.687	233.4	0.525	4.79	76.8	10.8	0.98	11.6	0.00	0.03	0.04	171
1	200	9.73	9.71	33.774	26.044	199.8	0.590	4.38	68.3	18.1	1.28	17.1	0.00	0.01	0.02	202
1	228	8.87	8.85	33.914	26.292	176.4	0.642	4.07	62.3	24.9	1.54	21.1	0.00			230
	250 ISL	8.45	8.42	33.975	26.405	165.9	0.680	3.61	54.8	30.6	1.75	24.0	0.00			252
1	269	8.17	8.14	34.003	26.470	160.0	0.711	3.22	48.6	35.2	1.91	26.1	0.00			**271**
	300 ISL	7.70	7.67	34.015	26.549	152.8	0.759	3.07	45.8	40.2	2.02	27.8	0.00			**302**
1	324	7.37	7.34	34.013	26.594	148.7	0.796	2.98	44.1	43.8	2.09	28.8	0.00			**327**
1	383	6.77	6.73	34.053	26.709	138.3	0.880	1.90	27.8	56.4	2.51	33.9	0.00			386
	400 ISL	6.57	6.53	34.065	26.745	135.0	0.904	1.66	24.1	60.4	2.61	35.1	0.00			**403**
1	446	6.03	5.99	34.100	26.843	125.9	0.964	1.15	16.5	70.9	2.84	37.9	0.00			**450**
	500 ISL	5.56	5.52	34.140	26.933	117.6	1.029	0.78	11.1	80.8	3.01	40.1	0.00			**504**
1	511	5.46	5.42	34.149	26.952	115.8	1.042	0.70	9.9	82.8	3.05	40.6	0.00			515

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 77 66

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 31.5 N	121 57.9 W	2/ 2/89	1955 UTC	23 M	1220 - 1801 PST	1222 PST	1801 PST	340.3 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
1	11.57	33.433	25.453	6.24	101.2	8.4	0.74	5.9	0.18	0.80	0.26	99.	7.5	7.3	7.4	0.08
11	11.54	33.432	25.458	6.26	101.4	8.3	0.73	5.9	0.18	0.82	0.23					
19	11.52	33.433	25.462	6.25	101.2	7.9	0.74	5.9	0.18	0.59	0.24	31.	7.8	8.0	7.9	0.08
34	11.31	33.494	25.548	5.82	93.9	10.0	0.95	9.0	0.47	0.52	0.30	11.	5.6	5.8	5.7	0.13
57	10.89	33.598	25.705	5.04	80.6	13.9	1.27	13.7	0.49	0.27	0.43	2.5	1.1	0.87	0.96	0.14
66	10.42	33.642	25.822	4.22	66.8	17.7	1.53	17.9	0.20	0.19	0.25	1.4	0.58	0.50	0.54	0.06
102	9.16	33.829	26.178	3.10	47.8	28.3	1.89	25.0	0.01	0.01	0.08	0.11	0.01	0.01	0.01	0.04
125	8.69	33.904	26.311	3.11	47.5	30.8	1.90	25.7	0.01	0.00	0.06					
145	8.40	33.916	26.365	3.36	50.9	31.1	1.87	25.3	0.01	0.00	0.05					
175	8.23	34.032	26.482	2.51	37.9	38.0	2.16	28.9	0.01	0.00	0.05					
206	7.90	34.054	26.549	2.43	36.5	41.3	2.26	29.7	0.01	0.00	0.05					

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 29.0 N	122 32.0 W	1/ 2/89	1840 UTC	21 M	1219 - 1811 PST	1224 PST	1811 PST	414.1 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
0	12.00	33.176	25.173	6.17	100.8	6.9	0.63	3.5	0.12	0.61	0.19	99.	11.4	10.5	10.9	0.15
16	11.89	33.168	25.188	6.13	99.9	7.2	0.67	3.8	0.12	0.58	0.18	31.	11.0	10.9	10.9	0.16
30	11.89	33.324	25.309	6.25	102.0	8.2	0.68	4.3	0.13	0.77	0.23	11.	6.6	8.5	7.6	0.20
50	11.80	33.390	25.378	6.14	100.0	8.5	0.73	5.0	0.18	0.48	0.30	2.5	1.3	1.3	1.3	0.13
57	11.80	33.411	25.394	6.07	98.9	8.8	0.75	5.5	0.22	0.40	0.28	1.4	0.73	0.63	0.68	0.18
94	10.23	33.526	25.764	4.10	64.6	19.3	1.51	18.2	0.01	0.07	0.09	0.11	0.07	0.11	0.09	0.04

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 16.5 N	120 1.5 W	31/ 1/89	1936 UTC	10 M	1214 - 1758 PST	1213 PST	1759 PST	1852.2 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	12.63	33.536	25.332	6.41	106.4	5.9	0.51	2.5	0.13	5.27	0.31	99.	72.4	73.8	73.1	0.47
9	12.06	33.583	25.478	7.22	118.4	3.3	0.35	0.7	0.04	7.62	1.11	31.	76.5	76.2	76.4	0.58
16	11.91	33.593	25.514	7.14	116.7	2.5	0.42	0.7	0.04	16.12	1.59	11.	85.1	72.3	78.7	1.0
25	11.74	33.596	25.548	6.50	105.9	4.5	0.61	3.5	0.09	9.95	2.05	2.5	27.0	23.6	25.3	0.26
29	11.60	33.606	25.582	6.33	102.8	5.1	0.71	4.5	0.11	7.45	2.13	1.4	10.8	11.6	11.2	0.20
46	11.18	33.665	25.705	5.61	90.3	8.1	1.02	8.6	0.17	2.02	1.11	0.11	0.24	0.25	0.24	0.11

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 14.6 N	121 26.6 W	30/ 1/89	1840 UTC	16 M	1219 - 1756 PST	1219 PST	1756 PST	487.0 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
1	11.78	33.502	25.467	6.30	102.7	9.8	0.78	6.3	0.13	1.38	0.25	99.	9.9	9.6	9.8	0.10
13	11.72	33.502	25.479	6.30	102.5	9.8	0.79	6.3	0.13	1.35	0.28	31.	21.7	23.2	22.5	0.11
24	11.18	33.652	25.695	5.81	93.5	14.2	1.10	11.2	0.19	1.10	0.43	11.	10.0	10.6	10.3	0.07
39	11.07	33.665	25.725	5.63	90.4	15.4	1.19	12.3	0.21	0.43	0.31	2.5	1.3	1.7	1.5	0.03
45	10.85	33.691	25.784	5.06	80.9	17.5	1.31	14.4	0.26	0.27	0.23	1.4	0.49	0.58	0.54	0.04
74	9.59	33.873	26.142	2.96	46.1	29.5	1.87	24.2	0.03	0.07	0.12	0.11	0.03	0.04	0.04	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 83 U0

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 54.7 N	124 10.1 W	29/ 1/89	1907 UTC	17 M	1226 - 1803 PST	1230 PST	1809 PST	197.5 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	12.90	33.241	25.051	6.11	101.8	2.8	0.42	1.1	0.06	0.56	0.19	99.	1.6	2.2	1.9	0.07
13	12.89	33.240	25.052	6.11	101.8	3.0	0.42	1.0	0.06	0.55	0.19	31.	5.5	6.4	6.0	0.07
24	12.83	33.255	25.076	6.08	101.1	3.1	0.45	1.3	0.08	0.50	0.19	11.	5.1	5.4	5.3	0.03
40	12.75	33.265	25.100	6.08	101.0	3.4	0.46	1.4	0.07	0.54	0.21	2.5	1.6	1.5	1.6	0.03
47	12.76	33.267	25.099	6.09	101.1	3.3	0.47	1.4	0.07	0.52	0.23	1.4	1.2	1.2	1.2	0.03
76	12.79	33.300	25.120	6.04	100.4	3.5	0.52	1.8	0.07	0.31	0.16	0.11	0.12	0.09	0.11	0.03

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 29.4 N	119 19.1 W	27/ 1/89	1916 UTC	17 M	1155 - 1758 PST	1210 PST	1753 PST	509.4 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
0	12.18	33.478	25.374	5.98	98.3	8.2	0.77	6.5	0.13	0.81	0.15	99.	9.0	10.2	9.6	0.09
12	11.88	33.475	25.428	5.96	97.3	8.2	0.78	6.6	0.13	1.10	0.33	31.	18.3	19.0	18.6	0.13
24	11.86	33.483	25.438	5.89	96.1	8.3	0.79	6.8	0.13	0.87	0.22	11.	14.5	13.3	13.9	0.07
41	10.88	33.636	25.736	4.58	73.2	16.0	1.28	14.7	0.19	0.39	0.23	2.5	1.2	1.0	1.1	0.02
45	10.70	33.674	25.797	4.36	69.5	17.7	1.36	16.1	0.19	0.34	0.19	1.4	0.86	0.94	0.90	0.03
75	9.50	33.925	26.197	2.80	43.5	29.4	1.91	24.8	0.02	0.03	0.10	0.11	0.01	0.00	0.01	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 19.4 N	121 42.9 W	28/ 1/89	1944 UTC	16 M	1219 - 1803 PST	1220 PST	1807 PST	213.4 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
0	12.56	33.296	25.160	6.11	101.1	4.3	0.50	1.9	0.09	0.64	0.19	99.	8.1	8.6	8.4	0.08
12	12.49	33.289	25.168	6.13	101.3	4.3	0.50	1.9	0.09	0.65	0.19	31.	7.6	7.5	7.5	0.06
23	12.50	33.290	25.167	6.12	101.1	4.2	0.50	1.9	0.09	0.65	0.19	11.	4.6	4.4	4.5	0.04
38	12.49	33.285	25.166	6.13	101.2	4.4	0.50	1.9	0.09	0.68	0.19	2.5	0.92	1.0	0.96	0.04
44	12.48	33.281	25.165	6.13	101.2	4.2	0.50	2.0	0.09	0.66	0.20	1.4	0.44	0.50	0.47	0.04
71	12.43	33.300	25.190	6.10	100.6	4.7	0.54	2.5	0.10	0.52	0.20	0.11	0.04	0.03	0.03	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 25.1 N	117 54.3 W	26/ 1/89	1914 UTC	13 M	1204 - 1743 PST	1204 PST	17 43 PST	564.2 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	12.96	33.481	25.225	6.40	106.9	3.4	0.35	0.9	0.05	1.33	0.33	99.	12.3	12.4	12.4	0.20
10	12.83	33.476	25.247	6.48	107.9	3.2	0.32	0.4	0.03	1.85	0.52	31.	27.4	28.3	27.8	0.21
20	12.80	33.473	25.251	6.47	107.7	3.3	0.32	0.3	0.03	1.55	0.54	11.	18.8	20.5	19.7	0.15
30	12.39	33.455	25.317	5.75	94.9	3.6	0.60	3.6	0.28	0.50	0.50	2.5	1.8	1.9	1.9	0.04
36	12.02	33.481	25.407	5.03	82.4	7.0	0.89	8.4	0.43	0.33	0.31	1.4	0.78	0.79	0.79	0.05
59	10.88	33.611	25.717	3.85	61.6	15.8	1.45	17.9	0.02	0.08	0.11	0.11	0.05	0.05	0.05	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 39.1 N	119 29.0 W	25/ 1/89	1927 UTC	16 M	1210 - 1749 PST	1210 PST	1749 PST	398.7 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	12.37	33.574	25.412	6.08	100.4	8.8	0.74	6.0	0.15	0.63	0.23	99.	6.3	8.2	7.2	0.10
12	12.19	33.575	25.447	6.09	100.1	8.8	0.74	6.0	0.16	0.84	0.31	31.	14.1	14.3	14.2	0.12
24	12.18	33.575	25.449	6.08	100.0	8.8	0.74	6.0	0.15	0.81	0.30	11.	10.6	10.8	10.7	0.09
37	12.18	33.574	25.449	6.05	99.5	8.7	0.75	6.1	0.16	0.76	0.29	2.5	2.8	2.8	2.8	0.05
44	11.86	33.588	25.520	5.54	90.5	10.4	0.91	8.8	0.24	0.41	0.25	1.4	1.2	1.4	1.3	0.04
72	10.63	33.707	25.836	3.83	60.9	18.6	1.50	18.5	0.11	0.12	0.13	0.11	0.02	0.05	0.04	0.04

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 45.1 N	121 18.9 W	24/ 1/89	1914 UTC	15 M	1213 - 1755 PST	1217 PST	1755 PST	153.9 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
2	13.86	33.416	24.993	5.97	101.6	2.7	0.39	0.4	0.03	0.44	0.15	99.	0.56	1.1	0.82	0.04
13	13.81	33.415	25.003	5.97	101.4	2.6	0.39	0.4	0.03	0.43	0.15	31.	5.2	5.5	5.4	0.04
24	13.82	33.414	25.000	5.98	101.6	2.6	0.39	0.5	0.03	0.42	0.16	11.	5.0	4.9	4.9	0.04
38	13.81	33.414	25.003	5.97	101.4	2.5	0.39	0.5	0.03	0.43	0.17	2.5	1.7	1.6	1.7	0.03
44	13.82	33.414	25.001	5.97	101.5	2.5	0.39	0.5	0.03	0.42	0.15	1.4	0.59	0.61	0.60	0.03
69	13.76	33.409	25.010	5.95	101.0	2.4	0.39	0.6	0.03	0.42	0.17	0.11	0.05	0.08	0.06	0.02

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 90 106

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 54.2 N	123 4.7 W	23/ 1/89	1944 UTC	19 M	1226 - 1813 PST	1224 PST	1804 PST	58.1 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
0	14.74	33.257	24.685	5.89	101.9	1.9	0.34	0.0	0.00	0.18	0.07	99.	0.30	0.27	0.28	0.04
16	14.76	33.247	24.674	5.89	101.9	1.9	0.34	0.0	0.00	0.18	0.06	31.	1.8	1.8	1.8	0.04
27	14.76	33.245	24.672	5.89	101.9	1.9	0.34	0.0	0.00	0.18	0.06	11.	1.4	1.3	1.4	0.04
44	14.75	33.245	24.675	5.90	102.1	1.9	0.34	0.0	0.00	0.18	0.07	2.5	0.43	0.39	0.41	0.03
52	14.72	33.262	24.695	5.89	101.9	1.6	0.33	0.0	0.00	0.19	0.07	1.4	0.32	0.32	0.32	0.04
82	14.49	33.253	24.738	5.91	101.7	1.7	0.35	0.0	0.03	0.26	0.11	0.11	0.05	0.05	0.05	0.02
93	13.87	33.254	24.868	5.89	100.1	2.4	0.39	0.4	0.20	0.19	0.14					
107	13.91	33.573	25.107	5.63	95.9	2.9	0.38	1.4	0.04	0.12	0.11					
123	13.13	33.542	25.242	5.50	92.2	3.9	0.48	3.1	0.02	0.07	0.07					
147	10.96	33.377	25.523	5.14	82.2	8.7	0.88	9.3	0.01	0.03	0.04					
171	10.46	33.714	25.873	4.75	75.3	12.5	1.04	12.9	0.00	0.01	0.02					
202	9.11	33.832	26.190	4.26	65.6	21.6	1.44	19.5	0.00	0.00	0.01					

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 41.0 N	117 52.5 W	20/ 1/89	1849 UTC	18 M	1201 - 1742 PST	1203 PST	1741 PST	375.0 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
0	13.33	33.484	25.153	6.11	102.8	4.2	0.51	2.1	0.08	0.44	0.11	99.	11.9	12.2	12.1	0.10
12	13.12	33.475	25.189	6.15	103.1	4.3	0.50	1.8	0.07	0.56	0.18	31.	11.7	11.8	11.7	0.14
25	13.02	33.471	25.206	6.10	102.0	4.3	0.51	2.1	0.09	0.67	0.26	11.	8.2	7.8	8.0	0.08
43	12.73	33.477	25.268	5.73	95.2	5.5	0.66	4.5	0.16	0.55	0.29	2.5	1.8	1.6	1.7	0.04
50	12.07	33.479	25.396	4.96	81.3	8.7	1.00	9.9	0.18	0.33	0.20	1.4	0.58	0.55	0.56	0.03
81	10.43	33.698	25.864	3.57	56.6	19.2	1.60	20.0	0.04	0.05	0.08	0.11	0.02	0.02	0.02	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 50.8 N	119 34.3 W	21/ 1/89	1833 UTC	23 M	1205 - 1748 PST	1209 PST	1752 PST	179.0 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
0	14.18	33.365	24.887	5.98	102.4	2.1	0.36	0.1	0.00	0.21	0.06	99.	2.1	2.1	2.1	0.06
18	14.14	33.369	24.899	6.00	102.6	2.2	0.36	0.1	0.00	0.22	0.07	31.	2.7	2.9	2.8	0.09
33	13.91	33.407	24.976	6.03	102.7	2.7	0.38	0.0	0.01	0.58	0.25	11.	4.8	5.0	4.9	0.05
55	13.53	33.412	25.059	5.83	98.5	3.9	0.49	1.7	0.11	0.35	0.18	2.5	0.74	0.86	0.80	0.02
65	12.74	33.350	25.168	5.63	93.5	5.0	0.63	4.0	0.14	0.24	0.16	1.4	0.44	0.40	0.42	0.02
103	10.97	33.590	25.686	4.10	65.7	15.6	1.36	16.6	0.02	0.06	0.11	0.11	0.01	0.02	0.02	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 8901 — STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 30.8 N	122 15.5 W	22/ 1/89	1812 UTC	18 M	1208 - 1808 PST	1221 PST	1808 PST	216.5 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	13.72	33.221	24.871	6.05	102.5	2.1	0.37	0.1	0.02	0.47	0.11	99.	1.8	2.1	1.9	0.05
14	13.73	33.217	24.866	6.06	102.7	2.2	0.37	0.1	0.01	0.48	0.12	31.	6.8	7.0	6.9	0.05
26	13.73	33.217	24.866	6.06	102.7	2.0	0.35	0.1	0.02	0.52	0.12	11.	4.7	4.7	4.7	0.04
44	13.58	33.221	24.901	6.06	102.4	2.1	0.36	0.2	0.03	0.60	0.19	2.5	1.8	1.8	1.8	0.02
50	13.55	33.230	24.914	6.06	102.3	2.2	0.36	0.2	0.04	0.55	0.18	1.4	1.1	1.1	1.1	0.02
81	13.19	33.249	25.002	5.87	98.4	3.2	0.46	1.5	0.17	0.22	0.14	0.11	0.06	0.07	0.07	0.02

Secchi Disk Observations

CalCOFI Cruise 8901

Line	Sta.	Day	Mo	Local Time (+8: PST)	Secchi Depth (m)	Forel Water Color	Weather	Clouds Type/Amt	
77	60	2	2	1415	14	4	1	AC	7/8
77	66	2	2	1135	23	3	1	AC	4/8
77	70	1	2	0914	16	4	1	SC	7/8
80	51	31	1	1510	6	6	1	CI	1/8
80	80	1	2	1025	21	3	1	SC	5/8
80	90	1	2	1428	16	2	1	SC	7/8
82	47	31	1	1124	10	5	1	CI	1/8
83	60	30	1	1435	15	3	0	-	0
83	70	30	1	1026	16	4	1	CI	1/8
83	100	29	1	1500	17	2	1	ST	6/8
83	110	29	1	1051	17	3	2	ST	8/8
87	33	26	1	1553	6	6	0	-	0
87	45	27	1	1102	17	4	0	-	0
87	50	27	1	1330	19	4	0	-	0
87	80	28	1	1130	16	3	2	ST	8/8
87	90	28	1	1525	15	4	2	ST	8/8
90	28	26	1	0745	13	4	0	-	0
90	30	26	1	1100	13	6	0	-	0
90	45	25	1	1516	21	3	0	-	0
90	53	25	1	1111	16	4	0	-	0
90	80	24	1	1056	15	3	2	SC	8/8
90	106	23	1	1120	19	2	1	SC	6/8
90	110	23	1	0923	23	2	1	SC	6/8
93	35	20	1	1026	18	3	2	cs	8/8
93	40	20	1	1526	18	4	2	cs	8/8
93	60	21	1	1020	23	2	1	SC	6/8
93	70	21	1	1538	14	2	1	SC	6/8
93	100	22	1	0950	18	2	1	CB	7/8
93	110	22	1	1405	26	2	1	CI	5/8

CalCOFI Cruise 8901

MACROZOOPLANKTON BIOMASS
Net Mesh Size: 0.505 mm

Line	Sta.	Position		Date Mo/Day	Time (UTC Start	Time (UTC End	Water Volume Strained (m)	Max. Tow Depth (m)	Volume per 1000 m Strained Total (cm)	Volume per 1000 m Strained Small (cm)
77	49	35 05.3N	120 46.6W	2/03	0905	0912	117	55	908	908
77	51	35 01.3N	120 55.1W	2/03	0642	0704	389	211	732	591
77	55	34 53.5N	121 11.8W	2/03	0345	0407	417	212	103	103
77	60	34 43.3N	121 32.9W	2/02	2330	2352	414	209	44	44
77	70	34 23.3N	122 14.6W	2/02	1715	1737	436	206	46	46
77	80	34 03.3N	122 56.5W	2/02	1130	1152	421	215	76	59
77	90	33 43.2N	123 38.1W	2/02	0507	0529	431	209	216	216
80	51	34 26.9N	120 31.5W	2/02	0025	0033	148	70	183	183
80	55	34 18.9N	120 48.2W	2/02	0325	0347	405	214	128	128
80	60	34 09.0N	121 09.0W	2/02	0710	0732	414	210	77	77
80	70	33 48.9N	121 50.7W	2/01	1230	1252	440	212	116	116
80	80	33 29.0N	122 32.0W	2/01	1750	1812	400	213	60	60
80	90	33 09.1N	123 13.3W	2/01	2325	2347	401	214	17	17
82	47	34 16.5N	120 01.5W	1/31	2015	2037	401	212	175	175
83	40.6	34 13.6N	119 24.5W	1/31	1440	1444	69	28	173	173
83	42	34 10.7N	119 30.4W	1/31	1255	1305	174	92	144	144
83	51	33 52.7N	120 08.0W	1/31	0648	0657	164	84	116	116
83	55	33 44.7N	120 24.6W	1/31	0345	0407	397	213	310	310
83	60	33 34.7N	120 45.3W	1/30	2350	0012	419	213	38	38
83	70	33 14.6N	121 26.6W	1/30	1750	1812	418	214	179	179
83	80	32 54.7N	122 07.6W	1/30	1145	1207	415	212	63	63
83	90	32 34.7N	122 48.7W	1/30	0555	0617	415	210	55	55
83	100	32 14.7N	123 29.5W	1/30	0010	0032	408	213	34	34
83	110	31 54.7N	124 10.1W	1/29	1820	1842	406	214	17	17
87	33	33 53.4N	118 29.6W	1/27	0040	0046	98	49	123	123
87	35	33 49.5N	118 37.7W	1/27	0300	0322	401	213	92	92
87	39.5	33 40.5N	118 56.4W	1/27	0712	0734	397	219	81	81
87	45	33 29.4N	119 19.1W	1/27	1825	1847	405	211	62	62
87	50	33 19.4N	119 39.8W	1/27	2220	2228	142	69	28	28
87	55	33 09.4N	120 00.4W	1/28	0250	0312	415	215	58	58
87	60	32 59.4N	120 20.9W	1/28	0635	0657	408	215	64	64
87	70	32 39.4N	121 02.1W	1/28	1225	1247	403	216	62	62
87	80	32 19.4N	121 42.9W	1/28	1855	1917	425	206	21	21
87	90	31 59.4N	122 23.7W	1/29	0030	0052	431	212	39	39
87	100	31 39.4N	123 04.2W	1/29	0610	0632	402	215	42	42
87	110	31 19.4N	123 44.6W	1/29	1200	1222	402	218	32	32
90	28	33 29.0N	117 46.1W	1/26	1530	1537	133	68	158	158
90	30	33 25.1N	117 54.3W	1/26	1315	1337	404	214	57	57
90	35	33 15.1N	118 15.0W	1/26	0905	0927	401	214	45	45
90	37	33 11.1N	118 23.2W	1/26	0620	0642	407	212	174	88
90	45	32 55.1N	118 56.0W	1/26	0049	0111	406	214	69	69
90	53	32 39.1N	119 29.0W	1/25	1935	1957	400	216	82	82
90	60	32 25.0N	119 57.6W	1/25	1425	1447	428	218	51	51
90	70	32 05.0N	120 38.3W	1/25	0600	0623	455	219	26	26
90	80	31 45.1N	121 18.9W	1/24	1825	1848	446	240	9	9
90	100	31 05.0N	122 39.6W	1/24	0146	0208	466	209	9	9
90	110	30 45.1N	123 19.9W	1/23	1650	1712	408	210	5	5
90	120	30 25.1N	123 59.9W	1/23	1025	1047	424	214	40	40
93	26.7	32 57.4N	117 18.2W	1/20	0830	0837	115	56	78	78
93	28	32 54.8N	117 23.6W	1/20	1125	1147	397	212	169	169
93	30	32 51.0N	117 31.8W	1/20	1445	1505	371	216	399	399
93	35	32 41.0N	117 52.5W	1/20	1945	2007	408	216	12	12
93	40	32 28.2N	118 14.6W	1/21	0122	0144	395	213	66	66
93	45	32 20.6N	118 33.0W	1/21	0513	0535	409	213	78	78
93	50	32 10.9N	118 53.5W	1/21	0915	0937	409	212	42	42
93	55	32 00.8N	119 14.0W	1/21	1315	1337	393	217	109	109
93	60	31 50.8N	119 34.3W	1/21	1740	1802	393	214	25	25
93	70	31 30.8N	120 14.8W	1/21	2357	0019	391	213	15	15
93	80	31 10.8N	120 55.2W	1/22	0544	0606	406	212	32	32
93	90	30 51.3N	121 35.8W	1/22	1120	1142	412	208	24	24
93	100	30 30.8N	122 15.5W	1/22	1715	1737	411	214	32	32
93	110	30 10.8N	122 55.5W	1/22	2330	2352	422	209	218	187
93	120	29 50.8N	123 35.2W	1/23	0450	0512	408	216	37	37

FIGURES

Cruise 8904

1. CalCOFI Cruise 8904 track and station positions.

2. Horizontal distribution of chlorophyll-a at 10 meters.

3. 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).

4. Horizontal distribution of sigma-theta at 10 meters.

5. Horizontal distribution of temperature at 10 meters.

6. Horizontal distribution of salinity at 10 meters.

7. Horizontal distribution of dynamic height anomaly (200 over 500 m).

8. Horizontal distribution of sigma-theta at 200 meters.

9. Horizontal distribution of temperature at 200 meters.

10. Horizontal distribution of salinity at 200 meters.

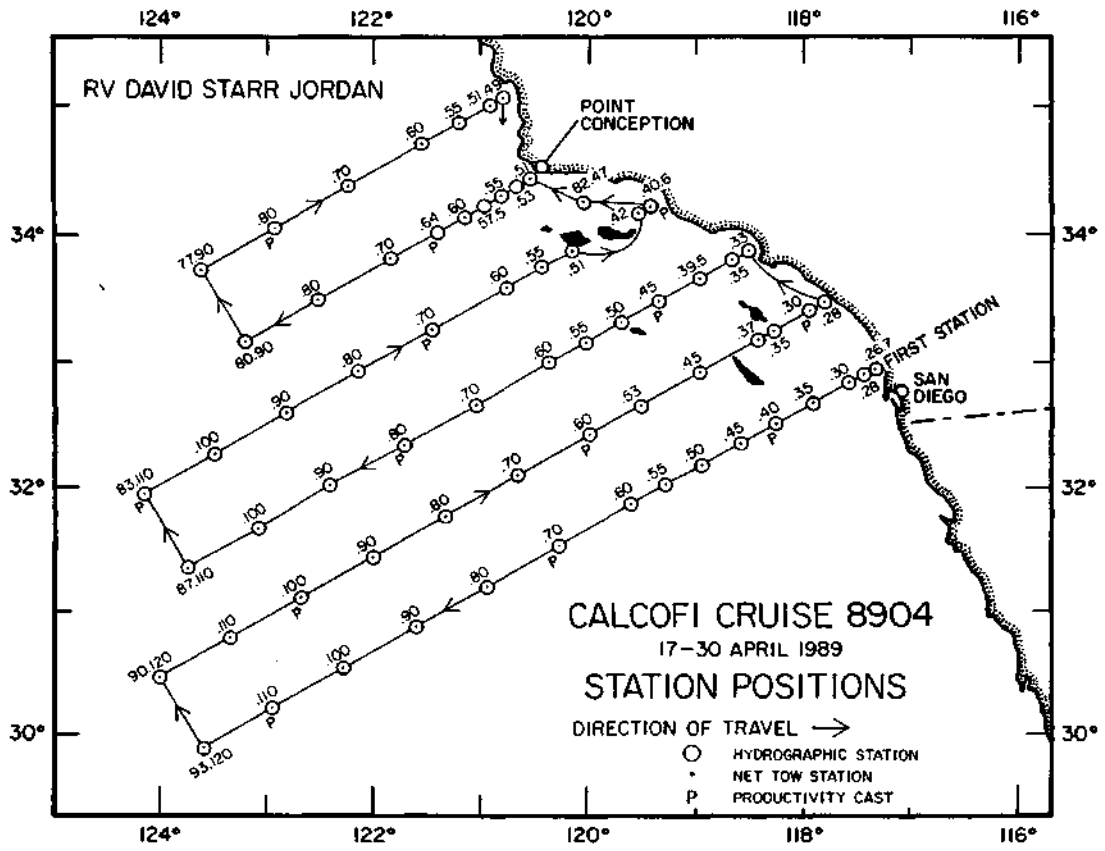

FIGURE 1

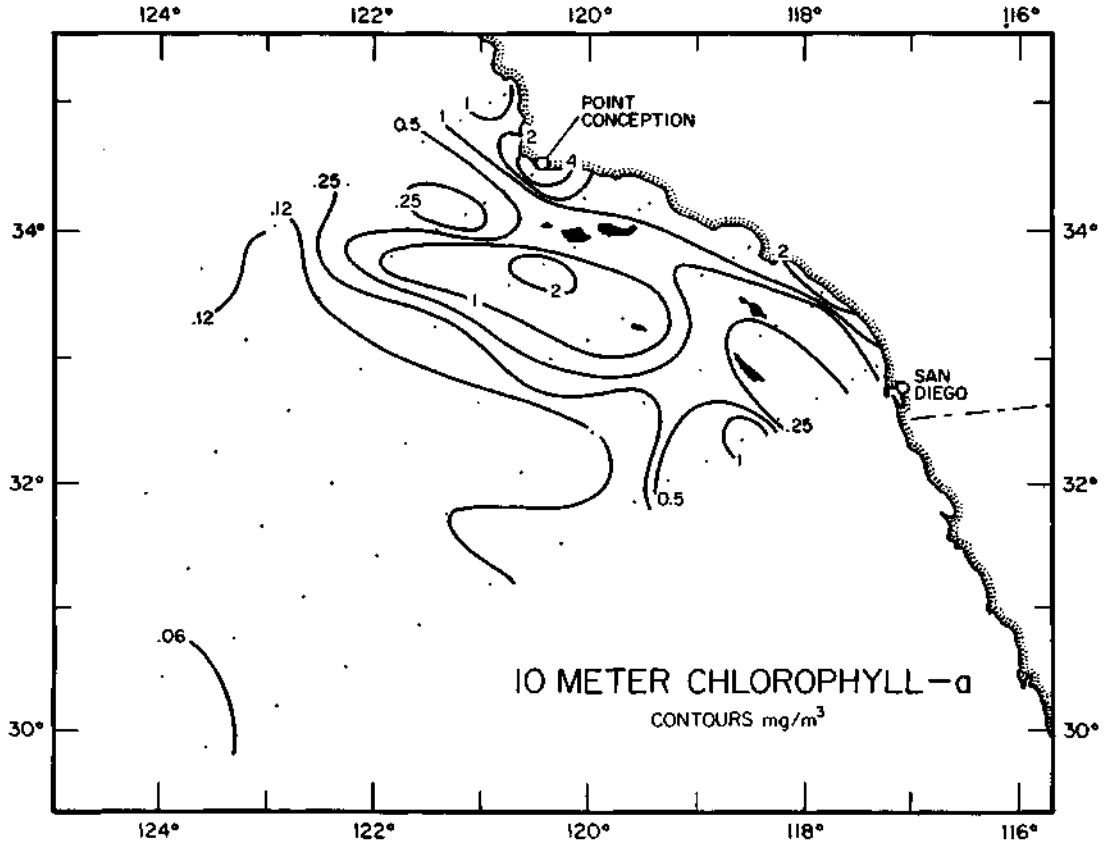

FIGURE 2

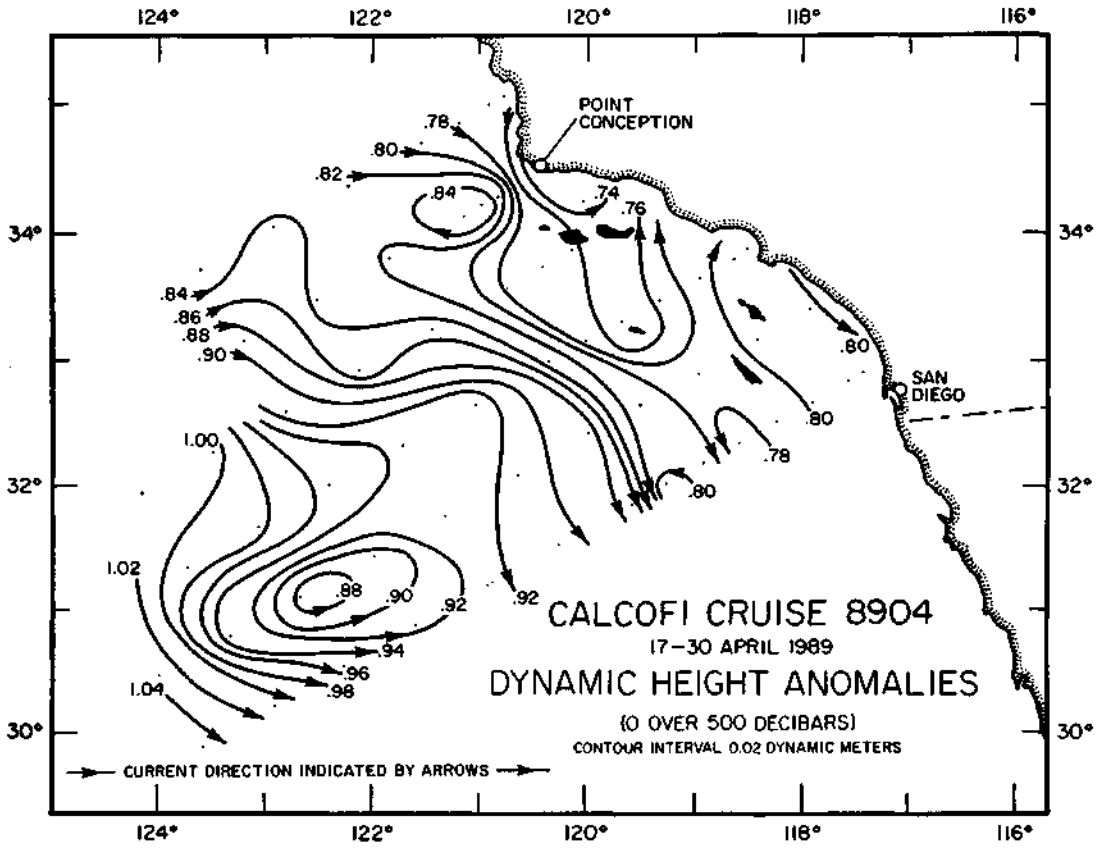

FIGURE 3

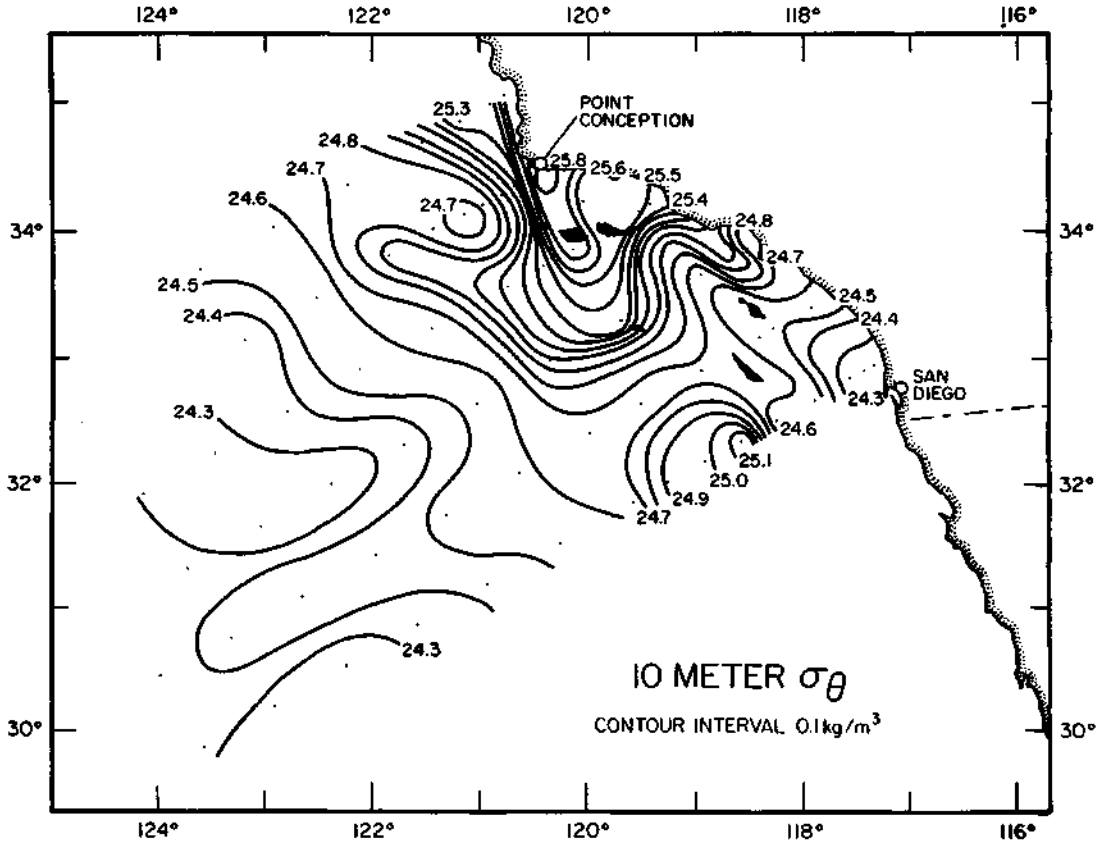

FIGURE 4

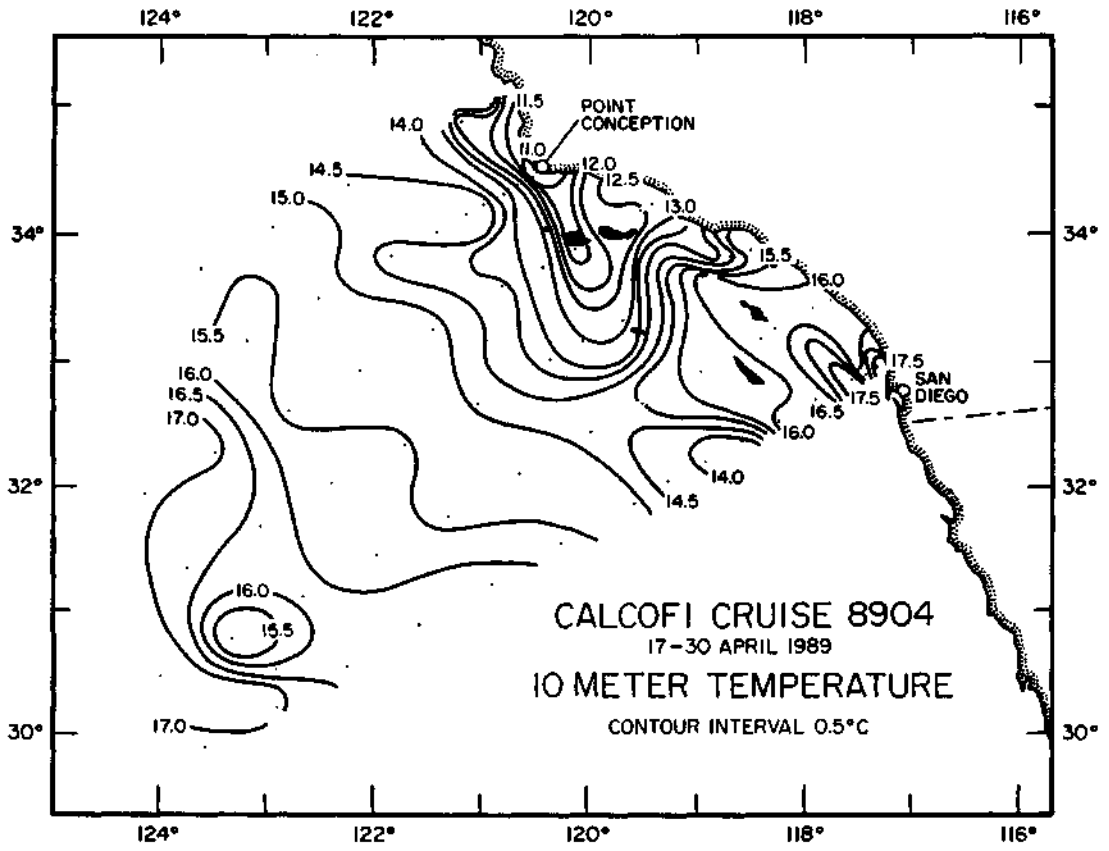

FIGURE 5

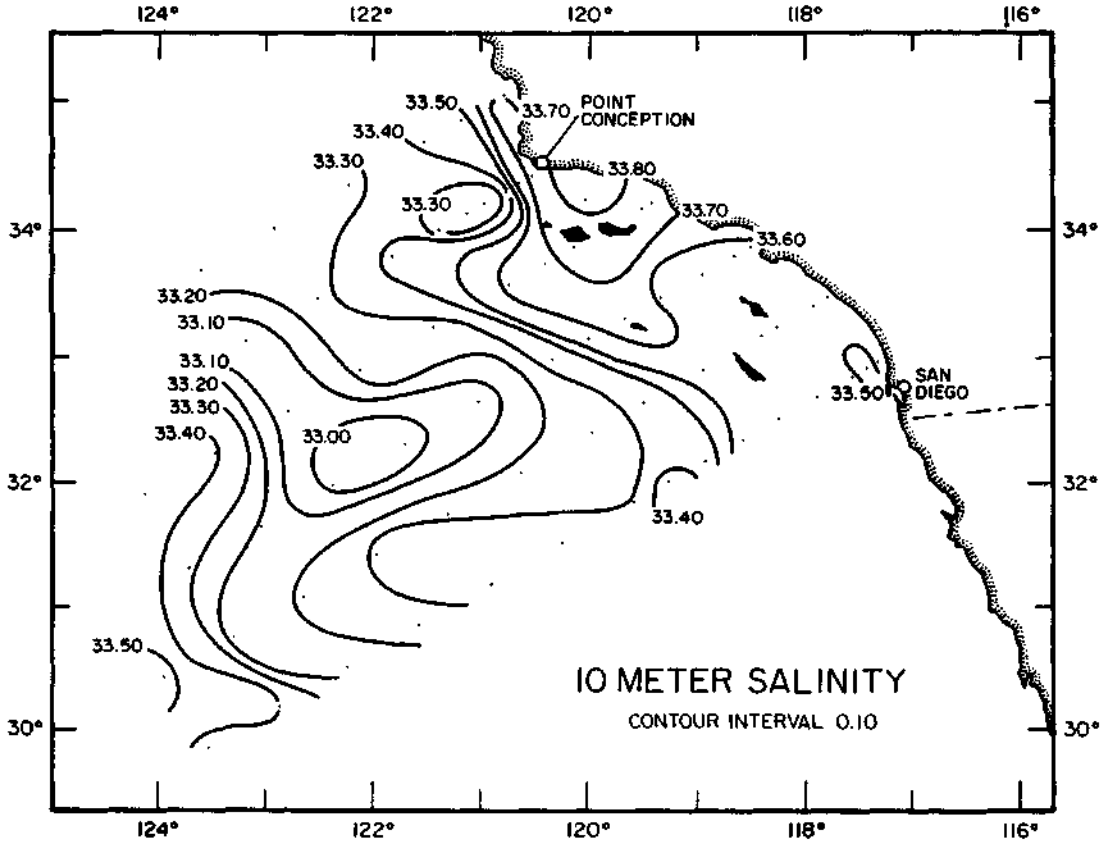

FIGURE 6

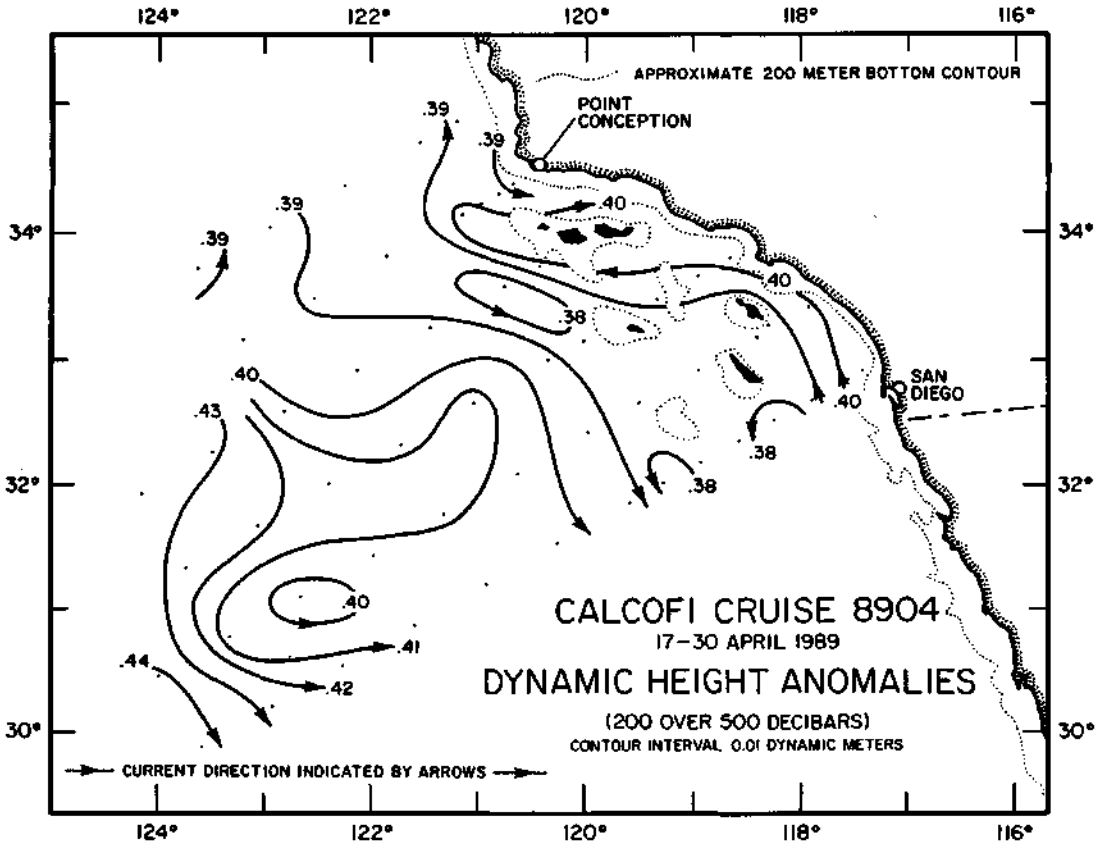

FIGURE 7

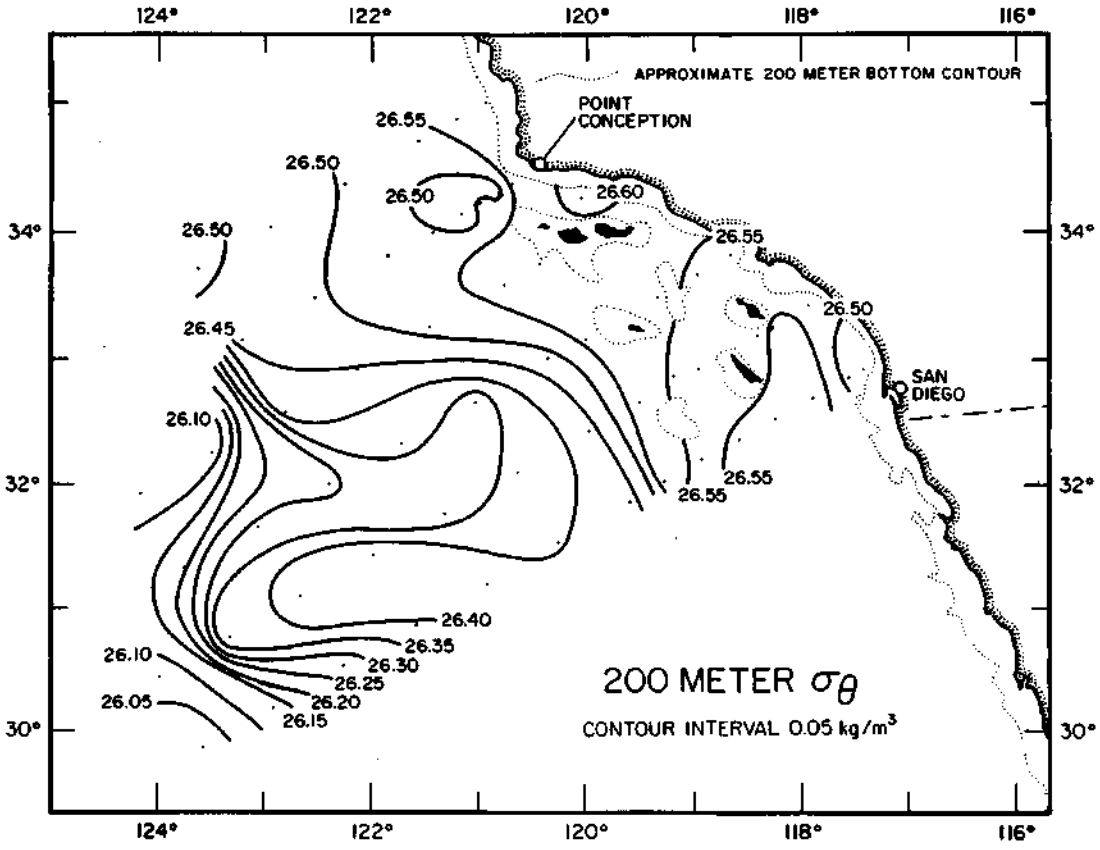

FIGURE 8

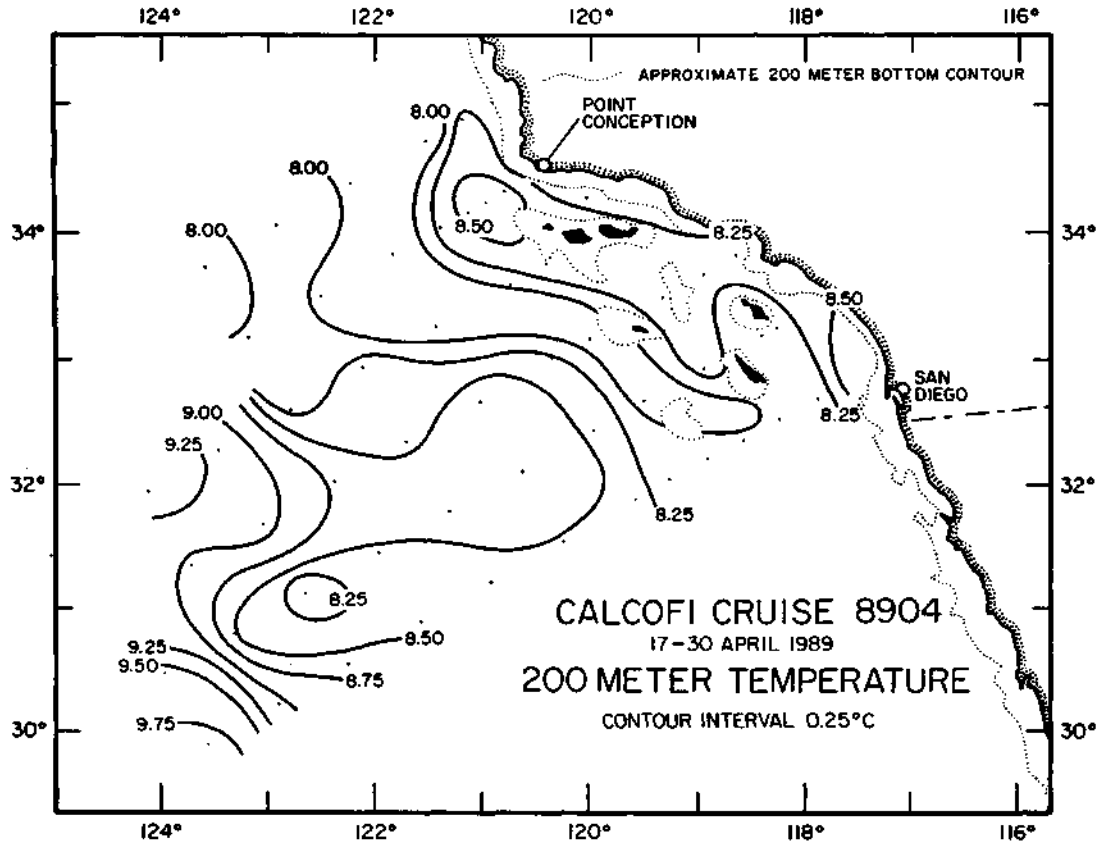

FIGURE 9

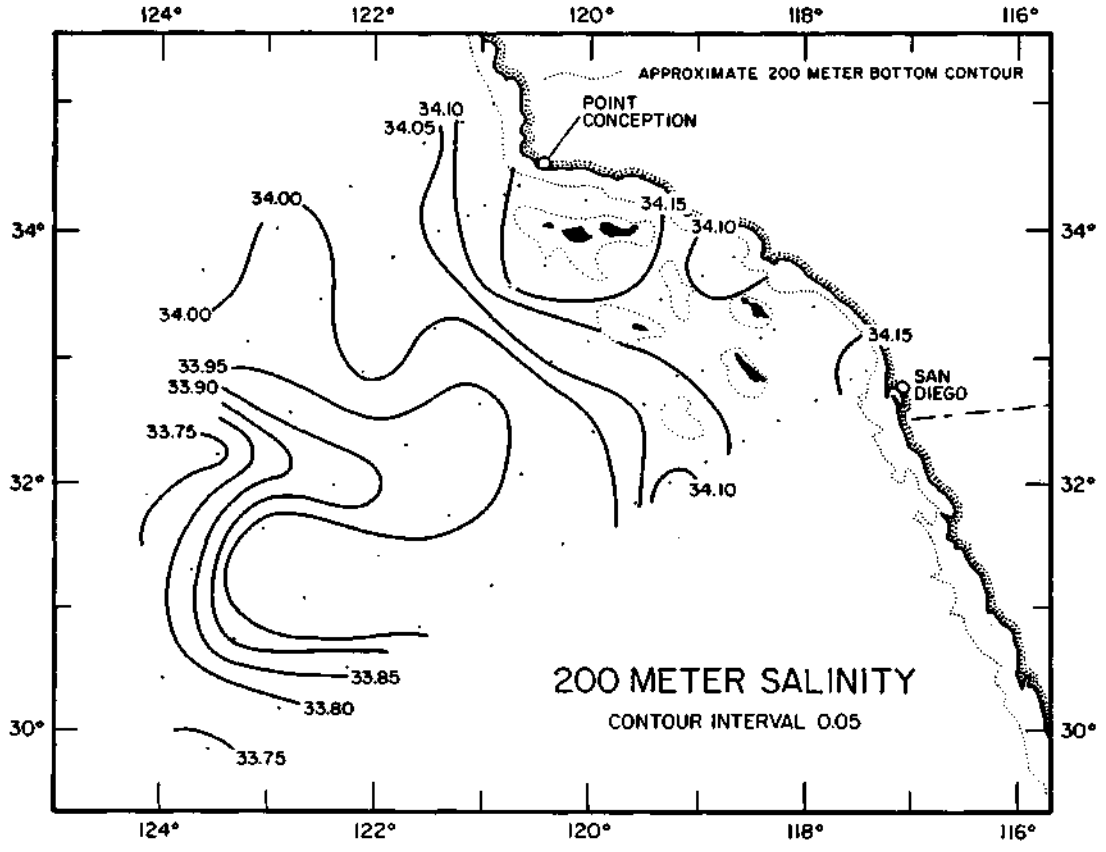

FIGURE 10

PERSONNEL

CalCOFI Cruise 8904

SHIP'S CAPTAIN

Thomas L. Meyer, RV *David Starr Jordan*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participation (Leg)
Flerx, William C. (in charge)	Fishery Biologist, NMFS	I, II
Abramenkoff, Dimitry N.	Fishery Biologist, NMFS	I, II
Bos, David L.	Staff Research Associate, SIO	I, II
Conversi, Alessandra	Graduate Student, SIO	II
Cynar, Skip J.	Graduate Student, SIO	I
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
Lowell, William R.	Staff Research Associate, SIO	I, II
Miller, Susan M.	Biological Technician, NMFS	I, II
Mullin, Michael M.	Professor, Director of MLRG, SIO	I, II
Ord, Robin W.	Post Graduate Researcher, SIO	I, II
Russell, Robert W.	Graduate Student, UCI	I, II
Speed, Hazel	Volunteer, SIO	I

Leg I: San Diego to Dana Point, CA, 17-22 April 1989

Leg II: Dana Point to San Diego, CA, 22-30 April 1989

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
35 5.3 N	120 46.6 W	30/04/89	1552 UTC	70 M	070	07 KT	250 01 07	2	1018.1 MB	14.0 C	12.8 C	8/8	CS

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 D.BAR
	0 ISL	11.97	11.97	33.697	25.583	239.3	0.000	5.50	90.1	15.1	1.16	11.8	0.20	1.00	0.51	0
1	1	11.97	11.97	33.697	25.583	239.3	0.002	5.50	90.1	15.1	1.16	11.8	0.20	1.00	0.51	1
	10 ISL	11.79	11.79	33.681	25.605	237.5	0.024	5.41	88.3	15.0	1.19	12.0	0.18	0.97	0.49	10
1	11	11.76	11.76	33.679	25.609	237.1	0.026	5.40	88.0	15.0	1.19	12.0	0.18	0.97	0.49	11
	20 ISL	11.74	11.74	33.679	25.613	237.0	0.048	5.33	86.9	15.0	1.20	12.3	0.19	0.94	0.49	20
1	21	11.74	11.74	33.679	25.613	237.0	0.050	5.32	86.7	15.0	1.20	12.3	0.19	0.94	0.49	21
	30 ISL	11.22	11.22	33.700	25.725	226.5	0.071	4.85	78.2	17.0	1.35	14.7	0.23	0.76	0.48	30
1	31	11.15	11.15	33.705	25.741	225.0	0.073	4.78	76.9	17.3	1.37	15.1	0.24	0.75	0.48	31
1	41	10.58	10.58	33.799	25.916	208.6	0.095	4.03	64.1	22.1	1.64	19.0	0.36	0.90	0.43	41
	50 ISL	10.45	10.44	33.836	25.967	203.9	0.113	3.81	60.4	24.0	1.73	19.7	0.39	1.04	0.57	50
1	51	10.44	10.43	33.840	25.972	203.5	0.115	3.79	60.1	24.2	1.74	19.8	0.39	1.05	0.58	51

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
35 1.4 N	120 55.1 W	30/04/89	1356 UTC	234 M	210	06 KT	080 01 08	2	1016.8 MB	14.0 C	13.2 C	8/8	CS

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 D.BAR
1	0	13.42	13.42	33.731	25.326	263.7	0.000	6.20	104.7	12.6	0.83	6.8	0.03	0.63	0.23	0
1	10	13.11	13.11	33.70	25.365	260.3	0.026	6.12	102.7	13.4	0.89	7.7	0.04	0.64	0.27	10
	20 ISL	11.92	11.92	33.717	25.609	237.4	0.051	5.46	89.3	15.6	1.15	11.4	0.30	0.75	0.44	20
1	21	11.77	11.77	33.721	25.640	234.4	0.053	5.36	87.4	16.0	1.19	12.0	0.32	0.76	0.45	21
1	30	10.47	10.47	33.765	25.908	209.1	0.073	4.03	63.9	21.8	1.62	19.8	0.32	0.37	0.30	30
1	41	9.92	9.92	33.785	26.018	198.9	0.096	3.46	54.2	24.6	1.80	22.2	0.06	0.17	0.21	41
	50 ISL	9.78	9.77	33.803	26.055	195.5	0.114	3.29	51.4	25.3	1.84	23.0	0.06	0.10	0.24	50
1	51	9.77	9.76	33.807	26.060	195.1	0.116	3.27	51.1	25.4	1.85	23.1	0.06	0.10	0.24	51
1	60	9.36	9.35	33.905	26.204	181.5	0.132	2.76	42.8	29.7	2.02	25.3	0.05	0.03	0.19	60
1	72	9.16	9.15	33.966	26.285	174.1	0.154	2.44	37.6	32.2	2.10	26.3	0.04	0.04	0.21	72
	75 ISL	9.13	9.12	33.978	26.299	172.8	0.159	2.38	36.7	32.8	2.13	26.6	0.04	0.04	0.21	75
1	86	9.06	9.05	34.015	26.339	169.2	0.178	2.22	34.2	34.9	2.22	27.6	0.04	0.03	0.21	86
	100 ISL	8.90	8.89	34.040	26.384	165.2	0.201	2.14	32.8	36.3	2.26	28.1	0.04	0.02	0.20	101
1	106	8.84	8.83	34.047	26.399	163.9	0.211	2.12	32.5	36.7	2.26	28.2	0.04	0.02	0.19	10
1	125	8.76	8.75	34.067	26.428	161.5	0.242	2.05	31.4	38.2	2.30	28.8	0.03	0.02	0.19	126
1	146	8.64	8.62	34.091	26.466	158.3	0.276	1.91	29.1	40.0	2.36	29.4	0.04	0.01	0.18	147
	150 ISL	8.60	8.58	34.096	26.476	157.4	0.282	1.88	28.7	40.5	2.37	29.6	0.05	0.01	0.18	151
1	176	8.35	8.33	34.127	26.539	151.9	0.322	1.71	25.9	44.2	2.47	30.5	0.08	0.01	0.16	177
	200 ISL	8.18	8.16	34.142	26.576	148.7	0.358	1.60	24.2	46.4	2.54	31.0	0.05	0.01	0.16	201
1	204	8.15	8.13	34.144	26.583	148.2	0.364	1.58	23.8	46.8	2.55	31.1	0.05	0.01	0.16	205

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 53.2 N	121 11.8 W	30/04/89	1100 UTC	575 M	100	08 KT			1017.2 MB	13.8 C	13.4 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 D.BAR
1	0	13.03	13.03	33.440	25.179	277.7	0.000	6.05	101.2	11.4	0.86	6.9	0.09	1.17	0.43	0
	10 ISL	12.25	12.25	33.449	25.338	262.8	0.027	5.82	95.7	11.3	0.93	7.9	0.10	1.27	0.51	10
1	11	12.17	12.17	33.450	25.354	261.4	0.030	5.80	95.3	11.3	0.94	8.0	0.10	1.28	0.52	11
	20 ISL	11.77	11.77	33.507	25.474	250.2	0.053	5.49	89.4	12.7	1.07	10.3	0.13	1.11	0.47	20
1	21	11.72	11.72	33.519	25.492	248.4	0.055	5.43	88.4	12.8	1.09	10.7	0.14	1.07	0.46	21
1	30	10.78	10.78	33.725	25.823	217.2	0.076	4.39	70.1	19.4	1.53	17.6	0.20	0.58	0.34	30
1	41	10.61	10.61	33.765	25.884	211.6	0.100	4.16	66.2	21.3	1.59	19.0	0.17	0.35	0.31	41
	50 ISL	10.38	10.37	33.800	25.952	205.4	0.118	3.76	59.5	24.1	1.72	20.6	0.33	0.27	0.31	50
1	51	10.36	10.35	33.803	25.957	204.9	0.121	3.72	58.9	24.4	1.74	20.7	0.34	0.27	0.31	51
1	61	10.21	10.20	33.818	25.995	201.5	0.141	3.55	56.0	25.6	1.80	21.1	0.17	0.24	0.29	61
1	71	10.06	10.05	33.848	26.044	197.0	0.161	3.30	51.9	27.0	1.86	22.7	0.32	0.16	0.29	71
	75 ISL	9.97	9.96	33.858	26.067	194.9	0.169	3.18	49.9	27.6	1.89	23.3	0.25	0.13	0.29	75
1	84	9.74	9.73	33.882	26.125	189.6	0.186	2.89	45.1	29.1	1.97	24.6	0.05	0.08	0.29	84
1	99	9.46	9.45	33.942	26.218	181.1	0.214	2.39	37.1	32.9	2.14	26.8	0.02	0.05	0.29	100
	100 ISL	9.45	9.44	33.943	26.220	180.9	0.216	2.38	37.0	33.0	2.14	26.9	0.02	0.05	0.29	101
1	119	9.35	9.34	33.961	26.251	178.3	0.250	2.27	35.2	33.8	2.18	27.5	0.03	0.05	0.28	120
	125 ISL	9.22	9.21	33.982	26.288	174.9	0.260	2.18	33.7	35.0	2.21	27.9	0.03	0.04	0.27	126
1	144	8.77	8.75	34.058	26.419	162.7	0.292	1.91	29.2	39.2	2.33	29.3	0.02	0.02	0.21	145
	150 ISL	8.70	8.68	34.074	26.443	160.6	0.302	1.87	28.6	39.9	2.35	29.5	0.02	0.02	0.19	151
1	175	8.49	8.47	34.119	26.511	154.5	0.341	1.77	26.9	42.1	2.40	30.1	0.01	0.01	0.12	176
	200 ISL	8.29	8.27	34.145	26.562	150.1	0.379	1.63	24.7	44.6	2.49	31.0	0.01	0.01	0.09	201
1	204	8.26	8.24	34.148	26.569	149.5	0.385	1.61	24.4	45.0	2.50	31.1	0.01	0.01	0.09	205
1	233	8.11	8.09	34.165	26.605	146.5	0.428	1.47	22.2	46.7	2.56	31.9	0.01			234
	250 ISL	8.03	8.00	34.174	26.625	145.0	0.453	1.41	21.2	47.9	2.58	32.2	0.01			252
1	274	7.89	7.86	34.186	26.655	142.5	0.488	1.33	20.0	50.0	2.61	32.7	0.01			276
	300 ISL	7.70	7.67	34.203	26.697	138.9	0.524	1.18	17.6	53.0	2.69	33.6	0.01			302
1	329	7.44	7.41	34.217	26.745	134.6	0.564	1.00	14.9	56.9	2.79	34.7	0.00			331
1	387	6.78	6.74	34.211	26.832	126.8	0.640	0.81	11.8	65.0	2.90	36.8	0.00			390
	400 ISL	6.68	6.64	34.220	26.853	124.9	0.656	0.74	10.8	67.0	2.93	37.1	0.00			403
1	452	6.35	6.31	34.264	26.932	118.0	0.719	0.48	7.0	74.5	3.05	38.3	0.01			455
	500 ISL	5.99	5.95	34.280	26.991	112.7	0.775	0.41	5.9	80.2	3.13	39.5	0.01			504
1	518	5.85	5.81	34.286	27.013	110.7	0.795	0.39	5.6	82.4	3.16	39.9	0.01			522

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 43.3 N	121 32.9 W	30/04/89	0728 UTC	936 M	010	03 KT			1017.1 MB	15.2 C	14.0 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 D.BAR
1	0	14.49	14.49	33.428	24.870	307.1	0.000	6.29	108.4	3.9	0.53	1.5	0.06	0.48	0.11	0
1	10	14.06	14.06	33.451	24.979	297.1	0.030	6.35	108.5	4.6	0.57	2.2	0.07	0.49	0.13	10
1	20	13.49	13.49	33.539	25.164	279.7	0.059	6.35	107.3	7.4	0.69	4.2	0.10	0.72	0.33	20
	30 ISL	12.73	12.73	33.520	25.301	266.9	0.086	6.22	103.4	8.6	0.78	5.8	0.13	0.86	0.39	30
1	31	12.65	12.65	33.521	25.317	265.4	0.089	6.21	103.1	8.7	0.80	6.0	0.13	0.87	0.40	31
1	40	12.08	12.07	33.671	25.543	244.1	0.112	5.45	89.5	12.2	1.13	10.1	0.45	0.44	0.29	40
1	50	11.29	11.28	33.706	25.717	227.7	0.136	4.87	78.6	15.6	1.35	14.3	0.63	0.19	0.21	50
1	60	10.90	10.89	33.700	25.783	221.7	0.158	4.53	72.5	17.3	1.42	16.7	0.53	0.13	0.18	60
1	70	9.83	9.82	33.632	25.914	209.3	0.180	3.98	62.2	20.1	1.58	19.7	0.06	0.05	0.13	70
	75 ISL	9.74	9.73	33.650	25.943	206.7	0.190	3.86	60.2	20.9	1.62	20.4	0.05	0.05	0.13	75
1	84	9.57	9.56	33.668	25.985	202.8	0.208	3.72	57.8	22.1	1.67	21.1	0.04	0.04	0.12	84
1	99	9.21	9.20	33.765	26.120	190.3	0.238	3.34	51.5	25.4	1.81	23.3	0.03	0.02	0.12	100
	100 ISL	9.20	9.19	33.769	26.124	189.9	0.240	3.33	51.4	25.5	1.81	23.4	0.03	0.02	0.12	101
1	119	9.02	9.01	33.821	26.194	183.6	0.275	3.22	49.5	27.5	1.86	24.3	0.02	0.01	0.09	120
	125 ISL	8.91	8.90	33.844	26.229	180.4	0.286	3.18	48.7	28.4	1.88	24.7	0.02	0.01	0.09	126
1	145	8.51	8.49	33.920	26.351	169.1	0.321	3.03	46.1	31.7	1.96	26.1	0.03	0.01	0.08	146
	150 ISL	8.45	8.43	33.936	26.373	167.1	0.330	2.98	45.2	32.5	1.98	26.4	0.03	0.01	0.08	151
1	173	8.19	8.17	33.993	26.458	159.5	0.367	2.75	41.5	36.4	2.07	27.8	0.03	0.01	0.06	174
	200 ISL	7.76	7.74	34.025	26.546	151.3	0.409	2.45	36.6	41.8	2.20	29.8	0.05	0.00	0.05	201
1	203	7.71	7.69	34.027	26.555	150.5	0.414	2.42	36.1	42	2.22	30.0	0.05	0.00	0.05	204
1	231	7.32	7.30	34.050	26.629	143.8	0.455	2.12	31.4	48.3	2.37	31.9	0.01			232
	250 ISL	7.13	7.11	34.058	26.662	140.9	0.482	1.96	28.9	51.1	2.44	32.8	0.01			252
1	270	6.96	6.93	34.065	26.691	138.4	0.510	1.81	26.6	53.7	2.51	33.6	0.01			272
	300 ISL	6.71	6.68	34.078	26.736	134.5	0.551	1.55	22.6	58.4	2.62	34.9	0.01			302
1	325	6.52	6.49	34.094	26.774	131.1	0.584	1.33	19.3	62.3	2.72	36.0	0.01			327
1	382	6.22	6.19	34.167	26.871	122.6	0.656	0.78	11.3	70.4	2.94	38.3	0.00			385
	400 ISL	6.15	6.11	34.178	26.889	121.1	0.678	0.70	10.1	72.2	2.98	38.7	0.00			403
1	447	6.00	5.96	34.207	26.931	117.6	0.734	0.56	8.0	76.2	3.06	39.5	0.00			450
	500 ISL	5.89	5.85	34.274	26.998	111.9	0.795	0.38	5.4	80.6	3.13	40.0	0.00			504
1	516	5.86	5.82	34.295	27.019	110.1	0.813	0.33	4.7	81.9	3.15	40.2	0.00			520

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 23.3 N	122 14.9 W	30/04/89	0217 UTC	4114 M	180	06 KT	350 02 08	1	1015.5 MB	16.0 C	12.8 C	4/8	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 D.BAR
1	0	15.55	15.55	33.334	24.568	335.9	0.000	6.13	107.9	2.9	0.44	0.1	0.00	0.23	0.04	0
1	9	14.65	14.65	33.278	24.721	321.6	0.030	6.23	107.6	2.9	0.41	0.1	0.00	0.28	0.07	9
	10 ISL	14.58	14.58	33.266	24.727	321.1	0.033	6.25	107.8	2.9	0.41	0.1	0.00	0.30	0.08	10
1	20	14.01	14.01	33.169	24.771	317.1	0.065	6.46	110.1	3.0	0.40	0.1	0.00	0.53	0.19	20
1	30	13.34	13.34	33.198	24.931	302.2	0.096	6.75	113.4	3.3	0.44	0.1	0.01	0.82	0.37	30
1	40	12.75	12.74	33.456	25.248	272.2	0.124	6.46	107.4	4.0	0.70	3.4	0.15	1.06	0.39	40
1	49	11.69	11.68	33.424	25.425	255.5	0.148	5.88	95.6	7.7	0.93	7.2	0.34	0.95	0.41	49
	50 ISL	11.67	11.66	33.432	25.435	254.6	0.151	5.85	95.0	7.9	0.94	7.4	0.35	0.92	0.41	50
1	60	11.52	11.51	33.474	25.495	249.1	0.176	5.60	90.7	9.5	1.06	9.5	0.40	0.56	0.35	60
1	71	10.83	10.82	33.465	25.612	238.2	0.203	5.16	82.3	12.2	1.22	12.9	0.05	0.31	0.24	71
	75 ISL	10.63	10.62	33.494	25.670	232.7	0.212	4.90	77.9	13.7	1.32	14.4	0.04	0.24	0.20	75
1	85	10.24	10.23	33.590	25.813	219.4	0.235	4.25	67.0	17.6	1.56	18.0	0.02	0.10	0.13	85
1	99	9.95	9.94	33.692	25.941	207.4	0.265	3.64	57.1	21.1	1.71	20.9	0.01	0.06	0.12	100
	100 ISL	9.91	9.90	33.695	25.950	206.5	0.267	3.62	56.7	21.3	1.72	21.0	0.01	0.06	0.12	101
1	120	9.18	9.17	33.759	26.120	190.7	0.306	3.40	52.4	25.3	1.83	23.2	0.01	0.01	0.07	121
	125 ISL	9.07	9.06	33.788	26.160	186.9	0.316	3.30	50.8	26.4	1.87	23.8	0.01	0.01	0.07	126
1	145	8.74	8.72	33.904	26.303	173.7	0.352	2.95	45.1	30.6	2.01	26.1	0.01	0.00	0.06	146
	150 ISL	8.65	8.63	33.921	26.331	171.2	0.360	2.94	44.8	31.4	2.03	26.4	0.01	0.00	0.06	151
1	175	8.27	8.25	33.979	26.435	161.7	0.402	2.88	43.5	34.9	2.08	27.3	0.01	0.00	0.06	176
	200 ISL	7.99	7.97	34.014	26.504	155.4	0.442	2.69	40.4	38.8	2.15	28.6	0.01	0.00	0.05	201
1	205	7.94	7.92	34.019	26.516	154.4	0.449	2.64	39.6	39.6	2.17	28.9	0.01	0.00	0.05	206
1	233	7.57	7.55	34.035	26.582	148.4	0.492	2.39	35.6	44.1	2.30	30.5	0.01			234
	250 ISL	7.29	7.27	34.033	26.620	145.0	0.517	2.32	34.3	46.9	2.36	31.3	0.01			252
1	272	6.94	6.91	34.029	26.666	140.8	0.548	2.23	32.7	50.6	2.44	32.4	0.02			274
	300 ISL	6.62	6.59	34.032	26.711	136.7	0.587	2.00	29.1	55.4	2.54	34.1	0.02			302
1	328	6.34	6.31	34.043	26.757	132.6	0.625	1.71	24.7	60.7	2.66	35.8	0.01			330
1	384	5.77	5.74	34.099	26.874	121.9	0.696	1.00	14.3	73.5	2.94	39.2	0.00			387
	400 ISL	5.66	5.63	34.112	26.897	119.8	0.715	0.88	12.5	76.0	2.99	39.8	0.00			403
1	449	5.46	5.42	34.159	26.959	114.4	0.773	0.61	8.6	81.8	3.09	40.9	0.00			452
	500 ISL	5.44	5.40	34.244	27.029	108.4	0.830	0.40	5.7	86.2	3.18	41.4	0.00			504
1	516	5.44	5.40	34.270	27.050	106.7	0.847	0.33	4.7	87.6	3.21	41.6	0.00			520

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 3.3 N	122 56.5 W	29/04/89	2058 UTC	4305 M	190	08 KT	340 02 09	1	1017.1 MB	17.2 C	15.3 C	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 D.BAR
1	0		15.90	15.90	33.273	24.443	347.8	0.000	5.90	104.5	1.8	0.43	0.1	0.01	0.09	0.01	0
1	10		15.45	15.45	33.271	24.542	338.7	0.034	5.93	104.1	1.8	0.43	0.1	0.01	0.11	0.02	10
1	20		15.43	15.43	33.270	24.546	338.6	0.068	5.92	103.9	1.8	0.42	0.1	0.01	0.11	0.02	20
1	30		14.01	14.01	33.234	24.822	312.5	0.101	6.53	111.3	2.0	0.48	0.1	0.00	0.23	0.05	30
1	41		13.03	13.02	33.360	25.118	284.6	0.134	6.79	113.5	3.4	0.50	0.3	0.01	1.01	0.32	41
	50	ISL	12.09	12.08	33.366	25.305	267.0	0.158	6.38	104.5	5.4	0.73	3.8	0.12	1.10	0.45	50
1	51		12.00	11.99	33.367	25.323	265.3	0.161	6.31	103.2	5.6	0.76	4.3	0.14	1.11	0.46	51
1	60		11.71	11.70	33.474	25.460	252.5	0.184	5.70	92.7	7.5	0.97	8.1	0.27	0.78	0.36	60
1	70		11.25	11.24	33.514	25.575	241.7	0.209	5.25	84.6	10.4	1.15	11.5	0.03	0.43	0.27	70
	75	ISL	11.11	11.10	33.526	25.610	238.5	0.221	5.07	81.4	11.5	1.20	12.6	0.03	0.33	0.24	75
1	83		10.90	10.89	33.549	25.666	233.4	0.240	4.78	76.4	13.2	1.29	14.2	0.02	0.23	0.19	83
1	98		10.27	10.26	33.649	25.854	215.8	0.274	3.97	62.6	17.8	1.57	18.7	0.01	0.10	0.11	98
	100	ISL	10.22	10.21	33.661	25.872	214.1	0.278	3.89	61.3	18.4	1.60	19.2	0.01	0.09	0.11	100
1	119		9.77	9.76	33.766	26.030	199.4	0.317	3.27	51.1	23.5	1.83	22.7	0.01	0.03	0.09	120
	125	ISL	9.58	9.57	33.797	26.085	194.2	0.329	3.14	48.8	25.1	1.89	23.6	0.01	0.02	0.09	126
1	143		9.06	9.04	33.877	26.232	180.5	0.363	2.88	44.3	29.1	2.01	25.7	0.01	0.01	0.08	144
	150	ISL	8.94	8.92	33.900	26.269	177.1	0.375	2.83	43.4	30.1	2.04	26.1	0.01	0.01	0.08	151
1	174		8.63	8.61	33.957	26.363	168.6	0.417	2.73	41.6	32.9	2.10	26.9	0.00	0.00	0.07	175
	200	ISL	8.23	8.21	33.993	26.452	160.5	0.460	2.65	40.0	36.3	2.18	28.3	0.01	0.00	0.05	201
1	204		8.17	8.15	33.998	26.465	159.3	0.466	2.63	39.7	36.9	2.19	28.5	0.01	0.00	0.05	205
1	233		7.88	7.86	34.068	26.563	150.4	0.511	2.13	31.9	42.9	2.37	30.7	0.02			234
	250	ISL	7.70	7.68	34.075	26.595	147.6	0.536	2.04	30.5	45.3	2.42	31.0	0.02			251
1	273		7.43	7.40	34.070	26.630	144.5	0.570	1.98	29.4	48.3	2.48	31.3	0.01			275
	300	ISL	7.05	7.02	34.080	26.691	138.9	0.608	1.70	25.0	53.8	2.62	33.4	0.00			302
1	328		6.70	6.67	34.100	26.755	133.1	0.646	1.37	20.0	59.6	2.77	35.8	0.00			330
1	386		6.38	6.35	34.175	26.857	124.1	0.721	0.82	11.9	68.2	2.97	38.1	0.00			389
	400	ISL	6.29	6.25	34.186	26.877	122.3	0.738	0.74	10.7	70.3	3.01	38.5	0.00			403
1	450		5.94	5.90	34.217	26.947	116.1	0.798	0.53	7.6	77.7	3.12	39.8	0.01			453
	500	ISL	5.62	5.58	34.251	27.013	110.1	0.854	0.39	5.6	84.5	3.22	41.0	0.00			503
1	517		5.51	5.47	34.263	27.036	108.1	0.873	0.34	4.8	86.8	3.25	41.4	0.00			521

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 43.3 N	123 38.0 W	29/04/89	1503 UTC	4102 M	210	04 KT	350 01 05	1	1016.9 MB	16.1 C	14.4 C	7/8	CC

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 D.BAR
1	0		15.34	15.34	33.290	24.580	334.7	0.000	5.98	104.7	1.4	0.40	0.1	0.00	0.18	0.03	0
	10	ISL	15.30	15.30	33.290	24.590	334.1	0.033	6.00	105.0	1.2	0.40	0.1	0.00	0.15	0.03	10
1	11		15.30	15.30	33.290	24.590	334.2	0.037	6.00	105.0	1.2	0.40	0.1	0.00	0.15	0.03	11
1	20		15.20	15.20	33.296	24.616	331.9	0.067	6.03	105.3	1.1	0.40	0.1	0.00	0.17	0.04	20
	30	ISL	13.25	13.25	33.308	25.034	292.3	0.098	6.70	112.5	2.0	0.48	0.5	0.01	0.41	0.11	30
1	31		13.01	13.01	33.309	25.083	287.7	0.101	6.76	112.9	2.1	0.50	0.5	0.01	0.44	0.12	31
1	41		11.24	11.23	33.255	25.375	260.0	0.128	6.43	103.4	6.7	0.81	5.2	0.14	0.73	0.28	41
	50	ISL	10.64	10.63	33.258	25.484	249.8	0.151	5.99	95.1	9.4	1.01	8.5	0.16	0.94	0.45	50
1	51		10.62	10.61	33.263	25.491	249.2	0.154	5.94	94.2	9.6	1.03	8.8	0.16	0.95	0.46	51
1	61		10.52	10.51	33.426	25.636	235.6	0.178	5.38	85.3	12.3	1.23	12.7	0.08	0.60	0.29	61
1	70		10.22	10.21	33.456	25.711	228.7	0.199	4.95	77.9	14.6	1.36	15.1	0.04	0.36	0.22	70
	75	ISL	10.05	10.04	33.476	25.755	224.5	0.210	4.71	73.9	15.9	1.43	16.4	0.04	0.26	0.18	75
1	85		9.70	9.69	33.526	25.853	215.4	0.232	4.27	66.5	18.6	1.57	18.7	0.03	0.13	0.11	85
1	100		9.21	9.20	33.629	26.013	200.4	0.263	3.83	59.0	22.6	1.72	21.4	0.02	0.04	0.08	101
1	120		8.99	8.98	33.786	26.172	185.8	0.302	3.23	49.6	27.0	1.93	24.7	0.01	0.01	0.08	121
	125	ISL	8.93	8.92	33.824	26.211	182.1	0.311	3.09	47.4	28.4	1.98	25.4	0.01	0.01	0.08	126
1	145		8.65	8.63	33.948	26.352	169.1	0.346	2.67	40.7	33.5	2.12	27.5	0.01	0.01	0.08	146
	150	ISL	8.58	8.56	33.962	26.374	167.1	0.355	2.66	40.5	34.2	2.14	27.7	0.01	0.01	0.08	151
1	175		8.22	8.20	33.997	26.456	159.6	0.396	2.60	39.3	37.4	2.20	28.6	0.01	0.00	0.06	176
	200	ISL	7.87	7.85	34.034	26.537	152.2	0.435	2.33	34.9	42.0	2.33	30.4	0.01	0.00	0.05	201
1	205		7.81	7.79	34.041	26.552	150.9	0.442	2.27	34.0	42.9	2.35	30.8	0.01	0.00	0.05	206
1	233		7.55	7.53	34.065	26.609	145.9	0.484	2.14	31.8	46.4	2.42	31.6	0.01			234
	250	ISL	7.44	7.42	34.085	26.640	143.2	0.508	1.96	29.1	48.9	2.50	32.3	0.01			252
1	273		7.31	7.28	34.109	26.678	139.9	0.541	1.69	25.0	52.3	2.62	33.4	0.01			275
	300	ISL	7.09	7.06	34.121	26.718	136.4	0.578	1.46	21.5	56.0	2.71	34.6	0.01			302
1	327		6.84	6.81	34.129	26.759	132.8	0.614	1.26	18.4	59.8	2.79	35.8	0.01			329
1	385		6.23	6.20	34.158	26.863	123.4	0.689	0.86	12.4	70.0	3.00	38.5	0.01			388
	400	ISL	6.11	6.07	34.168	26.886	121.3	0.707	0.77	11.1	72.4	3.04	39.1	0.01			403
1	450		5.70	5.66	34.194	26.958	114.8	0.766	0.55	7.8	80.3	3.15	40.7	0.00			453
	500	ISL	5.16	5.12	34.192	27.021	108.8	0.822	0.48	6.8	89.0	3.22	42.1	0.00			503
1	517		4.98	4.94	34.192	27.042	106.8	0.840	0.46	6.4	91.9	3.24	42.6	0.00			521

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 26.9 N	120 31.5 W	28/04/89	0423 UTC	79 M	320	23 KT			1017.1 MB	13.1 C	12.0 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 D.BAR
1	0		11.14	11.14	33.789	25.808	217.9	0.000	5.20	83.7	16.6	1.30	12.5	0.27	4.93	1.46	0
1	10		10.98	10.98	33.792	25.839	215.2	0.022	4.97	79.7	17.3	1.37	13.3	0.28	4.37	1.40	10
1	20		9.86	9.86	33.847	26.076	192.9	0.042	3.33	52.2	26.5	1.89	21.3	0.27	0.44	1.31	20
1	30		9.59	9.59	33.877	26.144	186.6	0.061	3.00	46.7	29.1	2.00	23.1	0.26	0.38	1.14	30
1	40		9.15	9.15	33.941	26.266	175.2	0.079	2.45	37.8	32.7	2.17	25.9	0.19	0.15	1.12	40
1	50		9.09	9.08	33.970	26.298	172.4	0.097	2.27	35.0	34.4	2.25	26.7	0.20	0.11	1.00	50
1	61		9.06	9.05	33.988	26.317	170.8	0.115	2.18	33.6	35.2	2.27	26.9	0.21	0.12	0.90	61
1	72		9.05	9.04	34.015	26.340	168.8	0.134	2.07	31.9	36.0	2.26	27.4	0.21	0.13	1.04	72

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 80 53

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 23.0 N	120 39.8 W	28/04/89	0720 UTC	465 M	310	22 KT			1017.1 MB	13.1 C	12.3 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 D.BAR
1	0		13.37	13.37	33.613	25.245	271.4	0.000	6.20	104.5	8.1	0.82	5.8	0.17	0.66	0.21	0
1	10		13.29	13.29	33.611	25.260	270.3	0.027	6.18	104.0	8.1	0.83	5.9	0.18	0.69	0.28	10
1	20		11.67	11.67	33.564	25.536	244.2	0.053	5.51	89.6	11.9	1.17	11.3	0.22	0.53	0.28	20
	30	ISL	10.73	10.73	33.518	25.671	231.7	0.077	4.95	78.9	14.2	1.33	14.6	0.06	0.24	0.20	30
1	31		10.67	10.67	33.514	25.678	231.0	0.079	4.91	78.1	14.3	1.34	14.8	0.04	0.22	0.19	31
1	40		10.53	10.53	33.509	25.698	229.2	0.100	4.79	76.0	14.5	1.37	15.3	0.03	0.19	0.18	40
1	50		10.20	10.19	33.633	25.852	214.8	0.122	4.11	64.8	19.0	1.61	18.8	0.03	0.09	0.16	50
1	60		9.62	9.61	33.699	26.001	200.9	0.143	3.62	56.3	22.7	1.76	21.5	0.02	0.04	0.12	60
1	70		9.20	9.19	33.727	26.091	192.5	0.162	3.56	54.9	24.2	1.80	22.6	0.03	0.02	0.07	70
	75	ISL	9.10	9.09	33.748	26.124	189.5	0.172	3.46	53.2	25.2	1.84	23.3	0.03	0.01	0.07	75
1	84		8.99	8.98	33.793	26.176	184.6	0.189	3.27	50.2	27.1	1.92	24.5	0.02	0.01	0.07	84
1	99		8.78	8.77	33.888	26.284	174.6	0.216	3.13	47.9	29.3	1.96	25.3	0.02	0.01	0.06	100
	100	ISL	8.78	8.77	33.895	26.289	174.2	0.217	3.09	47.2	29.6	1.97	25.4	0.02	0.01	0.06	101
1	119		8.87	8.86	34.009	26.365	167.4	0.250	2.44	37.4	34.3	2.16	27.4	0.02	0.01	0.11	120
	125	ISL	8.83	8.82	34.011	26.373	166.8	0.260	2.46	37.7	34.3	2.16	27.4	0.02	0.01	0.10	126
1	144		8.66	8.64	34.004	26.394	165.1	0.291	2.56	39.1	34.5	2.16	27.5	0.02	0.02	0.09	145
	150	ISL	8.65	8.63	34.025	26.412	163.5	0.301	2.39	36.5	35.8	2.21	28.0	0.02	0.02	0.11	151
1	174		8.60	8.58	34.121	26.496	156.0	0.340	1.63	24.9	42.4	2.45	30.3	0.02	0.02	0.20	175
	200	ISL	8.27	8.25	34.154	26.572	149.1	0.379	1.36	20.6	47.2	2.60	31.7	0.02	0.02	0.18	201
1	203		8.22	8.20	34.156	26.581	148.3	0.384	1.35	20.4	47.7	2.61	31.8	0.02	0.02	0.18	204
1	236		7.86	7.84	34.181	26.655	141.8	0.432	1.06	15.9	53.5	2.76	33.2	0.02			237
	250	ISL	7.74	7.72	34.193	26.682	139.4	0.451	1.04	15.6	54.5	2.78	33.6	0.01			252
1	285		7.48	7.45	34.218	26.740	134.4	0.499	1.00	14.9	56.1	2.81	34.3	0.00			287
	300	ISL	7.40	7.37	34.225	26.757	133.0	0.519	0.96	14.2	57.1	2.83	34.7	0.00			302
1	339		7.17	7.14	34.239	26.800	129.4	0.570	0.81	12.0	61.5	2.92	35.5	0.00			341
1	400		6.58	6.54	34.259	26.897	120.7	0.647	0.44	6.4	75.6	3.17	36.1	0.02			403
1	419		6.43	6.39	34.270	26.926	118.2	0.669	0.40	5.8	77.3	3.18	36.8	0.06			422
1	439		6.29	6.25	34.283	26.954	115.6	0.693	0.37	5.4	78.8	3.23	37.5	0.09			442

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 19.0 N	120 48.1 W	28/04/89	0912 UTC	752 M	320	19 KT			1017.0 MB	13.4 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	PHAEO UG/L	PRESS D.BAR
	0	ISL	13.64	13.64	33.314	24.959	298.7	0.000	6.44	109.0	3.2	0.49	0.6	0.02	0.50	0.15	0
1	1		13.64	13.64	33.314	24.959	298.7	0.003	6.44	109.0	3.2	0.49	0.6	0.02	0.50	0.15	1
	10	ISL	13.65	13.65	33.312	24.956	299.3	0.030	6.46	109.3	3.1	0.48	0.6	0.02	0.50	0.16	10
1	12		13.65	13.65	33.312	24.956	299.3	0.036	6.47	109.5	3.1	0.48	0.6	0.02	0.50	0.17	12
1	20		13.64	13.64	33.321	24.965	298.6	0.060	6.47	109.5	3.1	0.49	0.7	0.03	0.54	0.20	20
	30	ISL	13.30	13.30	33.303	25.020	293.6	0.089	6.50	109.2	3.5	0.52	1.0	0.04	0.65	0.23	30
1	31		13.24	13.24	33.298	25.028	292.9	0.092	6.50	109.1	3.6	0.52	1.0	0.04	0.67	0.23	31
1	39		12.52	12.51	33.230	25.117	284.6	0.115	6.44	106.4	4.3	0.59	1.9	0.09	0.87	0.37	39
1	49		12.07	12.06	33.386	25.324	265.1	0.143	6.09	99.8	6.3	0.81	5.4	0.24	1.05	0.49	49
	50	ISL	12.01	12.00	33.391	25.339	263.7	0.146	6.05	99.0	6.5	0.83	5.7	0.24	1.02	0.48	50
1	63		11.25	11.24	33.424	25.505	248.2	0.179	5.56	89.5	9.5	1.05	9.7	0.19	0.41	0.25	63
	75	ISL	10.87	10.86	33.504	25.636	236.0	0.208	5.10	81.5	13.1	1.25	13.5	0.12	0.15	0.15	75
1	76		10.84	10.83	33.513	25.648	234.9	0.210	5.06	80.8	13.4	1.27	13.8	0.11	0.14	0.14	76
1	91		10.34	10.33	33.685	25.870	214.1	0.244	4.18	66.1	18.9	1.58	18.9	0.03	0.05	0.12	91
	100	ISL	10.15	10.14	33.749	25.952	206.4	0.263	3.82	60.2	21.4	1.71	20.8	0.03	0.05	0.13	101
1	HI		9.92	9.91	33.805	26.035	198.8	0.285	3.46	54.2	24.1	1.83	22.5	0.03	0.05	0.14	112
	125	ISL	9.41	9.40	33.867	26.168	186.3	0.312	3.00	46.5	27.7	1.96	24.5	0.02	0.03	0.16	126
1	128		9.31	9.30	33.879	26.193	184.0	0.318	2.91	45.0	28.4	1.99	24.9	0.02	0.03	0.16	129
	150	ISL	9.16	9.14	34.001	26.313	173.0	0.357	2.44	37.7	32.6	2.15	26.7	0.01	0.02	0.18	151
1	158		9.11	9.09	34.027	26.342	170.5	0.371	2.33	35.9	33.8	2.19	27.2	0.01	0.02	0.19	159
1	187		8.75	8.73	34.079	26.440	161.6	0.419	2.08	31.8	37.6	2.29	28.8	0.01	0.02	0.17	188
	200	ISL	8.62	8.60	34.104	26.480	158.0	0.440	1.96	29.9	39.4	2.34	29.4	0.01	0.02	0.14	201
1	216		8.44	8.42	34.124	26.523	154.1	0.465	1.87	28.4	41.4	2.40	30.0	0.01	0.01	0.11	217
	250	ISL	7.85	7.83	34.093	26.587	148.4	0.516	2.06	30.9	44.5	2.40	30.8	0.01			252
1	255		7.75	7.72	34.086	26.597	147.6	0.523	2.09	31.2	45.0	2.40	30.9	0.01			257
	300	ISL	6.99	6.96	34.084	26.703	137.8	0.588	1.76	25.9	53.5	2.59	33.6	0.01			**302**
1	305		6.92	6.89	34.086	26.714	136.8	0.594	1.70	24.9	54.6	2.62	34.0	0.01			**307**
1	358		6.47	6.44	34.135	26.813	127.9	0.665	1.06	15.4	64.7	2.88	37.0	0.00			**360**
	400	ISL	6.38	6.34	34.202	26.878	122.3	0.717	0.72	10.4	69.3	3.02	38.0	0.00			**403**
1	418		6.37	6.33	34.230	26.902	120.3	0.739	0.62	9.0	70.8	3.06	38.2	0.00			**421**
1	482		6.21	6.17	34.283	26.965	115.1	0.814	0.41	5.9	75.7	3.15	39.1	0.00			**485**
	500	ISL	6.15	6.11	34.294	26.982	113.8	0.835	0.38	5.5	77.0	3.17	39.3	0.00			**504**
1	548		5.93	5.88	34.312	27.024	110.2	0.889	0.33	4.7	81.1	3.22	40.0	0.00			**552**
	600	ISL	5.58	5.53	34.303	27.060	107.0	0.945	0.28	4.0	88.0	3.26	41.1	0.00			**604**
1	612		5.50	5.45	34.303	27.070	106.1	0.958	0.27	3.8	89.6	3.27	41.3	0.00			**617**
1	668		5.25	5.19	34.358	27.144	99.5	1.015	0.26	3.7	93.5	3.30	42.0	0.00			**673**
	700	ISL	5.06	5.00	34.375	27.180	96.2	1.047	0.26	3.7	96.9	3.32	42.2	0.01			**705**
1	706		5.03	4.97	34.377	27.185	95.7	1.053	0.26	3.7	97.7	3.32	42.2	0.01			**711**
1	741		4.90	4.84	34.387	27.208	93.8	1.086	0.28	3.9	103.5	3.35	41.9	0.05			**747**

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 80 57.5

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 14.0 N	120 58.6 W	28/04/89	1225 UTC	949 M	320	22 KT			1016.6 MB	14.2 C	13.0 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 D.BAR
	0	ISL	14.68	14.68	33.293	24.726	320.9	0.000	6.12	105.8	2.5	0.45	0.1	0.00	0.29	0.08	0
1	1		14.68	14.68	33.293	24.726	320.9	0.003	6.12	105.8	2.5	0.45	0.1	0.00	0.29	0.08	1
	10	ISL	14.67	14.67	33.295	24.730	320.8	0.032	6.10	105.4	2.4	0.44	0.1	0.00	0.29	0.07	10
1	12		14.67	14.67	33.295	24.730	320.8	0.038	6.10	105.4	2.4	0.44	0.1	0.00	0.29	0.07	12
	20	ISL	14.65	14.65	33.295	24.734	320.6	0.064	6.12	105.7	2.3	0.44	0.1	0.00	0.29	0.08	20
1	21		14.65	14.65	33.295	24.734	320.7	0.067	6.12	105.7	2.3	0.44	0.1	0.00	0.29	0.08	21
	30	ISL	13.75	13.75	33.285	24.915	303.7	0.095	6.03	102.3	3.7	0.57	2.2	0.02	0.39	0.15	30
	50	ISL	11.30	11.29	33.344	25.434	254.7	0.151	5.62	90.5	8.6	0.98	8.6	0.06	0.63	0.32	50
1	51		11.16	11.15	33.351	25.465	251.8	0.154	5.59	89.8	8.9	1.00	9.0	0.06	0.64	0.33	51
	75	ISL	10.92	10.91	33.651	25.741	226.0	0.211	4.71	75.4	15.0	1.41	14.5	0.31	0.42	0.27	75
1	100		10.66	10.65	33.802 A	25.905	211.0	0.266	3.73	59.4	21.4	1.75	19.2	0.50	0.08	0.14	101
	125	ISL	9.91	9.90	33.909	26.118	191.2	0.316	3.07	48.1	27.0	1.96	23.3	0.28	0.05	0.14	126
1	150		9.15	9.13	33.982	26.300	174.3	0.362	2.57	39.6	32.1	2.10	26.4	0.01	0.02	0.13	151
1	200		8.56	8.54	34.123	26.504	155.7	0.444	1.95	29.7	40.4	2.37	29.4	0.01	0.01	0.11	201
1	249		8.06	8.03	34.139	26.593	148.0	0.519	1.73	26.1	45.4	2.50	31.1	0.00			250
	250	ISL	8.05	8.02	34.139	26.594	147.9	0.520	1.72	25.9	45.6	2.50	31.2	0.00			252
1	299		7.43	7.40	34.163	26.704	138.0	0.590	1.35	20.0	53.6	2.68	33.6	0.00			**301**
	300	ISL	7.43	7.40	34.164	26.704	137.9	0.592	1.34	19.9	53.8	2.68	33.6	0.00			**302**
1	349		7.28	7.25	34.237	26.784	131.2	0.657	0.86	12.7	60.1	2.88	35.1	0.00			**351**
1	399		7.04	7.00	34.255	26.832	127.3	0.722	0.67	9.9	63.8	2.97	36.1	0.00			**402**
	400	ISL	7.03	6.99	34.255	26.833	127.2	0.723	0.67	9.9	63.9	2.97	36.1	0.00			**403**
1	449		6.52	6.48	34.263	26.909	120.3	0.784	0.52	7.6	70.9	3.07	37.9	0.01			**452**
1	497		6.04	6.00	34.284	26.988	113.0	0.840	0.36	5.2	78.8	3.19	39.7	0.00			**500**
	500	ISL	6.02	5.98	34.286	26.992	112.7	0.843	0.35	5.0	79.2	3.19	39.8	0.00			**503**
1	546		5.81	5.76	34.317	27.043	108.2	0.894	0.29	4.1	83.6	3.23	40.5	0.00			**550**
	600	ISL	5.63	5.58	34.333	27.078	105.4	0.952	0.28	4.0	87.0	3.24	40.9	0.00			**604**
1	645		5.50	5.45	34.342	27.101	103.6	0.999	0.28	4.0	89.4	3.25	41.2	0.00			**650**
	700	ISL	5.28	5.22	34.364	27.146	99.8	1.055	0.26	3.7	93.7	3.27	41.7	0.00			**705**
1	745		5.10	5.04	34.381	27.180	96.8	1.099	0.26	3.7	97.2	3.29	42.1	0.00			**751**
1	792		4.92	4.86	34.391	27.209	94.3	1.144	0.28	3.9	100.4	3.34	42.5	0.01			**798**
	800	ISL	4.86	4.79	34.396	27.220	93.2	1.151	0.29	4.1	101.9	3.34	42.6	0.01			**806**
1	842		4.51	4.44	34.425	27.282	87.2	1.189	0.35	4.9	109.9	3.31	43.0	0.02			**849**
1	891		4.23	4.16	34.449	27.331	82.5	1.231	0.44	6.1	115.0	3.32	43.3	0.00			**898**
1	940				34.473				0.54		121.2	3.32	43.7	0.00			**949**

A) AN ERROR OF -0.01 IN CONDUCTIVITY RATIO. 0.391 SALINITY, HAS BEEN ASSUMED FOR THIS VALUE.

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 9.1 N	121 9.0 W	28/04/89	1417 UTC	2171 M	320	21 KT	320 03 05	1	1016.9 MB	14.7 C	13.4 C	1/8	CI

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 D.BAR
	0	ISL	14.81	14.81	33.285	24.692	324.1	0.000	6.06	105.0	2.8	0.44	0.0	0.00	0.20	0.05	0
1	2		14.81	14.81	33.285	24.692	324.2	0.006	6.06	105.0	2.8	0.44	0.0	0.00	0.20	0.05	2
	10	ISL	14.79	14.79	33.283	24.695	324.1	0.032	6.07	105.1	2.7	0.45	0.0	0.00	0.19	0.05	10
1	11		14.79	14.79	33.283	24.695	324.1	0.036	6.07	105.1	2.7	0.45	0.0	0.00	0.19	0.05	11
	20	ISL	14.68	14.68	33.282	24.718	322.2	0.065	6.13	105.9	2.5	0.43	0.0	0.00	0.22	0.06	20
1	21		14.67	14.67	33.282	24.720	322.0	0.068	6.14	106.1	2.5	0.43	0.0	0.00	0.22	0.06	21
	30	ISL	13.69	13.69	33.273	24.918	303.4	0.096	6.53	110.6	3.3	0.46	0.1	0.01	0.55	0.19	30
1	31		13.55	13.55	33.274	24.947	300.6	0.099	6.57	110.9	3.4	0.46	0.1	0.01	0.61	0.21	31
1	40		12.38	12.37	33.314	25.209	275.9	0.125	6.49	107.0	4.6	0.61	2.3	0.06	1.36	0.50	40
	50	ISL	11.71	11.70	33.396	25.399	258.0	0.152	5.88	95.6	7.6	0.89	7.1	0.19	1.21	0.49	50
1	51		11.68	11.67	33.405	25.412	256.8	0.154	5.82	94.6	7.9	0.92	7.5	0.21	1.20	0.49	51
1	59		11.64	11.63	33.465	25.466	251.9	0.175	5.71	92.7	9.0	1.01	8.8	0.30	0.86	0.36	59
1	69		11.75	11.74	33.637	25.580	241.4	0.199	5.61	91.4	11.9	1.18	11.0	0.98	0.33	0.26	69
	75	ISL	11.68	11.67	33.667	25.616	238.0	0.214	5.54	90.2	13.0	1.24	12.2	0.85	0.18	0.21	75
1	84		11.39	11.38	33.678	25.678	232.3	0.235	5.27	85.2	14.8	1.34	14.2	0.43	0.09	0.15	84
1	98		10.56	10.55	33.755	25.886	212.7	0.266	4.15	66.0	20.4	1.64	19.1	0.22	0.07	0.13	98
	100	ISL	10.48	10.47	33.771	25.913	210.3	0.270	3.98	63.1	21.2	1.69	19.8	0.22	0.07	0.13	101
1	117		9.97	9.96	33.899	26.100	192.8	0.305	2.81	44.1	27.4	2.01	24.4	0.24	0.05	0.19	118
	125	ISL	9.78	9.77	33.929	26.155	187.6	0.320	2.71	42.4	29.0	2.04	25.3	0.18	0.05	0.22	126
1	143		9.42	9.40	33.973	26.249	179.0	0.353	2.49	38.6	31.5	2.12	26.3	0.02	0.04	0.26	144
	150	ISL	9.28	9.26	33.995	26.289	175.3	0.365	2.40	37.1	32.7	2.16	26.8	0.02	0.04	0.25	151
1	174		8.88	8.86	34.062	26.406	164.6	0.406	2.11	32.4	36.8	2.27	28.4	0.01	0.02	0.17	175
	200	ISL	8.60	8.58	34.106	26.484	157.6	0.448	1.92	29.3	39.9	2.36	29.6	0.01	0.01	0.11	201
1	204		8.56	8.54	34.111	26.494	156.7	0.454	1.89	28.8	40.4	2.37	29.8	0.01	0.01	0.10	205
1	232		8.31	8.29	34.152	26.565	150.4	0.497	1.64	24.8	44.2	2.48	31.0	0.01			233
	250	ISL	8.20	8.17	34.166	26.593	148.1	0.524	1.54	23.3	45.8	2.53	31.5	0.01			252
1	271		8.09	8.06	34.176	26.618	146.1	0.555	1.45	21.9	47.4	2.58	32.0	0.01			273
	300	ISL	7.93	7.90	34.190	26.653	143.2	0.597	1.31	19.7	49.7	2.65	32.8	0.01			302
1	327		7.76	7.73	34.203	26.688	140.2	0.635	1.18	17.7	52.1	2.72	33.5	0.01			329
1	387		7.28	7.24	34.233	26.781	132.1	0.717	0.86	12.7	59.5	2.87	35.4	0.01			390
	400	ISL	7.15	7.11	34.240	26.805	129.9	0.734	0.79	11.7	61.5	2.91	35.9	0.01			403
1	450		6.66	6.62	34.266	26.892	122.0	0.797	0.55	8.0	69.0	3.04	37.7	0.01			453
	500	ISL	6.27	6.23	34.288	26.961	115.8	0.856	0.41	5.9	74.7	3.12	39.0	0.01			503
1	514		6.18	6.13	34.293	26.977	114.4	0.872	0.39	5.6	76.0	3.14	39.3	0.01			518
2	591		5.85	5.80	34.309	27.032	109.9	0.959	0.31	4.4	80.6	3.20	40.3	0.00			595
	600	ISL	5.79	5.74	34.314	27.043	108.9	0.969	0.30	4.3	81.7	3.21	40.4	0.00			604
3	666		5.36	5.30	34.351	27.125	101.4	1.038	0.27	3.8	90.7	3.27	41.4	0.00			671
	700	ISL	5.17	5.11	34.367	27.161	98.2	1.072	0.27	3.8	94.4	3.29	42.0	0.00			705
3	740		4.96	4.90	34.381	27.196	95.0	1.110	0.27	3.8	98.4	3.31	42.6	0.00			746
	800	ISL	4.63	4.57	34.386	27.237	91.1	1.166	0.28	3.9	104.6	3.33	43.4	0.00			806
3	815		4.56	4.50	34.388	27.247	90.3	1.180	0.28	3.9	106.0	3.33	43.6	0.00			821
3	889		4.34	4.27	34.429	27.304	85.3	1.245	0.35	4.8	111.0	3.34	43.8	0.00			896
	900	ISL	4.30	4.23	34.433	27.311	84.6	1.254	0.36	5.0	111.9	3.34	43.8	0.00			907
3	963		4.09	4.02	34.449	27.346	81.5	1.307	0.42	5.8	116.6	3.33	43.9	0.00			971
	1000	ISL	4.01	3.93	34.455	27.360	80.4	1.336	0.46	6.3	118.7	3.33	44.0	0.00			1008
3	1037		3.94	3.86	34.460	27.371	79.5	1.366	0.50	6.8	120.4	3.32	44.1	0.00			1046
	1100	ISL	3.81	3.73	34.473	27.395	77.5	1.415	0.57	7.8	122.6	3.31	44.1	0.00			1110
3	1111		3.79	3.71	34.475	27.399	77.2	1.424	0.58	7.9	123.0	3.31	44.1	0.00			1121
3	1184		3.56	3.47	34.493	27.436	73.7	1.479	0.67	9.1		3.28	43.9	0.01			1195
	1200	ISL	3.51	3.42	34.497	27.444	72.9	1.491	0.69	9.3		3.28	43.9	0.01			1211
3	1257		3.35	3.26	34.509	27.469	70.5	1.532	0.75	10.1		3.26	44.0	0.00			1269
	1300	ISL	3.25	3.16	34.516	27.484	69.1	1.562	0.84	11.3		3.24	43.8	0.00			1312
3	1328		3.19	3.09	34.520	27.493	68.3	1.581	0.89	11.9		3.23	43.7	0.00			1340
3	1400		3.05	2.95	34.533	27.517	66.2	1.629	0.95	12.7		3.21	43.5	0.00			1413
3	1471		2.89	2.78	34.545	27.541	63.8	1.675	1.07	14.2		3.19	43.4	0.01			1485
	1500	ISL	2.83	2.72	34.549	27.550	63.0	1.694	1.09	14.5		3.19	43.3	0.01			1515
3	1539		2.76	2.65	34.555	27.561	62.0	1.718	1.11	14.7		3.19	43.2	0.02			1554

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 49.0 N	121 50.6 W	28/04/89	2233 UTC	3733 M	310	17 KT	330 04 06	1	1017.0 MB	16.5 C	14.7 C	1/8	CI

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 D.BAR
1	0		14.15	14.15	33.475	24.978	296.8	0.000	6.49	111.1	5.4	0.59	1.9	0.05	1.47	0.29	0
1	10		14.06	14.06	33.470	24.993	295.7	0.030	6.51	111.2	6.6	0.72	2.4	0.05	1.31	0.28	10
	20	ISL	13.96	13.96	33.454	25.002	295.1	0.059	6.44	109.8	5.1	0.65	2.0	0.06	1.07	0.26	20
1	21		13.95	13.95	33.452	25.003	295.1	0.062	6.43	109.6	4.9	0.64	1.9	0.06	1.05	0.26	21
1	30		13.91	13.91	33.454	25.013	294.4	0.089	6.41	109.2	4.6	0.59	1.8	0.06	1.04	0.31	30
1	40		13.10	13.09	33.549	25.251	272.0	0.117	6.07	101.7	6.6	0.76	4.9	0.15	0.99	0.43	40
1	50		11.99	11.98	33.587	25.495	248.9	0.143	5.73	93.8	9.2	1.07	8.8	0.49	0.59	0.45	50
1	60		11.39	11.38	33.636	25.645	234.9	0.167	5.13	82.9	14.1	1.31	13.1	0.65	0.22	0.26	60
1	70		11.16	11.15	33.693	25.731	226.9	0.190	4.79	77.1	16.1	1.43	15.4	0.85	0.20	0.25	70
	75	ISL	10.75	10.74	33.671	25.787	221.7	0.202	4.53	72.3	17.3	1.49	16.9	0.56	0.15	0.22	75
1	83		10.06	10.05	33.642	25.883	212.6	0.219			19.5	1.59	19.3	0.03	0.06	0.16	83
1	98		9.69	9.68	33.773	26.048	197.2	0.250	3.52	54.9	24.1	1.77	22.2	0.01	0.05	0.11	99
	100	ISL	9.63	9.62	33.778	26.062	195.9	0.254	3.52	54.8	24.3	1.77	22.4	0.01	0.05	0.10	101
1	119		9.06	9.05	33.800	26.171	185.8	0.290	3.52	54.1	25.8	1.79	23.2	0.02	0.01	0.07	120
	125	ISL	8.92	8.91	33.828	26.215	181.7	0.301	3.48	53.4	26.9	1.81	23.7	0.02	0.01	0.06	126
1	143		8.54	8.53	33.918	26.345	169.6	0.332	3.30	50.2	30.9	1.89	25.3	0.02	0.00	0.05	144
	150	ISL	8.40	8.38	33.943	26.386	165.8	0.344	3.21	48.7	32.6	1.93	25.9	0.02	0.00	0.04	151
1	174		7.98	7.96	34.000	26.494	155.9	0.383	2.95	44.3	37.6	2.06	27.8	0.01	0.00	0.03	175
	200	ISL	7.69	7.67	34.007	26.542	151.7	0.423	2.90	43.3	40.5	2.12	28.6	0.01	0.00	0.03	201
1	203		7.66	7.64	34.007	26.547	151.3	0.427	2.89	43.1	40.8	2.13	28.7	0.01	0.00	0.03	204
1	232		7.38	7.36	34.027	26.603	146.4	0.470	2.48	36.8	45.8	2.29	30.3	0.01			233
	250	ISL	7.18	7.16	34.038	26.640	143.1	0.497	2.24	33.0	49.4	2.39	31.7	0.01			252
1	274		6.93	6.90	34.053	26.686	138.9	0.530	1.93	28.3	54.1	2.51	33.6	0.01			276
	300	ISL	6.77	6.74	34.078	26.728	135.3	0.566	1.61	23.5	58.1	2.64	35.1	0.01			302
1	328		6.64	6.61	34.104	26.766	132.0	0.603	1.31	19.1	61.8	2.76	36.3	0.01			330
1	387		6.25	6.22	34.133	26.840	125.5	0.679	0.93	13.4	69.0	2.92	38.3	0.00			390
	400	ISL	6.19	6.15	34.150	26.862	123.7	0.696	0.83	12.0	70.8	2.96	38.7	0.00			403
1	451		5.94	5.90	34.220	26.949	115.9	0.757	0.48	6.9	78.2	3.12	40.1	0.00			454
	500	ISL	5.63	5.59	34.262	27.021	109.5	0.812	0.36	5.1	84.8	3.20	41.1	0.00			504
1	518		5.52	5.48	34.278	27.047	107.1	0.831	0.32	4.5	87.2	3.23	41.4	0.00			522

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 29.0 N	122 32.0 W	29/04/89	0405 UTC	3809 M	310	15 KT			1016.5 MB	14.8 C	12.5 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 D.BAR
1	0		15.48	15.48	33.292	24.551	337.5	0.000	5.96	104.7	2.1	0.41	0.2	0.00	0.12	0.04	0
1	10		15.46	15.46	33.291	24.555	337.4	0.034	5.97	104.8	2.1	0.41	0.2	0.00	0.12	0.03	10
1	20		15.25	15.25	33.295	24.605	333.0	0.067	6.03	105.4	2.1	0.40	0.2	0.00	0.16	0.04	20
1	30		13.36	13.36	33.317	25.019	293.8	0.099	6.76	113.7	3.5	0.46	0.2	0.00	0.50	0.20	30
1	40		11.96	11.95	33.323	25.296	267.6	0.127	6.14	100.3	6.3	0.74	4.5	0.32	1.15	0.45	40
1	50		11.58	11.57	33.382	25.412	256.7	0.153	5.76	93.4	8.1	0.91	8.0	0.03	0.54	0.23	50
1	60		11.18	11.17	33.413	25.509	247.7	0.178	5.51	88.6	9.7	1.03	10.1	0.02	0.27	0.19	60
1	69		10.70	10.69	33.481	25.648	234.7	0.200	5.06	80.5	12.9	1.22	13.6	0.01	0.10	0.11	69
	75	ISL	10.40	10.39	33.492	25.708	229.1	0.214	4.84	76.5	14.5	1.32	15.1	0.01	0.08	0.10	75
1	83		10.06	10.05	33.498	25.771	223.2	0.232	4.60	72.2	16.3	1.42	16.6	0.01	0.06	0.08	83
1	98		9.74	9.73	33.565	25.877	213.4	0.265	4.12	64.2	19.3	1.55	19.3	0.01	0.04	0.08	98
	100	ISL	9.68	9.67	33.580	25.899	211.4	0.269	4.05	63.1	19.9	1.57	19.7	0.01	0.04	0.08	100
1	118		9.16	9.15	33.732	26.102	192.4	0.305	3.48	53.6	25.1	1.80	23.2	0.01	0.01	0.06	119
	125	ISL	9.06	9.05	33.791	26.164	186.6	0.318	3.26	50.1	26.9	1.87	24.3	0.01	0.01	0.06	126
1	143		8.87	8.85	33.915	26.292	174.8	0.351	2.83	43.4	30.6	2.01	26.4	0.01	0.01	0.05	144
	150	ISL	8.76	8.74	33.935	26.325	171.8	0.363	2.83	43.3	31.5	2.02	26.7	0.01	0.01	0.05	151
1	173		8.39	8.37	33.963	26.404	164.6	0.402	2.85	43.2	34.0	2.06	27.3	0.01	0.01	0.05	174
	200	ISL	7.98	7.96	33.997	26.492	156.5	0.445	2.80	42.1	37.8	2.12	28.3	0.01	0.00	0.04	201
1	204		7.91	7.89	34.000	26.505	155.4	0.451	2.79	41.8	38.5	2.13	28.5	0.01	0.00	0.04	205
1	234		7.32	7.30	34.004	26.593	147.3	0.497	2.67	39.5	44.4	2.25	30.3	0.01			235
	250	ISL	7.15	7.13	34.014	26.625	144.4	0.520	2.47	36.4	47.2	2.33	31.4	0.01			251
1	273		6.98	6.95	34.031	26.662	141.2	0.553	2.12	31.1	51.0	2.45	33.0	0.01			275
	300	ISL	6.75	6.72	34.051	26.709	137.0	0.591	1.79	26.1	55.5	2.58	34.6	0.01			302
1	327		6.51	6.48	34.070	26.756	132.8	0.627	1.49	21.6	60.1	2.70	36.1	0.01			329
1	386		5.91	5.88	34.108	26.863	123.0	0.702	0.97	13.9	71.9	2.93	39.1	0.01			389
	400	ISL	5.80	5.77	34.117	26.884	121.1	0.720	0.88	12.6	74.2	2.97	39.6	0.01			403
1	450		5.46	5.42	34.156	26.957	114.6	0.778	0.62	8.8	81.6	3.10	41.0	0.00			453
	500	ISL	5.23	5.19	34.207	27.025	108.6	0.834	0.43	6.1	88.2	3.18	42.0	0.00			503
1	516		5.15	5.11	34.224	27.048	106.5	0.851	0.37	5.2	90.3	3.21	42.3	0.00			520

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 9.0 N	123 13.A W	29/04/89	0930 UTC	4305 M	280	10 KT			1017.1 MB	14.2 C	12.1 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 D.BAR
	0	ISL	15.59	15.59	33.027	24.323	359.3	0.000	5.90	103.7	2.9	0.44	0.1	0.00	0.08	0.01	0
1	1		15.59	15.59	33.027	24.323	359.3	0.004	5.90	103.7	2.9	0.44	0.1	0.00	0.08	0.01	1
	10	ISL	15.55	15.55	33.025	24.331	358.8	0.036	5.89	103.4	2.7	0.44	0.1	0.00	0.08	0.02	10
1	11		15.55	15.55	33.025	24.331	358.8	0.039	5.89	103.4	2.7	0.44	0.1	0.00	0.08	0.02	11
	20	ISL	15.09	15.09	33.143	24.523	340.8	0.071	6.05	105.3	2.4	0.41	0.1	0.00	0.09	0.03	20
1	22		14.93	14.93	33.159	24.570	336.4	0.078	6.08	105.5	2.3	0.41	0.1	0.00	0.10	0.03	22
1	30		14.07	14.07	33.037	24.657	328.2	0.104	6.60	112.5	2.4	0.43	0.1	0.00	0.13	0.03	30
1	40		12.78	12.77	32.942	24.844	310.7	0.136	6.55	108.6	2.9	0.46	0.1	0.00	0.16	0.06	40
1	50		12.00	11.99	32.912	24.969	298.9	0.167	6.63	108.1	3.1	0.49	0.1	0.00	0.30	0.12	50
1	60		11.41	11.40	32.942	25.102	286.5	0.196	6.26	100.8	4.3	0.62	2.1	0.16	1.01	0.51	60
1	70		11.25	11.24	33.024	25.194	277.9	0.224	6.02	96.7	5.5	0.76	4.3	0.17	0.56	0.32	70
	75	ISL	11.12	11.11	33.074	25.257	272.1	0.238	5.90	94.5	6.3	0.83	5.6	0.12	0.36	0.23	75
1	83		10.89	10.88	33.153	25.359	262.5	0.259	5.72	91.2	7.7	0.92	7.6	0.02	0.11	0.12	83
1	98		10.49	10.48	33.249	25.504	249.0	0.298	5.54	87.6	9.9	1.06	10.0	0.01	0.05	0.08	98
	100	ISL	10.42	10.41	33.265	25.529	246.7	0.303	5.46	86.2	10.4	1.09	10.5	0.01	0.05	0.07	100
1	117		9.76	9.75	33.418	25.759	225.0	0.343	4.64	72.3	15.4	1.36	15.6	0.01	0.02	0.04	118
	125	ISL	9.51	9.50	33.511	25.873	214.3	0.360	4.33	67.1	18.2	1.49	17.8	0.01	0.01	0.04	126
1	142		9.05	9.03	33.697	26.093	193.7	0.395	3.87	59.5	23.5	1.70	21.5	0.00	0.01	0.03	143
	150	ISL	8.87	8.85	33.750	26.163	187.2	0.410	3.85	58.9	25.0	1.74	22.3	0.00	0.01	0.03	151
1	170		8.48	8.46	33.845	26.298	174.6	0.446	3.79	57.5	27.9	1.79	23.3	0.00	0.00	0.03	171
1	200		8.05	8.03	33.958	26.451	160.5	0.497	3.73	56.1	32.3	1.84	24.4	0.00	0.00	0.02	201
1	228		7.77	7.75	33.986	26.515	154.8	0.541	3.35	50.1	36.9	2.01	26.6	0.00			229
	250	ISL	7.44	7.42	33.989	26.565	150.3	0.574	3.18	47.2	40.8	2.10	28.1	0.00			251
1	267		7.16	7.13	33.987	26.603	146.8	0.600	3.06	45.1	44.0	2.16	29.2	0.00			269
	300	ISL	6.66	6.63	33.990	26.673	140.4	0.647	2.62	38.2	51.0	2.36	31.9	0.00			302
1	323		6.35	6.32	33.999	26.721	136.0	0.679	2.26	32.7	56.2	2.51	33.8	0.00			325
1	379		5.84	5.81	34.056	26.831	125.9	0.752	1.42	20.3	68.9	2.82	37.5	0.00			381
	400	ISL	5.62	5.59	34.067	26.867	122.6	0.778	1.22	17.3	73.3	2.90	38.7	0.00			403
1	443		5.31	5.27	34.102	26.932	116.7	0.830	0.90	12.7	80.4	3.03	40.6	0.00			446
	500	ISL	5.47	5.43	34.216	27.004	110.8	0.895	0.47	6.7	83.6	3.17	41.2	0.00			503
1	510		5.50	5.46	34.236	27.016	109.8	0.906	0.40	5.7	84.2	3.20	41.3	0.00			513

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 16.4 N	120 1.5 W	27/04/89	2242 UTC	596 M	270	23 KT	280 05 08	1	1016.9 MB	15.1 C	13.0 C	1/8	CU

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 D.BAR
	0	ISL	12.60	12.60	33.829	25.565	241.0	0.000	5.71	94.9	15.7	1.26	12.3	0.29	1.52	0.45	0
1	1	A	12.60	12.60	33.829	25.565	241.0	0.002	5.71	94.9	15.7	1.26	12.3	0.29	1.52	0.45	1
	10	ISL	12.47	12.47	33.832	25.593	238.6	0.024	5.65	93.6	16.3	1.27	12.8	0.30	1.56	0.58	10
1	11		12.46	12.46	33.833	25.596	238.4	0.026	5.64	93.4	16.4	1.27	12.9	0.30	1.57	0.60	11
	20	ISL	11.90	11.90	33.846	25.713	227.5	0.047	5.32	87.1	21.1	1.55	14.5	0.36	1.71	0.74	20
1	25		11.43	11.43	33.863	25.813	218.0	0.058	4.92	79.7	49.1	U	16.2	0.43	1.78	0.77	25
	30	ISL	10.72	10.72	33.902	25.971	203.1	0.069	3.99	63.7	26.8	1.88	19.7	0.61	1.45	0.65	30
1	40		9.44	9.44	33.998	26.264	175.5	0.088	2.22	34.5	32.8	2.23	26.3	0.81	0.64	0.37	40
	50	ISL	9.23	9.22	34.070	26.354	167.1	0.105	2.12	32.8	34.9	2.31	27.5	0.35	0.22	0.28	50
1	55		9.12	9.11	34.064	26.367	165.9	0.113	2.07	31.9	35.6	2.32	28.1	0.07	0.09	0.27	55
1	67		8.98	8.97													67
	75	ISL	8.90	8.89	34.092	26.424	160.9	0.146	1.90	29.2	38.5	2.36	29.2	0.05	0.06	0.26	75
1	82		8.83	8.82	34.094	26.437	159.8	0.157	1.85	28.4	39.3	2.37	29.4	0.04	0.05	0.26	82
1	96		8.71	8.70	34.107	26.466	157.3	0.180	1.74	26.6	40.8	2.41	29.8	0.04	0.03	0.25	97
	100	ISL	8.68	8.67	34.110	26.474	156.7	0.186	1.71	26.1	41.1	2.42	29.9	0.04	0.03	0.25	101
1	110		8.62	8.61	34.119	26.490	155.3	0.201	1.65	25.2	41.9	2.45	30.2	0.04	0.04	0.24	111
	125	ISL	8.54	8.53	34.126	26.508	153.9	0.225	1.55	23.6	43.4	2.48	30.6	0.04	0.04	0.26	126
1	133		8.49	8.48	34.130	26.519	153.0	0.237	1.50	22.8	44.2	2.50	30.8	0.04	0.04	0.27	134
	150	ISL	8.37	8.35	34.142	26.547	150.6	0.263	1.43	21.7	46.0	2.54	31.3	0.03	0.03	0.24	151
1	161		8.29	8.27	34.149	26.565	149.1	0.279	1.39	21.1	47.1	2.57	31.6	0.03	0.03	0.22	162
1	190		8.12	8.10	34.158	26.598	146.5	0.322	1.20	18.1	50.1	2.65	32.2	0.02	0.03	0.19	191
	200	ISL	8.06	8.04	34.161	26.609	145.5	0.337	1.16	17.5	51.1	2.67	32.5	0.02	0.03	0.18	201
1	224		7.90	7.88	34.169	26.640	143.0	0.371	1.07	16.1	53.4	2.73	33.1	0.02	0.03	0.15	225
	250	ISL	7.73	7.71	34.177	26.671	140.4	0.408	0.97	14.5	55.8	2.79	33.7	0.02	0.02	0.15	252
1	270		7.60	7.57	34.183	26.695	138.5	0.436	0.89	13.3	57.7	2.84	34.0	0.02	0.02	0.15	272
	300	ISL	7.44	7.41	34.192	26.725	136.0	0.477	0.80	11.9	60.4	2.90	34.3	0.02			302
1	315		7.35	7.32	34.197	26.742	134.6	0.497	0.76	11.3	61.9	2.93	34.5	0.02			317
1	358		7.01	6.98	34.208	26.798	129.7	0.554	0.58	8.5	67.8	3.06	35.1	0.02			360
1	394		6.85	6.81	34.215	26.826	127.5	0.601	0.47	6.9	72.3	3.13	35.1	0.02			397
	400	ISL	6.80	6.76	34.216	26.834	126.9	0.608	0.45	6.6	73.7	3.15	34.9	0.02			403
1	427		6.59	6.55	34.222	26.867	124.0	0.642	0.33	4.8	80.2	3.26	34.0	0.02			430
1	454		6.49	6.45	34.230	26.886	122.4	0.675	0.22	3.2	84.7	3.32	33.8	0.02			457
1	469		6.43	6.39	34.235	26.898	121.4	0.694	0.17	2.5	87.7	3.38	33.1	0.02			472
1	487		6.36	6.32	34.237	26.909	120.6	0.715	0.13	1.9	91.5	3.43	31.8	0.02			491
	500	ISL	6.33	6.28	34.245	26.920	119.8	0.731	0.10	1.4	95.6	3.52	30.0	0.01			504
1	504		6.32	6.27	34.247	26.923	119.6	0.736	0.09	1.3	96.7	3.55	29.5	0.01			508
1	517		6.30	6.25	34.244	26.923	119.7	0.751	0.09	1.3	98.0	3.57	29.1	0.01			521

A) SANTA BARBARA BASIN STATION.

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 13.5 N	119 24.7 W	27/04/89	1712 UTC	30 M	290	01 KT	270 01 06	0	1019.9 MB	13.7 C	11.8 C	0/8	

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 D.BAR
	0	ISL	12.90	12.90	33.735	25.433	253.5	0.000	5.65	94.4	13.3	1.15	11.1	0.23	1.34	0.29	0
1	1		12.90	12.90	33.735	25.433	253.6	0.003	5.65	94.4	13.3	1.15	11.1	0.23	1.34	0.29	1
1	6		12.67	12.67	33.733	25.477	249.5	0.015	5.63	93.6	13.4	1.14	11.1	0.23	1.51	0.39	6
	10	ISL	12.59	12.59	33.734	25.494	248.1	0.025	5.56	92.3	13.7	1.17	11.4	0.24	1.50	0.44	10
1	15		12.43	12.43	33.737	25.527	245.0	0.037	5.47	90.5	14.0	1.20	11.8	0.25	1.49	0.47	15
	20	ISL	11.87	11.87	33.748	25.642	234.2	0.049	4.79	78.3	16.2	1.38	14.3	0.30	1.24	0.49	20
1	26		11.20	11.20	33.766	25.780	221.2	0.063	3.98	64.1	18.9	1.59	17.2	0.37	0.93	0.52	26

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 10.7 N	119 30.5 W	27/04/89	1503 UTC	163 M	080	06 KT	270 01 06	0	1019.3 MB	13.4 C	12.5 C	0/8

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 D.BAR
	0	ISL	12.49	12.49	33.722	25.504	246.9	0.000	5.59	92.6	14.9	1.17	11.2	0.24	1.28	0.43	0
1	1		12.49	12.49	33.722	25.504	246.9	0.002	5.59	92.6	14.9	1.17	11.2	0.24	1.28	0.43	1
1	10		12.36	12.36	33.730	25.535	244.1	0.025	5.49	90.7	14.6	1.19	11.6	0.25	1.16	0.45	10
	20	ISL	12.10	12.10	33.743	25.595	238.7	0.049	5.17	84.9	14.3	1.29	12.2	0.25	0.61	0.38	20
1	21		12.08	12.08	33.745	25.600	238.2	0.051	5.14	84.4	14.3	1.30	12.3	0.25	0.57	0.37	21
1	30		12.03	12.03	33.783	25.640	234.7	0.072	5.02	82.4	15.9	1.35	13.5	0.29	0.87	0.40	30
1	41		11.86	11.85	33.787	25.675	231.6	0.098	4.87	79.6	16.7	1.41	14.3	0.30	0.66	0.33	41
	50	ISL	11.35	11.34	33.794	25.775	222.3	0.118	4.33	70.0	18.9	1.59	16.3	0.36	0.60	0.30	50
1	51		11.28	11.27	33.795	25.788	221.0	0.121	4.25	68.6	19.2	1.61	16.6	0.37	0.59	0.29	51
1	61		10.46	10.45	33.825	25.957	205.1	0.142	3.11	49.3	24.2	1.87	21.4	0.41	0.22	0.15	61
1	70		10.00	9.99	33.886	26.084	193.2	0.160	2.75	43.2	27.0	1.97	23.7	0.24	0.07	0.15	70
	75	ISL	9.85	9.84	33.912	26.130	189.0	0.169	2.66	41.7	28.2	2.01	24.4	0.23	0.06	0.14	75
1	84		9.68	9.67	33.948	26.186	183.8	0.186	2.58	40.3	29.8	2.05	25.0	0.21	0.04	0.12	84
	100	ISL	9.48	9.47	33.986	26.249	178.2	0.215	2.46	38.2	31.6	2.11	25.8	0.18	0.03	0.13	101
1	105		9.43	9.42	33.994	26.263	176.9	0.224	2.43	37.7	32.0	2.13	26.0	0.17	0.03	0.14	106
	125	ISL	9.21	9.20	34.035	26.332	170.8	0.259	2.27	35.1	34.3	2.19	26.8	0.15	0.02	0.15	126
1	131		9.15	9.14	34.047	26.350	169.1	0.269	2.22	34.3	35.0	2.21	27.1	0.14	0.02	0.16	132
	150	ISL	8.94	8.92	34.083	26.412	163.5	0.301	2.10	32.3	37.7	2.30	28.0	0.22	0.02	0.20	151
1	156		8.87	8.85	34.094	26.432	161.8	0.310	2.06	31.6	38.5	2.33	28.3	0.24	0.02	0.21	157

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 52.7 N	120 8.0 W	27/04/89	0854 UTC	99 M	310	20 KT			1019.8 MB	13.0 C	12.0 C	

CAST	DEPTH M		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ML/L	OXY PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
	0	ISL	11.34	11.34	33.759	25.748	223.6	0.000	4.15	67.1	18.7	1.48	16.2	0.23	0.63	0.36	0
1	1		11.34	11.34	33.759	25.748	223.6	0.002	4.15	67.1	18.7	1.48	16.2	0.23	0.63	0.36	1
	10	ISL	11.32	11.32	33.755	25.749	223.8	0.022	4.13	66.7	18.8	1.48	16.3	0.24	0.68	0.36	10
1	11		11.32	11.32	33.755	25.749	223.8	0.025	4.13	66.7	18.8	1.48	16.3	0.24	0.69	0.36	11
	20	ISL	11.36	11.36	33.752	25.740	224.9	0.045	4.14	67.0	18.7	1.47	16.2	0.24	0.66	0.33	20
1	21		11.36	11.36	33.752	25.740	224.9	0.047	4.14	67.0	18.7	1.47	16.2	0.24	0.66	0.33	21
	30	ISL	11.35	11.35	33.751	25.741	225.0	0.067	4.14	66.9	18.6	1.48	16.2	0.24	0.75	0.39	30
1	31		11.35	11.35	33.751	25.741	225.1	0.070	4.14	66.9	18.6	1.48	16.2	0.24	0.76	0.40	31
1	41		11.36	11.35	33.749	25.738	225.6	0.092	4.12	66.6	18.5	1.49	16.2	0.24	0.69	0.33	41
	50	ISL	11.30	11.29	33.762	25.759	223.8	0.112	4.08	65.9	19.2	1.51	16.7	0.25	0.70	0.35	50
1	51		11.29	11.28	33.765	25.763	223.4	0.115	4.07	65.7	19.3	1.51	16.8	0.25	0.70	0.35	51
1	61		11.04	11.03	33.80	25.836	216.7	0.137	3.84	61.7	19.9	1.60	18.0	0.24	0.78	0.37	61
	75	ISL	10.46	10.45	33.832	25.963	204.9	0.166	3.32	52.7	24.3	1.78	20.8	0.21	0.39	0.28	75
1	76		10.42	10.41	33.834	25.972	204.1	0.168	3.28	52.0	24.6	1.79	21.0	0.21	0.36	0.27	76

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 44.7 N	120 24.6 W	27/04/89	0520 UTC	1019 M	310	14 KT			1021.0 MB	15.0 C	13.0 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 D.BAR
1	0		13.28	13.28	33.687	25.320	264.3	0.000	6.06	102.0	12.4	0.89	7.6	0.15	2.09	0.63	0
1	10		13.25	13.25	33.685	25.325	264.1	0.026	6.06	102.0	12.4	0.91	7.6	0.15	2.09	0.63	10
1	19		12.88	12.88	33.691	25.404	256.9	0.050	5.68	94.8	13.1	0.99	8.8	0.18	1.96	0.65	19
	20	ISL	12.84	12.84	33.692	25.412	256.1	0.052	5.63	93.9	13.2	1.00	8.9	0.19	1.92	0.64	20
1	30		12.17	12.17	33.704	25.552	243.1	0.077	5.00	82.2	14.5	1.16	11.6	0.28	1.36	0.58	30
1	39		11.04	11.04	33.744	25.792	220.4	0.098	4.02	64.6	19.4	1.52	17.3	0.30	0.57	0.32	39
1	49		10.16	10.15	33.844	26.023	198.5	0.119	3.22	50.8	25.0	1.82	21.9	0.11	0.19	0.20	49
	50	ISL	10.09	10.08	33.846	26.037	197.3	0.121	3.19	50.2	25.3	1.83	22.2	0.10	0.17	0.20	50
1	61		9.54	9.53	33.879	26.155	186.3	0.142	2.94	45.7	28.1	1.95	24.1	0.03	0.05	0.17	61
1	70		9.45	9.44	33.984	26.252	177.3	0.159	2.52	39.1	31.3	2.08	25.6	0.04	0.05	0.21	70
	75	ISL	9.36	9.35	34.008	26.285	174.2	0.167	2.46	38.1	32.4	2.12	26.1	0.04	0.05	0.20	75
1	84		9.20	9.19	34.023	26.323	170.7	0.183	2.36	36.5	33.6	2.17	26.7	0.03	0.04	0.18	84
1	99		9.15	9.14	34.031	26.338	169.6	0.208	2.33	36.0	34.2	2.19	27.0	0.03	0.04	0.19	100
	100	ISL	9.14	9.13	34.032	26.340	169.5	0.210	2.32	35.8	34.3	2.19	27.0	0.03	0.04	0.19	101
1	119		8.97	8.96	34.067	26.395	164.6	0.242	2.16	33.2	36.6	2.26	27.9	0.03	0.03	0.17	120
	125	ISL	8.87	8.86	34.083	26.423	162.0	0.252	2.08	31.9	37.8	2.30	28.3	0.03	0.02	0.16	126
1	144		8.59	8.57	34.131	26.505	154.6	0.282	1.85	28.2	41.3	2.40	29.6	0.05	0.01	0.12	145
	150	ISL	8.57	8.55	34.138	26.513	153.9	0.291	1.81	27.6	41.8	2.41	29.8	0.05	0.01	0.12	151
1	175		8.50	8.48	34.152	26.535	152.2	0.329	1.73	26.3	42.9	2.44	30.1	0.04	0.01	0.10	176
	200	ISL	8.38	8.36	34.157	26.558	150.5	0.367	1.66	25.2	44.2	2.47	30.4	0.03	0.02	0.12	201
1	204		8.36	8.34	34.158	26.562	150.2	0.373	1.65	25.0	44.5	2.48	30.5	0.03	0.02	0.12	205
1	235		8.19	8.17	34.17	26.598	147.4	0.419	1.47	22.2	47.3	2.57	31.4	0.01			236
	250	ISL	8.06	8.03	34.182	26.626	144.8	0.441	1.38	20.8	49.0	2.61	32.0	0.01			252
1	274		7.84	7.81	34.201	26.674	140.6	0.475	1.23	18.4	51.7	2.68	32.9	0.01			276
	300	ISL	7.67	7.64	34.212	26.708	137.8	0.512	1.11	16.6	54.2	2.74	33.6	0.02			302
1	328		7.50	7.47	34.222	26.741	135.1	0.550	0.99	14.7	56.8	2.81	34.2	0.02			330
1	386		7.11	7.07	34.255	26.822	128.1	0.626	0.70	10.3	63.6	2.96	35.9	0.01			389
	400	ISL	7.02	6.98	34.261	26.839	126.6	0.644	0.65	9.6	65.0	2.99	36.2	0.01			403
1	450		6.71	6.67	34.275	26.893	122.0	0.706	0.53	7.7	69.6	3.06	37.4	0.00			453
	500	ISL	6.37	6.32	34.278	26.941	117.9	0.766	0.45	6.5	73.8	3.11	38.6	0.00			504
1	516		6.26	6.21	34.280	26.957	116.5	0.785	0.42	6.1	75.1	3.13	39.0	0.00			520

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 34.7 N	120 45.4 W	27/04/89	0117 UTC	1668 M	290	15 KT	310 04 08	0	1021.0 MB	15.6 C	14.0 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 D.BAR
1	0		14.74	14.74	33.675	25.007	294.0	0.000	6.64	115.2	1.9	0.53	1.7	0.09	1.17	0.20	0
1	9		14.29	14.29	33.660	25.092	286.3	0.026	6.72	115.5	1.8	0.52	1.6	0.09	1.39	0.38	9
	10	ISL	14.11	14.11	33.647	25.120	2 83.6	0.029	6.67	114.2	2.2	0.55	2.0	0.10	1.46	0.41	10
1	19		12.44	12.44	33.546	25.377	259.4	0.053	6.14	101.5	6.4	0.87	6.2	0.21	1.94	0.62	19
	20	ISL	12.34	12.34	33.541	25.392	257.9	0.056	6.10	100.6	6.6	0.89	6.5	0.22	1.93	0.61	20
1	30		11.73	11.73	33.544	25.510	247.0	0.081	5.71	93.0	8.8	1.04	8.9	0.37	1.42	0.55	30
1	40		11.57	11.56	33.651	25.623	236.5	0.105	5.30	86.0	12.2	1.29	11.9	0.49	0.58	0.36	40
1	50		11.22	11.21	33.675	25.706	228.8	0.129	4.82	77.7	14.9	1.38	13.9	0.47	0.43	0.40	50
1	59		10.54	10.53	33.609	25.775	222.4	0.149	4.53	71.9	16.2	1.43	15.9	0.23	0.21	0.25	59
1	69		10.40	10.39	33.760	25.917	209.1	0.171	3.83	60.7	21.5	1.70	19.7	0.50	0.14	0.24	69
	75	ISL	9.99	9.98	33.761	25.988	202.4	0.183	3.72	58.4	22.3	1.71	20.7	0.34	0.08	0.18	75
1	83		9.43	9.42	33.751	26.073	194.5	0.199	3.62	56.1	23.0	1.72	21.7	0.04	0.02	0.10	83
1	99		9.30	9.29	33.925	26.230	179.8	0.229	2.78	43.0	29.5	2.01	25.3	0.01	0.03	0.15	100
	100	ISL	9.30	9.29	33.931	26.235	179.4	0.231	2.75	42.6	29.7	2.02	25.4	0.01	0.03	0.15	101
1	119		9.19	9.18	34.013	26.317	172.0	0.264	2.39	36.9	33.2	2.15	26.7	0.02	0.03	0.18	120
	125	ISL	9.11	9.10	34.034	26.347	169.3	0.274	2.30	35.5	34.4	2.19	27.2	0.02	0.03	0.18	126
1	144		8.83	8.81	34.082	26.429	161.8	0.306	2.08	31.9	37.6	2.30	28.4	0.03	0.02	0.17	145
	150	ISL	8.77	8.75	34.087	26.442	160.7	0.315	2.06	31.5	38.1	2.31	28.5	0.03	0.02	0.16	151
1	174		8.55	8.53	34.100	26.487	156.8	0.353	1.98	30.2	40.0	2.35	29.1	0.02	0.01	0.13	175
	200	ISL	8.19	8.17	34.150	26.581	148.2	0.393	1.64	24.8	45.0	2.50	31.0	0.01	0.01	0.10	201
1	204		8.13	8.11	34.159	26.597	146.8	0.399	1.58	23.8	45.9	2.53	31.3	0.01	0.01	0.09	205
1	232		7.79	7.77	34.200	26.680	139.3	0.439	1.20	18.0	51.4	2.69	33.1	0.01			233
	250	ISL	7.60	7.58	34.212	26.717	136.0	0.464	1.07	16.0	54.2	2.76	33.9	0.01			252
1	271		7.41	7.38	34.220	26.751	133.0	0.492	0.96	14.3	56.9	2.83	34.6	0.01			273
	300	ISL	7.23	7.20	34.236	26.789	129.8	0.530	0.82	12.1	59.8	2.89	35.3	0.00			302
1	326		7.11	7.08	34.249	26.817	127.6	0.564	0.71	10.5	62.1	2.93	35.8	0.00			328
1	384		6.80	6.76	34.277	26.882	122.1	0.636	0.53	7.8	67.3	3.03	37.0	0.00			387
	400	ISL	6.72	6.68	34.281	26.896	121.0	0.655	0.50	7.3	68.7	3.05	37.3	0.00			403
1	448		6.44	6.40	34.292	26.942	117.1	0.713	0.43	6.2	73.5	3.10	38.3	0.00			451
	500	ISL	6.05	6.01	34.321	27.016	110.5	0.772	0.32	4.6	80.0	3.19	39.5	0.00			504
1	516		5.93	5.88	34.331	27.039	108.3	0.789	0.29	4.2	82.0	3.22	39.9	0.00			520

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 14.7 N	121 26.6 W	26/04/89	1839 UTC	3620 M	310	12 KT	310 04 06	1	1021.9 MB	16.7 C	13.9 C	2/8	SC

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 D.BAR
1	0		15.26	15.26	33.260	24.575	335.2	0.000	6.01	105.1	2.1	0.40	0.0	0.00	0.13	0.02	0
1	10		15.06	15.06	33.256	24.616	331.7	0.033	6.01	104.7	1.8	0.41	0.0	0.00	0.14	0.03	10
1	20		15.04	15.04	33.256	24.620	331.5	0.067	6.01	104.6	1.8	0.41	0.0	0.00	0.14	0.04	20
	30	ISL	14.73	14.73	33.223	24.662	327.8	0.099	6.12	105.8	1.9	0.41	0.0	0.00	0.17	0.04	30
1	31		14.70	14.70	33.219	24.666	327.5	0.103	6.14	106.1	1.9	0.41	0.0	0.00	0.18	0.04	31
1	40		13.11	13.10	33.114	24.912	304.2	0.131	6.38	106.6	2.4	0.45	0.0	0.00	0.25	0.08	40
1	50		12.67	12.66	33.117	25.001	296.0	0.161	6.41	106.2	2.8	0.48	0.1	0.01	1.07	0.41	50
1	60		11.57	11.56	33.078	25.178	279.2	0.190	6.02	97.4	4.6	0.68	3.5	0.23	0.98	0.43	60
1	71		11.51	11.50	33.215	25.296	268.3	0.220	5.97	96.5	5.9	0.75	5.0	0.40	0.64	0.32	71
	75	ISL	11.33	11.32	33.252	25.357	262.5	0.231	5.89	94.9	6.8	0.83	6.3	0.30	0.48	0.26	75
1	84		10.85	10.84	33.322	25.498	249.3	0.254	5.64	90.0	9.2	1.03	9.6	0.02	0.18	0.14	84
1	100		10.32	10.31	33.428	25.673	233.0	0.292	5.18	81.7	12.9	1.25	13.6	0.02	0.06	0.10	100
1	120		9.54	9.53	33.548	25.897	211.9	0.337	4.17	64.7	19.2	1.57	18.8	0.01	0.02	0.07	121
	125	ISL	9.36	9.35	33.617	25.980	204.1	0.347	3.86	59.7	21.7	1.68	20.5	0.01	0.01	0.07	126
1	145		8.76	8.74	33.885	26.285	175.4	0.385	2.90	44.3	30.8	2.05	26.2	0.01	0.00	0.06	146
	150	ISL	8.67	8.65	33.912	26.321	172.1	0.394	2.93	44.7	31.5	2.05	26.3	0.01	0.00	0.06	151
1	175		8.30	8.28	33.963	26.417	163.3	0.436	3.08	46.6	33.4	2.03	26.8	0.01	0.00	0.06	176
	200	ISL	7.80	7.78	33.997	26.519	154.0	0.475	3.00	44.9	38.4	2.10	27.8	0.01	0.00	0.04	201
1	204		7.73	7.71	34.000	26.531	152.8	0.482	2.99	44.7	39.3	2.12	28.0	0.01	0.00	0.04	205
1	233		7.42	7.40	34.018	26.590	147.6	0.525	2.72	40.3	44.1	2.24	29.6	0.02			234
	250	ISL	7.21	7.19	34.019	26.620	144.9	0.550	2.60	38.4	46.7	2.30	30.5	0.02			251
1	273		6.94	6.91	34.022	26.660	141.3	0.583	2.40	35.2	50.4	2.40	31.7	0.01			275
	300	ISL	6.72	6.69	34.045	26.708	137.1	0.620	1.99	29.0	55.4	2.58	33.5	0.00			302
1	327		6.55	6.52	34.076	26.755	132.9	0.657	1.56	22.7	60.4	2.75	35.3	0.00			329
1	385		6.17	6.14	34.135	26.852	124.3	0.732	0.96	13.8	69.6	2.95	38.2	0.01			387
	400	ISL	6.08	6.05	34.151	26.876	122.2	0.750	0.84	12.1	71.8	3.01	38.7	0.01			403
1	449		5.79	5.75	34.200	26.952	115.4	0.808	0.55	7.9	78.5	3.18	40.1	0.00			452
	500	ISL	5.49	5.45	34.238	27.019	109.5	0.866	0.41	5.8	85.1	3.24	41.0	0.00			503
1	516		5.40	5.36	34.250	27.039	107.6	0.883	0.36	5.1	87.2	3.26	41.3	0.00			520

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 54.7 N	122 7.7 W	26/04/89	1257 UTC	4209 M	330	08 KT		1	1019.1 MB	14.4 C	12.5 C	5/8	SC

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 D.BAR
1	0		15.22	15.22	33.253	24.578	334.9	0.000	6.00	104.8	1.8	0.41	0.1	0.00	0.12	0.02	0
1	9		15.20	15.20	33.249	24.580	335.1	0.030	6.02	105.1	1.8	0.41	0.1	0.00	0.11	0.02	9
	10	ISL	15.16	15.16	33.246	24.586	334.4	0.033	6.04	105.4	1.8	0.41	0.1	0.00	0.11	0.02	10
1	20		14.32	14.32	33.169	24.707	323.2	0.066	6.32	108.4	1.7	0.40	0.1	0.00	0.14	0.04	20
1	30		12.53	12.53	33.009	24.944	300.9	0.098	6.53	107.8	2.8	0.50	0.1	0.00	0.25	0.06	30
1	40		11.47	11.47	32.929	25.080	288.1	0.127	6.62	106.8	3.7	0.58	0.6	0.05	0.57	0.18	40
1	49		10.85	10.84	32.891	25.161	280.5	0.153	6.46	102.8	4.8	0.67	2.5	0.25	0.78	0.32	49
	50	ISL	10.86	10.85	32.902	25.168	279.9	0.155	6.43	102.3	4.9	0.68	2.7	0.25	0.78	0.32	50
1	59		10.93	10.92	33.004	25.236	273.7	0.180	6.05	96.5	5.9	0.78	4.7	0.21	0.73	0.31	59
1	69		10.90	10.89	33.121	25.332	264.7	0.207	5.61	89.5	7.4	0.92	7.5	0.07	0.64	0.30	69
	75	ISL	10.65	10.64	33.173	25.417	256.8	0.223	5.39	85.5	8.9	1.01	9.3	0.05	0.43	0.22	75
1	83		10.28	10.27	33.250	25.540	245.2	0.243	5.12	80.6	11.2	1.15	11.7	0.03	0.14	0.10	83
1	98		10.12	10.11	33.493	25.757	224.9	0.278	4.65	73.1	16.2	1.42	16.4	0.02	0.08	0.10	98
	100	ISL	10.07	10.06	33.525	25.791	221.7	0.283	4.51	70.8	17.1	1.47	17.1	0.02	0.07	0.10	100
1	116		9.65	9.64	33.734	26.024	199.8	0.316	3.39	52.8	23.6	1.81	22.4	0.01	0.03	0.09	117
	125	ISL	9.46	9.45	33.783	26.094	193.4	0.334	3.27	50.7	25.5	1.86	23.7	0.01	0.02	0.08	126
1	142		9.15	9.13	33.826	26.178	185.7	0.366	3.05	47.0	27.7	1.94	24.9	0.01	0.01	0.07	143
	150	ISL	8.98	8.96	33.859	26.231	180.8	0.381	2.99	45.9	29.0	1.97	25.5	0.01	0.01	0.07	151
1	172		8.59	8.57	33.941	26.356	169.2	0.419	2.86	43.6	32.5	2.06	26.7	0.02	0.00	0.06	173
	200	ISL	8.35	8.33	34.005	26.443	161.4	0.466	2.62	39.7	36.5	2.16	28.0	0.01	0.00	0.05	201
1	201		8.34	8.32	34.007	26.446	161.1	0.467	2.61	39.5	36.6	2.16	28.0	0.01	0.00	0.05	202
1	230		7.94	7.92	34.049	26.540	152.6	0.513	2.32	34.8	41.4	2.31	29.9	0.01			231
	250	ISL	7.71	7.69	34.067	26.587	148.3	0.543	2.12	31.7	44.9	2.40	31.0	0.01			251
1	270		7.46	7.43	34.075	26.630	144.5	0.572	1.94	28.8	48.6	2.48	32.0	0.01			272
	300	ISL	6.90	6.87	34.069	26.703	137.7	0.615	1.72	25.2	55.2	2.61	34.1	0.01			302
1	325		6.41	6.38	34.061	26.762	132.1	0.648	1.57	22.7	61.0	2.71	35.8	0.01			327
1	383		5.59	5.56	34.066	26.869	122.1	0.722	1.27	18.0	73.8	2.89	38.5	0.01			385
	400	ISL	5.45	5.42	34.071	26.890	120.2	0.743	1.17	16.6	76.4	2.94	39.1	0.01			403
1	448		5.17	5.13	34.098	26.945	115.4	0.799	0.90	12.7	82.7	3.08	40.5	0.01			451
	500	ISL	4.97	4.93	34.157	27.015	109.2	0.858	0.62	8.7	89.9	3.18	41.8	0.01			503
1	514		4.92	4.88	34.173	27.033	107.5	0.873	0.54	7.6	91.9	3.21	42.1	0.01			518

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 34.7 N	122 48.7 W	26/04/89	0714 UTC	3924 M	290	13 KT		1	1019.1 MB	14.7 C	11.6 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 D.BAR
1	0		15.50	15.50	33.076	24.380	353.8	0.000	5.92	103.9	2.1	0.42	0.1	0.00	0.08	0.02	0
1	10		15.42	15.42	33.072	24.395	352.6	0.035	5.94	104.1	2.1	0.42	0.1	0.00	0.09	0.02	10
1	20		15.13	15.13	33.052	24.444	348.3	0.070	6.03	105.0	2.1	0.42	0.1	0.00	0.11	0.03	20
	30	ISL	15.00	15.00	33.059	24.478	345.4	0.105	6.06	105.3	2.1	0.42	0.1	0.00	0.11	0.02	30
1	31		14.99	14.99	33.060	24.481	3 45.2	0.109	6.06	105.2	2.1	0.42	0.1	0.00	0.11	0.02	31
1	40		13.84	13.83	33.045	24.711	323.3	0.139	6.27	106.4	2.0	0.42	0.1	0.00	0.12	0.03	40
	50	ISL	12.96	12.95	32.979	24.837	311.6	0.170	6.54	108.9	2.5	0.45	0.1	0.00	0.22	0.06	50
1	51		12.89	12.88	32.972	24.846	310.8	0.173	6.56	109.1	2.6	0.45	0.1	0.00	0.23	0.07	51
1	61		12.15	12.14	32.960	24.979	298.3	0.204	6.52	106.7	2.8	0.47	0.1	0.00	0.39	0.20	61
1	71		11.78	11.77	32.960	25.048	291.9	0.233	6.40	103.9	3.2	0.53	0.7	0.06	0.92	0.38	71
	75	ISL	11.62	11.61	32.980	25.093	287.7	0.245	6.22	100.7	3.7	0.60	1.9	0.06	0.84	0.37	75
1	84		11.28	11.27	33.044	25.205	277.2	0.270	5.82	93.5	5.3	0.77	5.0	0.05	0.65	0.35	84
1	99		10.77	10.76	33.167	25.391	259.8	0.311	5.68	90.3	7.8	0.94	8.1	0.02	0.17	0.12	99
	100	ISL	10.75	10.74	33.177	25.403	258.7	0.313	5.67	90.1	8.0	0.95	8.3	0.02	0.17	0.12	100
1	119		10.37	10.36	33.359	25.611	239.3	0.361	5.26	83.0	11.9	1.18	12.5	0.01	0.07	0.08	120
	125	ISL	10.11	10.10	33.399	25.686	232.2	0.375	4.99	78.3	13.8	1.28	14.3	0.01	0.05	0.07	126
1	144		9.27	9.25	33.530	25.927	209.5	0.417	4.19	64.6	19.8	1.57	19.2	0.01	0.01	0.04	145
	150	ISL	9.13	9.11	33.599	26.003	202.4	0.429	4.19	64.4	20.7	1.57	19.7	0.01	0.01	0.03	151
1	174		8.72	8.70	33.853	26.267	177.7	0.475	4.19	64.0	23.7	1.59	20.7	0.01	0.01	0.02	175
	200	ISL	8.24	8.22	33.947	26.414	164.0	0.519	3.85	58.2	29.7	1.80	23.4	0.01	0.00	0.02	201
1	204		8.17	8.15	33.951	26.428	162.8	0.526	3.79	57.2	30.7	1.84	23.8	0.01	0.00	0.02	205
1	234		7.65	7.63	33.970	26.520	154.4	0.573	3.58	53.4	36.2	1.92	25.9	0.00			235
	250	ISL	7.39	7.37	33.978	26.563	150.4	0.598	3.42	50.7	39.4	1.99	27.1	0.00			251
1	273		7.04	7.01	33.986	26.618	145.4	0.632	3.15	46.3	44.1	2.12	28.8	0.01			275
	300	ISL	6.66	6.63	33.991	26.674	140.3	0.670	2.77	40.4	50.0	2.29	31.1	0.01			302
1	327		6.34	6.31	33.998	26.721	135.9	0.707	2.36	34.1	55.7	2.46	33.3	0.00			329
1	386		5.94	5.91	34.051	26.815	127.6	0.785	1.49	21.3	66.5	2.79	37.1	0.00			388
	400	ISL	5.83	5.80	34.059	26.835	125.8	0.803	1.37	19.6	68.9	2.84	37.7	0.00			403
1	449		5.45	5.41	34.089	26.905	119.5	0.863	1.04	14.7	77.0	2.97	39.4	0.00			452
	500	ISL	5.16	5.12	34.145	26.984	112.3	0.922	0.67	9.4	85.4	3.12	41.1	0.00			503
1	514		5.08	5.04	34.160	27.005	110.4	0.938	0.57	8.0	87.7	3.16	41.6	0.00			517

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 14.6 N	123 29.5 W	26/04/89	0122 UTC	4304 M	300	10 KT	310 05 10	1	1018.0 MB	15.9 C	12.4 C	5/8	SC

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 D.BAR
	0	ISL	17.04	17.04	33.411	24.286	362.7	0.000	5.70	103.3	2.3	0.34	0.0	0.00	0.06	0.02	0
1	1		17.04	17.04	33.411	24.286	362.7	0.004	5.70	103.3	2.3	0.34	0.0	0.00	0.06	0.02	1
1	10		17.01	17.01	33.408	24.292	362.6	0.036	5.70	103.3	2.2	0.35	0.0	0.00	0.06	0.01	10
1	20		16.97	16.97	33.406	24.300	362.1	0.072	5.70	103.2	2.3	0.36	0.0	0.00	0.06	0.02	20
1	29		16.61	16.61	33.398	24.378	354.9	0.105	5.79	104.1	2.2	0.35	0.0	0.00	0.06	0.02	29
	30	ISL	16.52	16.52	33.402	24.402	352.7	0.108	5.81	104.2	2.2	0.35	0.0	0.00	0.06	0.02	30
1	40		15.67	15.66	33.465	24.643	330.0	0.142	5.94	104.8	1.9	0.34	0.0	0.00	0.07	0.02	40
1	50		15.64	15.63	33.535	24.704	324.5	0.175	5.89	103.9	1.9	0.33	0.0	0.00	0.08	0.02	50
1	59		15.26	15.25	33.475	24.742	321.1	0.204	5.92	103.6	1.9	0.35	0.0	0.00	0.10	0.03	59
1	70		14.81	14.80	33.398	24.781	317.7	0.239	5.95	103.2	1.9	0.36	0.0	0.00	0.12	0.05	70
	75	ISL	14.39	14.38	33.348	24.832	312.9	0.255	5.99	102.9	2.0	0.37	0.0	0.00	0.24	0.14	75
1	83		13.70	13.69	33.285	24.927	304.0	0.280	6.03	102.1	2.2	0.40	0.0	0.00	0.44	0.28	83
1	100		13.02	13.01	33.303	25.078	290.0	0.330	5.90	98.5	2.9	0.50	1.2	0.16	0.42	0.31	100
1	119		11.76	11.74	33.257	25.284	270.7	0.384	5.61	91.2	5.7	0.78	5.8	0.01	0.11	0.12	120
	125	ISL	11.49	11.47	33.271	25.344	265.0	0.400	5.54	89.5	6.6	0.85	7.0	0.01	0.10	0.11	126
1	144		10.84	10.82	33.358	25.529	247.8	0.448	5.24	83.6	9.7	1.05	10.5	0.01	0.05	0.07	145
	150	ISL	10.65	10.63	33.391	25.588	242.2	0.463	5.07	80.5	10.9	1.13	11.8	0.01	0.04	0.06	151
1	174		9.93	9.91	33.542	25.829	219.6	0.518	4.31	67.5	16.4	1.43	17.0	0.01	0.01	0.04	175
	200	ISL	9.23	9.21	33.728	26.089	195.2	0.572	3.61	55.7	23.3	1.72	22.1	0.00	0.00	0.03	201
1	203		9.15	9.13	33.749	26.119	192.5	0.578	3.55	54.7	24.1	1.75	22.6	0.00	0.00	0.03	204
1	231		8.53	8.51	33.902	26.336	172.2	0.629	3.50	53.2	29.0	1.82	24.1	0.00			232
	250	ISL	8.24	8.21	33.961	26.426	163.8	0.661	3.29	49.7	32.4	1.91	25.5	0.00			251
1	271		7.96	7.93	33.998	26.497	157.4	0.695	2.99	44.9	36.5	2.04	27.1	0.01			272
	300	ISL	7.51	7.48	34.023	26.582	149.5	0.739	2.64	39.2	43.0	2.23	29.4	0.01			302
1	326		7.12	7.09	34.030	26.643	144.0	0.778	2.33	34.3	49.1	2.39	31.5	0.00			328
1	384		6.37	6.34	34.049	26.759	133.3	0.858	1.68	24.3	61.2	2.69	35.3	0.00			3 86
	400	ISL	6.25	6.21	34.065	26.787	130.8	0.879	1.49	21.5	63.6	2.76	36.2	0.00			402
1	448		5.97	5.93	34.116	26.863	124.0	0.940	0.99	14.2	70.1	2.93	38.3	0.00			451
	500	ISL	5.63	5.59	34.154	26.935	117.5	1.003	0.71	10.1	77.5	3.03	39.6	0.00			503
1	514		5.54	5.50	34.165	26.955	115.7	1.019	0.63	8.9	79.5	3.06	40.0	0.00			517

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 83 IIO

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 54.6 N	124 10.2 W	25/04/89	1902 UTC	4190 M	300	12 KT	320 05 09	1	1018.5 MB	17.0 C	14.5 C	3/8	SC

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 D.BAR
	0	ISL	17.16	17.16	33.450	24.288	362.6	0.000	5.68	103.2	2.1	0.34	0.0	0.01	0.07	0.01	0
1	2		17.16	17.16	33.450	24.288	362.6	0.007	5.68	103.2	2.1	0.34	0.0	0.01	0.07	0.01	2
	10	ISL	17.12	17.12	33.449	24.297	362.0	0.036	5.68	103.2	2.1	0.35	0.0	0.00	0.07	0.01	10
1	12		17.11	17.11	33.449	24.300	361.9	0.043			2.1	0.35	0.0	0.00	0.07	0.01	12
	20	ISL	17.11	17.11	33.448	24.299	362.2	0.072	5.67	102.9	1.9	0.34	0.0	0.00	0.07	0.02	20
1	24		17.11	17.11	33.447	24.299	362.4	0.087	5.67	102.9	1.9	0.34	0.0	0.00	0.07	0.02	24
	30	ISL	17.07	17.07	33.446	24.307	361.7	0.109	5.69	103.2	2.2	0.34	0.0	0.01	0.07	0.01	30
1	32		17.05	17.04	33.446	24.312	361.3	0.116	5.71	103.5	2.3	0.34	0.0	0.01	0.07	0.01	32
1	42		16.06	16.05	33.431	24.530	3 40.9	0.151	5.88	104.6	2.4	0.34	0.1	0.01	0.07	0.01	42
	50	ISL	15.52	15.51	33.382	24.613	333.2	0.178	5.95	104.6	2.1	0.35	0.1	0.00	0.08	0.02	50
1	52		15.42	15.41	33.372	24.628	331.8	0.185	5.96	104.6	2.0	0.35	0.1	0.00	0.08	0.02	52
1	61		15.08	15.07	33.389	24.715	323.7	0.214	5.95	103.7	2.1	0.35	0.1	0.00	0.09	0.03	61
1	71		14.89	14.88	33.412	24.775	318.3	0.246	5.91	102.6	2.2	0.35	0.1	0.00	0.11	0.04	71
	75	ISL	14.60	14.59	33.376	24.809	315.1	0.259	5.94	102.5	2.2	0.36	0.1	0.00	0.15	0.07	75
1	86		13.67	13.66	33.250	24.906	306.1	0.293	6.06	102.6	2.2	0.40	0.1	0.00	0.29	0.20	86
1	100		12.86	12.85	33.152	24.992	298.1	0.335	6.18	102.8	2.4	0.46	0.2	0.03	0.52	0.35	100
1	120		12.66	12.64	33.307	25.152	283.4	0.394	5.76	95.5	3.6	0.58	2.7	0.13	0.22	0.21	121
	125	ISL	12.44	12.42	33.327	25.210	278.0	0.408	5.66	93.4	4.1	0.62	3.5	0.11	0.18	0.18	126
1	145		11.35	11.33	33.401	25.471	253.4	0.461	5.28	85.2	7.4	0.82	7.3	0.01	0.08	0.08	146
	150	ISL	11.05	11.03	33.429	25.547	246.2	0.473	5.15	82.5	8.8	0.92	8.9	0.01	0.06	0.07	151
1	175		9.80	9.78	33.593	25.890	213.8	0.531			15.8	1.37	16.2	0.01	0.01	0.03	176
	200	ISL	9.37	9.35	33.740	26.076	196.6	0.582	4.23	65.5	19.2	1.50	18.6	0.01	0.00	0.02	201
1	204		9.33	9.31	33.763	26.101	194.3	0.590	4.18	64.6	19.6	1.50	18.8	0.01	0.00	0.02	205
1	234		8.70	8.68	33.943	26.342	171.8	0.645	4.26	65.0	24.4	1.56	20.4	0.01			235
	250	ISL	8.40	8.37	33.974	26.412	165.3	0.672	4.18	63.4	27.2	1.63	21.5	0.01			251
1	273		8.00	7.97	33.983	26.479	159.1	0.709	3.95	59.4	31.7	1.77	23.3	0.01			**274**
	300	ISL	7.57	7.54	33.996	26.552	152.4	0.751	3.44	51.2	38.3	1.98	26.4	0.01			**302**
1	327		7.18	7.15	34.002	26.612	146.9	0.791	2.88	42.5	45.1	2.19	29.5	0.01			**329**
1	386		6.37	6.34	34.018	26.734	135.6	0.875	2.08	30.1	57.5	2.55	34.0	0.01			**388**
	400	ISL	6.21	6.17	34.026	26.761	133.1	0.894	1.90	27.4	60.6	2.62	35.0	0.01			**402**
1	451		5.71	5.67	34.064	26.854	124.6	0.959	1.32	18.8	71.2	2.85	38.3	0.00			**454**
	500	ISL	5.39	5.35	34.106	26.926	118.1	1.019	0.95	13.4	79.1	3.01	40.0	0.01			**503**
1	519		5.26	5.22	34.123	26.955	115.4	1.041	0.80	11.3	82.1	3.07	40.6	0.01			**522**

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 53.4 N	118 29.4 W	23/04/89	0630 UTC	58 M	270	15 KT			1014.6 MB	14.3 C	12.3 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 D.BAR
1	0		15.36	15.36	33.554	24.779	315.8	0.000	6.24	109.5	4.2	0.33	0.1	0.01	1.49	0.33	0
	10	ISL	15.31	15.31	33.553	24.790	315.1	0.032	6.27	109.9	4.2	0.33	0.1	0.01	1.65	0.38	10
1	11		15.30	15.30	33.553	24.792	314.9	0.035	6.27	109.9	4.2	0.33	0.1	0.01	1.67	0.38	11
1	20		14.88	14.88	33.551	24.882	306.6	0.063	6.17	107.2	4.7	0.40	0.6	0.03	2.71	0.54	20
1	30		11.34	11.34	33.468	25.523	245.8	0.090	3.11	50.2	20.9	2.24	15.8	0.43	0.50	0.29	30
1	40		11.27	11.27	33.576	25.620	236.8	0.114	3.32	53.5	18.5	1.91	15.9	0.47	0.32	0.19	40
	50	ISL	10.33	10.32	33.788	25.951	205.5	0.137	2.35	37.2	28.0	2.20	20.4	0.46	0.12	0.42	50
1	51		10.24	10.23	33.810	25.983	202.4	0.139	2.25	35.5	28.9	2.23	20.9	0.46	0.10	0.44	51

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 49.4 N	118 37.7 W	23/04/89	0837 UTC	658 M	270	17 KT			1014.8 MB	14.0 C	12.1 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 D.BAR
	0	ISL	14.07	14.07	33.552	25.054	289.6	0.000	5.97	102.1	7.5	0.54	2.4	0.09	1.86	0.42	0
1	2		14.07	14.07	33.552	25.054	289.6	0.006	5.97	102.1	7.5	0.54	2.4	0.09	1.86	0.42	2
	10	ISL	14.05	14.05	33.551	25.058	289.5	0.029	5.96	101.9	7.4	0.53	2.4	0.08	1.86	0.42	10
1	13		14.04	14.04	33.550	25.059	289.5	0.038	5.96	101.8	7.3	0.53	2.4	0.08	1.86	0.42	13
	20	ISL	13.92	13.92	33.537	25.075	288.2	0.058	6.01	102.4	7.3	0.54	2.3	0.08	1.90	0.44	20
1	22		13.89	13.89	33.534	25.078	287.9	0.064	6.03	102.7	7.3	0.54	2.3	0.08	1.91	0.44	22
	30	ISL	12.89	12.89	33.493	25.249	271.9	0.086	6.06	101.1	8.0	0.63	2.8	0.08	1.70	0.42	30
1	31		12.74	12.74	33.490	25.276	269.4	0.089	6.06	100.8	8.1	0.64	2.9	0.08	1.65	0.42	31
1	42		11.44	11.43	33.540	25.561	242.5	0.117	4.66	75.4	13.3	1.19	12.3	0.24	0.70	0.36	42
1	50		10.85	10.84	33.598	25.712	228.2	0.136	4.11	65.7	17.1	1.44	16.3	0.06	0.44	0.30	50
1	59		10.37	10.36	33.694	25.871	213.3	0.156	3.52	55.7	21.2	1.66	19.8	0.02	0.17	0.15	59
1	69		10.04	10.03	33.756	25.975	203.5	0.176	3.33	52.3	23.4	1.75	21.3	0.01	0.07	0.10	69
	75	ISL	9.97	9.96	33.797	26.019	199.5	0.188	3.16	49.6	24.7	1.82	22.1	0.01	0.04	0.09	75
1	83		9.88	9.87	33.844	26.071	194.7	0.204	2.98	46.7	26.2	1.89	22.9	0.01	0.03	0.08	83
1	97		9.34	9.33	33.883	26.191	183.6	0.231	3.08	47.7	28.3	1.89	24.0	0.01	0.01	0.06	98
	100	ISL	9.29	9.28	33.895	26.208	181.9	0.236	3.07	47.5	28.7	1.90	24.1	0.01	0.01	0.06	101
1	117		9.16	9.15	33.962	26.282	175.3	0.267	2.90	44.7	30.8	1.98	24.9	0.01	0.00	0.04	118
	125	ISL	9.05	9.04	33.993	26.324	171.4	0.280	2.81	43.3	32.1	2.03	25.5	0.01	0.00	0.04	126
1	141		8.83	8.81	34.043	26.398	164.7	0.307	2.67	40.9	34.6	2.11	26.5	0.01	0.00	0.04	142
	150	ISL	8.71	8.69	34.054	26.426	162.2	0.322	2.66	40.6	35.7	2.13	26.8	0.01	0.00	0.04	151
1	171		8.47	8.45	34.066	26.472	158.1	0.356	2.64	40.1	37.7	2.15	27.2	0.01	0.00	0.03	172
1	200		8.35	8.33	34.095	26.514	154.7	0.401	2.40	36.4	40.2	2.24	28.2	0.01	0.01	0.03	201
1	229		8.16	8.14	34.147	26.584	148.5	0.445	1.90	28.7	45.2	2.43	30.1	0.01			230
	250	ISL	8.15	8.12	34.188	26.618	145.7	0.476	1.58	23.9	47.8	2.54	31.0	0.01			252
1	269		8.15	8.12	34.216	26.640	143.9	0.503	1.35	20.4	49.6	2.62	31.6	0.01			271
	300	ISL	7.96	7.93	34.217	26.670	141.6	0.548	1.23	18.5	52.0	2.68	32.2	0.01			302
1	323		7.77	7.74	34.211	26.693	139.7	0.580	1.19	17.8	53.8	2.71	32.7	0.01			325
1	382		7.37	7.33	34.262	26.791	131.1	0.660	0.75	11.1	61.1	2.90	34.9	0.01			385
	400	ISL	7.21	7.17	34.267	26.818	128.8	0.683	0.67	9.9	63.6	2.95	35.5	0.01			403
1	448		6.76	6.72	34.276	26.887	122.6	0.744	0.52	7.6	70.4	3.05	36.9	0.00			451
	500	ISL	6.34	6.29	34.304	26.965	115.6	0.806	0.37	5.4	77.3	3.15	38.6	0.00			504
1	517		6.20	6.15	34.314	26.991	113.2	0.825	0.32	4.6	79.5	3.18	39.1	0.00			521

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 87 39.5

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 40.4 N	118 56.4 W	23/04/89	1302 UTC	895 M	290	22 KT	270 06 06	1	1013.8 MB	14.2 C	11.8 C	1/8	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 D.BAR
	0	ISL	16.10	16.10	33.550	24.611	331.8	0.000	6.01	107.0	4.2	0.36	0.0	0.01	0.33	0.08	0
1	1	A	16.10	16.10	33.550	24.611	331.9	0.003	6.01	107.1	4.2	0.36	0.0	0.01	0.33	0.08	1
1	10		16.07	16.07	33.548	24.616	331.6	0.033	6.01	107.0	4.3	0.36	0.0	0.01	0.35	0.09	10
	20	ISL	13.69	13.69	33.591	25.164	279.8	0.064	6.00	101.8	6.2	0.64	3.4	0.13	1.31	0.41	20
1	21		13.41	13.41	33.599	25.227	273.8	0.067	6.00	101.2	6.6	0.68	3.9	0.15	1.40	0.44	21
1	30		11.98	11.98	33.600	25.507	247.3	0.090	4.85	79.4	12.3	1.13	10.5	0.39	1.24	0.40	30
1	40		11.04	11.04	33.650	25.719	227.4	0.114	3.75	60.2	17.8	1.53	16.9	0.41	0.49	0.26	40
1	50		10.68	10.67	33.698	25.820	218.0	0.136	3.41	54.3	20.7	1.66	19.4	0.08	0.31	0.20	50
1	60		10.31	10.30	33.755	25.929	207.8	0.157	3.16	49.9	23.0	1.77	21.2	0.03	0.15	0.15	60
1	71		10.10	10.09	33.790	25.992	202.0	0.180	3.07	48.3	24.1	1.82	21.9	0.03	0.11	0.14	71
	75	ISL	10.02	10.01	33.804	26.016	199.8	0.188	3.07	48.2	24.6	1.83	22.1	0.03	0.09	0.12	75
1	84		9.84	9.83	33.839	26.074	194.4	0.206	3.07	48.0	25.8	1.85	22.7	0.02	0.04	0.08	84
	100	ISL	9.54	9.53	33.923	26.190	183.8	0.236	2.93	45.6	28.8	1.94	24.1	0.02	0.02	0.06	101
1	105		9.47	9.46	33.950	26.223	180.8	0.245	2.86	44.4	29.8	1.98	24.6	0.02	0.01	0.06	106
	125	ISL	9.37	9.36	34.027	26.299	173.9	0.280	2.47	38.3	32.8	2.11	25.9	0.02	0.02	0.09	126
1	130		9.35	9.34	34.042	26.314	172.5	0.289	2.37	36.7	33.5	2.14	26.2	0.02	0.02	0.10	131
	150	ISL	9.16	9.14	34.095	26.387	166.0	0.323	2.17	33.5	36.2	2.24	27.3	0.02	0.01	0.09	151
1	160		9.02	9.00	34.111	26.422	162.9	0.339	2.14	32.9	37.4	2.27	27.7	0.02	0.01	0.08	161
1	190		8.40	8.38	34.100	26.510	154.9	0.387	2.35	35.7	40.0	2.26	28.3	0.01	0.00	0.04	191
	200	ISL	8.26	8.24	34.098	26.530	153.1	0.402	2.29	34.6	41.0	2.28	28.6	0.01	0.00	0.04	201
1	223		8.03	8.01	34.107	26.572	149.5	0.437	2.16	32.5	43.7	2.36	29.6	0.01	0.00	0.04	224
	250	ISL	7.93	7.90	34.171	26.637	143.8	0.477	1.60	24.0	48.4	2.56	31.2	0.01			252
1	264		7.90	7.87	34.206	26.669	140.9	0.497	1.31	19.7	50.8	2.66	32.0	0.01			266
	300	ISL	7.72	7.69	34.227	26.713	137.4	0.547	1.09	16.3	53.7	2.76	33.2	0.02			302
1	309		7.66	7.63	34.228	26.722	136.6	0.559	1.07	16.0	54.3	2.77	33.4	0.02			311
1	368		7.17	7.13	34.257	26.815	128.5	0.637	0.69	10.2	62.0	2.94	35.6	0.01			370
	400	ISL	6.99	6.95	34.272	26.852	125.3	0.678	0.58	8.5	64.8	3.00	36.4	0.00			403
1	432		6.81	6.77	34.285	26.887	122.4	0.718	0.50	7.3	67.7	3.05	37.1	0.00			435
1	500		6.21	6.17	34.310	26.987	113.4	0.798	0.33	4.8	77.9	3.18	39.1	0.00			504
1	579		5.79	5.74	34.348	27.070	106.1	0.884	0.22	3.1	87.3	3.27	39.3	0.00			583
	600	ISL	5.70	5.65	34.355	27.087	104.7	0.907	0.21	3.0	89.3	3.28	39.4	0.00			604
2	656		5.48	5.42	34.371	27.127	101.3	0.964	0.19	2.7	94.4	3.31	39.5	0.00			661
	700	ISL	5.32	5.26	34.381	27.154	99.1	1.008	0.15	2.1	99.0	3.36	38.8	0.00			705
2	725		5.25	5.19	34.385	27.166	98.1	1.033	0.13	1.8	101.5	3.39	38.3	0.00			731
2	788		5.14	5.07	34.393	27.186	96.9	1.094	0.12	1.7	106.7	3.41	36.9	0.00			794
	800	ISL	5.13	5.06	34.394	27.188	96.8	1.106	0.12	1.7	107.9	3.44	36.3	0.00			806
2	846		5.10	5.03	34.396	27.193	96.8	1.151	0.11	1.5	111.3	3.52	34.6	0.00			853
2	886		5.09	5.02	34.398	27.196	96.9	1.189	0.13	1.8	111.0	3.51	35.0	0.00			893

A) SANTA MONICA BASIN STATION.

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 29.4 N	119 19.0 W	23/04/89	1808 UTC	1634 M	290	19 KT	280 05 06	1	1015.7 MB	15.8 C	14.0 C	1/8	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 D.BAR
	0 ISL	14.47	14.47	33.581	24.993	295.5	0.000	5.96	102.8	5.3	0.56	2.4	0.08	0.96	0.24	0
1	1	14.47	14.47	33.581	24.993	295.5	0.003	5.96	102.8	5.3	0.56	2.4	0.08	0.96	0.24	1
	10 ISL	14.39	14.39	33.580	25.009	294.2	0.029	5.95	102.4	5.2	0.56	2.4	0.08	1.03	0.28	10
1	11	14.38	14.38	33.580	25.011	294.0	0.032	5.95	102.4	5.2	0.56	2.4	0.08	1.04	0.28	11
	20 ISL	14.33	14.33	33.581	25.023	293.2	0.059	5.92	101.8	5.2	0.57	2.5	0.09	1.01	0.28	20
1	21	14.32	14.32	33.581	25.025	293.0	0.062	5.92	101.8	5.2	0.57	2.5	0.09	1.01	0.28	21
	30 ISL	13.70	13.70	33.612	25.178	278.7	0.088	5.71	96.9	7.0	0.69	4.3	0.11	1.40	0.39	30
1	32	13.46	13.46	33.624	25.236	273.2	0.093	5.66	95.6	7.9	0.75	5.1	0.11	1.45	0.41	32
1	42	11.55	11.54	33.744	25.699	229.3	0.118	4.29	69.7	16.5	1.35	14.0	0.28	0.83	0.33	42
	50 ISL	10.38	10.37	33.829	25.974	203.3	0.135	3.32	52.6	24.0	1.76	20.5	0.33	0.30	0.28	50
1	51	10.26	10.25	33.837	26.001	200.7	0.137	3.22	50.9	24.8	1.80	21.2	0.34	0.24	0.27	51
1	62	9.50	9.49	33.869	26.153	186.4	0.159	3.01	46.8	27.6	1.92	23.7	0.08	0.05	0.17	62
1	70	9.46	9.45	33.933	26.210	181.2	0.173	2.66	41.3	29.7	2.04	25.2	0.03	0.05	0.17	70
	75 ISL	9.40	9.39	33.950	26.233	179.1	0.182	2.63	40.8	30.5	2.05	25.4	0.03	0.04	0.17	75
1	85	9.25	9.24	33.968	26.272	175.6	0.200	2.58	39.9	31.5	2.08	25.9	0.02	0.02	0.16	85
1	99	9.12	9.11	34.005	26.322	171.1	0.224	2.48	38.2	32.8	2.12	26.5	0.01	0.01	0.14	100
	100 ISL	9.11	9.10	34.007	26.325	170.9	0.226	2.47	38.1	32.9	2.12	26.6	0.01	0.01	0.14	101
1	120	8.97	8.96	34.037	26.371	166.9	0.260	2.29	35.2	35.5	2.21	27.5	0.04	0.03	0.18	121
	125 ISL	8.94	8.93	34.045	26.382	165.9	0.268	2.27	34.9	35.8	2.22	27.6	0.04	0.03	0.18	126
1	145	8.84	8.82	34.075	26.422	162.5	0.301	2.19	33.6	36.7	2.25	28.0	0.02	0.01	0.14	146
	150 ISL	8.81	8.79	34.082	26.432	161.6	0.309	2.16	33.1	37.1	2.27	28.1	0.02	0.01	0.13	151
1	175	8.59	8.57	34.113	26.491	156.5	0.349	1.98	30.2	40.0	2.36	29.1	0.01	0.01	0.11	176
	200 ISL	8.30	8.28	34.145	26.561	150.2	0.387	1.72	26.1	43.7	2.46	30.5	0.01	0.01	0.08	201
1	204	8.25	8.23	34.150	26.572	149.2	0.393	1.67	25.3	44.3	2.48	30.7		0.01	0.07	205
1	234	7.95	7.93	34.191	26.650	142.3	0.437	1.34	20.1	49.4	2.64	32.3	0.01			235
	250 ISL	7.82	7.80	34.201	26.677	139.9	0.460	1.22	18.3	51.3	2.69	32.9	0.01			**252**
1	274	7.66	7.63	34.210	26.707	137.4	0.493	1.09	16.3	53.7	2.75	33.6	0.01			**276**
	300 ISL	7.53	7.50	34.222	26.736	135.0	0.528	0.95	14.1	56.3	2.81	34.4	0.01			**302**
1	328	7.40	7.37	34.235	26.765	132.7	0.566	0.83	12.3	59.1	2.87	35.1	0.01			**330**
1	386	6.97	6.93	34.259	26.844	125.8	0.641	0.64	9.4	65.2	2.99	36.4	0.00			**389**
	400 ISL	6.89	6.85	34.264	26.859	124.5	0.658	0.60	8.8	66.6	3.01	36.7	0.00			**403**
1	450	6.61	6.57	34.286	26.915	119.8	0.719	0.45	6.6	72.0	3.09	37.7	0.00			**453**
	500 ISL	6.25	6.21	34.315	26.985	113.5	0.778	0.33	4.8	79.0	3.18	38.7	0.00			**504**
1	516	6.14	6.09	34.324	27.007	111.6	0.796	0.29	4.2	81.2	3.21	39.0	0.00			**520**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 19.4 N	119 39.9 W	23/04/89	2238 UTC	83 M	280	18 KT	290 05 08	1	1015.5 MB	16.2 C	13.6 C	6/8	CI

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 D.BAR
1	0	14.33	14.33	33.615	25.049	290.1	0.000	6.01	103.4	5.3	0.58	2.4	0.06	1.26	0.25	0
	10 ISL	12.87	12.87	33.656	25.378	259.0	0.027	5.29	88.3	11.1	0.99	8.8	0.18	1.13	0.29	10
1	11	12.72	12.72	33.661	25.412	255.9	0.030	5.22	86.8	11.7	1.03	9.4	0.19	1.12	0.29	11
	20 ISL	11.74	11.74	33.686	25.618	236.4	0.052	4.72	76.9	15.7	1.31	13.6	0.23	0.69	0.25	20
1	21	11.65	11.65	33.688	25.637	234.7	0.055	4.67	76.0	16.0	1.33	13.9	0.23	0.64	0.25	21
1	30	11.12	11.12	33.704	25.746	224.5	0.075	4.26	68.5	17.6	1.44	15.6	0.17	0.50	0.28	30
1	40	10.11	10.11	33.774	25.977	202.7	0.097	3.42	53.8	23.5	1.76	20.9	0.09	0.13	0.18	40
1	50	10.04	10.03	33.790	26.002	200.6	0.117	3.38	53.1	24.4	1.79	21.3	0.11	0.12	0.20	50
1	60	9.66	9.65	33.851	26.113	190.2	0.136	3.04	47.4	28.1	1.92	23.1	0.09	0.06	0.20	60
1	72	9.62	9.61	33.855	26.123	189.5	0.159	3.00	46.7	28.2	1.94	23.5	0.06	0.05	0.21	72

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 9.4 N	120 0.4 W	24/04/89	0242 UTC	1135 M	280	19 KT	300 05 05	1	1015.1 MB	14.3 C	12.5 C	5/8	CI

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 D.BAR
1	0	13.21	13.21	33.523	25.208	275.0	0.000	6.18	103.8	6.3	0.79	4.9	0.18	1.01	0.21	0
1	10	13.03	13.03	33.541	25.258	270.5	0.027	6.16	103.1	6.5	0.83	5.4	0.21	1.01	0.21	10
1	20	12.96	12.96	33.559	25.286	268.1	0.054	6.14	102.6	6.6	0.85	5.6	0.22	0.97	0.23	20
1	30	12.76	12.76	33.583	25.344	262.8	0.081	6.05	100.7	7.4	0.91	6.4	0.26	1.00	0.29	30
1	41	12.50	12.49	33.631	25.432	254.7	0.109	5.93	98.2	8.4	0.99	7.3	0.29	0.84	0.26	41
	50 ISL	11.92	11.91	33.698	25.595	239.5	0.131	5.46	89.3	12.7	1.25	10.8	0.50	0.45	0.29	50
1	51	11.85	11.84	33.704	25.612	237.8	0.134	5.40	88.2	13.2	1.28	11.3	0.53	0.40	0.29	51
1	61	11.22	11.21	33.698	25.724	227.4	0.157	4.87	78.5	16.3	1.44	14.8	0.62	0.18	0.22	61
1	72	10.39	10.38	33.664	25.844	216.1	0.181	4.29	67.9	19.3	1.56	18.2	0.08	0.07	0.20	72
	75 ISL	10.21	10.20	33.665	25.876	213.1	0.188	4.15	65.4	20.1	1.60	18.9	0.07	0.06	0.19	75
1	84	9.71	9.70	33.698	25.986	202.8	0.207	3.75	58.5	23.0	1.71	20.9	0.03	0.03	0.16	84
1	98	8.98	8.97	33.847	26.220	180.7	0.233	3.19	49.0	28.9	1.92	24.3	0.02	0.01	0.10	99
	100 ISL	8.92	8.91	33.859	26.239	178.9	0.237	3.18	48.8	29.4	1.93	24.6	0.02	0.01	0.10	101
1	118	8.54	8.53	33.927	26.352	168.5	0.268	3.06	46.5	32.7	2.01	26.0	0.01	0.00	0.08	119
	125 ISL	8.45	8.44	33.946	26.381	165.9	0.280	3.00	45.5	33.7	2.04	26.4	0.01	0.00	0.08	126
1	143	8.29	8.28	33.985	26.436	161.0	0.309	2.81	42.5	35.9	2.11	27.4	0.02	0.00	0.07	144
	150 ISL	8.26	8.24	34.001	26.453	159.5	0.321	2.70	40.8	36.9	2.15	27.8	0.02	0.00	0.07	151
1	172	8.17	8.15	34.045	26.501	155.3	0.355	2.38	35.9	39.8	2.27	28.9	0.02	0.00	0.07	173
	200 ISL	7.98	7.96	34.073	26.552	150.9	0.398	2.15	32.3	43.0	2.35	29.9	0.02	0.00	0.07	201
1	202	7.97	7.95	34.075	26.555	150.6	0.401	2.13	32.0	43.2	2.36	30.0	0.02	0.00	0.07	203
1	229	8.02	8.00	34.147	26.605	146.5	0.441	1.62	24.4	47.1	2.55	31.3	0.01			230
	250 ISL	7.83	7.81	34.177	26.656	141.9	0.472	1.32	19.8	50.9	2.67	32.6	0.01			252
1	267	7.62	7.59	34.190	26.697	138.2	0.495	1.14	17.0	53.9	2.75	33.6	0.01			269
	300 ISL	7.26	7.23	34.198	26.755	133.0	0.540	1.00	14.8	58.2	2.84	34.9	0.01			**302**
1	321	7.05	7.02	34.201	26.787	130.2	0.568	0.95	14.0	60.6	2.88	35.5	0.01			**323**
1	379	6.64	6.61	34.247	26.879	122.1	0.641	0.61	8.9	68.1	3.05	37.3	0.00			**382**
	400 ISL	6.51	6.47	34.268	26.913	119.1	0.666	0.51	7.4	71.0	3.10	37.9	0.00			**403**
1	441	6.27	6.23	34.306	26.975	113.7	0.714	0.35	5.1	76.5	3.19	38.8	0.01			**444**
	500 ISL	5.95	5.91	34.332	27.037	108.3	0.780	0.29	4.2	82.3	3.25	39.6	0.00			**504**
1	510	5.89	5.85	34.337	27.048	107.3	0.790	0.28	4.0	83.3	3.26	39.7	0.00			**514**

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 59.5 N	120 21.0 W	24/04/89	0619 UTC	775 M	290	14 KT			1015.8 MB	14.4 C	12.0 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 D.BAR
	0	ISL	13.77	13.77	33.333	24.947	299.8	0.000	6.40	108.6	2.8	0.51	0.9	0.04	0.89	0.28	0
1	1		13.77	13.77	33.333	24.947	299.8	0.003	6.40	108.6	2.8	0.51	0.9	0.04	0.89	0.28	1
	10	ISL	13.75	13.75	33.334	24.952	299.6	0.030	6.42	108.9	2.8	0.52	0.9	0.05	0.89	0.27	10
1	11		13.75	13.75	33.334	24.952	299.6	0.033	6.42	108.9	2.8	0.52	0.9	0.05	0.89	0.27	11
	20	ISL	13.74	13.74	33.332	24.953	299.8	0.060	6.41	108.7	2.9	0.52	0.9	0.05	0.90	0.29	20
1	21		13.74	13.74	33.332	24.953	299.8	0.063	6.41	108.7	2.9	0.52	0.9	0.05	0.90	0.29	21
	30	ISL	13.73	13.73	33.328	24.952	300.1	0.090	6.41	108.7	2.9	0.51	0.9	0.05	0.85	0.26	30
1	31		13.73	13.73	33.328	24.952	300.2	0.093	6.41	108.7	2.9	0.51	0.9	0.05	0.84	0.26	31
1	40		12.09	12.08	33.137	25.127	283.7	0.119	6.24	102.1	2.8	0.60	1.7	0.15	0.86	0.39	40
1	50		11.42	11.41	33.273	25.357	262.0	0.146	5.84	94.3	6.3	0.85	6.3	0.16	0.53	0.29	50
1	60		11.20	11.19	33.319	25.433	255.0	0.172	5.65	90.8	7.5	0.91	8.0	0.06	0.35	0.22	60
1	71		10.58	10.57	33.336	25.556	243.5	0.200	5.31	84.2	9.6	1.07	10.7	0.03	0.14	0.13	71
	75	ISL	10.51	10.50	33.364	25.590	240.3	0.209	5.14	81.4	10.3	1.12	11.6	0.03	0.11	0.11	75
1	84		10.37	10.36	33.468	25.695	230.5	0.231	4.69	74.1	12.8	1.26	14.1	0.03	0.07	0.08	84
1	98		9.55	9.54	33.752	26.054	196.6	0.261	3.86	60.0	21.1	1.63	20.4	0.01	0.02	0.05	98
	100	ISL	9.57	9.56	33.766	26.062	195.9	0.264	3.76	58.5	22.0	1.67	21.0	0.01	0.02	0.06	100
1	118		9.71	9.70	33.896	26.141	188.8	0.299	3.11	48.5	27.5	1.96	24.2	0.02	0.05	0.14	119
	125	ISL	9.56	9.55	33.915	26.181	185.2	0.312	2.97	46.2	28.5	2.00	24.9	0.02	0.05	0.14	126
1	142		9.10	9.08	33.941	26.276	176.4	0.343	2.74	42.2	30.0	2.05	25.9	0.01	0.03	0.14	143
	150	ISL	9.00	8.98	33.963	26.309	173.4	0.357	2.63	40.4	31.1	2.09	26.5	0.01	0.03	0.14	151
1	173		8.78	8.76	34.020	26.389	166.2	0.396	2.39	36.6	34.4	2.19	27.8	0.02	0.02	0.12	174
	200	ISL	8.41	8.39	34.055	26.473	158.5	0.440	2.35	35.7	37.7	2.26	28.7	0.01	0.01	0.10	201
1	201		8.39	8.37	34.055	26.477	158.3	0.441	2.35	35.6	37.8	2.26	28.7	0.01	0.01	0.10	202
1	231		7.57	7.55	34.042	26.588	147.9	0.487	2.39	35.6	43.9	2.32	30.2	0.01			232
	250	ISL	7.33	7.31	34.047	26.626	144.5	0.515	2.25	33.3	46.9	2.40	31.2	0.01			251
1	269		7.18	7.15	34.058	26.656	141.9	0.542	2.03	29.9	49.9	2.50	32.2	0.01			271
	300	ISL	6.90	6.87	34.092	26.721	136.0	0.585	1.59	23.3	56.0	2.67	34.2	0.01			302
1	324		6.74	6.71	34.126	26.770	131.7	0.617	1.26	18.4	60.6	2.80	35.5	0.01			326
1	381		6.65	6.62	34.207	26.846	125.2	0.691	0.82	12.0	67.4	2.97	36.5	0.01			383
	400	ISL	6.58	6.54	34.230	26.874	122.9	0.714	0.71	10.3	69.3	3.02	37.0	0.01			403
1	443		6.39	6.35	34.271	26.932	117.9	0.766	0.51	7.4	73.2	3.11	38.1	0.00			446
	500	ISL	6.14	6.10	34.297	26.985	113.4	0.832	0.38	5.5	77.2	3.18	39.3	0.00			503
1	509		6.10	6.05	34.301	26.994	112.7	0.842	0.36	5.2	77.8	3.19	39.5	0.00			513

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 39.4 N	121 2.0 W	24/04/89	1210 UTC	3784 M	310	20 KT			1014.9 MB	14.7 C	11.8 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 D.BAR
	0	ISL	14.95	14.95	33.076	24.501	342.3	0.000	6.03	104.7	2.0	0.44	0.0	0.00	0.10	0.02	0
1	1		14.95	14.95	33.076	24.501	342.3	0.003	6.03	104.7	2.0	0.44	0.0	0.00	0.10	0.02	1
	10	ISL	14.93	14.93	33.076	24.505	342.2	0.034	6.02	104.4	1.9	0.42	0.0	0.00	0.10	0.02	10
1	12		14.93	14.93	33.076	24.505	3 42.2	0.041	6.02	104.4	1.9	0.42	0.0	0.00	0.10	0.02	12
	20	ISL	14.94	14.94	33.075	24.503	342.7	0.068	6.04	104.8	1.9	0.42	0.0	0.00	0.10	0.02	20
1	22		14.94	14.94	33.075	24.503	342.8	0.075	6.04	104.8	1.9	0.42	0.0	0.00	0.10	0.02	22
	30	ISL	14.56	14.56	33.068	24.579	335.7	0.102	6.24	107.4	1.9	0.45	0.0	0.00	0.16	0.04	30
1	31		14.48	14.48	33.065	24.593	334.4	0.106	6.27	107.8	1.9	0.45	0.0	0.00	0.17	0.04	31
1	41		12.97	12.96	32.959	24.820	313.0	0.138	6.40	106.6	2.2	0.46	0.0	0.00	0.19	0.07	41
	50	ISL	12.55	12.54	32.948	24.893	306.2	0.166	6.42	105.9	2.3	0.46	0.0	0.00	0.22	0.08	50
1	52		12.52	12.51	32.951	24.901	305.5	0.172	6.43	106.0	2.3	0.46	0.0	0.00	0.23	0.09	52
1	62		12.15	12.14	32.968	24.985	297.7	0.202	6.40	104.7	2.5	0.49	0.0	0.01	0.39	0.18	62
1	73		11.66	11.65	32.998	25.100	287.0	0.234	6.10	98.8	3.8	0.64	2.5	0.20	0.40	0.18	73
	75	ISL	11.66	11.65	33.031	25.125	284.6	0.240	6.03	97.7	4.0	0.65	2.8	0.20	0.39	0.19	75
1	86		11.66	11.65	33.236	25.285	269.7	0.271	5.67	92.0	5.3	0.72	4.8	0.10	0.31	0.22	86
1	100		10.81	10.80	33.329	25.511	248.5	0.307	5.40	86.1	9.4	1.02	9.8	0.02	0.09	0.09	100
1	120		10.37	10.36	33.524	25.739	227.1	0.355	4.51	71.3	14.0	1.30	14.9	0.01	0.04	0.06	121
	125	ISL	10.21	10.20	33.569	25.802	221.3	0.366	4.30	67.7	15.7	1.39	16.3	0.01	0.03	0.05	126
1	146		9.54	9.52	33.728	26.038	199.1	0.410	3.59	55.8	22.7	1.72	21.5	0.01	0.01	0.04	147
	150	ISL	9.46	9.44	33.747	26.066	196.5	0.418	3.51	54.4	23.5	1.75	22.0	0.01	0.01	0.04	151
1	177		9.05	9.03	33.845	26.209	183.4	0.469	3.22	49.5	27.3	1.88	24.1	0.01	0.00	0.03	178
	200	ISL	8.66	8.64	33.923	26.332	172.0	0.510	3.26	49.7	30.3	1.91	24.8	0.01	0.00	0.03	201
1	206		8.57	8.55	33.940	26.359	169.6	0.520	3.28	49.9	31.0	1.92	25.0	0.01	0.00	0.03	207
1	235		8.34	8.32	33.981	26.427	163.6	0.568	3.08	46.6	33.9	2.02	26.5	0.01			236
	250	ISL	8.18	8.15	34.011	26.474	159.3	0.593	2.85	43.0	36.7	2.11	27.6	0.01			251
1	275		7.88	7.85	34.056	26.554	152.0	0.632	2.42	36.3	42.0	2.26	29.4	0.00			277
	300	ISL	7.54	7.51	34.070	26.615	146.5	0.669	2.15	32.0	46.7	2.38	31.0	0.00			302
1	329		7.16	7.13	34.078	26.675	141.0	0.711	1.88	27.7	51.8	2.51	32.8	0.01			331
1	388		6.71	6.67	34.132	26.779	131.7	0.791	1.22	17.8	61.2	2.78	35.9	0.00			390
	400	ISL	6.62	6.58	34.142	26.799	129.9	0.807	1.12	16.3	63.1	2.83	36.4	0.00			403
1	450		6.25	6.21	34.182	26.880	122.7	0.870	0.77	11.1	70.8	3.00	38.3	0.00			453
	500	ISL	5.87	5.83	34.223	26.961	115.4	0.929	0.51	7.3	78.5	3.11	39.8	0.00			503
1	516		5.75	5.71	34.236	26.986	113.1	0.948	0.43	6.1	81.0	3.15	40.3	0.00			519

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 19.A N	121 42.9 W	24/04/89	1810 UTC	4114 M	310	15 KT	310 04 08	1	1018.2 MB	16.3 C	12.2 C	3/8	SC

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 D.BAR
	0	ISL	15.59	15.59	32.995	24.298	361.6	0.000	5.92	104.0	2.4	0.41	0.0	0.01	0.09	0.01	0
1	1		15.59	15.59	32.995	24.298	361.6	0.004	5.92	104.0	2.4	0.41	0.0	0.01	0.09	0.01	1
	10	ISL	15.50	15.50	32.993	24.317	360.1	0.036	5.91	103.7	2.4	0.41	0.0	0.01	0.09	0.01	10
1	11		15.49	15.49	32.993	24.319	359.9	0.040	5.91	103.6	2.4	0.41	0.0	0.01	0.09	0.01	11
	20	ISL	15.45	15.45	32.989	24.325	359.6	0.072	5.92	103.7	2.0	0.41	0.0	0.01	0.09	0.02	20
1	21		15.44	15.44	32.989	24.328	359.5	0.076	5.92	103.7	2.0	0.41	0.0	0.01	0.09	0.02	21
	30	ISL	14.56	14.56	32.965	24.499	343.3	0.107	6.15	105.8	2.0	0.42	0.0	0:01	0.11	0.02	30
1	31		14.44	14.44	32.963	24.523	341.1	0.111	6.18	106.1	2.0	0.42	0.0	0.01	0.11	0.02	31
1	41		13.28	13.27	32.968	24.765	318.2	0.144	6.36	106.6	2.0	0.42	0.0	0.00	0.13	0.03	41
	50	ISL	12.67	12.66	32.973	24.889	306.6	0.172	6.41	106.1	2.2	0.44	0.0	0.01	0.20	0.07	50
1	51		12.61	12.60	32.972	24.900	305.6	0.175	6.41	105.9	2.2	0.44	0.0	0.01	0.21	0.08	51
1	61		11.87	11.86	32.907	24.990	297.2	0.205	6.53	106.2	2.6	0.46	0.0	0.01	0.39	0.18	61
1	70		11.43	11.42	32.917	25.079	288.9	0.231	6.29	101.3	3.4	0.57	1.3	0.21	0.87	0.40	70
	75	ISL	11.41	11.40	32.966	25.120	285.1	0.246	6.15	99.1	3.9	0.62	2.4	0.18	0.79	0.37	75
1	85		11.36	11.35	33.054	25.198	277.9	0.274	5.90	95.0	4.8	0.71	4.5	0.11	0.40	0.22	85
1	99		11.29	11.28	33.170	25.302	268.4	0.312	5.64	90.7	5.9	0.78	5.9	0.04	0.20	0.17	99
	100	ISL	11.28	11.27	33.180	25.311	267.5	0.315	5.63	90.5	5.9	0.78	6.0	0.04	0.19	0.17	100
1	120		10.94	10.93	33.363	25.515	248.6	0.366	5.28	84.4	7.7	0.87	8.3	0.02	0.10	0.10	121
	125	ISL	10.75	10.74	33.393	25.572	243.3	0.379	5.13	81.7	9.3	0.98	10.0	0.02	0.08	0.09	126
1	145		9.89	9.87	33.512	25.812	220.7	0.425	4.45	69.6	16.9	1.47	17.3	0.01	0.02	0.07	146
	150	ISL	9.72	9.70	33.555	25.874	214.9	0.436	4.20	65.4	18.8	1.57	18.9	0.01	0.02	0.07	151
1	175		9.00	8.98	33.772	26.160	188.0	0.486	3.34	51.3	26.3	1.89	24.1	0.02	0.01	0.06	176
	200	ISL	8.40	8.38	33.923	26.371	168.2	0.531	4.13	62.6	26.9	1.73	22:0	0.01	0.00	0.03	201
1	204		8.32	8.30	33.939	26.396	165.9	0.538	4.28	64.8	27.0	1.70	21.5	0.01	0.00	0.03	205
1	234		7.93	7.91	33.974	26.482	158.1	0.586	3.81	57.2	32.7	1.83	24.3	0.01			235
	250	ISL	7.70	7.68	33.986	26.525	154.2	0.611	3.61	53.9	36.1	1.91	25.6	0.01			251
1	272		7.38	7.35	34.000	26.582	149.0	0.644	3.32	49.2	40.9	2.04	27.3	0.01			274
	300	ISL	7.05	7.02	34.016	26.641	143.7	0.685	2.74	40.3	47.3	2.26	30.1	0.01			302
1	327		6.74	6.71	34.028	26.693	139.0	0.724	2.19	32.0	53.5	2.47	32.8	0.01			329
1	385		5.92	5.89	34.040	26.808	128.2	0.801	1.61	23.1	66.3	2.76	36.6	0.01			387
	400	ISL	5.78	5.75	34.049	26.833	125.9	0.820	1.46	20.8	69.3	2.82	37.4	0.01			402
1	449		5.47	5.43	34.101	26.912	118.8	0.880	0.97	13.7	78.0	3.01	39.6	0.01			452
	500	ISL	5.39	5.35	34.211	27.009	110.2	0.939	0.51	7.2	84.9	3.18	40.9	0.01			503
1	516		5.36	5.32	34.245	27.040	107.5	0.956	0.37	5.2	87.0	3.23	41.3	0.01			519

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 59.5 N	122 23.6 W	25/04/89	0100 UTC	4022 M	290	12 KT	300 05 07	1	1016.8 MB	15.4 C	12.0 C	4/8	CU

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 D.BAR
	0	ISL	15.86	15.86	32.999	24.241	367.0	0.000	5.90	104.2	2.7	0.42	0.0	0.00	0.08	0.01	0
1	1		15.86	15.86	32.999	24.241	367.1	0.004	5.90	104.2	2.7	0.42	0.0	0.00	0.08	0.01	1
	10	ISL	15.80	15.80	32.997	24.253	366.2	0.037	5.92	104.5	2.7	0.42	0.0	0.00	0.07	0.01	10
1	11		15.79	15.79	32.997	24.256	366.0	0.040	5.92	104.4	2.7	0.42	0.0	0.00	0.07	0.01	11
1	20		15.01	15.01	32.974	24.410	351.6	0.073	6.04	104.9	2.5	0.42	0.0	0.00	0.07	0.01	20
1	30		14.94	14.94	33.114	24.533	340.1	0.107	6.08	105.5	2.4	0.39	0.0	0.00	0.08	0.02	30
1	40		14.41	14.40	33.140	24.666	327.7	0.141	6.13	105.3	2.3	0.38	0.0	0.00	0.09	0.02	40
1	50		14.18	14.17	33.238	24.791	316.1	0.173	6.09	104.1	2.4	0.38	0.0	0.00	0.12	0.04	50
1	60		12.71	12.70	32.989	24.894	306.4	0.204	6.34	105.0	2.5	0.44	0.0	0.00	0.19	0.08	60
1	69		12.54	12.53	33.027	24.957	300.7	0.231	6.27	103.5	2.8	0.45	0.1	0.01	0.42	0.22	69
	75	ISL	12.31	12.30	33.034	25.006	296.1	0.249	6.16	101.2	3.2	0.50	0.9	0.07	0.44	0.28	75
1	82		12.05	12.04	33.060	25.076	289.6	0.270	6.00	98.0	3.9	0.58	2.2	0.13	0.46	0.30	82
1	97		11.83	11.82	33.281	25.289	269.7	0.312	5.61	91.4	5.6	0.71	5.2	0.03	0.24	0.21	97
	100	ISL	11.74	11.73	33.308	25.326	266.1	0.320	5.54	90.1	6.0	0.74	5.8	0.03	0.21	0.19	100
1	118		11.08	11.07	33.412	25.528	247.3	0.366	5.16	82.7	9.0	0.92	9.3	0.01	0.08	0.11	119
	125	ISL	10.82	10.80	33.438	25.594	241.1	0.383	5.00	79.7	10.4	1.01	10.8	0.01	0.05	0.09	126
1	143		10.19	10.17	33.508	25.758	225.8	0.425	4.61	72.5	14.2	1.24	14.6	0.01	0.02	0.05	144
	150	ISL	9.95	9.93	33.557	25.837	218.4	0.440	4.53	70.9	15.5	1.30	15.6	0.01	0.01	0.04	151
1	173		9.27	9.25	33.727	26.082	195.5	0.488	4.23	65.3	20.5	1.48	18.9	0.01	0.00	0.03	174
	200	ISL	8.72	8.70	33.868	26.279	177.0	0.538	3.40	51.9	28.8	1.84	24.1	0.01	0.00	0.03	201
1	204		8.66	8.64	33.885	26.302	175.0	0.545	3.28	50.0	30.0	1.89	24.8	0.01	0.00	0.03	205
1	232		8.26	8.24	33.979	26.437	162.5	0.593	2.99	45.2	35.1	2.02	26.8	0.00			233
	250	ISL	7.98	7.95	34.011	26.504	156.4	0.621	2.81	42.2	38.8	2.12	28.1	0.00			251
1	271		7.65	7.62	34.031	26.568	150.5	0.654	2.60	38.8	43.1	2.23	29.5	0.00			273
	300	ISL	7.27	7.24	34.043	26.632	144.7	0.696	2.33	34.4	48.1	2.36	31.3	0.00			302
1	326		6.98	6.95	34.049	26.677	140.6	0.733	2.06	30.2	52.5	2.47	32.8	0.00			**328**
1	385		6.47	6.44	34.102	26.787	130.7	0.814	1.29	18.7	63.9	2.78	36.4	0.00			**387**
	400	ISL	6.30	6.26	34.107	26.813	128.3	0.833	1.17	16.9	66.6	2.84	37.2	0.00			**402**
1	450		5.78	5.74	34.122	26.891	121.1	0.895	0.89	12.7	75.3	2.98	39.3	0.00			**453**
	500	ISL	5.51	5.47	34.162	26.956	115.4	0.954	0.66	9.4	83.0	3.08	40.5	0.00			**503**
1	516		5.42	5.38	34.175	26.977	113.5	0.973	0.58	8.2	85.4	3.11	40.9	0.00			**519**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
31 39.4 N	123 4.2 W	25/04/89	0638 UTC	3738 M	290	09 KT			1017.9 MB	14.8 C	11.8 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 D.BAR
	0	ISL	16.52	16.52	33.198	24.244	366.8	0.000	5.77	103.4	2.5	0.42	0.0	0.00	0.07	0.01	0
1	1		16.52	16.52	33.198	24.244	366.8	0.004	5.77	103.4	2.5	0.42	0.0	0.00	0.07	0.01	1
	10	ISL	16.48	16.48	33.198	24.254	366.2	0.037	5.79	103.7	2.5	0.39	0.0	0.00	0.07	0.02	10
1	11		16.48	16.48	33.198	24.254	366.2	0.040	5.79	103.7	2.5	0.38	0.0	0.00	0.07	0.02	11
	20	ISL	16.56	16.56	33.303	24.316	360.5	0.073	5.76	103.4	2.5	0.36	0.0	0.00	0.06	0.01	20
1	21		16.57	16.57	33.318	24.326	359.7	0.077	5.76	103.4	2.5	0.36	0.0	0.00	0.06	0.01	21
	30	ISL	16.44	16.44	33.422	24.436	349.5	0.109	5.82	104.3	2.3	0.35	0.0	0.00	0.06	0.01	30
1	31		16.42	16.42	33.437	24.452	348.0	0.112	5.83	104.4	2.3	0.35	0.0	0.00	0.06	0.01	31
1	41		15.55	15.54	33.403	24.622	332.0	0.146	5.98	105.3	2.2	0.35	0.0	0.00	0.06	0.02	41
	50	ISL	15.24	15.23	33.407	24.694	325.4	0.176	5.97	104.4	2.2	0.35	0.0	0.00	0.08	0.02	50
1	51		15.23	15.22	33.409	24.698	325.1	0.179	5.97	104.4	2.2	0.35	0.0	0.00	0.08	0.02	51
1	61		15.17	15.16	33.446	24.740	321.4	0.211	5.92	103.4	2.1	0.34	0.0	0.00	0.08	0.03	61
1	70		14.46	14.45	33.342	24.813	314.7	0.240	6.03	103.8	2.2	0.37	0.0	0.00	0.13	0.06	70
	75	ISL	14.01	14.00	33.286	24.864	309.9	0.255	6.12	104.3	2.3	0.38	0.0	0.00	0.16	0.08	75
1	85		13.24	13.23	33.218	24.968	300.1	0.286	6.21	104.1	2.4	0.42	0.1	0.00	0.24	0.15	85
1	98		12.78	12.77	33.258	25.090	288.8	0.324	5.97	99.2	3.2	0.53	1.5	0.25	0.43	0.27	98
	100	ISL	12.68	12.67	33.261	25.112	286.7	0.330	5.94	98.5	3.4	0.55	1.8	0.24	0.42	0.26	100
1	119		11.67	11.65	33.300	25.334	265.9	0.382	5.63	91.4	6.1	0.77	6.0	0.02	0.19	0.18	120
	125	ISL	11.40	11.38	33.319	25.398	259.9	0.398	5.49	88.6	7.3	0.86	7.6	0.02	0.15	0.15	126
1	144		10.62	10.60	33.423	25.618	239.3	0.446	4.89	77.6	12.3	1.20	13.0	0.01	0.06	0.06	145
	150	ISL	10.37	10.35	33.488	25.712	230.4	0.460	4.57	72.2	14.6	1.33	15.1	0.01	0.04	0.05	151
1	175		9.50	9.48	33.785	26.090	194.8	0.513	3.23	50.1	24.8	1.83	23.1	0.00	0.01	0.03	176
	200	ISL	9.09	9.07	33.989	26.316	173.8	0.559	2.41	37.1	32.4	2.14	27.2	0.00	0.00	0.03	201
1	204		9.05	9.03	34.012	26.340	171.5	0.566	2.32	35.7	33.4	2.17	27.6	0.00	0.00	0.03	205
1	234		8.72	8.70	34.093	26.456	161.0	0.616	2.00	30.6	37.8	2.32	29.2	0.00			235
	250	ISL	8.55	8.52	34.119	26.503	156.8	0.641	1.87	28.5	39.9	2.38	29.9	0.00			251
1	272		8.34	8.31	34.144	26.555	152.2	0.675	1.70	25.8	42.7	2.45	30.7	0.00			273
	300	ISL	8.10	8.07	34.175	26.616	146.8	0.717	1.44	21.7	46.7	2.56	31.9	0.00			302
1	327		7.88	7.85	34.198	26.667	142.3	0.756	1.20	18.0	50.6	2.67	33.1	0.00			329
1	385		7.31	7.27	34.213	26.761	133.9	0.836	0.91	13.5	58.2	2.85	35.3	0.00			387
	400	ISL	7.10	7.06	34.203	26.783	132.0	0.856	0.89	13.1	60.3	2.88	35.9	0.00			402
1	450		6.47	6.43	34.180	26.850	125.8	0.921	0.83	12.0	67.3	2.95	37.6	0.00			453
	500	ISL	6.19	6.15	34.223	26.920	119.6	0.982	0.58	8.4	74.2	3.08	39.0	0.00			503
1	517		6.10	6.05	34.238	26.944	117.5	1.002	0.50	7.2	76.5	3.12	39.5	0.00			520

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
31 19.4 N	123 44.7 W	25/04/89	1215 UTC	4194 M	270	18 KT			1017.6 MB	15.0 C	11.3 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 D.BAR
1	0		16.58	16.58	33.317	24.322	359.4	0.000	5.75	103.2	2.9	0.37	0.0	0.00	0.07	0.01	0
1	10		16.61	16.61	33.318	24.316	360.2	0.036	5.75	103.3	2.7	0.37	0.0	0.00	0.07	0.01	10
	20	ISL	16.58	16.58	33.313	24.319	360.2	0.072	5.76	103.4	2.6	0.37	0.0	0.00	0.07	0.01	20
1	22		16.57	16.57	33.312	24.321	360.2	0.079	5.76	103.4	2.6	0.37	0.0	0.00	0.07	0.01	22
	30	ISL	15.78	15.78	33.281	24.477	345.5	0.107	5.93	104.8	2.4	0.36	0.0	0.00	0.08	0.02	30
1	31		15.66	15.66	33.276	24.500	343.4	0.111	5.95	104.9	2.4	0.36	0.0	0.00	0.08	0.02	31
1	41		14.84	14.83	33.228	24.643	330.0	0.145	6.07	105.2	2.5	0.37	0.0	0.00	0.09	0.02	41
	50	ISL	14.32	14.31	33.201	24.733	321.7	0.174	6.16	105.6	2.5	0.39	0.0	0.00	0.11	0.03	50
1	52		14.23	14.22	33.197	24.748	320.2	0.180	6.17	105.6	2.5	0.39	0.0	0.00	0.11	0.03	52
1	62		13.83	13.82	33.190	24.826	313.0	0.212	6.19	105.1	2.8	0.40	0.0	0.00	0.14	0.05	62
1	72		13.39	13.38	33.196	24.920	304.3	0.243	6.21	104.5	2.7	0.41	0.0	0.00	0.22	0.11	72
	75	ISL	13.24	13.23	33.199	24.953	301.3	0.252	6.16	103.3	2.8	0.43	0.2	0.04	0.31	0.17	75
1	86		12.74	12.73	33.222	25.069	290.4	0.284	5.94	98.6	3.5	0.53	1.2	0.18	0.60	0.37	86
	100	ISL	12.46	12.45	33.276	25.166	281.6	0.324	5.75	94.9	4.2	0.61	3.1	0.07	0.41	0.28	100
1	101		12.44	12.43	33.281	25.174	280.8	0.327	5.74	94.7	4.3	0.62	3.3	0.06	0.39	0.27	101
1	120		11.80	11.78	33.364	25.359	263.5	0.379	5.43	88.4	6.5	0.78	6.2	0.02	0.16	0.14	121
	125	ISL	11.58	11.56	33.381	25.413	258.5	0.392	5.32	86.2	7.4	0.83	7.3	0.02	0.12	0.12	126
1	144		10.73	10.71	33.450	25.620	239.1	0.439	4.88	77.7	11.3	1.07	11.7	0.01	0.04	0.05	145
	150	ISL	10.48	10.46	33.479	25.686	232.9	0.453	4.74	75.1	12.7	1.15	13.1	0.01	0.03	0.05	151
1	174		9.60	9.58	33.621	25.945	208.5	0.506	4.16	64.7	18.9	1.48	18.5	0.01	0.01	0.03	175
	200	ISL	8.98	8.96	33.816	26.198	184.9	0.558	3.41	52.3	27.2	1.84	23.7	0.00	0.00	0.05	201
1	202		8.95	8.93	33.830	26.214	183.4	0.561	3.36	51.5	27.8	1.86	24.0	0.00	0.00	0.05	203
1	230		8.64	8.62	33.946	26.353	170.6	0.611	2.92	44.5	32.4	2.03	26.3	0.00			231
	250	ISL	8.33	8.30	33.999	26.442	162.4	0.644	2.71	41.0	35.9	2.12	27.5	0.00			251
2	273		7.96	7.93	34.041	26.531	154.2	0.681	2.49	37.4	40.2	2.21	28.8	0.01			274
	300	ISL	7.61	7.58	34.074	26.608	147.2	0.721	2.13	31.7	45.6	2.36	30.7	0.01			302
2	331		7.25	7.22	34.096	26.677	140.9	0.766	1.73	25.6	51.8	2.53	32.9	0.00			333
2	390		6.56	6.52	34.112	26.784	131.2	0.846	1.26	18.3	62.3	2.75	36.0	0.00			392
	400	ISL	6.46	6.42	34.114	26.798	129.9	0.859	1.20	17.4	63.7	2.78	36.5	0.00			402
2	455		6.00	5.96	34.128	26.869	123.5	0.929	0.92	13.2	71.0	2.95	38.6	0.00			458
	500	ISL	5.71	5.67	34.161	26.931	118.0	0.983	0.70	10.0	78.0	3.05	39.9	0.00			503
2	521		5.57	5.53	34.177	26.961	115.3	1.008	0.60	8.5	81.3	3.10	40.5	0.00			524

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 29.1 N	117 46.1 W	22/04/89	2124 UTC	74 M	190	10 KT	240 03 07	0	1014.5 MB	18.0 C	15.3 C	0/8

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 D.BAR
	0	ISL	16.75	16.75	33.530	24.446	347.6	0.000	7.06	127.4	5.0	0.25	0.0	0.01	1.52	0.20	0
1	1		16.75	16.75	33.530	24.446	3 47.6	0.003	7.06	127.4	5.0	0.25	0.0	0.01	1.52	0.20	1
1	10		16.30	16.30	33.527	24.548	338.2	0.034	7.11	127.1	4.9	0.25	0.0	0.01	2.94	0.35	10
1	20		12.44	12.44	33.525	25.361	260.9	0.064	4.85	80.1	9.9	1.03	7.9	0.33	1.88	0.32	20
1	30		11.33	11.33	33.571	25.605	238.0	0.089	4.00	64.6	13.4	1.44	15.5	0.36	0.58	0.36	30
1	40		10.93	10.93	33.607	25.705	228.7	0.113	3.61	57.8					0.27	0.23	40
1	50		10.31	10.30	33.703	25.888	211.5	0.135	3.46	54.7	18.9	1.68	20.1	0.06	0.12	0.12	50
1	60		10.11	10.10	33.754	25.962	204.6	0.155	3.16	49.7	21.4	1.82	21.5	0.10	0.10	0.15	60

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 25.2 N	117 54.2 W	22/04/89	1814 UTC	614 M	150	06 KT	250 04 07	0	1015.3 MB	18.8 C	15.2 C	0/8

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 D.BAR
	0	ISL	16.83	16.83	33.523	24.422	3 49.8	0.000	6.11	110.4	2.9	0.33	0.1	0.00	0.23	0.05	0
1	1		16.83	16.83	33.523	24.422	349.9	0.003	6.11	110.4	2.9	0.33	0.1	0.00	0.23	0.05	1
	10	ISL	16.17	16.17	33.510	24.564	336.6	0.034	6.18	110.2	2.7	0.35	0.0	0.01	0.29	0.07	10
1	12		16.02	16.02	33.508	24.597	333.5	0.041	6.19	110.1	2.7	0.35	0.0	0.01	0.30	0.07	12
	20	ISL	13.69	13.69	33.486	25.082	287.5	0.066	6.44	109.2	4.0	0.44	0.7	0.05	1.15	0.24	20
1	21		13.39	13.39	33.487	25.144	281.6	0.069	6.45	108.7	4.3	0.46	0.8	0.05	1.24	0.26	21
	30	ISL	12.17	12.17	33.486	25.382	259.1	0.093	5.57	91.5	7.5	0.86	6.5	0.24	0.92	0.34	30
1	31		12.10	12.10	33.486	25.396	257.9	0.096	5.46	89.6	7.9	0.90	7.2	0.26	0.88	0.34	31
1	40		11.82	11.81	33.512	25.469	251.2	0.119	5.14	83.8	9.8	1.04	9.2	0.36	0.54	0.30	40
1	49		11.34	11.33	33.542	25.581	240.7	0.141	4.64	74.9	11.9	1.18	12.8	0.18	0.36	0.36	49
	50	ISL	11.28	11.27	33.549	25.597	239.2	0.143	4.57	73.7	12.3	1.21	13.3	0.16	0.34	0.35	50
1	60		10.68	10.67	33.629	25.766	223.3	0.166	3.94	62.7	16.6	1.52	17.4	0.04	0.20	0.18	60
1	70		10.27	10.26	33.696	25.890	211.7	0.188	3.62	57.1	20.1	1.61	19.9	0.03	0.12	0.13	70
	75	ISL	10.07	10.06	33.734	25.953	205.7	0.198	3.46	54.4	21.5	1.69	20.9	0.02	0.09	0.11	75
1	84		9.77	9.76	33.798	26.054	196.4	0.217	3.21	50.2	23.6	1.83	22.4	0.01	0.04	0.07	84
1	99		9.48	9.47	33.872	26.160	186.6	0.245	3.02	46.9	26.4	1.93	23.9	0.02	0.01	0.05	100
	100	ISL	9.46	9.45	33.878	26.168	185.9	0.247	3.00	46.6	26.6	1.94	24.0	0.02	0.01	0.05	101
1	119		9.14	9.13	33.977	26.297	173.9	0.281	2.74	42.3	30.8	2.06	25.6	0.01	0.00	0.05	120
	125	ISL	9.06	9.05	33.995	26.324	171.4	0.292	2.70	41.6	31.6	2.08	25.9	0.01	0.00	0.05	126
1	144		8.86	8.84	34.033	26.386	165.9	0.324	2.61	40.0	33.7	2.14	26.7	0.01	0.00	0.04	145
	150	ISL	8.81	8.79	34.043	26.402	164.5	0.334	2.57	39.4	34.4	2.16	26.9	0.01	0.00	0.04	151
1	175		8.61	8.59	34.080	26.462	159.2	0.374	2.38	36.3	37.2	2.24	27.9	0.01	0.00	0.04	176
	200	ISL	8.38	8.36	34.115	26.525	153.6	0.413	2.13	32.3	40.4	2.35	29.0	0.01	0.00	0.03	201
1	204		8.35	8.33	34.119	26.533	153.0	0.419	2.09	31.7	40.9	2.36	29.2	0.01	0.00	0.03	205
1	232		8.18	8.16	34.124	26.563	150.6	0.462	2.01	30.4	42.3	2.39	30.0	0.02			233
	250	ISL	7.99	7.96	34.138	26.602	147.1	0.489	1.82	27.4	45.0	2.49	31.0	0.02			**252**
1	275		7.69	7.66	34.163	26.666	141.3	0.525	1.50	22.4	49.6	2.65	32.5	0.02			**277**
	300	ISL	7.40	7.37	34.182	26.723	136.2	0.559	1.24	18.4	54.3	2.76	33.9	0.02			**302**
1	327		7.13	7.10	34.203	26.777	131.3	0.595	0.99	14.6	59.0	2.86	35.2	0.02			**329**
1	386		6.90	6.86	34.261	26.856	124.7	0.671	0.62	9.1	64.9	3.03	36.6	0.01			**389**
	400	ISL	6.82	6.78	34.271	26.874	123.1	0.688	0.56	8.2	66.4	3.06	36.9	0.01			**403**
1	450		6.52	6.48	34.300	26.938	117.6	0.748	0.40	5.8	71.8	3.16	38.0	0.01			**453**
	500	ISL	6.24	6.20	34.324	26.994	112.7	0.806	0.31	4.5	76.8	3.22	39.1	0.01			**504**
1	517		6.15	6.10	34.332	27.012	111.2	0.825	0.28	4.0	78.5	3.24	39.5	0.01			**521**

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 15.1 N	118 15.1 W	22/04/89	1440 UTC	476 M	270	10 KT	260 03 06	0	1014.4 MB	15.2 C	13.2 C	0/8

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 D.BAR
	0	ISL	16.65	16.65	33.538	24.475	3 44.7	0.000	5.85	105.3	2.0	0.35	0.0	0.00	0.35	0.07	0
1	1		16.65	16.65	33.538	24.475	3 44.8	0.003	5.85	105.3	2.0	0.35	0.0	0.00	0.35	0.07	1
1	10		16.48	16.48	33.531	24.509	341.8	0.034	5.91	106.0	2.1	0.35	0.0	0.00	0.36	0.07	10
1	20		13.99	13.99	33.477	25.014	294.0	0.066	6.22	106.1	3.9	0.48	0.9	0.05	0.81	0.18	20
	30	ISL	12.18	12.18	33.476	25.373	260.0	0.094	5.94	97.6	5.7	0.67	3.8	0.21	0.73	0.22	30
1	31		12.06	12.06													31
1	42		11.78	11.77	33.510	25.475	250.7	0.124	5.10	83.1	9.4	1.01	9.4	0.29	0.63	0.26	42
	50	ISL	11.10	11.09	33.573	25.648	234.3	0.144	4.35	69.9	13.7	1.32	14.5	0.14	0.30	0.19	50
1	51		11.02	11.01	33.581	25.669	232.4	0.146	4.27	68.5	14.2	1.35	15.0	0.12	0.26	0.18	51
1	61		10.86	10.85	33.603	25.714	228.2	0.169	4.10	65.5	15.3	1.40	16.1	0.09	0.22	0.17	61
1	71		10.32	10.31	33.693	25.879	212.8	0.191	3.63	57.4	19.1	1.61	19.4	0.03	0.11	0.10	71
	75	ISL	10.15	10.14	33.726	25.934	207.6	0.200	3.49	55.0	20.5	1.67	20.4	0.03	0.09	0.09	75
1	86		9.80	9.79	33.798	26.049	196.9	0.222	3.24	50.7	23.7	1.79	22.2	0.02	0.05	0.08	86
	100	ISL	9.60	9.59	33.838	26.114	191.0	0.249	3.13	48.7	25.2	1.85	23.2	0.02	0.03	0.07	101
1	101		9.59	9.58	33.840	26.117	190.7	0.251	3.13	48.7	25.3	1.85	23.2	0.02	0.03	0.07	102
1	119		9.21	9.20	33.913	26.236	179.7	0.284	3.02	46.6	28.3	1.93	24.2	0.01	0.01	0.07	120
	125	ISL	9.11	9.10	33.936	26.270	176.6	0.295	2.96	45.6	29.3	1.96	24.7	0.01	0.01	0.06	126
1	146		8.85	8.83	34.012	26.371	167.4	0.331	2.69	41.2	32.9	2.08	26.4	0.00	0.00	0.04	147
	150	ISL	8.82	8.80	34.027	26.387	165.9	0.338	2.63	40.3	33.5	2.10	26.7	0.00	0.00	0.04	151
1	175		8.60	8.58	34.098	26.478	157.7	0.378	2.28	34.8	37.7	2.25	28.2	0.01	0.00	0.04	176
	200	ISL	8.07	8.05	34.105	26.564	149.8	0.417	2.12	31.9	42.4	2.36	29.8	0.01	0.00	0.03	201
1	206		7.93	7.91	34.104	26.584	148.0	0.426	2.09	31.4	43.6	2.38	30.2	0.01	0.00	0.03	207
1	239		7.49	7.47	34.123	26.663	140.9	0.473	1.75	26.0	49.5	2.54	32.3	0.01			240
	250	ISL	7.49	7.47	34.123	26.663	141.1	0.489	1.59	23.6	51.1	2.59	32.8	0.01			**252**
1	288		7.47	7.44	34.123	26.666	141.4	0.542	1.08	16.0	55.5	2.76	34.1	0.03			**290**
	300	ISL	7.46	7.43	34.153	26.692	139.2	0.559	0.98	14.6	56.4	2.80	34.4	0.03			**302**
1	343		7.34	7.31	34.267	26.799	129.7	0.617	0.71	10.5	59.9	2.93	35.3	0.02			**345**
	400	ISL	6.77	6.73	34.284	26.891	121.4	0.689	0.50	7.3	68.0	3.08	37.4	0.01			**403**
1	406		6.71	6.67	34.286	26.901	120.5	0.696	0.48	7.0	68.9	3.10	37.6	0.01			**409**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 11.1 N	118 23.3 W	22/04/89	1154 UTC	1204 M	280	18 KT			1013.9 MB	14.5 C	12.2 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 D.BAR
	0	ISL	16.16	16.16	33.527	24.579	334.8	0.000	5.94	105.9	2.4	0.38	0.1	0.00	0.20	0.05	0
1	1		16.16	16.16	33.527	24.579	334.8	0.003	5.94	105.9	2.4	0.38	0.1	0.00	0.20	0.05	1
	10	ISL	16.13	16.13	33.526	24.586	334.5	0.033	5.94	105.8	2.4	0.37	0.1	0.00	0.19	0.05	10
1	12		16.12	16.12	33.526	24.588	334.4	0.040	5.94	105.8	2.4	0.37	0.1	0.00	0.19	0.05	12
	20	ISL	16.09	16.09	33.523	24.593	334.2	0.067	5.94	105.8	2.4	0.38	0.1	0.00	0.21	0.06	20
1	21		16.09	16.09	33.523	24.593	334.2	0.070	5.94	105.8	2.4	0.38	.0.1	0.00	0.21	0.06	21
1	30		13.57	13.57	33.485	25.106	285.5	0.098	6.16	104.2	4.8	0.55	1.6	0.07	0.61	0.14	30
1	40		11.87	11.86	33.505	25.454	252.6	0.125	5.17	84.4	9.5	1.00	8.8	0.28	0.64	0.26	40
1	50		11.57	11.56	33.527	25.527	245.8	0.150	4.78	77.5	11.5	1.16	11.5	0.34	0.45	0.25	50
1	59		11.24	11.23	33.570	25.621	237.1	0.172	4.24	68.3	13.7	1.34	14.4	0.25	0.37	0.28	59
1	69		10.80	10.79	33.614	25.734	226.6	0.195	4.01	64.0	16.4	1.47	16.9	0.05	0.21	0.19	69
	75	ISL	10.57	10.56	33.646	25.799	220.5	0.208	3.83	60.8	18.0	1.54	18.2	0.04	0.15	0.15	75
1	83		10.27	10.26	33.700	25.893	211.7	0.226	3.57	56.4	20.3	1.64	19.9	0.02	0.09	0.11	83
1	98		9.63	9.62	33.846	26.115	190.9	0.256	3.17	49.4	25.4	1.84	23.1	0.01	0.02	0.06	98
	100	ISL	9.58	9.57	33.857	26.132	189.3	0.260	3.14	48.9	25.9	1.86	23.3	0.01	0.02	0.06	101
1	117		9.24	9.23	33.919	26.236	179.7	0.291	2.94	45.4	29.3	1.97	24.8	0.01	0.01	0.06	118
	125	ISL	9.11	9.10	33.952	26.282	175.4	0.305	2.83	43.6	30.9	2.02	25.5	0.01	0.01	0.06	126
1	142		8.89	8.87	34.015	26.367	167.7	0.334	2.61	40.0	34.0	2.11	26.8	0.00	0.00	0.05	143
	150	ISL	8.80	8.78	34.037	26.398	164.8	0.348	2.52	38.6	35.3	2.15	27.3	0.00	0.00	0.05	151
1	171		8.57	8.55	34.079	26.467	158.6	0.382	2.32	35.3	38.6	2.25	28.6	0.01	0.00	0.04	172
	200	ISL	8.23	8.21	34.104	26.539	152.3	0.427	2.11	31.9	42.7	2.36	30.0	0.00	0.00	0.03	201
1	201		8.22	8.20	34.105	26.541	152.0	0.428	2.10	31.7	42.8	2.36	30.0	0.00	0.00	0.03	202
1	231		8.02	8.00	34.147	26.605	146.5	0.473	1.77	26.6	46.9	2.48	31.4	0.01			232
	250	ISL	7.86	7.83	34.172	26.648	142.7	0.500	1.54	23.1	49.8	2.58	32.4	0.01			252
1	269		7.69	7.66	34.194	26.691	138.9	0.527	1.32	19.7	52.7	2.68	33.3	0.01			271
	300	ISL	7.44	7.41	34.218	26.745	134.1	0.569	1.04	15.4	56.9	2.80	34.6	0.01			302
1	324		7.24	7.21	34.231	26.784	130.7	0.601	0.87	12.9	60.0	2.88	35.5	0.01			326
1	381		6.75	6.71	34.255	26.871	123.0	0.674	0.63	9.2	67.0	3.01	37.4	0.00			383
	400	ISL	6.66	6.62	34.266	26.892	121.3	0.697	0.56	8.2	68.8	3.04	37.8	0.00			403
1	443		6.49	6.45	34.290	26.934	117.8	0.748	0.43	6.2	72.9	3.11	38.6	0.00			446
	500	ISL	6.11	6.07	34.320	27.007	111.3	0.813	0.32	4.6	80.1	3.19	39.9	0.00			503
1	508		6.06	6.02	34.324	27.017	110.5	0.822	0.30	4.3	81.1	3.20	40.1	0.00			512

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 55.1 N	118 56.2 W	22/04/89	0637 UTC	1724 M	290	28 KT			1015.5 MB	15.2 C	12.8 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 D.BAR
	0	ISL	15.73	15.73	33.547	24.692	324.1	0.000	6.04	106.8	2.3	0.37	0.0	0.00	0.32	0.08	0
1	1		15.73	15.73	33.547	24.692	324.1	0.003	6.04	106.8	2.3	0.37	0.0	0.00	0.32	0.08	1
	10	ISL	15.71	15.71	33.545	24.695	324.1	0.032	6.04	106.7	2.2	0.37	0.0	0.00	0.35	0.09	10
1	11		15.71	15.71	33.545	24.695	324.1	0.036	6.04	106.7	2.2	0.37	0.0	0.00	0.35	0.09	11
	20	ISL	14.17	14.17	33.523	25.012	294.2	0.063	6.13	105.0	3.8	0.49	1.4	0.03	0.55	0.17	20
1	22		13.74	13.74	33.522	25.100	285.9	0.069	6.15	104.4	4.4	0.52	1.7	0.04	0.61	0.20	22
	30	ISL	12.30	12.30	33.540	25.400	257.5	0.091	5.21	85.8	8.7	0.95	8.1	0.20	0.93	0.43	30
1	32		12.00	12.00	33.548	25.463	251.6	0.096	4.95	81.0	9.9	1.06	9.8	0.24	0.98	0.48	32
1	42		11.30	11.29	33.575	25.613	237.4	0.121	4.40	71.0	13.4	1.29	13.6	0.33	0.54	0.38	42
1	50		10.96	10.95	33.636	25.722	227.3	0.139	3.85	61.7	16.4	1.50	17.0	0.15	0.33	0.27	50
1	61		10.66	10.65	33.706	25.830	217.2	0.164	3.58	57.0	19.0	1.64	19.1	0.07	0.21	0.20	61
1	72		9.97	9.96	33.757	25.988	202.4	0.187	3.35	52.6	23.2	1.79	21.8	0.02	0.08	0.16	72
	75	ISL	9.88	9.87	33.778	26.020	199.4	0.193	3.26	51.1	24.0	1.83	22.3	0.02	0.07	0.16	75
1	86		9.67	9.66	33.854	26.114	190.7	0.214	2.94	45.8	26.7	1.94	23.9	0.01	0.04	0.15	86
	100	ISL	9.38	9.37	33.915	26.210	181.8	0.240	2.70	41.8	30.1	2.05	25.4	0.01	0.01	0.13	101
1	101		9.36	9.35	33.919	26.216	181.3	0.242	2.69	41.7	30.3	2.06	25.5	0.01	0.01	0.13	102
1	122		9.08	9.07	34.003	26.327	171.1	0.279	2.46	37.9	33.4	2.15	26.7	0.00	0.01	0.11	123
	125	ISL	9.06	9.05	34.008	26.334	170.5	0.284	2.44	37.6	33.7	2.16	26.8	0.00	0.01	0.11	126
1	146		8.92	8.90	34.031	26.375	167.0	0.320	2.35	36.1	35.4	2.20	27.5	0.00	0.01	0.10	147
	150	ISL	8.88	8.86	34.038	26.387	166.0	0.326	2.32	35.6	35.9	2.22	27.7	0.00	0.01	0.10	151
1	176		8.56	8.54	34.088	26.476	157.9	0.368	2.08	31.7	39.3	2.34	29.3	0.00	0.01	0.07	177
	200	ISL	8.33	8.31	34.121	26.537	152.5	0.406	1.90	28.8	42.2	2.41	30.2	0.00	0.00	0.06	201
1	206		8.27	8.25	34.127	26.551	151.2	0.415	1.86	28.1	43.0	2.43	30.4	0.00	0.00	0.06	207
1	234		7.82	7.80	34.138	26.627	144.3	0.456	1.74	26.1	47.5	2.54	31.5	0.00			235
	250	ISL	7.64	7.62	34.154	26.666	140.9	0.479	1.55	23.1	50.4	2.62	32.5	0.00			252
1	274		7.43	7.40	34.182	26.718	136.2	0.512	1.24	18.4	54.7	2.73	34.0	0.01			276
	300	ISL	7.23	7.20	34.206	26.766	132.0	0.547	1.00	14.8	58.7	2.84	35.2	0.01			302
1	334		7.00	6.97	34.233	26.819	127.4	0.591	0.77	11.3	63.2	2.96	36.4	0.01			336
1	393		6.65	6.61	34.274	26.899	120.4	0.664	0.52	7.6	69.6	3.09	38.0	0.00			396
	400	ISL	6.62	6.58	34.278	26.906	119.8	0.673	0.50	7.3	70.2	3.10	38.1	0.00			403
1	457		6.35	6.31	34.306	26.965	114.9	0.740	0.36	5.2	74.8	3.18	39.1	0.00			460
	500	ISL	6.13	6.09	34.326	27.009	111.1	0.788	0.30	4.3	78.7	3.22	39.9	0.00			503
1	523		6.01	5.96	34.337	27.033	109.0	0.813	0.27	3.9	80.8	3.24	40.3	0.00			527

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 39.0 N	119 28.9 W	22/04/89	0126 UTC	1406 M	300	23 KT	300 04 06	0	1015.5 MB	16.4 C	15.2 C		

CAST	DEPTH M		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ML/L	OXY PCT	SI03 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
	0	ISL	15.03	15.03	33.315	24.667	326.4	0.000	6.11	106.4	2.1	0.43	0.0	0.00	0.24	0.06	0
1	1		15.03	15.03	33.315	24.667	326.4	0.003	6.11	106.4	2.1	0.43	0.0	0.00	0.24	0.06	1
1	10		15.00	15.00	33.313	24.673	326.2	0.033	6.13	106.7	2.0	0.43	0.0	0.00	0.24	0.06	10
1	20		13.06	13.06	33.304	25.068	288.8	0.063	6.46	108.0	3.0	0.56	1.4	0.08	0.78	0.24	20
	30	ISL	12.63	12.63	33.335	25.177	278.7	0.092	6.30	104.4	3.9	0.66	2.8	0.13	1.02	0.37	30
1	31		12.62	12.62	33.341	25.184	278.1	0.095	6.28	104.1	4.1	0.67	3.0	0.14	1.04	0.38	31
1	41		12.14	12.13	33.469	25.375	260.1	0.121	5.87	96.3	7.5	0.91	6.6	0.42	0.46	0.33	41
1	50		12.05	12.04	33.493	25.411	256.9	0.145	5.78	94.7	8.3	0.96	7.5	0.54	0.26	0.24	50
1	61		11.74	11.73	33.525	25.494	249.3	0.173	5.52	89.9	9.8	1.07	9.6	0.32	0.14	0.20	61
1	72		11.17	11.16	33.542	25.612	238.3	0.199	5.05	81.2	12.2	1.22	12.8	0.05	0.07	0.14	72
	75	ISL	11.00	10.99	33.577	25.670	232.8	0.206	4.80	76.9	13.7	1.31	14.2	0.04	0.06	0.14	75
1	85		10.45	10.44	33.716	25.875	213.5	0.229	3.94	62.5	19.3	1.61	18.8	0.01	0.04	0.13	85
1	100		9.84	9.83	33.850	26.083	194.0	0.259	3.15	49.3	24.8	1.87	23.0	0.01	0.02	0.11	101
1	120		9.23	9.22	33.953	26.264	177.1	0.296	2.69	41.6	30.4	2.04	25.7	0.02	0.01	0.14	121
	125	ISL	9.12	9.11	33.965	26.291	174.6	0.305	2.68	41.3	31.2	2.06	26.1	0.02	0.01	0.13	126
1	145		8.73	8.71	33.991	26.373	167.1	0.339	2.63	40.2	33.5	2.10	27.0	0.03	0.01	0.08	146
	150	ISL	8.60	8.58	33.996	26.397	164.9	0.348	2.67	40.7	34.2	2.10	27.1	0.03	0.01	0.07	151
1	175		8.06	8.04	34.023	26.500	155.3	0.388	2.80	42.1	37.8	2.14	27.8	0.02	0.00	0.04	176
	200	ISL	7.88	7.86	34.055	26.552	150.8	0.426	2.47	37.0	41.4	2.28	29.3	0.02	0.00	0.04	201
1	205		7.87	7.85	34.061	26.559	150.3	0.434	2.38	35.7	42.1	2.31	29.6	0.02	0.00	0.04	206
1	234		7.74	7.72	34.090	26.601	146.8	0.477	2.07	30.9	44.9	2.41	30.8	0.02			235
	250	ISL	7.64	7.62	34.117	26.637	143.6	0.500	1.82	27.1	47.5	2.50	31.7	0.02			251
1	273		7.49	7.46	34.157	26.690	138.9	0.532	1.46	21.7	51.6	2.64	33.0	0.01			**275**
	300	ISL	7.34	7.31	34.188	26.736	134.9	0.569	1.18	17.5	55.6	2.76	34.1	0.01			**302**
1	328		7.18	7.15	34.210	26.776	131.5	0.607	0.98	14.5	59.3	2.85	35.1	0.01			**330**
1	387		6.71	6.67	34.242	26.866	123.5	0.682	0.68	9.9	66.4	2.99	36.8	0.00			**390**
	400	ISL	6.62	6.58	34.250	26.885	121.9	0.698	0.62	9.0	68.2	3.02	37.3	0.00			**403**
1	449		6.32	6.28	34.283	26.950	116.1	0.756	0.42	6.1	74.8	3.14	38.9	0.00			**452**
	500	ISL	6.10	6.06	34.317	27.006	111.4	0.814	0.33	4.8	79.8	3.19	39.4	0.00			**503**
1	516		6.03	5.98	34.328	27.024	109.9	0.832	0.30	4.3	81.4	3.21	39.6	0.00			**520**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 25.1 N	119 57.6 W	21/04/89	2028 UTC	857 M	290	12 KT	300 02 07	1	1017.5 MB	17.0 C	14.9 C	1/8	CI

CAST	DEPTH M		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ML/L	OXY PCT	S103 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
	0	ISL	15.32	15.32	33.279	24.576	335.1	0.000	6.00	105.0	2.6	0.46	0.0	0.00	0.09	0.02	0
1	1		15.32	15.32	33.279	24.576	335.1	0.003	6.00	105.1	2.6	0.46	0.0	0.00	0.09	0.02	1
	10	ISL	14.96	14.96	33.277	24.654	328.0	0.033	6.04	105.0	2.4	0.43	0.0	0.00	0.12	0.03	10
1	11		14.91	14.91	33.277	24.664	327.0	0.036	6.04	104.9	2.4	0.43	0.0	0.00	0.12	0.03	11
	20	ISL	14.85	14.85	33.271	24.673	326.5	0.066	6.03	104.6	2.3	0.44	0.0	0.00	0.12	0.03	20
1	21		14.84	14.84	33.270	24.674	326.4	0.069	6.03	104.5	2.3	0.44	0.0	0.00	0.12	0.03	21
	30	ISL	14.54	14.54	33.267	24.736	320.7	0.098	6.07	104.6	2.1	0.45	0.0	0.01	0.12	0.04	30
1	31		14.49	14.49	33.266	24.746	319.8	0.101	6.08	104.7	2.1	0.45	0.0	0.01	0.12	0.04	31
1	41		13.86	13.85	33.245	24.862	309.1	0.133	6.22	105.7	2.4	0.45	0.0	0.00	0.20	0.10	41
1	50		13.29	13.28	33.275	25.001	296.0	0.160	6.21	104.3	2.6	0.50	0.4	0.04	0.46	0.20	50
1	62		12.65	12.64	33.317	25.160	281.2	0.195	5.88	97.5	3.8	0.64	2.6	0.37	0.42	0.27	62
1	72		12.16	12.15	33.336	25.269	271.0	0.222	5.56	91.2	5.4	0.77	5.3	0.09	0.29	0.23	72
	75	ISL	12.05	12.04	33.342	25.294	268.6	0.230	5.52	90.4	5.8	0.81	5.9	0.07	0.26	0.22	75
1	85		11.64	11.63	33.372	25.394	259.3	0.257	5.38	87.3	7.5	0.94	8.1	0.02	0.17	0.17	85
1	100		10.65	10.64	33.476	25.653	234.9	0.294	4.75	75.5	12.5	1.22	13.4	0.02	0.09	0.09	100
1	120		10.81	10.80	33.801	25.879	214.0	0.339	4.37	69.8	20.9	1.68	18.4	0.74	0.08	0.16	121
	125	ISL	10.59	10.58	33.815	25.928	209.4	0.349	4.13	65.7	22.1	1.74	19.6	0.64	0.07	0.15	126
1	145		9.50	9.48	33.812	26.110	192.2	0.390	3.17	49.2	25.9	1.89	23.5	0.01	0.02	0.09	146
	150	ISL	9.32	9.30	33.837	26.159	187.6	0.399	3.11	48.1	27.2	1.93	24.2	0.01	0.01	0.08	151
1	175		8.71	8.69	33.966	26.357	169.2	0.444	2.79	42.6	32.7	2.07	26.5	0.02	0.00	0.07	176
	200	ISL	8.46	8.44	33.999	26.422	163.4	0.485	2.77	42.1	34.8	2.11	27.1	0.03	0.00	0.06	201
1	204		8.43	8.41	34.000	26.427	163.0	0.492	2.77	42.0	35.1	2.11	27.2	0.03	0.00	0.06	205
1	233		8.00	7.98	34.043	26.526	154.0	0.538	2.64	39.7	40.0	2.20	28.5	0.02			234
	250	ISL	7.76	7.74	34.061	26.576	149.5	0.564	2.42	36.2	43.5	2.30	29.7	0.02			251
1	272		7.47	7.44	34.079	26.631	144.4	0.596	2.07	30.7	48.2	2.45	31.5	0.02			274
	300	ISL	7.08	7.05	34.096	26.700	138.1	0.635	1.69	24.9	54.3	2.62	33.6	0.02			**302**
1	326		6.78	6.75	34.117	26.757	132.9	0.671	1.37	20.0	59.7	2.77	35.4	0.01			**328**
1	384		6.47	6.44	34.208	26.871	122.8	0.745	0.73	10.6	69.3	3.00	37.8	0.00			**386**
	400	ISL	6.40	6.36	34.222	26.891	121.1	0.764	0.64	9.3	71.0	3.04	38.2	0.00			**403**
1	448		6.19	6.15	34.253	26.943	116.6	0.821	0.49	7.1	75.2	3.12	39.1	0.00			**451**
	500	ISL	5.98	5.94	34.292	27.001	111.7	0.881	0.37	5.3	79.6	3.19	39.9	0.00			**503**
1	516		5.92	5.87	34.304	27.019	110.2	0.898	0.33	4.7	81.0	3.21	40.1	0.00			**520**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 5.1 N	120 38.2 W	21/04/89	1308 UTC	3732 M	310	15 KT	310 03 06	2	1016.0 MB	15.3 C	14.3 C	7/8	SC

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 D.BAR
	0	ISL	15.24	15.24	33.283	24.597	333.1	0.000	5.95	104.0	2.2	0.43	0.0	0.00	0.11	0.02	0
1	1		15.24	15.24	33.283	24.597	333.2	0.003	5.95	104.0	2.2	0.43	0.0	0.00	0.11	0.02	1
1	10		15.23	15.23	33.282	24.599	333.3	0.033	5.93	103.6	2.3	0.43	0.0	0.00	0.10	0.02	10
1	20		15.21	15.21	33.281	24.603	333.2	0.067	5.93	103.6	2.1	0.43	0.0	0.00	0.10	0.02	20
1	30		14.92	14.92	33.284	24.668	327.2	0.100	6.03	104.7	2.1	0.43	0.0	0.00	0.21	0.05	30
1	41		13.59	13.58	33.173	24.861	309.1	0.135	6.37	107.6	2.4	0.46	0.0	0.00	0.32	0.11	41
	50	ISL	12.94	12.93	33.169	24.988	297.2	0.162	6.48	108.0	2.9	0.49	0.3	0.02	0.75	0.26	50
1	52		12.81	12.80	33.170	25.015	294.7	0.168	6.50	108.0	3.0	0.50	0.4	0.03	0.84	0.30	52
1	61		11.99	11.98	33.137	25.146	282.3	0.194	6.31	103.0	4.0	0.61	1.9	0.12	0.83	0.39	61
1	69		11.68	11.67	33.148	25.213	276.2	0.216	6.08	98.6	5.1	0.70	3.5	0.29	0.64	0.36	69
	75	ISL	11.78	11.77	33.237	25.263	271.5	0.233	5.96	96.9	6.1	0.80	5.0	0.31	0.51	0.32	75
1	84		12.02	12.01	33.410 A	25.353	263.3	0.257	5.82	95.2	7.9	0.95	7.4	0.33	0.35	0.26	84
1	98		11.86	11.85	33.609	25.538	246.1	0.292	5.62	91.8	10.9	1.13	10.2	0.52	0.18	0.23	98
	100	ISL	11.80	11.79	33.618	25.556	244.4	0.297	5.56	90.7	11.3	1.15	10.7	0.49	0.17	0.22	100
1	119		10.98	10.97	33.623	25.710	230.0	0.342	4.80	76.9	15.0	1.37	15.2	0.09	0.09	0.16	120
	125	ISL	10.64	10.63	33.624	25.771	224.3	0.356	4.54	72.2	16.2	1.44	16.5	0.07	0.07	0.14	126
1	142		9.75	9.73	33.654	25.946	207.8	0.393	3.83	59.7	20.0	1.63	20.0	0.03	0.02	0.10	143
	150	ISL	9.51	9.49	33.705	26.025	200.4	0.409	3.53	54.8	22.3	1.73	21.6	0.03	0.02	0.10	151
1	173		9.06	9.04	33.865	26.223	182.0	0.453	2.94	45.2	28.3	1.95	25.0	0.02	0.03	0.09	174
	200	ISL	8.61	8.59	33.962	26.370	168.4	0.500	3.00	45.7	31.7	2.00	26.0	0.03	0.01	0.07	201
1	201		8.59	8.57	33.964	26.375	168.0	0.502	3.00	45.7	31.8	2.00	26.0	0.03	0.01	0.07	202
1	231		8.12	8.10	34.031	26.499	156.6	0.551	2.68	40.4	38.0	2.15	28.3	0.02			232
	250	ISL	7.80	7.78	34.050	26.561	150.8	0.580	2.46	36.8	42.1	2.26	29.8	0.01			251
1	270		7.50	7.47	34.062	26.614	146.0	0.610	2.22	33.0	46.3	2.37	31.2	0.01			272
	300	ISL	7.20	7.17	34.081	26.671	140.9	0.653	1.91	28.2	51.2	2.51	32.8	0.01			302
1	323		7.03	7.00	34.099	26.709	137.6	0.685	1.67	24.6	54.6	2.61	33.9	0.01			325
1	382		6.69	6.65	34.179	26.819	127.9	0.763	0.97	14.2	63.3	2.88	36.5	0.01			384
	400	ISL	6.58	6.54	34.195	26.847	125.5	0.786	0.84	12.2	65.7	2.94	37.1	0.01			403
1	446		6.28	6.24	34.230	26.914	119.5	0.842	0.59	8.5	71.7	3.05	38.6	0.01			449
	500	ISL	5.94	5.90	34.277	26.995	112.3	0.905	0.39	5.6	78.9	3.15	40.1	0.01			503
1	513		5.86	5.82	34.289	27.014	110.5	0.919	0.34	4.9	80.6	3.18	40.5	0.01			516

A) AN ERROR OF -0.01 IN CONDUCTIVITY RATIO, 0.387 SALINITY, HAS BEEN ASSUMED FOR THIS VALUE.

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 45.0 N	121 19.1 W	21/04/89	0648 UTC	3544 M	310	16 KT			1017.0 MB	15.2 C	14.7 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 D.BAR
	0	ISL	15.50	15.50	33.298	24.551	337.5	0.000	5.94	104.4	2.6	0.45	0.0	0.00	0.12	0.02	0
1	1		15.50	15.50	33.298	24.551	337.5	0.003	5.94	104.4	2.6	0.45	0.0	0.00	0.12	0.02	1
	10	ISL	15.47	15.47	33.298	24.558	337.1	0.034	5.92	104.0	2.6	0.44	0.0	0.00	0.12	0.02	10
1	11		15.47	15.47	33.298	24.558	337.2	0.037	5.92	104.0	2.6	0.44	0.0	0.00	0.12	0.02	11
	20	ISL	15.44	15.44	33.301	24.568	336.6	0.067	5.94	104.3	2.6	0.44	0.0	0.00	0.13	0.03	20
1	22		15.43	15.43	33.301	24.570	336.4	0.074	5.94	104.2	2.6	0.44	0.0	0.00	0.13	0.03	22
	30	ISL	14.86	14.86	33.281	24.679	326.2	0.101	6.09	105.6	2.5	0.44	0.0	0.00	0.14	0.04	30
1	31		14.78	14.78	33.278	24.694	324.8	0.104	6.11	105.8	2.5	0.44	0.0	0.00	0.14	0.04	31
1	39		14.38	14.37	33.274	24.776	317.2	0.130	6.12	105.1	2.5	0.44	0.0	0.00	0.17	0.07	39
1	50		14.23	14.22	33.294	24.823	313.0	0.164	6.11	104.6	2.6	0.44	0.0	0.00	0.22	0.08	50
1	60		13.76	13.75	33.318	24.939	302.2	0.195	6.44	109.2	2.8	0.50	0.6	0.03	0.61	0.17	60
1	70		13.44	13.43	33.340	25.022	294.6	0.225	6.34	106.8	3.3	0.57	1.4	0.07	0.68	0.26	70
	75	ISL	13.18	13.17	33.326	25.063	290.8	0.240	6.19	103.7	3.5	0.59	1.7	0.23	0.57	0.25	75
1	84		12.67	12.66	33.302	25.145	283.2	0.265	5.85	97.0	4.1	0.64	2.6	0.46	0.31	0.24	84
1	100		11.86	11.85	33.362	25.346	264.3	0.309	5.36	87.4	6.8	0.86	7.3	0.03	0.13	0.14	100
1	118		10.94	10.93	33.460	25.590	241.4	0.355	4.79	76.6	12.0	1.17	12.7	0.02	0.06	0.09	119
	125	ISL	10.60	10.59	33.513	25.691	231.9	0.371	4.50	71.5	14.3	1.31	15.1	0.02	0.04	0.07	126
1	143		9.84	9.82	33.655	25.932	209.2	0.411	3.81	59.6	20.3	1.64	20.5	0.01	0.02	0.04	144
	150	ISL	9.63	9.61	33.706	26.006	202.2	0.425	3.65	56.8	22.7	1.71	21.9	0.01	0.02	0.04	151
1	173		9.13	9.11	33.843	26.195	184.7	0.470	3.32	51.1	29.3	1.87	24.8	0.00	0.01	0.03	174
	200	ISL	8.68	8.66	33.931	26.335	171.8	0.518	3.08	47.0	31.6	2.02	26.1	0.01	0.00	0.04	201
1	201		8.67	8.65	33.933	26.338	171.5	0.520	3.07	46.8	31.6	2.02	26.1	0.01	0.00	0.04	202
1	231		8.34	8.32	34.003	26.444	161.9	0.570	2.78	42.1	36.4	2.14	27.9	0.01			232
	250	ISL	8.08	8.05	34.041	26.513	155.6	0.600	2.52	37.9	40.3	2.25	29.3	0.01			**251**
1	270		7.81	7.78	34.074	26.579	149.5	0.630	2.23	33.4	44.5	2.38	30.8	0.00			272
	300	ISL	7.50	7.47	34.103	26.646	143.5	0.674	1.87	27.8	49.8	2.54	32.6	0.00			**302**
1	325		7.25	7.22	34.117	26.693	139.3	0.710	1.60	23.6	54.1	2.66	33.9	0.00			**327**
1	383		6.58	6.55	34.146	26.808	128.8	0.787	1.06	15.4	64.8	2.90	37.1	0.00			**385**
	400	ISL	6.44	6.40	34.150	26.829	126.9	0.809	0.97	14.1	67.0	2.94	37.7	0.00			**402**
1	446		6.14	6.10	34.167	26.882	122.4	0.866	0.77	11.1	72.2	3.03	39.1	0.00			**449**
	500	ISL	5.85	5.81	34.228	26.967	114.8	0.930	0.48	6.9	79.6	3.16	40.3	0.00			**503**
1	512		5.78	5.74	34.242	26.987	113.0	0.944	0.42	6.0	81.3	3.19	40.6	0.00			**515**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 25.0 N	121 59.1 W	21/04/89	0034 UTC	4100 M	320	10 KT	310 03 10	4	1016.5 MB	16.2 C	15.8 C	8/8	

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 D.BAR
1	0	15.93	15.93	33.303	24.459	346.3	0.000	5.94	105.3	2.5	0.43	0.0	0.00	0.11	0.03	0
1	9	15.92	15.92	33.326	24.479	344.6	0.031	5.95	105.5	2.4	0.43	0.0	0.00	0.11	0.02	9
	10 ISL	15.85	15.85	33.326	24.495	343.1	0.035	5.97	105.7	2.4	0.43	0.0	0.00	0.11	0.02	10
	20 ISL	15.05	15.05	33.319	24.667	327.1	0.068	6.12	106.6	2.5	0.44	0.0	0.00	0.12	0.03	20
1	21	14.96	14.96	33.318	24.686	325.3	0.071	6.13	106.6	2.5	0.44	0.0	0.00	0.12	0.03	21
1	30	14.58	14.58	33.311	24.762	318.3	0.100	6.13	105.7	2.7	0.46	0.0	0.00	0.16	0.05	30
1	40	13.99	13.98	33.297	24.875	307.8	0.132	6.26	106.7	2.8	0.48	0.0	0.00	0.37	0.16	40
1	50	12.91	12.90	33.275	25.076	288.8	0.161	6.18	103.0	3.3	0.57	1.2	0.14	0.64	0.32	50
1	60	12.47	12.46	33.318	25.196	277.7	0.190	5.87	96.9	4.4	0.70	3.5	0.33	0.46	0.30	60
1	70	12.32	12.31	33.408	25.294	268.6	0.217	5.82	95.8	6.5	0.84	5.6	0.27	0.16	0.13	70
	75 ISL	12.18	12.17	33.411	25.323	265.9	0.230	5.70	93.6	6.9	0.86	6.3	0.21	0.14	0.13	75
1	84	11.84	11.83	33.397	25.377	261.0	0.254	5.42	88.3	7.5	0.90	7.7	0.11	0.11	0.12	84
1	98	11.09	11.08	33.433	25.542	245.5	0.290	5.00	80.2	10.1	1.11	11.3	0.02	0.08	0.09	98
	100 ISL	11.00	10.99	33.441	25.564	243.4	0.294	4.93	78.9	10.6	1.14	11.8	0.02	0.07	0.09	100
1	119	10.22	10.21	33.553	25.788	222.5	0.339	4.27	67.3	16.1	1.45	16.9	0.01	0.03	0.05	120
	125 ISL	9.93	9.92	33.614	25.884	213.4	0.352	4.02	62.9	18.6	1.56	18.7	0.01	0.02	0.04	126
1	144	9.13	9.11	33.809	26.168	186.7	0.390	3.35	51.6	26.3	1.86	23.6	0.01	0.01	0.03	145
	150 ISL	8.99	8.97	33.848	26.221	181.7	0.401	3.30	50.7	27.8	1.91	24.4	0.01	0.01	0.03	151
1	174	8.62	8.60	33.946	26.355	169.3	0.443	3.09	47.1	31.9	2.00	25.9	0.01	0.00	0.03	175
	200 ISL	8.34	8.32	33.989	26.432	162.4	0.486	3.04	46.0	34.3	2.05	26.5	0.01	0.00	0.02	201
1	203	8.32	8.30	33.991	26.437	162.0	0.491	3.03	45.9	34.5	2.06	26.6	0.01	0.00	0.02	204
1	233	8.12	8.10	34.023	26.493	157.2	0.539	2.82	42.5	37.9	2.19	28.2	0.01			234
	250 ISL	7.93	7.90	34.040	26.534	153.5	0.565	2.63	39.5	41.2	2.27	29.2	0.01			251
1	272	7.67	7.64	34.062	26.590	148.5	0.598	2.33	34.8	45.9	2.39	30.5	0.01			274
	300 ISL	7.38	7.35	34.090	26.653	142.7	0.639	1.93	28.6	50.6	2.56	32.3	0.01			302
1	327	7.16	7.13	34.122	26.710	137.7	0.677	1.54	22.7	54.8	2.72	34.0	0.00			329
1	386	6.91	6.87	34.223	26.824	127.6	0.755	0.81	11.9	63.6	2.96	36.5	0.00			388
	400 ISL	6.82	6.78	34.231	26.843	126.0	0.773	0.73	10.7	65.3	3.00	37.0	0.00			403
1	450	6.42	6.38	34.245	26.907	120.3	0.835	0.56	8.1	71.5	3.12	38.6	0.01			453
	500 ISL	5.98	5.94	34.276	26.989	112.9	0.893	0.41	5.9	79.8	3.22	40.2	0.01			503
1	517	5.83	5.79	34.288	27.017	110.3	0.912	0.36	5.2	82.6	3.26	40.7	0.01			520

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 5.0 N	122 39.7 W	20/04/89	1734 UTC	3644 M	300	09 KT	290 03 09	2	1017.9 MB	18.7 C	16.4 C	8/8	SC

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 D.BAR
	0 ISL	16.87	16.87	33.289	24.233	367.8	0.000	5.76	104.0	2.4	0.46	0.0	0.00	0.10	0.02	0
1	1	16.87	16.87	33.289	24.233	367.9	0.004	5.76	104.0	2.4	0.46	0.0	0.00	0.10	0.02	1
1	10	16.03	16.03	33.269	24.411	351.2	0.036	5.84	103.7	2.3	0.45	0.0	0.00	0.10	0.02	10
1	20	15.31	15.31	33.234	24.545	338.8	0.071	5.99	104.8	2.3	0.45	0.0	0.00	0.10	0.03	20
1	30	15.02	15.02	33.243	24.615	332.3	0.104	6.03	104.9	2.2	0.45	0.0	0.01	0.14	0.05	30
1	41	12.76	12.75	33.165	25.020	293.9	0.139	6.82	113.2	3.3	0.49	0.0	0.01	0.22	0.09	41
1	49	11.81	11.80	33.195	25.225	274.6	0.161	6.36	103.5	4.9	0.68	3.2	0.11	0.55	0.30	49
	50 ISL	11.76	11.75	33.203	25.240	273.1	0.164	6.29	102.2	5.1	0.70	3.6	0.12	0.56	0.30	50
1	59	11.55	11.54	33.271	25.332	264.6	0.188	5.75	93.1	6.4	0.86	6.2	0.19	0.61	0.32	59
1	70	11.12	11.11	33.276	25.414	257.0	0.217	5.66	90.8	7.8	0.97	8.2	0.10	0.49	0.27	70
	75 ISL	10.99	10.98	33.304	25.459	252.8	0.230	5.51	88.1	8.6	1.02	9.3	0.06	0.40	0.25	75
1	83	10.82	10.81	33.360	25.533	246.0	0.250	5.23	83.4	9.9	1.11	11.1	0.02	0.25	0.20	83
1	99	10.37	10.36	33.448	25.680	232.3	0.288	4.71	74.4	13.0	1.25	14.4	0.02	0.08	0.08	99
	100 ISL	10.34	10.33	33.455	25.690	231.3	0.290	4.68	73.9	13.2	1.26	14.6	0.02	0.07	0.08	100
1	118	9.80	9.79	33.585	25.883	213.3	0.330	4.15	64.8	17.7	1.51	18.2	0.01	0.03	0.04	119
	125 ISL	9.63	9.62	33.628	25.945	207.5	0.345	3.97	61.8	19.3	1.59	19.5	0.01	0.02	0.04	126
1	143	9.23	9.21	33.728	26.088	194.2	0.381	3.58	55.2	23.4	1.77	22.3	0.01	0.01	0.03	144
	150 ISL	9.07	9.05	33.770	26.147	188.7	0.394	3.46	53.2	25.1	1.83	23.2	0.01	0.01	0.03	151
1	173	8.60	8.58	33.892	26.316	173.0	0.436	3.15	48.0	30.1	1.97	25.6	0.01	0.00	0.03	174
	200 ISL	8.24	8.22	33.974	26.436	162.0	0.481	2.90	43.8	34.5	2.08	27.3	0.01	0.00	0.03	201
1	201	8.23	8.21	33.976	26.439	161.8	0.483	2.89	43.7	34.7	2.08	27.3	0.01	0.00	0.03	202
1	230	7.89	7.87	34.029	26.531	153.4	0.529	2.59	38.8	39.9	2.22	29.1	0.01			**231**
	250 ISL	7.60	7.58	34.044	26.585	148.4	0.559	2.39	35.6	43.5	2.31	30.5	0.01			**251**
1	270	7.31	7.28	34.052	26.633	144.1	0.588	2.18	32.3	47.1	2.40	31.8	0.01			**272**
	300 ISL	7.04	7.01	34.074	26.688	139.2	0.631	1.83	26.9	52.3	2.54	33.7	0.00			**302**
1	324	6.84	6.81	34.086	26.725	136.0	0.664	1.59	23.3	56.4	2.64	35.0	0.00			**326**
1	382	6.02	5.99	34.067	26.817	127.4	0.740	1.39	20.0	66.5	2.80	37.7	0.01			**384**
	400 ISL	5.83	5.80	34.078	26.850	124.4	0.763	1.23	17.6	70.4	2.87	38.6	0.01			**403**
1	446	5.50	5.46	34.131	26.932	116.9	0.818	0.79	11.2	79.4	3.04	41.0	0.00			**449**
	500 ISL	5.46	5.42	34.222	27.010	110.3	0.879	0.46	6.5	84.2	3.14		0.01			**503**
1	512	5.45	5.41	34.242	27.027	108.8	0.893	0.39	5.5	85.3	3.16		0.01			**515**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
30 45.2 N	123 19.9 W	20/04/89	1117 UTC	3829 M	310	05 KT			1016.2 MB	17.4 C	17.1 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 D.BAR
	0	ISL	16.18	16.18	33.139	24.277	363.7	0.000	5.99	106.6	2.3	0.42	0.0	0.00	0.09	0.02	0
1	1		16.18	16.18	33.139	24.277	363.7	0.004	5.99	106.6	2.3	0.42	0.0	0.00	0.09	0.02	1
	10	ISL	15.14	15.14	33.126	24.498	342.8	0.035	6.08	106.0	2.3	0.42	0.0	0.00	0.07	0.02	10
1	11		15.00	15.00	33.125	24.528	340.0	0.039	6.09	105.8	2.3	0.42	0.0	0.00	0.07	0.02	11
	20	ISL	14.85	14.85	33.124	24.560	337.3	0.069	6.10	105.7	2.1	0.42	0.0	0.00	0.09	0.02	20
1	21		14.84	14.84	33.124	24.562	337.1	0.073	6.10	105.7	2.1	0.42	0.0	0.00	0.09	0.02	21
	30	ISL	14.18	14.18	33.124	24.702	324.0	0.102	6.26	107.0	2.1	0.42	0.0	0.00	0.12	0.03	30
1	32		14.02	14.02	33.125	24.736	320.8	0.109	6.29	107.1	2.1	0.42	0.0	0.00	0.13	0.04	32
1	41		13.65	13.64	33.130	24.816	313.4	0.137	6.27	106.0	2.0	0.43	0.0	0.00	0.17	0.08	41
	50	ISL	13.32	13.31	33.113	24.870	308.5	0.165	6.27	105.3	2.2	0.44	0.0	0.00	0.26	0.12	50
1	52		13.25	13.24	33.108	24.880	307.6	0.172	6.27	105.1	2.3	0.44	0.0	0.00	0.28	0.13	52
1	61		12.87	12.86	33.094	24.944	301.7	0.199	6.21	103.3	2.5	0.46	0.1	0.01	0.36	0.20	61
1	72		12.20	12.19	33.057	25.045	292.3	0.232	6.13	100.5	3.2	0.53	1.2	0.14	0.38	0.21	72
	75	ISL	12.18	12.17	33.081	25.067	290.2	0.240	6.06	99.3	3.4	0.55	1.6	0.17	0.36	0.21	75
1	84		12.11	12.10	33.157	25.140	283.6	0.266	5.84	95.6	3.8	0.59	2.7	0.23	0.29	0.20	84
1	99		12.19	12.18	33.391	25.307	268.1	0.308	5.56	91.3	4.7	0.62	4.2	0.08	0.26	0.19	99
	100	ISL	12.15	12.14	33.397	25.319	267.0	0.310	5.55	91.1	4.8	0.63	4.3	0.08	0.25	0.18	100
1	119		11.10	11.09	33.445	25.550	245.3	0.359	5.20	83.4	8.0	0.85	8.4	0.03	0.08	0.07	120
	125	ISL	10.78	10.76	33.468	25.625	238.2	0.373	4.93	78.6	10.2	1.01	10.8	0.03	0.05	0.07	126
1	145		9.83	9.81	33.572	25.869	215.3	0.419	4.11	64.2	18.0	1.50	18.4	0.02	0.01	0.05	146
	150	ISL	9.63	9.61	33.612	25.933	209.2	0.429	4.11	63.9	19.0	1.51	19.0	0.02	0.01	0.05	151
1	175		8.84	8.82	33.811	26.216	182.6	0.478	4.11	62.9	23.3	1.57	20.8	0.01	0.00	0.03	176
	200	ISL	8.49	8.47	33.930	26.363	169.0	0.522	3.29	50.0	30.5	1.88	25.4	0.01	0.00	0.05	201
1	204		8.45	8.43	33.943	26.380	167.5	0.529	3.15	47.8	31.7	1.93	26.1	0.01	0.00	0.05	205
1	234		8.10	8.08	34.009	26.485	158.0	0.578	2.71	40.8	37.3	2.12	28.4	0.01			235
	250	ISL	7.75	7.73	34.011	26.538	153.0	0.603	2.81	42.0	39.9	2.12	28.9	0.01			251
1	273		7.23	7.20	34.004	26.606	146.6	0.637	2.98	44.0	43.7	2.13	29.4	0.01			275
	300	ISL	6.92	6.89	34.010	26.654	142.4	0.676	2.68	39.3	48.5	2.26	31.2	0.01			302
1	328		6.74	6.71	34.031	26.695	138.8	0.716	2.15	31.4	53.8	2.45	33.5	0.01			330
1	387		6.53	6.49	34.158	26.824	127.4	0.794	0.95	13.8	65.7	2.88	38.0	0.01			389
	400	ISL	6.42	6.38	34.166	26.844	125.5	0.811	0.89	12.9	67.9	2.93	38.6	0.01			402
1	451		5.94	5.90	34.177	26.915	119.1	0.873	0.67	9.6	75.6	3.04	40.3	0.01			454
	500	ISL	5.61	5.57	34.203	26.976	113.6	0.930	0.52	7.4	82.1	3.13	41.6	0.01			503
1	517		5.49	5.45	34.213	26.999	111.5	0.949	0.47	6.7	84.4	3.16	42.1	0.01			520

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
30 25.5 N	123 59.9 W	20/04/89	0006 UTC	4022 M	290	08 KT			1018.2 MB	18.6 C	17.9 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	PHAEO UG/L	PRESS D.BAR
	0	ISL	18.12	18.12	33.573	24.151	375.6	0.000	5.62	104.1	2.2	0.35	0.0	0.00	0.06	0.01	0
1	1		18.12	18.12	33.573	24.151	375.7	0.004	5.62	104.1	2.2	0.35	0.0	0.00	0.06	0.01	1
1	10		17.50	17.50	33.582	24.309	360.9	0.037	5.66	103.6	2.2	0.34	0.0	0.00	0.05	0.01	10
1	20		17.36	17.36	33.587	24.346	357.7	0.073	5.67	103.5	2.1	0.33	0.0	0.00	0.05	0.01	20
1	30		17.23	17.23	33.579	24.372	355.6	0.109	5.69	103.6	2.1	0.33	0.0	0.00	0.05	0.02	30
1	40		16.85	16.84	33.570	24.455	348.0	0.144	5.76	104.1	2.1	0.34	0.0	0.00	0.05	0.01	40
1	50		16.50	16.49	33.553	24.523	341.8	0.178	5.84	104.8	2.1	0.32	0.0	0.00	0.06	0.02	50
1	61		16.02	16.01	33.594	24.665	328.6	0.215	5.84	103.9	2.1	0.33	0.0	0.00	0.07	0.02	61
1	70		15.85	15.84	33.582	24.694	326.1	0.245	5.84	103.5	2.1	0.33	0.0	0.00	0.09	0.03	70
	75	ISL	15.62	15.61	33.556	24.726	323.2	0.261	5.84	103.0	2.0	0.33	0.0	0.00	0.11	0.05	75
1	84		15.22	15.21	33.524	24.790	317.4	0.290	5.84	102.2	1.9	0.34	0.0	0.00	0.15	0.09	84
1	100		15.22	15.20	33.613	24.859	311.3	0.340	5.81	101.7	2.0	0.34	0.0	0.00	0.20	0.14	100
1	118		14.46	14.44	33.610	25.021	296.3	0.395	5.65	97.4	2.6	0.41	0.6	0.09	0.28	0.27	118
	125	ISL	14.43	14.41	33.696	25.094	289.5	0.415	5.56	95.8	2.7	0.42	1.0	0.09	0.25	0.25	126
1	144		14.14	14.12	33.900	25.313	269.2	0.468	5.29	90.7	3.7	0.46	3.0	0.04	0.12	0.12	145
	150	ISL	13.62	13.60	33.856	25.387	262.3	0.484	5.22	88.6	4.5	0.53	4.2	0.03	0.09	0.10	151
1	175		11.12	11.10	33.661	25.716	230.9	0.546	4.90	78.8	9.7	0.91	10.3	0.01	0.02	0.03	176
	200	ISL	9.60	9.58	33.789	26.077	196.6	0.599	4.35	67.7	18.3	1.35	17.2	0.01	0.00	0.01	201
1	204		9.44	9.42	33.819	26.127	191.9	0.607	4.27	66.2	19.7	1.41	18.2	0.01	0.00	0.01	205
1	233		8.90	8.87	33.916	26.289	176.8	0.660	4.04	61.9	24.6	1.58	20.8	0.01			234
	250	ISL	8.59	8.56	33.956	26.369	169.5	0.690	3.89	59.2	27.8	1.68	22.3	0.01			251
1	275		8.16	8.13	33.995	26.465	160.6	0.731	3.64	54.9	32.7	1.82	24.4	0.00			276
	300	ISL	7.75	7.72	34.009	26.537	154.0	0.770	3.32	49.6	37.7	1.97	26.6	0.00			302
1	329		7.32	7.29	34.012	26.601	148.1	0.814	2.91	43.0	43.7	2.15	29.1	0.00			331
1	386		6.58	6.54	34.032	26.718	137.4	0.896	2.10	30.5	56.2	2.49	33.8	0.00			388
	400	ISL	6.45	6.41	34.051	26.750	134.4	0.915	1.83	26.5	59.6	2.59	35.0	0.00			402
1	450		6.03	5.99	34.126	26.863	124.0	0.979	0.97	13.9	71.2	2.91	38.8	0.01			453
	500	ISL	5.62	5.58	34.170	26.949	116.1	1.039	0.67	9.5	79.8	3.06	40.7	0.00			503
1	516		5.49	5.45	34.185	26.977	113.6	1.058	0.57	8.1	82.5	3.11	41.3	0.00			519

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 57.3 N	117 18.3 W	17/04/89	0412 UTC	68 M	300	05 KT			1017.1 MB	17.2 C	14.4 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 D.BAR
1	0		18.07	18.07	33.539	24.137	376.9	0.000	6.16	114.0	2.5	0.29	0.0	0.00	0.54	0.16	0
1	10		17.67	17.67	33.539	24.235	368.0	0.037	6.25	114.8	2.5	0.29	0.0	0.00	0.71	0.19	10
1	20		13.34	13.34	33.524	25.183	277.9	0.070	5.78	97.3	5.9	0.68	2.1	0.17	2.36	0.49	20
1	30		11.83	11.83	33.538	25.487	249.2	0.096	4.56	74.4	11.2	1.25	10.4	0.52	0.66	0.32	30
1	40		11.02	11.02	33.614	25.694	229.7	0.120	3.81	61.1	15.0	1.50	16.9	0.15	0.29	0.27	40
1	50		10.65	10.64	33.719	25.841	215.9	0.142	3.21	51.1	19.8	1.71	19.6	0.31	0.16	0.30	50
1	59		10.50	10.49	33.739	25.883	212.1	0.161	3.08	48.9	21.3	1.75	20.4	0.17	0.12	0.26	59

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 54.8 N	117 23.8 W	17/04/89	0752 UTC	648 M	320	03 KT			1016.9 MB	17.2 C	14.7 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 D.BAR
1	0		17.84	17.84	33.546	24.199	371.1	0.000	6.28	115.7	1.7	0.28	0.0	0.00	0.24	0.06	0
1	10		16.13	16.13	33.496	24.563	336.7	0.035	6.14	109.4	1.4	0.32	0.0	0.00	0.35	0.08	10
1	20		12.55	12.55	33.464	25.292	267.5	0.066	5.96	98.7	4.8	0.68	4.3	0.16	0.78	0.26	20
1	30		11.66	11.66	33.505	25.493	248.6	0.091	4.89	79.5	8.9	1.06	10.4	0.37	0.45	0.32	30
1	40		11.20	11.20	33.558	25.618	236.9	0.116	4.41	71.0	12.0	1.26	14.1	0.09	0.31	0.27	40
1	50		10.75	10.74	33.618	25.745	225.0	0.139	3.96	63.1	15.1	1.43	17.0	0.03	0.20	0.20	50
1	60		10.51	10.50	33.704	25.854	214.9	0.161	3.30	52.4	19.1	1.65	20.0	0.03	0.13	0.17	60
1	70		10.16	10.15	33.794	25.985	202.7	0.182	3.08	48.5	22.1	1.77	21.6	0.01	0.05	0.12	70
	75	ISL	10.07	10.06	33.831	26.029	198.6	0.192	2.97	46.7	23.0	1.81	22.2	0.01	0.03	0.12	75
1	84		9.97	9.96	33.888	26.091	192.9	0.209	2.78	43.6	24.4	1.88	23.1	0.02	0.02	0.11	84
1	99		9.74	9.73	33.957	26.183	184.4	0.238	2.59	40.5	27.3	1.98	24.2	0.02	0.01	0.10	100
	100	ISL	9.73	9.72	33.961	26.188	184.0	0.239	2.58	40.3	27.5	1.99	24.3	0.02	0.01	0.10	101
1	119		9.61	9.60													120
	125	ISL	9.53	9.52	34.046	26.288	175.0	0.284	2.35	36.6	30.9	2.09	25.7	0.02	0.01	0.09	126
1	144		9.28	9.26	34.089	26.363	168.3	0.317	2.23	34.5	32.8	2.15	26.5	0.02	0.01	0.08	145
	150	ISL	9.23	9.21	34.097	26.377	167.0	0.327	2.22	34.3	33.2	2.16	26.7	0.02	0.01	0.08	151
1	173		9.10	9.08	34.123	26.419	163.5	0.365	2.15	33.2	34.9	2.22	27.2	0.01	0.01	0.07	174
	200	ISL	8.97	8.95	34.173	26.479	158.3	0.408	1.90	29.2	37.9	2.31	28.2	0.01	0.00	0.06	201
1	203		8.95	8.93	34.177	26.485	157.7	0.413	1.87	28.7	38.3	2.32	28.3	0.01	0.00	0.06	204
1	232		8.55	8.53	34.178	26.549	152.1	0.458	1.80	27.4	41.2	2.38	29.3	0.02			233
	250	ISL	8.40	8.37	34.190	26.582	149.3	0.485	1.68	25.5	43.0	2.43	30.0	0.02			252
1	272		8.20	8.17	34.200	26.620	145.9	0.518	1.53	23.1	45.6	2.50	30.9	0.02			**274**
	300	ISL	7.60	7.57	34.164	26.680	140.3	0.558	1.46	21.8	50.9	2.58	32.4	0.01			**302**
1	326		7.09	7.06	34.142	26.735	135.2	0.594	1.37	20.2	56.0	2.66	33.8	0.01			**328**
1	385		7.09	7.05	34.263	26.831	127.2	0.671	0.67	9.9	62.3	2.91	35.9	0.02			388
	400	ISL	7.02	6.98	34.277	26.852	125.4	0.690	0.58	8.5	64.1	2.96	36.3	0.06			403
1	449		6.71	6.67	34.301	26.913	120.0	0.750	0.43	6.3	69.7	3.07	37.4	0.16			**452**
	500	ISL	6.40	6.35	34.319	26.969	115.2	0.810	0.34	4.9	74.7	3.12	38.3	0.04			**503**
1	517		6.29	6.24	34.325	26.988	113.6	0.830	0.31	4.5	76.4	3.13	38.6	0.00			**521**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 50.8 N	117 32.0 W	17/04/89	1103 UTC	890 M	300	07 KT			1018.8 MB	15.7 C	13.8 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 D.BAR
	0	ISL	17.72	17.72	33.548	24.229	368.2	0.000	6.13	112.7	1.9	0.23	0.0	0.00	0.45	0.17	0
1	1		17.72	17.72	33.548	24.229	368.2	0.004	6.13	112.7	1.9	0.23	0.0	0.00	0.45	0.17	1
	10	ISL	17.59	17.59	33.546	24.260	365.6	0.037	6.16	113.0	1.9	0.24	0.0	0.01	0.49	0.15	10
1	11		17.58	17.58	33.546	24.262	365.4	0.040	6.16	112.9	1.9	0.24	0.0	0.01	0.49	0.15	11
	20	ISL	14.41	14.41	33.504	24.947	300.4	0.070	6.42	110.5	3.0	0.32	0.0	0.01	0.85	0.35	20
1	22		13.61	13.61	33.512	25.119	284.1	0.076	6.48	109.7	3.2	0.34	0.0	0.01	0.91	0.39	22
	30	ISL	11.92	11.92	33.550	25.479	249.9	0.098	4.78	78.1	9.8	1.00	8.3	0.43	0.76	0.38	30
1	31		11.78	11.78	33.555	25.509	247.1	0.100	4.55	74.2	10.7	1.09	9.5	0.48	0.72	0.38	31
1	41		11.11	11.10	33.608	25.673	231.7	0.124	3.75	60.3	15.6	1.46	16.7	0.32	0.34	0.36	41
	50	ISL	10.74	10.73	33.665	25.784	221.4	0.144	3.42	54.5	18.3	1.59	19.0	0.07	0.22	0.25	50
1	51		10.71	10.70	33.671	25.794	220.5	0.147	3.40	54.2	18.5	1.60	19.1	0.04	0.21	0.24	51
1	62		10.31	10.30	33.747	25.922	208.4	0.170	3.18	50.3	21.5	1.72	20.9	0.02	0.09	0.18	62
1	71		9.98	9.97	33.830	26.044	197.1	0.188	3.02	47.4	23.9	1.83	22.4	0.02	0.04	0.11	71
	75	ISL	9.92	9.91	33.856	26.074	194.3	0.196	2.98	46.7	24.5	1.85	22.7	0.02	0.03	0.10	75
1	85		9.85	9.84	33.906	26.125	189.7	0.215	2.90	45.4	25.7	1.88	23.3	0.02	0.02	0.09	85
1	100		9.67	9.66	33.975	26.209	182.0	0.243	2.68	41.8	28.1	1.97	24.4	0.01	0.01	0.08	101
1	119		9.52	9.51	34.025	26.273	176.3	0.277	2.62	40.8	30.2	2.05	25.3	0.01	0.01	0.07	120
	125	ISL	9.46	9.45	34.043	26.297	174.1	0.288	2.56	39.8	31.1	2.08	25.7	0.01	0.01	0.07	126
1	144		9.26	9.24	34.096	26.371	167.4	0.320	2.34	36.2	33.9	2.18	26.7	0.01	0.01	0.08	145
	150	ISL	9.23	9.21	34.110	26.387	166.0	0.330	2.32	35.9	34.4	2.19	26.8	0.01	0.01	0.07	151
1	175		9.10	9.08	34.157	26.446	161.0	0.371	2.22	34.2	36.0	2.24	27.3	0.01	0.00	0.04	176
	200	ISL	8.89	8.87	34.183	26.500	156.3	0.411	1.94	29.8	38.7	2.32	28.2	0.01	0.00	0.04	201
1	206		8.84	8.82	34.188	26.511	155.3	0.420	1.86	28.5	39.4	2.35	28.5	0.01	0.00	0.04	207
1	234		8.74	8.72	34.231	26.561	151.1	0.463	1.53	23.4	42.4	2.49	29.6	0.02			235
	250	ISL	8.65	8.62	34.250	26.590	148.6	0.487	1.38	21.1	44.0	2.54	30.1	0.02			**252**
1	275		8.39	8.36	34.257	26.636	144.6	0.524	1.24	18.8	46.8	2.60	30.9	0.02			**277**
	300	ISL	7.82	7.79	34.200	26.677	140.8	0.559	1.33	19.9	50.6	2.62	32.2	0.02			**302**
1	329		7.21	7.18	34.146	26.722	136.7	0.600	1.42	21.0	55.0	2.65	33.7	0.01			**331**
1	387		7.31	7.27	34.264	26.801	130.2	0.677	0.74	11.0	60.3	2.89	35.1	0.00			**390**
	400	ISL	7.21	7.17	34.274	26.823	128.3	0.694	0.66	9.8	62.1	2.93	35.6	0.00			**403**
1	450		6.73	6.69	34.294	26.905	120.9	0.756	0.46	6.7	69.0	3.04	37.4	0.00			**453**
	500	ISL	6.44	6.39	34.316	26.962	116.0	0.815	0.35	5.1	74.0	3.11	38.5	0.00			**503**
1	519		6.33	6.28	34.325	26.983	114.1	0.837	0.31	4.5	75.9	3.13	38.9	0.00			**523**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 40.9 N	117 52.4 W	17/04/89	1527 UTC	587 M	280	07 KT	270 01 06	2	1017.6 MB	15.8 C	13.4 C	8/8	CC

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 D.BAR
1	0		16.08	16.08	33.523	24.594	333.4	0.000	5.89	104.9	2.1	0.36	0.0	0.00	0.16	0.04	0
1	10		16.05	16.05	33.520	24.599	333.2	0.033	5.91	105.1	2.1	0.35	0.0	0.00	0.16	0.03	10
	20	ISL	15.16	15.16	33.499	24.781	316.2	0.066	6.15	107.5	2.4	0.36	0.0	0.00	0.24	0.10	20
1	22		14.83	14.83	33.494	24.849	309.8	0.072	6.16	106.9	2.5	0.36	0.0	0.00	0.25	0.11	22
1	30		12.67	12.67	33.497	25.295	267.5	0.095	5.73	95.1	6.6	0.72	5.4	0.17	0.54	0.32	30
1	40		12.06	12.05	33.517	25.428	255.1	0.121	5.18	84.9	9.0	0.93	8.6	0.26	0.49	0.34	40
	50	ISL	11.41	11.40	33.557	25.579	240.8	0.146	4.52	73.1	12.3	1.19	13.0	0.19	0.37	0.28	50
1	51		11.35	11.34	33.561	25.594	239.5	0.148	4.46	72.0	12.6	1.21	13.4	0.18	0.36	0.27	51
1	61		10.96	10.95	33.595	25.690	230.5	0.172	4.16	66.6	15.0	1.36	15.9	0.09	0.25	0.21	61
1	70		10.52	10.51	33.689	25.841	216.4	0.192	3.54	56.2	18.7	1.57	19.2	0.04	0.14	0.14	70
	75	ISL	10.40	10.39	33.725	25.890	211.8	0.203	3.38	53.5	19.9	1.63	20.1	0.03	0.10	0.12	75
1	85		10.19	10.18	33.783	25.971	204.3	0.224	3.23	50.9	21.7	1.70	21.2	0.02	0.06	0.09	85
1	99		9.63	9.62	33.862	26.127	189.7	0.251	3.06	47.7	25.5	1.82	23.1	0.01	0.02	0.05	100
	100	ISL	9.61	9.60	33.868	26.135	188.9	0.253	3.05	47.5	25.7	1.83	23.2	0.01	0.02	0.05	101
1	120		9.32	**9.31**	33.972	26.264	177.1	0.290	2.79	43.2	29.3	1.94	24.8	0.01	0.00	0.04	121
	125	ISL	9.29	9.28	33.994	26.286	175.1	0.298	2.72	42.1	30.1	1.97	25.1	0.01	0.00	0.04	126
1	145		9.13	9.11	34.055	26.360	168.5	0.333	2.49	38.4	32.8	2.07	26.2	0.01	0.00	0.04	146
	150	ISL	9.02	9.00	34.055	26.378	166.8	0.341	2.51	38.6	33.2	2.08	26.4	0.01	0.00	0.04	151
1	174		8.47	8.45	34.047	26.458	159.6	0.380	2.57	39.1	35.9	2.11	27.4	0.01	0.00	0.04	175
	200	ISL	8.10	8.08	34.102	26.557	150.5	0.421	2.09	31.5	42.1	2.30	29.6	0.01	0.00	0.04	201
1	204		8.05	8.03	34.111	26.572	149.2	0.427	2.01	30.3	43.1	2.33	29.9	0.01	0.00	0.04	205
1	234		7.72	7.70	34.127	26.633	143.7	0.471	1.79	26.8	47.5	2.44	31.4	0.01			235
	250	ISL	7.60	7.58	34.152	26.670	140.4	0.493	1.54	23.0	50.4	2.54	32.4	0.01			251
1	274		7.44	7.41	34.193	26.725	135.5	0.526	1.15	17.1	54.5	2.68	33.7	0.01			276
	300	ISL	7.28	7.25	34.217	26.767	131.9	0.561	0.93	13.8	57.6	2.77	34.6	0.01			302
1	328		7.11	7.08	34.233	26.804	128.8	0.598	0.79	11.6	60.5	2.84	35.4	0.01			330
1	387		6.70	6.66	34.254	26.877	122.5	0.672	0.60	8.8	67.2	2.96	37.0	0.00			390
	400	ISL	6.66	6.62	34.268	26.893	121.1	0.688	0.55	8.0	68.5	2.98	37.3	0.00			403
1	450		6.51	6.47	34.318	26.953	116.1	0.747	0.36	5.2	72.8	3.06	38.2	0.00			453
	500	ISL	6.26	6.22	34.329	26.995	112.6	0.804	0.31	4.5	76.3	3.11	38.8	0.00			503
1	515		6.18	6.13	34.333	27.009	111.5	0.821	0.29	4.2	77.4	3.13	39.0	0.00			519

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 30.6 N	118 13.0 W	17/04/89	2051 UTC	1536 M	280	12 KT	270 01 06	2	1017.2 MB	17.8 C	15.6 C	8/8	CC

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 D.BAR
	0	ISL	16.42	16.42	33.532	24.524	340.1	0.000	5.84	104.7	1.6	0.34	0.0	0.00	0.16	0.04	0
1	1		16.42	16.42	33.532	24.524	340.1	0.003	5.84	104.7	1.6	0.34	0.0	0.00	0.16	0.04	1
1	10		16.26	16.26	33.530	24.559	337.1	0.034	5.86	104.7	1.6	0.35	0.0	0.00	0.18	0.05	10
1	20		15.88	15.88	33.516	24.635	330.2	0.067	5.96	105.7	1.7	0.35	0.0	0.00	0.19	0.06	20
	30	ISL	13.02	13.02	33.505	25.232	273.5	0.097	5.99	100.2	5.9	0.58	3.3	0.07	0.52	0.19	30
1	31		12.70	12.70	33.511	25.300	267.1	0.100	5.99	99.5	6.5	0.62	3.9	0.08	0.55	0.21	31
1	41		11.12	11.11	33.597	25.663	232.7	0.125	4.23	68.0	14.0	1.29	14.9	0.31	0.61	0.50	41
	50	ISL	10.73	10.72	33.649	25.773	222.4	0.146	3.74	59.6	16.7	1.47	17.8	0.13	0.38	0.43	50
1	51		10.71	10.70	33.654	25.780	221.7	0.148	3.72	59.3	16.9	1.48	17.9	0.10	0.35	0.42	51
1	60		10.25	10.24	33.725	25.916	209.1	0.167	3.38	53.3	20.4	1.61	20.6	0.02	0.16	0.17	60
1	70		10.10	10.09	33.755	25.965	204.6	0.188	3.28	51.6	21.6	1.70	21.5	0.02	0.11	0.13	70
	75	ISL	9.97	9.96	33.777	26.004	201.0	0.198	3.22	50.5	22.5	1.73	22.0	0.02	0.08	0.11	75
1	84		9.71	9.70	33.830	26.089	193.0	0.216	3.09	48.2	24.4	1.79	23.0	0.01	0.04	0.07	84
1	99		9.30	9.29	33.953	26.252	177.8	0.244	2.84	44.0	28.8	1.92	24.8	0.01	0.01	0.05	100
	100	ISL	9.30	9.29	33.959	26.257	177.4	0.245	2.83	43.8	29.0	1.93	24.9	0.01	0.01	0.05	101
1	119		9.26	9.25	34.018	26.310	172.7	0.279	2.63	40.7	31.1	2.02	25.8	0.01	0.01	0.05	120
	125	ISL	9.13	9.12	34.025	26.336	170.3	0.289	2.62	40.4	31.9	2.04	26.1	0.01	0.01	0.05	126
1	**144**		8.67	8.65	34.036	26.418	162.8	0.321	2.59	39.5	34.7	2.08	27.1	0.01	0.00	0.04	145
	150	ISL	8.58	8.56	34.043	26.437	161.1	0.330	2.55	38.8	35.5	2.10	27.4	0.01	0.00	0.04	151
1	174		8.29	8.27	34.073	26.505	155.0	0.368	2.36	35.7	38.9	2.21	28.8	0.02	0.00	0.03	175
	200	ISL	8.02	8.00	34.105	26.571	149.1	0.408	2.10	31.6	43.0	2.30	30.0	0.01	0.00	0.03	201
1	202		8.00	7.98	34.107	26.576	148.7	0.411	2.08	31.3	43.3	2.31	30.1	0.01	0.00	0.03	203
1	232		7.70	7.68	34.131	26.639	143.1	0.454	1.77	26.4	47.7	2.44	31.7	0.00			233
	250	ISL	7.53	7.51	34.152	26.680	139.4	0.480	1.52	22.6	51.0	2.54	32.7	0.00			252
1	272		7.34	7.31	34.179	26.729	135.1	0.510	1.23	18.2	55.0	2.67	33.8	0.00			274
	300	ISL	7.17	7.14	34.210	26.777	130.9	0.547	0.97	14.3	58.8	2.78	34.9	0.00			302
1	325		7.03	7.00	34.234	26.816	127.6	0.580	0.80	11.8	61.7	2.85	35.7	0.00			327
1	381		6.63	6.60	34.276	26.904	119.8	0.649	0.52	7.6	68.7	2.99	37.3	0.00			**384**
	400	ISL	6.51	6.47	34.286	26.927	117.8	0.671	0.46	6.7	70.9	3.03	37.9	0.00			**403**
1	**445**		6.26	6.22	34.305	26.976	113.7	0.724	0.37	5.3	75.7	3.10	39.0	0.00			**448**
	500	ISL	5.97	5.93	34.330	27.033	108.7	0.785	0.30	4.3	80.5	3.16	39.8	0.00			503
1	511		5.91	5.87	34.336	27.045	107.7	0.797	0.28	4.0	81.4	3.17	39.9	0.00			**515**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 20.9 N	118 33.2 W	18/04/89	0046 UTC	1323 M	290	11 KT	300 02 04	2	1016.8 MB	16.8 C	14.3 C	8/8	SC

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 D.BAR
1	0		15.81	15.81	33.554	24.679	325.3	0.000	6.09	107.9	1.9	0.37	0.0	0.00	0.58	0.11	0
1	9		14.04	14.04	33.591	25.091	286.4	0.028	7.12	121.7	1.2	0.28	0.4	0.04	1.92	0.52	9
	10	ISL	13.89	13.89	33.593	25.124	283.3	0.030	7.04	120.0	1.7	0.33	0.9	0.06	1.86	0.52	10
1	20		12.74	12.74	33.607	25.366	260.5	0.058	5.86	97.5	8.2	0.88	6.3	0.21	0.70	0.56	20
1	30		12.22	12.22	33.611	25.470	250.8	0.083	5.59	92.0	11.0	1.04	8.7	0.26	0.38	0.40	30
1	40		11.88	11.87	33.633	25.552	243.3	0.108	5.07	82.8	13.5	1.16	11.1	0.30	0.21	0.33	40
1	50		11.08	11.07	33.689	25.742	225.4	0.131	4.45	71.5	17.5	1.40	15.6	0.32	0.16	0.28	50
1	60		10.48	10.47	33.675	25.837	216.5	0.153	4.01	63.6	19.1	1.52	18.0	0.09	0.08	0.24	60
1	70		10.16	10.15	33.709	25.919	209.0	0.175	3.76	59.2	21.2	1.62	19.7	0.04	0.06	0.24	70
	75	ISL	9.91	9.90	33.764	26.004	201.0	0.185	3.47	54.4	23.8	1.73	21.4	0.04	0.05	0.23	75
1	84		9.50	9.49	33.865	26.151	187.1	0.202	2.97	46.1	28.3	1.91	24.2	0.03	0.04	0.20	84
1	98		9.33	9.32	33.909	26.213	181.5	0.228	2.80	43.3	30.1	1.99	25.0	0.02	0.02	0.17	99
	100	ISL	9.29	9.28	33.913	26.223	180.6	0.232	2.79	43.2	30.4	1.98	25.1	0.02	0.02	0.17	101
1	120		8.91	8.90	33.955	26.316	172.0	0.267	2.63	40.3	33.4	1.91	26.1	0.01	0.03	0.18	121
	125	ISL	8.83	8.82	33.974	26.344	169.5	0.276	2.55	39.1	34.5	1.97	26.6	0.01	0.03	0.16	126
1	145		8.59	8.57	34.053	26.443	160.4	0.309	2.19	33.4	39.0	2.25	28.5	0.01	0.01	0.09	146
	150	ISL	8.55	8.53	34.067	26.461	158.9	0.317	2.13	32.4	39.7	2.28	28.8	0.01	0.01	0.09	151
1	175		8.38	8.36	34.118	26.527	153.0	0.356	1.89	28.7	42.6	2.38	29.9	0.01	0.01	0.09	176
	200	ISL	8.18	8.16	34.147	26.580	148.3	0.393	1.69	25.5	45.4	2.48	30.9	0.01	0.01	0.06	201
1	204		8.15	8.13	34.150	26.587	147.7	0.399	1.66	25.1	45.9	2.49	31.1	0.01	0.01	0.06	205
1	234		7.91	7.89	34.175	26.643	142.9	0.443	1.39	20.9	49.5	2.61	32.4	0.01			235
	250	ISL	7.78	7.76	34.189	26.673	140.2	0.465	1.25	18.7	51.9	2.67	33.1	0.01			252
1	273		7.59	7.56	34.207	26.715	136.6	0.497	1.06	15.8	55.4	2.76	34.0	0.00			275
	300	ISL	7.34	7.31	34.223	26.764	132.3	0.533	0.87	12.9	59.2	2.85	35.2	0.00			**302**
1	327		7.10	7.07	34.237	26.808	128.4	0.569	0.72	10.6	62.6	2.93	36.3	0.01			**329**
1	385		6.79	6.75	34.272	26.879	122.4	0.641	0.53	7.8	68.5	3.04	37.6	0.00			**388**
	400	ISL	6.68	6.64	34.279	26.900	120.6	0.660	0.48	7.0	70.5	3.07	38.1	0.00			**403**
1	449		6.32	6.28	34.299	26.963	115.0	0.717	0.36	5.2	76.6	3.16	39.5	0.00			**452**
	500	ISL	6.03	5.99	34.324	27.020	110.0	0.775	0.30	4.3	80.6	3.17	39.5	0.00			**503**
1	514		5.95	5.90	34.331	27.036	108.6	0.790	0.28	4.0	81.7	3.17	39.5	0.00			**518**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 10.7 N	118 53.5 W	18/04/89	0442 UTC	1524 M	290	15 KT			1018.8 MB	14.9 C	13.0 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 D.BAR
1	0		14.53	14.53	33.415	24.852	308.9	0.000	6.50	112.1	3.2	0.42	0.3	0.03	0.64	0.15	0
1	10		13.97	13.97	33.391	24.951	299.7	0.030	6.58	112.2	3.7	0.43	0.5	0.03	0.65	0.16	10
1	20		12.69	12.69	33.433	25.241	272.4	0.059	6.28	104.3	6.3	0.68	4.2	0.14	1.60	0.54	20
1	30		12.41	12.41	33.497	25.345	262.7	0.086	5.97	98.6	8.2	0.82	6.4	0.24	1.32	0.55	30
1	39		12.11	12.10	33.523	25.423	255.5	0.109	5.70	93.5	9.5	0.92	8.0	0.39	0.58	0.35	39
2	50		11.94	11.93	33.574	25.495	249.0	0.137	5.45	89.1	11.4	1.04	10.1	0.45	0.21	0.26	50
2	60		11.68	11.67	33.592	25.557	243.2	0.161	5.25	85.4	12.6	1.11	11.6	0.45	0.18	0.18	60
2	69		11.52	11.51	33.599	25.593	240.1	0.183	5.06	82.0	13.6	1.16	12.3	0.37	0.14	0.19	69
	75	ISL	11.31	11.30	33.618	25.646	235.2	0.197	4.83	78.0	14.7	1.23	13.6	0.25	0.12	0.19	75
2	83		10.93	10.92	33.654	25.742	226.1	0.216	4.43	70.9	16.7	1.36	15.8	0.10	0.10	0.18	83
2	98		9.94	9.93	33.746	25.985	203.2	0.248	3.56	55.8	22.8	1.67	20.8	0.02	0.04	0.14	98
	100	ISL	9.85	9.84	33.762	26.013	200.6	0.252	3.47	54.3	23.6	1.70	21.3	0.02	0.04	0.14	101
2	118		9.29	9.28	33.894	26.208	182.3	0.287	2.90	44.9	29-3	1.93	24.5	0.02	0.02	0.12	119
	125	ISL	9.11	9.10	33.924	26.260	177.5	0.299	2.84	43.8	30.8	1.97	25.3	0.02	0.02	0.11	126
2	143		8.74	8.72	33.973	26.358	168.5	0.330	2.70	41.3	33.5	2.02	26.6	0.01	0.01	0.09	144
	150	ISL	8.65	8.63	33.984	26.380	166.5	0.342	2.69	41.0	34.1	2.03	26.8	0.01	0.01	0.09	151
2	173		8.43	8.41	34.014	26.438	161.4	0.380	2.65	40.2	36.1	2.09	27.4	0.02	0.01	0.08	174
	200	ISL	8.15	8.13	34.074	26.528	153.3	0.422	2.23	33.6	41.5	2.26	29.3	0.01	0.01	0.08	201
2	202		8.13	8.11	34.078	26.534	152.7	0.425	2.20	33.2	41.9	2.27	29.4	0.01	0.01	0.08	203
2	232		7.72	7.70	34.106	26.616	145.3	0.470	2.01	30.0	46.7	2.37	30.7	0.01			233
	250	ISL	7.62	7.60	34.151	26.667	140.8	0.496	1.64	24.5	50.0	2.49	31.9	0.01			**251**
2	270		7.56	7.53	34.202	26.715	136.5	0.524	1.19	17.7	53.6	2.64	33.2	0.00			272
	300	ISL	7.41	7.38	34.238	26.766	132.2	0.564	0.87	12.9	57.7	2.78	34.6	0.00			**302**
2	327		7.25	7.22	34.253	26.800	129.2	0.599	0.72	10.7	60.9	2.86	35.5	0.00			**329**
2	385		6.81	6.77	34.276	26.879	122.3	0.672	0.52	7.6	67.6	2.97	37.2	0.00			**388**
	400	ISL	6.72	6.68	34.283	26.897	120.8	0.690	0.48	7.0	69.2	2.99	37.5	0.00			**403**
2	448		6.46	6.42	34.305	26.950	116.3	0.747	0.36	5.2	74.1	3.06	38.3	0.00			**451**
	500	ISL	6.21	6.17	34.324	26.998	112.3	0.807	0.30	4.3	78.6	3.12	39.1	0.00			**503**
2	514		6.14	6.09	34.329	27.011	111.2	0.822	0.28	4.0	79.8	3.13	39.3	0.00			**518**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 1.3 N	119 15.3 W	18/04/89	0827 UTC	1521 M	330	10 KT			1019.2 MB	14.7 C	13.2 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 D.BAR
1	0		14.46	14.46	33.451	24.894	304.8	0.000	6.59	113.5	4.1	0.45	0.6	0.04	0.80	0.20	0
1	9		14.41	14.41	33.481	24.928	301.8	0.027	6.64	114.3	3.1	0.43	0.7	0.04	0.69	0.16	9
	10	ISL	14.32	14.32	33.483	24.949	299.9	0.030	6.64	114.1	3.1	0.44	0.8	0.04	0.70	0.16	10
1	19		13.34	13.34	33.491	25.157	280.3	0.056	6.67	112.3	3.5	0.56	2.1	0.07	0.76	0.23	19
	20	ISL	13.26	13.26	33.490	25.172	278.9	0.059	6.65	111.8	3.7	0.57	2.3	0.07	0.78	0.24	20
1	30		12.63	12.63	33.472	25.283	268.6	0.087	6.34	105.2	6.0	0.70	4.2	0.12	0.95	0.39	30
1	39		12.12	12.11	33.475	25.384	259.3	0.110	5.84	95.8	7.8	0.87	6.7	0.23	0.88	0.50	39
1	50		12.09	12.08	33.582	25.473	251.1	0.138	5.57	91.4	11.0	1.04	9.1	0.40	0.42	0.60	50
1	60		11.72	11.71	33.583	25.543	244.6	0.163	5.34	86.9	12.2	1.11	11.0	0.41	0.30	0.48	60
1	69		11.54	11.53	33.668	25.642	235.3	0.185	5.10	82.7	15.0	1.27	13.3	0.42	0.28	0.43	69
	75	ISL	11.11	11.10	33.676	25.727	227.4	0.199	4.66	74.9	16.9	1.38	15.4	0.27	0.20	0.39	75
1	84		10.37	10.36	33.673	25.855	215.4	0.219	3.96	62.6	19.4	1.54	18.5	0.04	0.08	0.31	84
1	97		9.73	9.72	33.721	26.001	201.7	0.246	3.54	55.2	22.1	1.68	21.0	0.02	0.04	0.17	97
	100	ISL	9.66	9.65	33.733	26.022	199.7	0.252	3.49	54.4	22.5	1.70	21.3	0.02	0.04	0.15	101
1	118		9.41	9.40	33.813	26.125	190.2	0.287	3.31	51.3	25.2	1.77	22.7	0.02	0.02	0.09	119
	125	ISL	9.26	9.25	33.861	26.187	184.5	0.300	3.21	49.6	26.9	1.82	23.4	0.02	0.02	0.09	126
1	143		8.86	8.84	33.977	26.342	170.1	0.332	2.94	45.1	31.3	1.96	25.3	0.02	0.01	0.10	144
	150	ISL	8.74	8.72	33.998	26.377	166.8	0.344	2.89	44.2	32.5	1.99	25.8	0.02	0.01	0.09	151
1	173		8.39	8.37	34.041	26.465	158.8	0.381	2.67	40.5	36.5	2.08	27.3	0.01	0.00	0.04	174
	200	ISL	8.05	8.03	34.111	26.571	149.1	0.423	2.05	30.9	43.6	2.33	30.2	0.01	0.00	0.04	201
1	201		8.04	8.02	34.113	26.575	148.8	0.424	2.02	30.4	43.9	2.34	30.3	0.01	0.00	0.04	202
1	231		7.79	7.77	34.173	26.659	141.3	0.468	1.47	22.0	49.4	2.55	32.2	0.01			232
	250	ISL	7.62	7.60	34.193	26.699	137.7	0.494	1.24	18.5	52.5	2.64	33.2	0.01			**251**
1	270		7.45	7.42	34.208	26.736	134.5	0.521	1.06	15.8	55.5	2.72	34.1	0.01			**272**
	300	ISL	7.28	7.25	34.242	26.787	130.1	0.561	0.79	11.7	59.9	2.83	35.3	0.01			**302**
1	323		7.15	7.12	34.266	26.824	126.8	0.591	0.63	9.3	63.1	2.91	36.1	0.01			**325**
1	381		6.66	6.62	34.291	26.911	119.1	0.662	0.44	6.4	70.5	3.04	37.6	0.00			**383**
	400	ISL	6.54	6.50	34.298	26.933	117.3	0.684	0.40	5.8	72.4	3.06	38.0	0.00			**403**
1	446		6.31	6.27	34.314	26.976	113.7	0.737	0.33	4.8	76.3	3.10	38.9	0.00			**449**
	500	ISL	6.11	6.07	34.329	27.014	110.7	0.798	0.28	4.0	80.6	3.16	39.4	0.00			**503**
1	514		6.06	6.01	34.333	27.024	109.9	0.814	0.27	3.9	81.7	3.17	39.5	0.00			**518**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 50.6 N	119 34.4 W	18/04/89	1214 UTC	1849 M	310	10 KT			1017.6 MB	14.9 C	13.8 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 D.BAR
1	0		15.34	15.34	33.305	24.592	333.6	0.000	6.00	105.1	2.5	0.39	0.0	0.00	0.15	0.03	0
1	10		15.23	15.23	33.300	24.613	331.9	0.033	6.01	105.0	2.5	0.38	0.0	0.00	0.15	0.03	10
1	20		14.56	14.56	33.270	24.734	320.7	0.066	6.15	106.0	2.5	0.38	0.0	0.00	0.15	0.04	20
1	30		13.96	13.96	33.277	24.866	308.4	0.097	6.34	108.0	2.8	0.40	0.1		0.28	0.08	30
1	39		13.35	13.34	33.298	25.006	295.2	0.125	6.29	105.8	3.5	0.46	0.8	0.05	0.75	0.24	39
1	48		13.00	12.99	33.316	25.090	287.4	0.151	5.98	99.9	4.0	0.55	2.1	0.20	0.75	0.31	48
	50	ISL	12.98	12.97	33.330	25.105	286.1	0.156	5.98	99.8	4.3	0.57	2.4	0.20	0.72	0.31	50
1	58		12.88	12.87	33.372	25.158	281.3	0.179	5.99	99.8	5.2	0.64	3.2	0.21	0.60	0.29	58
1	67		12.50	12.49	33.329	25.199	277.6	0.204	5.91	97.7	5.2	0.65	3.7	0.30	0.58	0.28	67
	75	ISL	12.45	12.44	33.450	25.302	268.0	0.226	5.86	96.8	7.5	0.76	5.3	0.32	0.42	0.26	75
1	81		12.41	12.40	33.556	25.392	259.5	0.242	5.83	96.3	9.5	0.86	6.9	0.34	0.28	0.23	81
1	96		11.07	11.06	33.441	25.552	244.5	0.280	5.04	80.8	11.2	1.06	11.7	0.03	0.13	0.14	96
	100	ISL	10.89	10.88	33.459	25.598	240.2	0.289	4.84	77.3	12.2	1.13	13.0	0.03	0.11	0.13	100
1	115		10.41	10.40	33.587	25.782	223.0	0.324	4.19	66.3	16.8	1.39	17.2	0.02	0.06	0.11	116
	125	ISL	9.94	9.93	33.662	25.920	210.0	0.346	3.89	60.9	19.8	1.52	19.4	0.02	0.03	0.08	126
1	139		9.34	9.32	33.765	26.099	193.1	0.374	3.58	55.4	23.8	1.66	21.8	0.02	0.01	0.05	140
	150	ISL	9.11	9.09	33.842	26.197	184.0	0.395	3.36	51.7	26.5	1.75	23.2	0.02	0.01	0.05	151
1	169		8.87	8.85	33.950	26.320	172.7	0.429	3.06	46.9	30.6	1.87	25.0	0.01	0.01	0.04	170
1	198		8.50	8.48	34.024	26.435	162.1	0.477	2.74	41.7	35.5	2.01	26.8	0.02	0.01	0.04	199
	200	ISL	8.48	8.46	34.030	26.443	161.4	0.480	2.70	41.0	36.0	2.03	27.0	0.02			201
1	227		8.22	8.20	34.103	26.540	152.6	0.523	2.07	31.3	42.1	2.25	29.7	0.02			**228**
	250	ISL	8.06	8.03	34.145	26.597	147.6	0.557	1.71	25.8	45.8	2.36	31.2	0.01			**251**
1	265		7.95	7.92	34.165	26.630	144.7	0.579	1.52	22.8	48.0	2.42	31.9	0.01			**267**
	300	ISL	7.61	7.58	34.200	26.707	137.8	0.629	1.17	17.4	53.8	2.60	33.6	0.01			**302**
1	319		7.42	7.39	34.213	26.745	134.5	0.655	1.02	15.1	56.9	2.70	34.4	0.01			**321**
1	377		7.00	6.96	34.245	26.829	127.1	0.731	0.70	10.3	64.2	2.90	37.0	0.00			**379**
	400	ISL	6.80	6.76	34.250	26.860	124.4	0.759	0.61	8.9	67.2	2.95	37.8	0.00			**403**
1	441		6.44	6.40	34.260	26.917	119.3	0.809	0.49	7.1	72.6	3.01	39.0	0.00			**444**
	500	ISL	6.06	6.02	34.303	27.000	111.9	0.878	0.33	4.7	79.7	3.10	40.3	0.00			**503**
1	509		6.00	5.96	34.309	27.012	110.8	0.888	0.31	4.5	80.8	3.11	40.5	0.00			**512**

LATITUDE LONGITUDE DAY/MO/YR MESSENGER

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
30 50.9 N	121 35.4 W	19/04/89	0555 UTC	3928 M	320	13 KT			1019.1 MB	16.8 C	14.3 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 D.BAR
1	0		16.07	16.07	33.225	24.368	355.0	0.000	5.87	104.3	2.8	0.39	0.0	0.00	0.10	0.02	0
1	10		16.04	16.04	33.223	24.373	354.8	0.035	5.87	104.2	2.8	0.39	0.0	0.00	0.10	0.02	10
1	19		15.71	15.71	33.237	24.458	346.9	0.067	5.93	104.6	2.6	0.38	0.0	0.00	0.08	0.02	19
	20	ISL	15.64	15.64	33.235	24.472	345.6	0.071	5.94	104.6	2.6	0.38	0.0	0.00	0.08	0.02	20
1	29		14.86	14.86	33.197	24.614	332.4	0.101	6.07	105.2	2.5	0.40	0.0	0.00	0.11	0.03	29
	30	ISL	14.78	14.78	33.190	24.626	331.3	0.104	6.09	105.4	2.5	0.40	0.0	0.00	0.11	0.03	30
1	40		13.97	13.96	33.135	24.754	319.3	0.137	6.27	106.7	2.8	0.41	0.0	0.00	0.14	0.05	40
1	50		13.18	13.17	33.133	24.913	304.4	0.168	6.34	106.1	2.8	0.41	0.0	0.00	0.24	0.14	50
1	61		12.50	12.49	33.126	25.041	292.4	0.201	6.21	102.5	3.3	0.50	0.7	0.09	0.70	0.38	61
1	71		12.23	12.22	33.177	25.132	284.0	0.230	5.93	97.3	4.0	0.57	2.4	0.27	0.44	0.27	71
	75	ISL	12.00	11.99	33.157	25.160	281.4	0.241	5.89	96.2	4.4	0.60	3.0	0.24	0.39	0.25	75
1	84		11.49	11.48	33.119	25.225	275.3	0.266	5.84	94.3	5.4	0.69	4.5	0.11	0.33	0.22	84
1	99		11.35	11.34	33.259	25.360	262.9	0.306	5.55	89.4	7.3	0.84	7.3	0.03	0.19	0.17	99
	100	ISL	11.32	11.31	33.268	25.372	261.7	0.309	5.51	88.7	7.5	0.86	7.6	0.03	0.18	0.17	100
1	120		10.54	10.53	33.457	25.658	234.9	0.359	4.61	73.1	13.1	1.21	14.0	0.01	0.07	0.09	121
	125	ISL	10.34	10.33	33.507	25.731	228.0	0.370	4.45	70.3	14.6	1.29	15.3	0.01	0.05	0.08	126
1	144		9.64	9.62	33.684	25.987	203.9	0.411	3.98	61.9	19.9	1.53	19.4	0.01	0.01	0.04	145
	150	ISL	9.45	9.43	33.730	26.055	197.6	0.423	3.88	60.2	21.3	1.58	20.3	0.01	0.01	0.04	151
1	176		8.80	8.78	33.881	26.277	176.9	0.472	3.57	54.6	27.1	1.76	23.4	0.00	0.00	0.03	177
	200	ISL	8.42	8.40	33.957	26.395	166.0	0.513	3.25	49.3	32.2	1.92	25.6	0.00	0.00	0.03	201
1	206		8.33	8.31	33.969	26.418	163.8	0.523	3.18	48.1	33.5	1.95	26.1	0.00	0.00	0.03	207
1	235		7.79	7.77	34.005	26.527	153.8	0.569	2.95	44.1	39.6	2.08	28.3	0.00			236
	250	ISL	7.60	7.58	34.017	26.564	150.5	0.592	2.74	40.8	42.6	2.17	29.5	0.00			251
1	275		7.33	7.30	34.032	26.614	146.0	0.629	2.35	34.8	47.5	2.33	31.4	0.00			277
	300	ISL	7.06	7.03	34.051	26.667	141.2	0.665	1.98	29.1	52.5	2.48	33.3	0.00			302
1	329		6.79	6.76	34.075	26.723	136.2	0.705	1.58	23.1	57.8	2.64	35.2	0.00			331
1	388		6.46	6.42	34.132	26.812	128.4	0.783	1.01	14.7	65.9	2.88	37.9	0.00			390
	400	ISL	6.39	6.35	34.143	26.830	126.8	0.798	0.92	13.3	67.5	2.91	38.3	0.00			402
1	453		6.09	6.05	34.191	26.907	120.0	0.864	0.61	8.8	74.5	3.04	39.8	0.00			456
	500	ISL	5.79	5.75	34.239	26.983	113.2	0.919	0.43	6.1	81.2	3.15	41.0	0.00			503
1	518		5.68	5.64	34.258	27.012	110.6	0.939	0.36	5.1	83.7	3.19	41.5	0.00			521

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
30 30.7 N	122 15.7 W	19/04/89	1145 UTC	3644 M	320	10 KT			1017.1 MB	17.6 C	15.8 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 D.BAR
	0	ISL	16.44	16.44	33.135	24.214	369.6	0.000	5.83	104.3	2.0	0.38	0.0	0.00	0.08	0.01	0
1	1		16.44	16.44	33.135	24.214	369.6	0.004	5.83	104.3	2.0	0.38	0.0	0.00	0.08	0.01	1
	10	ISL	16.40	16.40	33.133	24.222	369.2	0.037	5.83	104.2	2.0	0.38	0.0	0.00	0.08	0.01	10
1	11		16.39	16.39	33.133	24.224	369.0	0.041	5.83	104.2	2.0	0.38	0.0	0.00	0.08	0.01	11
	20	ISL	15.48	15.48	33.102	24.406	352.0	0.073	5.95	104.4	2.0	0.38	0.0	0.00	0.07	0.02	20
1	22		15.25	15.25	33.093	24.449	347.9	0.080	5.98	104.4	2.0	0.38	0.0	0.00	0.07	0.02	22
1	30		14.75	14.75	33.043	24.519	341.4	0.108	6.06	104.7	2.0	0.39	0.0	0.00	0.09	0.03	30
1	40		14.52	14.51	33.050	24.573	336.5	0.142	6.10	104.9	2.1	0.39	0.0	0.00	0.11	0.04	40
	50	ISL	14.30	14.29	33.066	24.632	331.2	0.175	6.15	105.3	2.1	0.39	0.0	0.00	0.15	0.07	50
1	51		14.28	14.27	33.070	24.640	330.5	0.178	6.16	105.5	2.1	0.39	0.0	0.00	0.16	0.07	51
1	61		13.94	13.93	33.171	24.789	316.6	0.211	6.23	106.0	2.4	0.40	0.0	0.00	0.21	0.10	61
1	70		13.19	13.18	33.138	24.915	304.7	0.239	6.24	104.5	2.6	0.42	0.0	0.00	0.46	0.26	70
	75	ISL	13.00	12.99	33.154	24.966	300.0	0.254	6.18	103.1	2.7	0.44	0.2	0.07	0.45	0.29	75
1	84		12.69	12.68	33.188	25.053	291.9	0.280	6.03	99.9	3.2	0.51	1.3	0.17	0.43	0.33	84
1	98		11.52	11.51	33.155	25.248	273.5	0.320	5.77	93.3	5.5	0.71	5.0	0.02	0.19	0.16	98
	100	ISL	11.43	11.42	33.160	25.268	271.6	0.325	5.75	92.8	5.8	0.73	5.4	0.02	0.17	0.15	100
1	118		10.84	10.83	33.270	25.460	253.7	0.373	5.49	87.5	9.1	0.94	9.1	0.01	0.09	0.10	119
	125	ISL	10.56	10.55	33.348	25.570	243.4	0.390	5.19	82.3	11.1	1.07	11.2	0.01	0.06	0.08	126
1	143		9.88	9.86	33.554	25.846	217.4	0.431	4.39	68.6	16.3	1.38	16.5	0.00	0.02	0.05	144
	150	ISL	9.69	9.67	33.597	25.911	211.3	0.446	4.25	66.2	17.7	1.44	17.6	0.00	0.02	0.04	151
1	173		9.18	9.16	33.703	26.077	195.8	0.493	3.93	60.5	22.1	1.59	20.4	0.00	0.01	0.03	174
	200	ISL	8.66	8.64	33.865	26.286	176.4	0.544	3.35	51.1	29.3	1.86	24.5	0.00	0.00	0.02	201
1	203		8.60	8.58	33.882	26.309	174.2	0.549	3.31	50.4	30.0	1.88	24.8	0.00	0.00	0.02	204
1	232		8.01	7.99	33.976	26.472	159.1	0.597	3.69	55.5	33.5	1.82	24.6	0.00			233
	250	ISL	7.79	7.77	33.989	26.515	155.3	0.625	3.56	53.2	35.7	1.86	25.4	0.00			**251**
1	272		7.57	7.54	33.987	26.545	152.6	0.659	3.39	50.4	38.8	1.96	26.8	0.00			**273**
	300	ISL	7.14	7.11	34.003	26.618	145.8	0.701	2.75	40.5	44.9	2.14	29.3	0.00			**302**
1	327		6.74	6.71	34.023	26.689	139.4	0.740	2.09	30.5							**329**
1	385		6.21	6.18	34.064	26.791	130.1	0.818	1.45	20.9	64.6	2.73	36.8	0.00			**387**
	400	ISL	6.14	6.10	34.082	26.814	128.1	0.837	1.28	18.4	67.0	2.80	37.7	0.00			**402**
1	448		5.90	5.86	34.138	26.889	121.4	0.897	0.83	11.9	74.4	2.99	40.0	0.00			**451**
	500	ISL	5.37	5.33	34.168	26.977	113.2	0.958	0.59	8.3	84.5	3.12	41.8	0.00			**503**
1	517		5.20	5.16	34.179	27.006	110.5	0.977	0.51	7.2	87.8	3.16	42.4	0.00			**520**

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
30 10.8 N	122 55.2 W	19/04/89	1745 UTC	4293 K	290	06 KT	320 01 06	2	1018.5 MB	18.7 C	15.8 C	8/8	CS

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 D.BAR
	0	ISL	17.32	17.32	33.403	24.214	369.6	0.000	5.71	104.1	2.3	0.35	0.0	0.00	0.08	0.02	0
1	1		17.32	17.32	33.403	24.214	369.6	0.004	5.71	104.1	2.3	0.35	0.0	0.00	0.08	0.02	1
1	10		17.21	17.21	33.401	24.239	367.6	0.037	5.71	103.8	2.2	0.36	0.0	0.00	0.08	0.01	10
1	20		16.72	16.72	33.373	24.333	359.0	0.073	5.77	103.9	2.2	0.35	0.0	0.00	0.06	0.02	20
1	30		16.63	16.63	33.391	24.368	355.9	0.109	5.75	103.4	2.2	0.35	0.0	0.00	0.06	0.02	30
1	50		15.46	15.45	33.366	24.614	333.1	0.178	5.93	104.2	2.1	0.33	0.0	0.00	0.08	0.02	50
1	58		15.08	15.07	33.343	24.680	327.0	0.204	5.98	104.2	2.0	0.34	0.0	0.00	0.09	0.03	58
1	69		14.90	14.89	33.332	24.711	324.4	0.240	5.98	103.8	2.0	0.34	0.0	0.00	0.11	0.04	69
	75	ISL	14.64	14.63	33.299	24.741	321.6	0.259	6.00	103.6	2.0	0.35	0.0	0.00	0.13	0.05	75
1	83		14.24	14.23	33.248	24.787	317.5	0.285	6.03	103.2	2.0	0.36	0.0	0.00	0.17	0.07	83
1	98		13.63	13.62	33.186	24.865	310.3	0.332	6.06	102.4	2.3	0.39	0.0	0.00	0.27	0.21	98
	100	ISL	13.64	13.63	33.215	24.885	308.5	0.338	6.02	101.8	2.4	0.39	0.1	0.01	0.27	0.21	100
1	119		13.75	13.73	33.536	25.112	287.5	0.395	5.61	95.3	3.3	0.44	1.6	0.07	0.23	0.22	119
	125	ISL	13.31	13.29	33.511	25.182	280.9	0.412	5.55	93.4	3.8	0.50	2.5	0.06	0.19	0.18	126
1	144		11.60	11.58	33.383	25.412	259.1	0.463	5.37	87.1	6.3	0.73	6.3	0.01	0.06	0.06	145
	150	ISL	11.26	11.24	33.398	25.485	252.1	0.479	5.26	84.7	7.3	0.81	7.7	0.01	0.04	0.05	151
1	173		10.23	10.21	33.542	25.778	224.5	0.533	4.73	74.5	12.8	1.13	13.3	0.01	0.01	0.03	174
	200	ISL	9.07	9.05	33.780	26.155	188.9	0.589	3.96	60.9	22.7	1.58	20.6	0.00	0.00	0.02	201
1	203		8.96	8.94	33.805	26.193	185.4	0.595	3.88	59.5	23.8	1.62	21.3	0.00	0.00	0.02	204
1	234		8.37	8.35	33.924	26.377	168.3	0.650	3.43	52.0	30.7	1.85	24.7	0.00			235
	250	ISL	8.14	8.11	33.958	26.439	162.6	0.676	3.48	52.4	32.6	1.87	25.0	0.00			25 1
1	273		7.85	7.82	33.988	26.505	156.6	0.713	3.57	53.5	35.1	1.89	25.2	0.00			274
	300	ISL	7.51	7.48	34.012	26.574	150.4	0.754	3.12	46.4	40.9	2.08	27.7	0.00			302
1	330		7.13	7.10	34.029	26.641	144.3	0.798	2.45	36.1	48.4	2.35	31.1	0.00			332
1	386		6.40	6.37	34.065	26.767	132.5	0.876	1.63	23.6	61.1	2.70	35.6	0.00			388
	400	ISL	6.29	6.25	34.082	26.795	130.0	0.894	1.43	20.7	63.7	2.78	36.5	0.00			402
1	450		5.96	5.92	34.147	26.889	121.6	0.957	0.82	11.8	72.2	3.01	39.2	0.01			453
	500	ISL	5.59	5.55	34.196	26.973	113.9	1.016	0.55	7.8	80.2	3.13	40.8	0.00			503
1	514		5.49	5.45	34.210	26.997	111.7	1.032	0.48	6.8	82.5	3.16	41.2	0.00			517

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
29 50.9 N	123 35.3 W	20/04/89	0006 UTC	4022 M	310	11 KT	330 03 09	1	1017.7 MB	19.9 C	17.8 C	6/8	SC

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 D.BAR
1	0		18.29	18.29	33.372	23.956	394.3	0.000	5.68	105.5	2.3	0.36	0.0	0.00	0.06	0.01	0
1	10		16.81	16.81	33.374	24.312	360.6	0.038	5.78	104.3	2.3	0.35	0.0	0.00	0.05	0.01	10
1	20		16.70	16.70	33.414	24.369	355.5	0.074	5.80	104.4	2.3	0.34	0.0	0.00	0.05	0.02	20
1	30		16.66	16.66	33.525	24.464	346.8	0.109	5.79	104.3	2.2	0.34	0.0	0.00	0.06	0.02	30
1	40		16.03	16.02	33.550	24.628	331.5	0.143	5.87	104.4	2.2	0.32	0.0	0.00	0.06	0.02	40
1	50		15.96	15.95	33.610	24.690	325.8	0.175	5.84	103.8	2.1	0.31	0.0	0.00	0.07	0.03	50
1	60		15.48	15.47	33.516	24.726	322.7	0.208	5.89	103.6	2.0	0.32	0.0	0.00	0.11	0.04	60
1	71		14.85	14.84	33.393	24.769	318.9	0.243	5.94	103.1	2.0	0.33	0.0	0.00	0.13	0.06	71
	75	ISL	14.71	14.70	33.369	24.780	317.9	0.256	5.93	102.6	2.0	0.34	0.0	0.00	0.14	0.07	75
1	85		14.49	14.48	33.346	24.810	315.4	0.288	5.92	101.9	2.0	0.35	0.0	0.00	0.18	0.11	85
	100	ISL	14.40	14.39	33.386	24.860	311.0	0.335	5.91	101.6	2.0	0.36	0.0	0.02	0.27	0.22	100
1	102		14.40	14.39	33.398	24.869	310.2	0.341	5.91	101.6	2.0	0.36	0.0	0.02	0.28	0.23	102
1	121		14.25	14.23	33.568	25.033	295.2	0.398	5.72	98.1	2.6	0.40	0.8	0.11	0.23	0.21	121
	125	ISL	14.02	14.00	33.559	25.074	291.3	0.410	5.68	97.0	2.8	0.42	1.2	0.10	0.21	0.19	126
1	146		12.54	12.52	33.488	25.316	268.5	0.469	5.45	90.2	4.7	0.60	4.4	0.02	0.10	0.09	147
	150	ISL	12.34	12.32	33.506	25.368	263.6	0.479	5.40	89.0	5.1	0.63	5.0	0.02	0.09	0.08	151
1	176		11.13	11.11	33.662	25.715	231.0	0.544	4.96	79.7	9.4	0.91	10.0	0.01	0.02	0.04	177
	200	ISL	9.76	9.74	33.740	26.012	202.8	0.596	4.24	66.2	18.5	1.40	17.8	0.00	0.00	0.02	201
1	204		9.55	9.53	33.752	26.056	198.6	0.604	4.13	64.2	20.0	1.48	19.0	0.00	0.00	0.02	205
1	234		8.88	8.85	33.883	26.267	179.0	0.660	3.92	60.1	25.1	1.63	21.6	0.00			235
	250	ISL	8.60	8.57	33.934	26.350	171.2	0.688	3.82	58.2	27.7	1.70	22.7	0.00			251
1	274		8.23	8.20	33.987	26.448	162.2	0.728	3.64	55.0	31.8	1.80	24.3	0.00			275
	300	ISL	7.84	7.81	34.009	26.524	155.3	0.770	3.33	49.9	36.8	1.94	26.4	0.00			302
1	328		7.44	7.41	34.017	26.588	149.4	0.812	2.91	43.2	42.8	2.12	28.9	0.00			330
1	385		6.64	6.60	34.052	26.725	136.7	0.894	1.93	28.1	56.4	2.54	34.3	0.00			387
	400	ISL	6.52	6.48	34.068	26.754	134.1	0.914	1.70	24.7	59.3	2.63	35.3	0.00			402
1	450		6.19	6.15	34.126	26.843	126.1	0.979	1.04	15.0	68.2	2.87	38.2	0.00			453
	500	ISL	5.77	5.73	34.180	26.939	117.3	1.040	0.67	9.6	77.8	3.01	40.5	0.00			503
1	517		5.63	5.59	34.199	26.971	114.3	1.060	0.55	7.8	81.0	3.06	41.3	0.00			520

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 3.3 N	122 56.5 W	29/ 4/89	2008 UTC	29 M	1219 - 1920 PST	1209 PST	1920 PST	278.0 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
1	15.78	33.276	24.472	5.90	104.3	2.4	0.43	0.1	0.00	0.10	0.01	99.	2.5	2.4	2.4	0.09
21	15.44	33.269	24.543	5.91	103.7	2.3	0.42	0.1	0.00	0.11	0.02	34.	3.1	3.1	3.1	0.14
39	13.69	33.328	24.961	6.75	114.3	3.3	0.45	0.1	0.00	0.31	0.09	14.	5.2	5.2	5.2	0.40
65	11.39	33.500	25.539	5.37	86.8	9.9	1.10	10.4	0.04	0.51	0.29	3.6	3.1	3.3	3.2	0.10
83	10.82	33.588	25.710	4.54	72.5	14.1	1.37	15.3	0.01	0.18	0.15	1.2	0.53	0.47	0.50	0.05
96	10.55	33.638	25.797	4.05	64.3	17.8	1.55	18.3	0.01	0.09	0.10	0.12 A	0.01	0.02	0.02	0.06

A) THE SAMPLE FROM 96 M WAS COLLECTED FROM THE WRONG LIGHT LEVEL (0.62% OF SURFACE LIGHT) TO MATCH THE INCUBATOR (WHICH WAS SET FOR 0.12% LIGHT, CORRESPONDING TO 128 M AT THIS STATION). BECAUSE PRODUCTION WAS LOW AND THE DIFFERENCE IN LIGHT LEVELS RELATIVELY SMALL, THIS SAMPLE WAS INCLUDED FOR CALCULATION OF INTEGRATED CHLOROPHYLL.

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 80 64

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 2.0 N	121 27.9 W	28/ 4/89	1927 UTC	18 M	1204 - 1917 PST	1203 PST	1918 PST	352.0 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
0	14.76	33.296	24.711	6.12	106.0	3.0	0.43	0.1	0.00	0.28	0.07	99.	3.8	4.2	4.0	0.75
13	14.66	33.293	24.730	6.15	106.3	2.9	0.44	0.1	0.00	0.28	0.08	34.	8.2	6.9	7.5	0.26
23	14.59	33.293	24.746	6.14	105.9	2.8	0.43	0.1	0.00	0.32	0.08	14.	5.4	5.6	5.5	0.14
39	12.16	33.263	25.212	6.29	103.2	5.4	0.67	3.2	0.17	0.92	0.35	3.6	8.4	8.3	8.4	0.17
53	11.16	33.386	25.492	5.49	88.2	9.5	1.02	9.6	0.05	0.50	0.26	1.2	2.2	2.1	2.1	0.06
78	10.14	33.541	25.791	4.27	67.1	17.4	1.51	17.8	0.02	0.10	0.11	0.12	0.09	0.11	0.10	0.05
99	9.60	33.711	26.014	3.52	54.8	23.7	1.77	21.9	0.03	0.04	0.10					
120	9.30	33.813	26.143	3.14	48.5	28.0	1.92	24.2	0.02	0.02	0.13					
140	8.75	33.893	26.293	3.13	47.8	30.7	1.97	25.3	0.02	0.01	0.07					
171	8.58	34.013	26.414	2.54	38.7	36.2	2.16	27.7	0.01	0.01	0.08					
202	8.32	34.094	26.518	1.99	30.1	42.1	2.37	29.9	0.01	0.01	0.08					

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 13.5 N	119 24.7 W	27/ 4/89	1840 UTC	13 M	1142 - 1909 PST	1156 PST	1909 PST	1486.0 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
0	12.99	33.738	25.418	5.65	94.6	13.3	1.14	11.2	0.24	1.31	0.29	99.	70.2	69.2	69.7	0.32
9	12.68	33.736	25.478	5.63	93.6	13.6	1.15	11.3	0.25	1.35	0.36	34.	69.0	67.9	68.4	0.26
16	12.49	33.736	25.515	5.58	92.4	13.7	1.17	11.4	0.25	1.55	0.50	14.	63.7	62.2	62.9	0.56
28	10.58	33.812	25.926	3.15	50.1	23.7	1.84	20.2	0.40	0.53	0.46	3.6	5.9	3.3	4.6	1.1

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 14.7 N	121 26.6 W	26/ 4/89	1941 UTC	19 M	1204 - 1907 PST	1204 PST	1908 PST	259.6 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	15.26	33.261	24.576	6.00	104.9	2.5	0.41	0.1	0.00	0.13	0.02	99.	2.6	2.5	2.5	0.08
14	15.06	33.257	24.617	6.00	104.5	2.4	0.40	0.1	0.00	0.13	0.03	34.	3.5	3.7	3.6	0.11
25	14.99	33.253	24.629	6.04	105.0	2.2	0.40	0.1	0.00	0.15	0.03	14.	2.9	3.0	2.9	0.11
42	12.68	33.079	24.969	6.39	105.8	2.8	0.46	0.0	0.00	0.41	0.15	3.6	2.8	2.4	2.6	0.10
56	11.88	33.079	25.122	6.16	100.3	4.3	0.60	2.1	0.11	1.16	0.46	1.2	5.5	5.5	5.5	0.11
84	10.96	33.348	25.499	5.60	89.5	10.3	1.05	10.2	0.02	0.16	0.12	0.12	0.09	0.09	0.09	0.04

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 54.6 N	124 10.2 W	25/ 4/89	1937 UTC	30 M	1211 - 1917 PST	1215 PST	1917 PST	130.9 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	17.24	33.448	24.268	5.67	103.2	2.5	0.34	0.0	0.00	0.07	0.01	99.	1.2	1.2	1.2	0.08
22	17.16	33.447	24.287	5.68	103.2	2.5	0.34	0.0	0.00	0.08	0.01	34.	1.8	1.9	1.9	0.08
39	16.49	33.429	24.430	5.83	104.6	2.5	0.33	0.0	0.00	0.08	0.01	14.	1.2	1.2	1.2	0.11
66	15.16	33.434	24.733	5.92	103.4	2.5	0.34	0.0	0.00	0.09	0.02	3.6	0.45	0.42	0.44	0.08
88	13.63	33.257	24.920	6.07	102.6	2.6	0.40	0.0	0.00	0.27	0.18	1.2	1.2	1.2	1.2	0.08
133	12.49	33.400	25.257	5.55	91.7	5.1	0.63	4.2	0.03	0.16	0.16	0.12	0.16	0.16	0.16	0.03

RV DAVID STARR JORDAN. CALCOFI CRUISE 8904 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 29.4 N	119 19.0 W	23/ 4/89	1911 UTC	13 M	1157 - 1901 PST	1155 PST	1902 PST	788.7 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	14.49	33.576	24.984	5.95	102.6	5.4	0.55	2.3	0.07	0.97	0.22	99.	20.6	20.7	20.6	0.20
10	14.46	33.575	24.990	5.97	102.9	5.2	0.55	2.2	0.07	0.97	0.27	34.	31.3	31.2	31.3	0.22
16	14.42	33.575	24.999	5.96	102.6	5.3	0.55	2.2	0.08	0.98	0.26	14.	26.8	26.4	26.6	0.25
28	14.35	33.576	25.015	5.94	102.2	5.5	0.56	2.4	0.08	1.06	0.30	3.6	8.3	7.8	8.0	0.19
38	13.98	33.593	25.106	6.10	104.1	6.8	0.65	3.6	0.10	1.20	0.37	1.2	6.8	7.0	6.9	0.17
57	12.10	33.720	25.578	4.58	75.2	15.3	1.24	12.1	0.24	0.98	0.39	0.12	0.90	0.77	0.83	0.11

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 19.4 N	121 42.9 W	24/ 4/89	1935 UTC	26 M	1202 - 1910 PST	1205 PST	1910 PST	183.5 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	15.55	32.998	24.310	5.90	103.6	2.2	0.41	0.0	0.00	0.09	0.01	99.	1.6	1.6	1.6	0.09
19	15.38	32.990	24.341	5.93	103.8	2.2	0.42	0.0	0.00	0.08	0.02	34.	2.1	2.1	2.1	0.26
34	13.40	32.967	24.740	6.33	106.4	2.1	a.42	0.0	0.00	0.13	0.03	14.	1.9	1.8	1.9	0.12
57	12.01	32.945	24.993	6.44	105.1	2.8	0.47	0.0	0.00	0.47	0.26	3.6	1.8	1.9	1.8	0.10
76	11.41	33.003	25.149	5.95	95.9	4.5	0.69	3.8	0.14	0.51	0.29	1.2	2.1	2.0	2.0	0.05
115	10.88	33.47	25.608	5.12	81.8	9.1	0.93	9.6	0.02	0.07	0.08	0.12	0.06	0.05	0.05	0.03

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 25.2 N	117 54.2 W	22/ 4/89	1911 UTC	18 M	1149 - 1857 PST	1150 PST	1857 PST	579.0 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
0	17.37	33.527	24.297	6.09	111.2	2.8	0.28	0.0	0.00	0.20	0.04	99.	7.3	6.9	7.1	0.13
13	15.37	33.497	24.734	6.28	110.2	2.6	0.33	0.0	0.00	0.31	0.07	34.	11.0	11.4	11.2	0.21
24	13.07	33.480	25.203	6.32	105.8	4.8	0.51	1.7	0.07	1.14	0.28	14.	26.2	26.0	26.1	0.21
38	11.55	33.523	25.527	4.88	79.1	10.7	1.10	11.0	0.30	0.49	0.29	3.6	3.3	3.4	3.3	0.04
52	10.76	33.609	25.737	4.00	63.8	15.8	1.44	16.8	0.05	0.24	0.22	1.2	1.2	1.2	1.2	0.02
80	10.17	33.745	25.945	3.38	53.3	21.9	1.72	21.3	0.02	0.07	0.09	0.12	0.07	0.06	0.06	0.02

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 25.1 N	119 57.6 W	21/ 4/89	1926 UTC	26 M	1159 - 1857 PST	1159 PST	1857 PST	159.4 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
1	15.11	33.269	24.615	6.00	104.6	2.4	0.43	0.0	0.00	0.10	0.02	99.	0.97	0.95	0.96	0.05
18	14.88	33.271	24.666	6.01	104.3	2.4	0.42	0.0	0.00	0.11	0.03	34.	2.3	2.6	2.5	0.08
33	14.17	33.274	24.820	6.13	104.8	2.4	0.43	0.0	0.00	0.16	0.07	14.	2.1	2.1	2.1	0.06
56	12.72	33.309	25.140	5.90	97.9	3.7	0.61	2.1	0.35	0.45	0.29	3.6	1.6	1.7	1.7	0.03
75	11.94	33.355	25.325	5.41	88.4	6.5	0.85	6.7	0.05	0.24	0.20	1.2	1.1	1.1	1.1	0.02
115	11.08	33.755	25.795	4.63	74.4	19.0	1.58	16.9	0.70	0.08	0.15	0.12	0.12	0.09	0.11	0.05

RV DAVID STARR JORDAN CALCOFI CRUISE 8904 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 5.0 N	122 39.7 W	20/ 4/89	1943 UTC	29 M	1208 - 1903 PST	1210 PST	1905 PST	218.4 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
0	17.00	33.302	24.212	5.77	104.5	2.8	0.52	0.0	0.00	0.12	0.02	99.	3.0	2.9	2.9	0.06
21	15.91	33.280	24.447	5.87	104.0	2.8	0.50	0.0	0.00	0.09	0.02	34.	2.3	2.4	2.4	0.10
37	15.00	33.246	24.622	6.04	105.0	2.7	0.49	0.0	0.00	0.15	0.05	14.	2.3	2.3	2.3	0.06
63	11.72	33.231	25.270	6.15	99.9	5.9	0.78	4.2	0.15	0.62	0.33	3.6	3.0	3.2	3.1	0.05
84	10.75	33.365	25.549	5.21	82.9	10.8	1.17	11.3	0.03	0.20	0.14	1.2	0.70	0.69	0.69	0.02
128	9.45	33.714	26.042	3.62	56.1	23.2	1.78	22.0	0.02	0.01	0.03	0.12	0.00	0.00	0.00	0.02

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 30.6 N	118 13.0 W	17/ 4/89	1945 UTC	25 M	1206 - 1851 PST	1153 PST	1851 PST	625.6 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	16.36	33.531	24.537	5.88	105.3	1.7	0.36	0.0	0.00	0.26	0.08	99.	4.4	4.8	4.6	0.11
16	16.27	33.529	24.556	5.87	104.9	1.7	0.41	0.0	0.00	1.72	0.32	34.	21.1	21.2	21.2	0.13
32	12.55	33.515	25.332	5.86	97.1	7.4	0.69	4.8	0.10	0.54	0.21	14.	12.2	11.4	11.8	0.13
53	10.56	33.669	25.818	3.64	57.8	18.2	1.54	18.7	0.07	0.27	0.33	3.6	1.2	1.2	1.2	0.03
74	10.03	33.769	25.988	3.25	51.1	22.1	1.71	21.6	0.01	0.09	0.11	1.2	0.22	0.21	0.21	0.02
111	9.48	34.047	26.297	2.74	42.6	30.0	1.98	25.0	0.01	0.01	0.05	0.12	0.01	-0.01	0.00	0.01

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 30.8 N	120 14.7 W	18/ 4/89	1941 UTC	22 M	1203 - 1858 PST	1200 PST	1859 PST	178.8 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
0	15.78	33.339	24.521	5.88	103.9		0.39	0.1	0.00	0.13	0.03	99.	3.3	3.2	3.2	0.09
15	15.39	33.322	24.595	6.00	105.2		0.38	0.1	0.00	0.15	0.04	34.	3.3	3.5	3.4	0.13
28	14.68	33.288	24.723	6.12	105.8		0.38	0.1	0.00	0.19	0.06	14.	2.4	2.3	2.4	0.10
47	14.04	33.275	24.848	6.19	105.6		0.40	0.1	0.00	0.37	0.13	3.6	1.2	1.4	1.3	0.05
64	13.48	33.279	24.966	6.11	103.0		0.47	0.7	0.05	0.66	0.31	1.2	1.7	1.8	1.8	0.05
95	12.20	33.367	25.286	5.40	88.7		0.76	6.6	0.04	0.22	0.16	0.12	0.15	0.12	0.14	0.02

RV DAVID STARR JORDAN | CALCOFI CRUISE 8904 | STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 10.8 N	122 55.2 W	19/ 4/89	1939 UTC	37 M	1206 - 1908 PST	1211 PST	1909 PST	181.4 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
0	17.21	33.407	24.243	5.69	103.5	2.1	0.33	0.0	0.00	0.07	0.01	99.	2.0	1.9	2.0	0.07
26	16.66	33.369	24.344	5.76	103.6	2.1	0.33	0.0	0.00	0.06	0.01	34.	1.5	1.6	1.5	0.09
47	15.69	33.414	24.600	5.92	104.5	2.1	0.32	0.0	0.00	0.07	0.02	14.	0.99	0.89	0.94	0.09
80	14.41	33.286	24.780	6.00	103.1	2.1	0.35	0.0	0.00	0.15	0.06	3.6	0.81	0.56	0.69	0.09
107	13.64	33.271	24.929	5.93	100.3	2.6	0.42	0.3	0.05	0.39	0.31	1.2	1.7	1.8	1.8	0.03
162	10.82	33.508	25.650	4.89	78.0	10.8	1.01	11.3	0.01	0.02	0.03	0.12	0.01	0.01	0.01	0.01

Secchi Disk Observations
CalCOFI Cruise 8904

Line	Sta.	Day	Mo	Local Time (+8:PST)	Secchi Depth (m)	Forel Water Color	Weather	Clouds Type	Clouds Amt
77	49	30	4	0800	9	5	2	CS	8/8
77	51	30	4	0615	10	5	2	cs	8/8
77	70	29	4	1800	16	2	1	AC	4/8
77	89	29	4	1155	29	1	1	AC	7/8
77	90	29	4	0726	24	1	1	cc	7/8
80	60	28	4	0745	17	2	1	a	1/8
80	64	28	4	1105	18	2	1	CI	1/8
80	70	28	4	1410	8	5	1	a	1/8
82	47	27	4	1300	12	4	1	cu	1/8
82	47	27	4	1543	12	4	1	cu	1/8
83	40.6	27	4	1026	13	5	0	-	0
83	42	27	4	0750	12	7	0	-	0
83	60	26	4	1700	8	4	0	-	0
83	70	26	4	1130	19	2	1	sc	2/8
83	100	25	4	1704	36	1	1	sc	5/8
83	110	25	4	1125	30	1	1	sc	3/8
87	39.5	23	4	0700	17	3	1	ST	1/8
87	45	23	4	1055	13	4	1	ST	1/8
87	50	23	4	1420	9	4	1	a	6/8
87	80	24	4	1120	26	1	1	sc	3/8
87	90	24	4	1638	31	1	1	cu	4/8
90	28	22	4	1305	11	4	0	-	0
90	30	22	4	1055	18	3	0	-	0
90	35	22	4	0620	16	2	0	-	0
90	53	21	4	1653	15	2	1	-	0
90	60	21	4	1110	26	2	1	a	1/8
90	70	21	4	0633	21	3	2	sc	7/8
90	90	20	4	1615	25	1	4	-	8/8
90	100	20	4	1130	29	1	2	sc	8/8
93	35	17	4	0850	21	2	2	cc	8/8
93	40	17	4	1142	25	2	2	cc	8/8
93	45	17	4	1627	13	3	2	sc	8/8
93	70	18	4	1126	22	2	2	cs	8/8
93	80	18	4	1604	26	2	2	sc	8/8
93	110	19	4	1123	37	1	2	cs	8/8
93	120	19	4	1546	37	2	1	sc	6/8

CalCOFI Cruise 8904

MACROZOOPLANKTON BIOMASS

Net Mesh Size: 0.505 mm

Line	Sta.	Position		Date Mo/Day	Time (UTC) Suit	End	Water Volume Strained (m)	Max. Tow Depth (m)	Volume per 1000 m Strained Total (cm)	Small (cm)
77	49	35 05.3N	120 46.6W	4/30	1623	1630	132	64	287	189
77	51	35 01.4N	120 55.1W	4/30	1434	1456	414	213	97	97
77	55	34 53.2N	121 11.8W	4/30	1148	1210	419	209	79	79
77	60	3443.3N	121 32.9W	4/30	0812	0834	422	209	163	163
77	70	34 23.3N	122 14.9W	4/30	0300	0322	407	213	155	155
77	80	34 03.3N	122 56.5W	4/29	2140	2202	417	208	34	34
77	90	33 43.3N	123 38.0W	4/29	1555	1617	413	209	94	94
80	51	34 26.9N	120 31.5W	4/28	0542	0551	166	74	3752	760
80	55	34 19.0N	120 48.1W	4/28	1025	1047	437	207	59	59
80	60	34 09. 1N	121 09.0W	4/28	1515	1537	412	213	70	70
80	70	33 49.0N	121 50.7W	4/28	2335	2357	418	206	53	53
80	80	33 29.0N	122 32.0W	4/29	0453	0515	429	213	58	58
80	90	33 09.0N	123 13.4W	4/29	1015	1037	406	213	54	54
82	47	34 16.4N	120 01.5W	4/28	0030	0052	438	207	212	212
83	40.6	34 13.5N	119 24.7W	4/27	1750	1754	66	28	931	931
83	42	34 10.7N	119 30.5W	4/27	1604	1621	304	151	440	440
83	51	33 52.7N	120 08.0W	4/27	0936	0948	232	119	250	250
83	55	33 44.7N	120 24.6W	4/27	0617	0639	425	209	120	108
83	60	33 34.7N	120 45.4W	4/27	0230	0252	435	210	147	147
83	70	33 14.7N	121 26.6W	4/26	2035	2057	419	212	24	24
83	80	32 54.7N	122 07.7W	4/26	1352	1414	433	213	48	48
83	90	32 34.7N	122 48.7W	4/26	0813	0835	460	212	33	33
83	100	32 14.6N	123 29.5W	4/26	0220	0242	444	217	20	20
83	110	31 54.6N	124 10.2W	4/25	2025	2047	463	208	9	9
87	33	33 53.4N	118 29.4W	4/23	0705	0711	112	47	224	224
87	35	33 49.4N	118 37.7W	4/23	0955	1017	440	209	73	73
87	39.5	33 40.4N	118 56.4W	4/23	1456	1518	429	211	75	75
87	45	33 29.4N	119 19.0W	4/23	1946	2008	429	216	112	112
87	50	33 19.4N	119 39.9W	4/23	2347	2353	126	57	95	95
87	55	33 09.4N	120 00.4W	4/24	0343	0405	433	213	173	162
87	60	32 59.5N	120 21.0W	4/24	0705	0727	469	202	77	77
87	70	32 39.4N	121 02.0W	4/24	1315	1337	447	210	34	34
87	80	32 19.4N	121 42.9W	4/24	2005	2027	422	215	19	19
87	90	31 59.5N	122 23.6W	4/25	0200	0222	437	209	18	18
87	100	31 39.4N	123 04.2W	4/25	0717	0739	450	208	36	36
87	110	31 19.4N	123 44.7W	4/25	1342	1404	480	212	6	6
90	28	33 29.1N	117 46.1W	4/22	2220	2226	108	58	65	65
90	30	33 25.2N	117 54.2W	4/22	2000	2022	441	208	11	11
90	35	33 15.1N	118 15.1W	4/22	1521	1543	433	211	7	7
90	37	33 11.1IN	118 23.3W	4/22	1250	1312	455	211	29	29
90	45	32 55.1N	118 56.2W	4/22	0725	0747	458	207	55	55
90	53	32 39.0N	119 28.9W	4/22	0215	0237	429	212	33	33
90	60	32 25. 1N	119 57.6W	4/21	2130	2152	410	214	24	24
90	70	32 05.1N	120 38.2W	4/21	1358	1420	441	209	20	20
90	80	31 45 .0N	121 19.1W	4/21	0730	0752	429	210	56	56
90	90	31 25.0N	121 59.1W	4/21	0130	0152	422	210	24	24
90	100	31 05.0N	122 39.7W	4/20	1833	1855	407	208	29	29
90	110	3045.2N	123 19.9W	4/20	1219	1241	397	213	66	66
90	120	30 25.5N	123 59.9W	4/20	0633	0655	430	210	21	21
93	26.7	32 57.3N	117 18.3W	4/17	0500	0506	122	58	197	197
93	28	32 54.8N	117 23.8W	4/17	0855	0917	416	204	79	79
93	30	32 50.8N	117 32.0W	4/17	1215	1237	411	211	102	102
93	35	3240.9N	117 52.4W	4/17	1627	1649	432	224	287	97
93	40	32 30.6N	118 13.0W	4/17	2200	2222	401	212	40	40
93	45	32 20.9N	U8 33.2W	4/18	0140	0202	398	211	168	168
93	50	32 10.7N	118 53.5W	4/18	0555	0617	428	204	75	75
93	55	32 01.3N	119 15.3W	4/18	0937	0959	403	210	159	159
93	60	31 50.6N	119 34.4W	4/18	1309	1331	422	210	38	38
93	70	31 30.8N	120 14.7W	4/18	1854	1916	414	215	41	41
93	80	31 10.8N	120 55.3W	4/19	0105	0127	425	212	19	19
93	90	30 50.9N	121 35.4W	4/19	0638	0700	427	214	37	37
93	100	30 30.7N	122 15.7W	4/19	1245	1307	422	209	26	26
93	110	30 10.8N	122 55.2W	4/19	1824	1846	430	211	9	9
93	120	29 50.9N	123 35.3W	4/20	0045	0107	437	209	11	11