UNIVERSITY OF CALIFORNIA, SAN DIEGO SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

CalCOFI Cruise 8907
18 July – 1 August 1989

CalCOFI Cruise 8908
2 – 8 August 1989

CalCOFI Cruise 8911
6 – 20 November 1989

SIO Reference 90-19
1 Mav 1990

UNIVERSITY OF CALIFORNIA

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093

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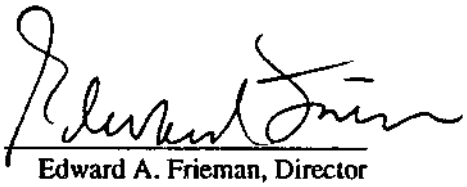
Approved for distribution:



Edward A. Frieman, Director

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INTRODUCTION

The data in this report were collected during Cruises 8907*. 8908, and 8911 of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the RV *New Horizon* of the Scripps Institution of Oceanography (SIO). 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 these cruises 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.

Cruises 8907 and 8911 were standard quarterly CalCOFI survey cruises with hydrographic, chemical, and biological sampling from the surface to 500 meters. Cruise 8908 was a special study cruise to extend Roemmich's (1989) investigation on the transport of mass, heat, salt, and nutrients by making CTD-rosette casts to the bottom on each standard station around the perimeter of the pattern. Personnel of the SIO Center for Coastal Studies assisted in the collection of the CTD data, to be published separately.

In addition to the normal maps of characteristics at the surface and 200 m shown with Cruises 8907 and 8911, vertical sections of various properties measured on the southern line of stations appear in this report for all three cruises. The 8908 vertical sections illustrate temperature, salinity, oxygen, and nutrient distributions beneath the standard 500-m depth range to the ocean bottom at depths greater than 4000 meters.

STANDARD PROCEDURES

Hydrographic Cast Data

The hydrographic casts on Cruises 8907 and 8911 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 Barbara Basin.

A 24-place rosette and CTD system was used on Cruise 8908, with 24 or fewer samples collected from the closest bottom approach to the surface on the up cast Water sampling methods and analyses were similar to those used for the wire casts.

Paired protected reversing thermometers were used on the wire casts 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. Temperatures and pressures from the rosette casts were derived from the CTD, corrected for shore-based calibrations.

Salinity samples were analyzed at sea using inductive-type salinometers standardized with substandard seawater and with Wormley water. Periodic checks on the concentration of the substandard were made by comparison with Wormley Standard Seawater batches P-78 and P-106. 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).

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

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

Chlorophyll-a and phaeopigments were measured with a fluorometric technique (Yentsch and Menzel, 1963; Holm-Hansen *et al.*, 1965) from subsamples filtered onto GF/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.

Primary Productivity Casts

Primary production was estimated from ^{14}C uptake using a simulated *in situ* technique. Light penetration was estimated from the Secchi depth (assuming that the 1% light level is three times the Secchi depth), six depths, corresponding to predetermined levels of light penetration, were sampled with 5-1 Niskin bottles. Temperature, salinity, oxygen, nutrients, chlorophylls, 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 |iCi of ^{14}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 Bumison, 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 Coordinated Universal Time (UTC) of the messenger release. For rosette casts, it is the start-up time when the first rosette bottle is tripped. 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. No interpolations were done on the rosette casts. Density-related parameters have been calculated from the International Equation of State of Seawater 1980 (EOS80, UNESCO, 198 l,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 ($cm^3/1000\ m^3$ strained) and as the total volume minus the volume of larger organisms under the heading "Small." Tow times are given in local PST (+8) time.

FOOTNOTES

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

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

D: CID value listed in place of normal hydrographic measurement.

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 8907

1. CalCOFI Cruise 8907, track and station positions.

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

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

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

5. Sections along CalCOFI line 93 (vertical exaggeration 1000): A) potential density; B) temperature; C) salinity; D) silicate; E) phosphate; F) nitrate; G) chlorophyll-a; H) oxygen saturation; I) oxygen; J) nitrite; and K) phaeopigments. The line at station 93.100 is to indicate extent of sampling on Cruise 8908 for comparison of figures included with that cruise later in this data report

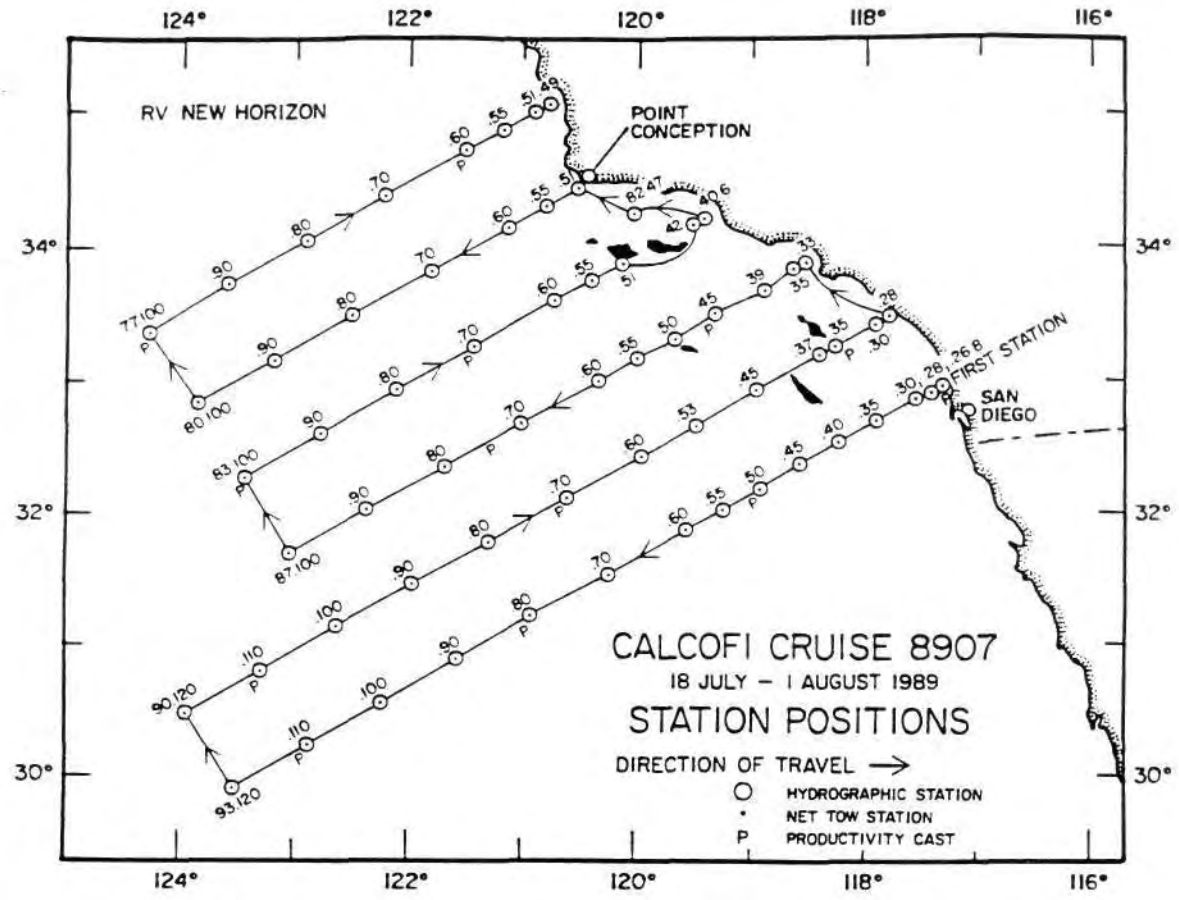
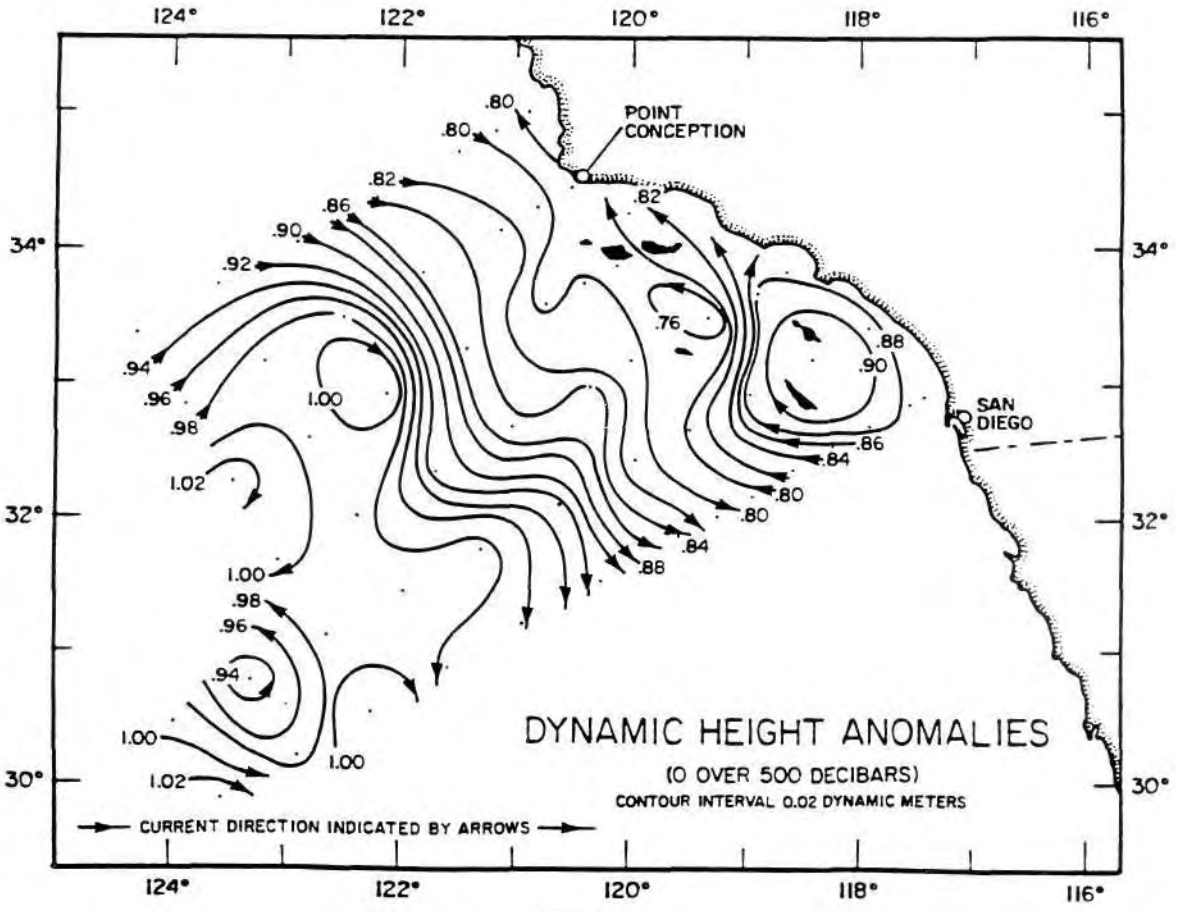


FIGURE 1



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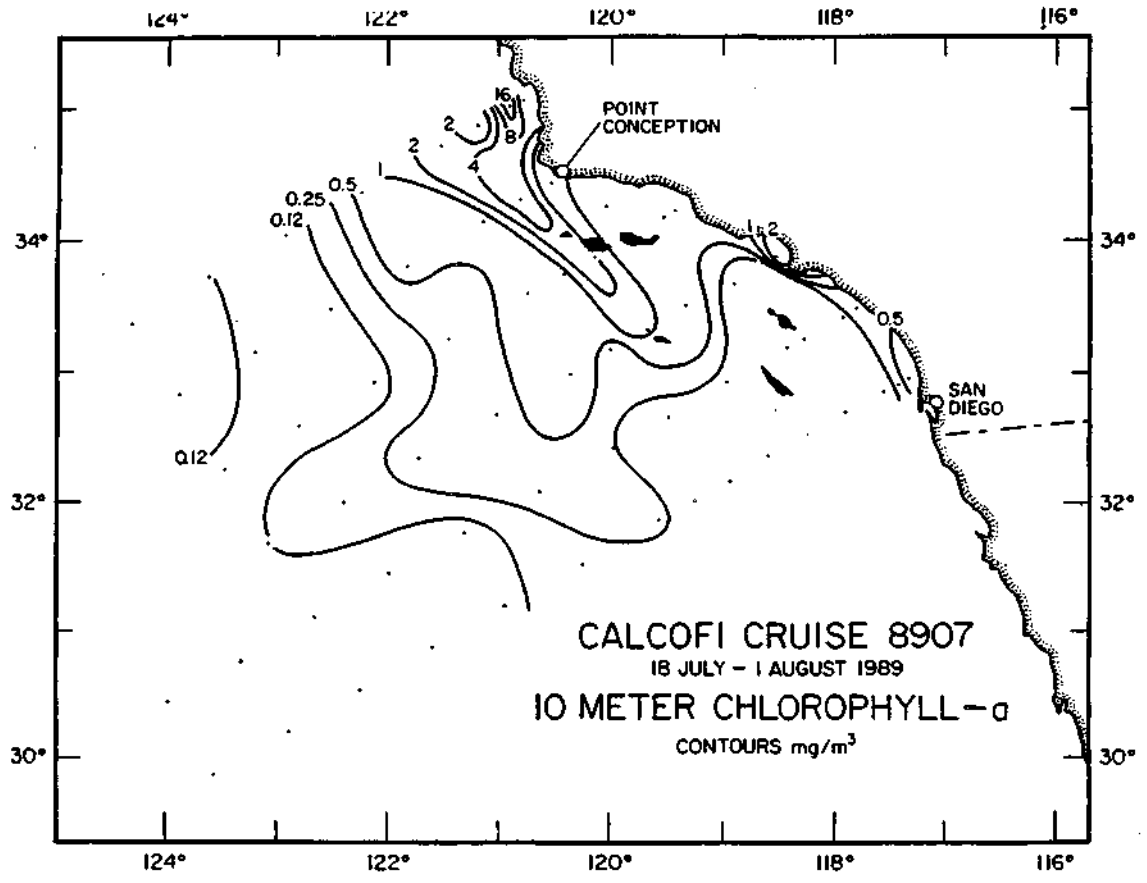

FIGURE 3A

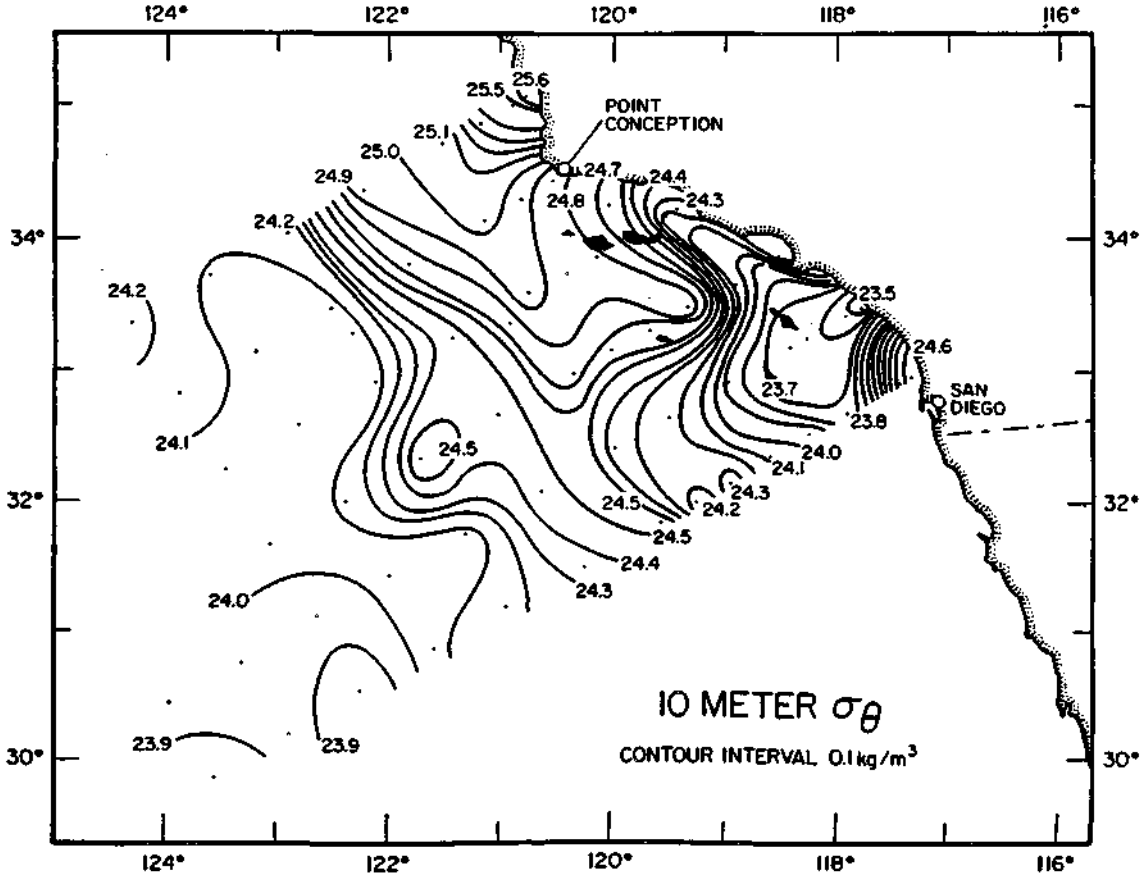

FIGURE 3B

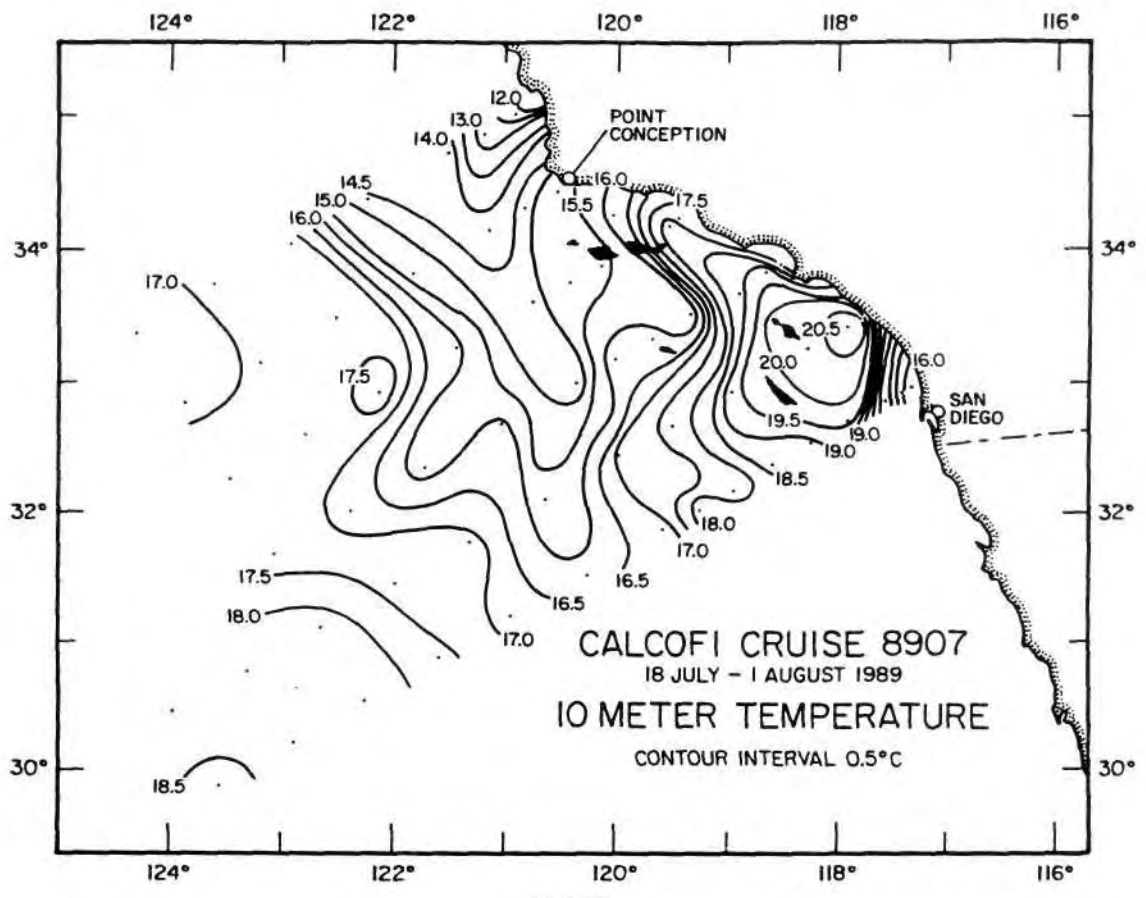

FIGURE 3C

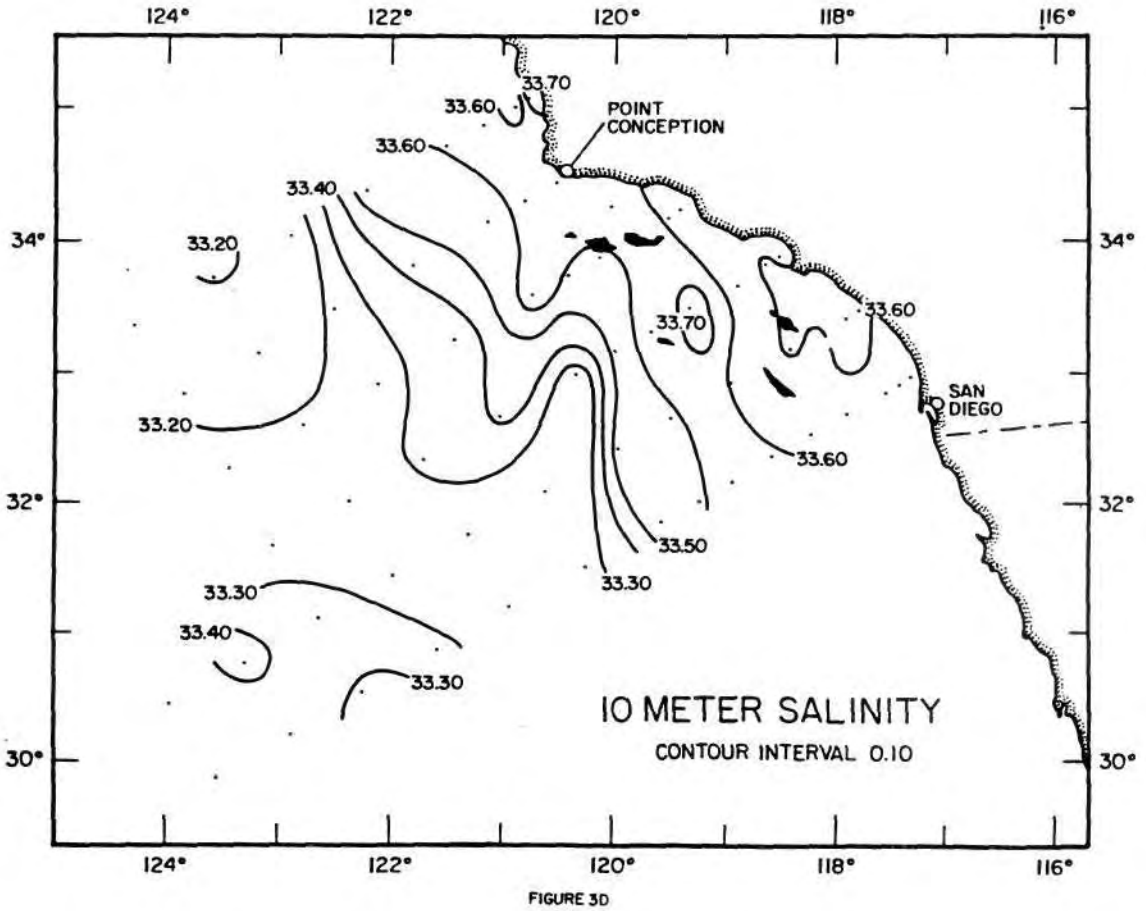

FIGURE 3D

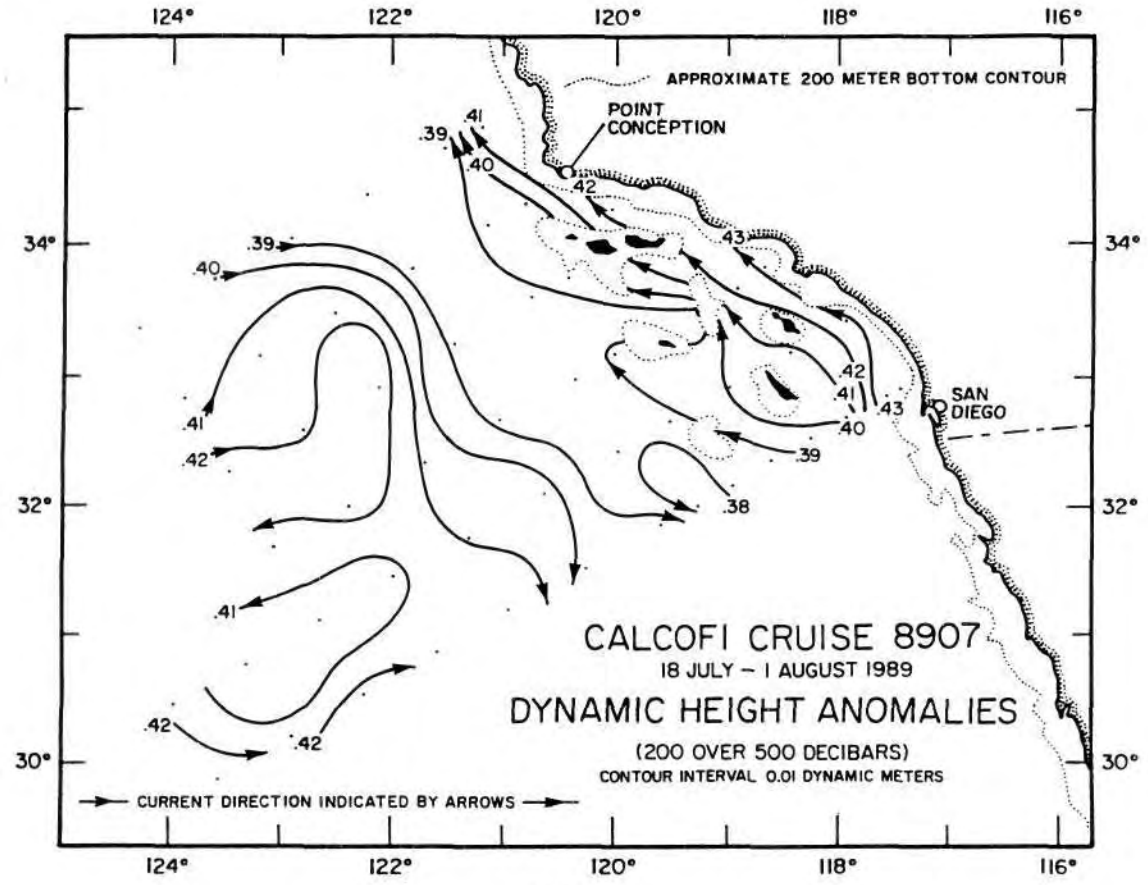

FIGURE 4A

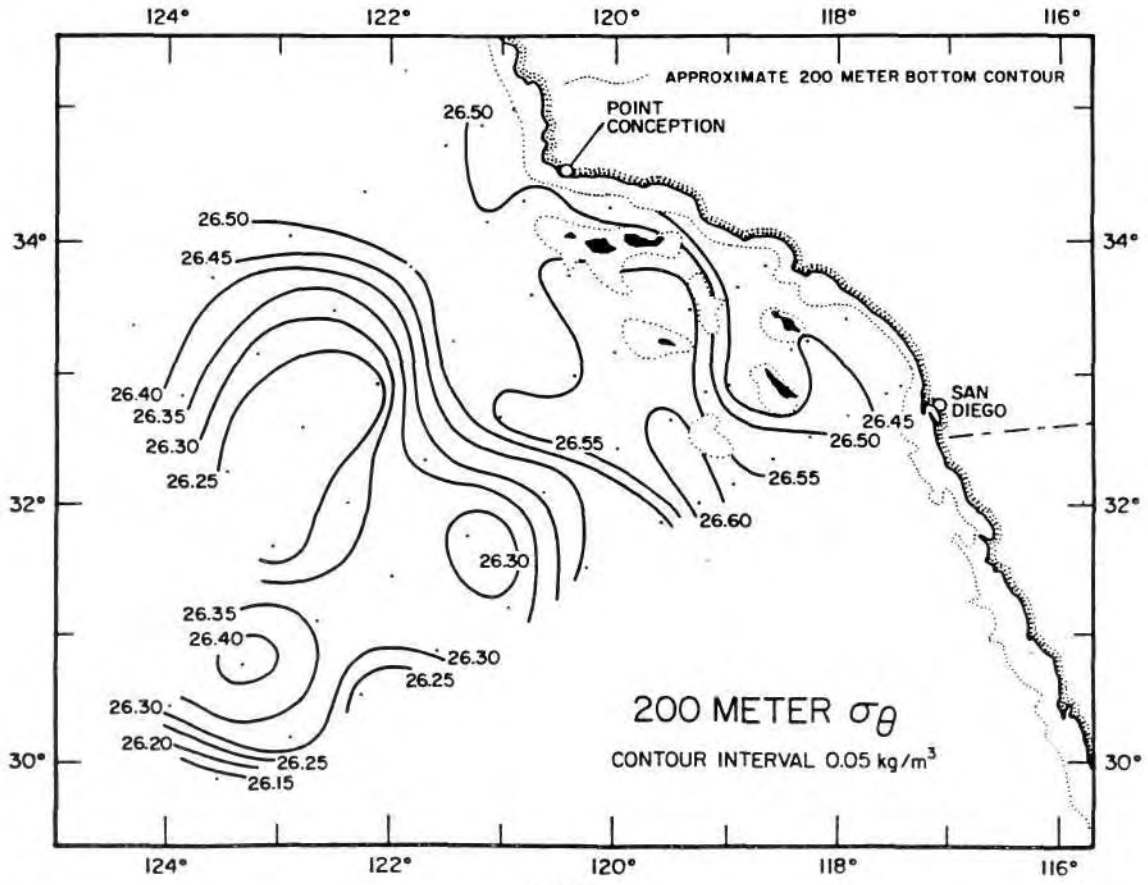

FIGURE 4B

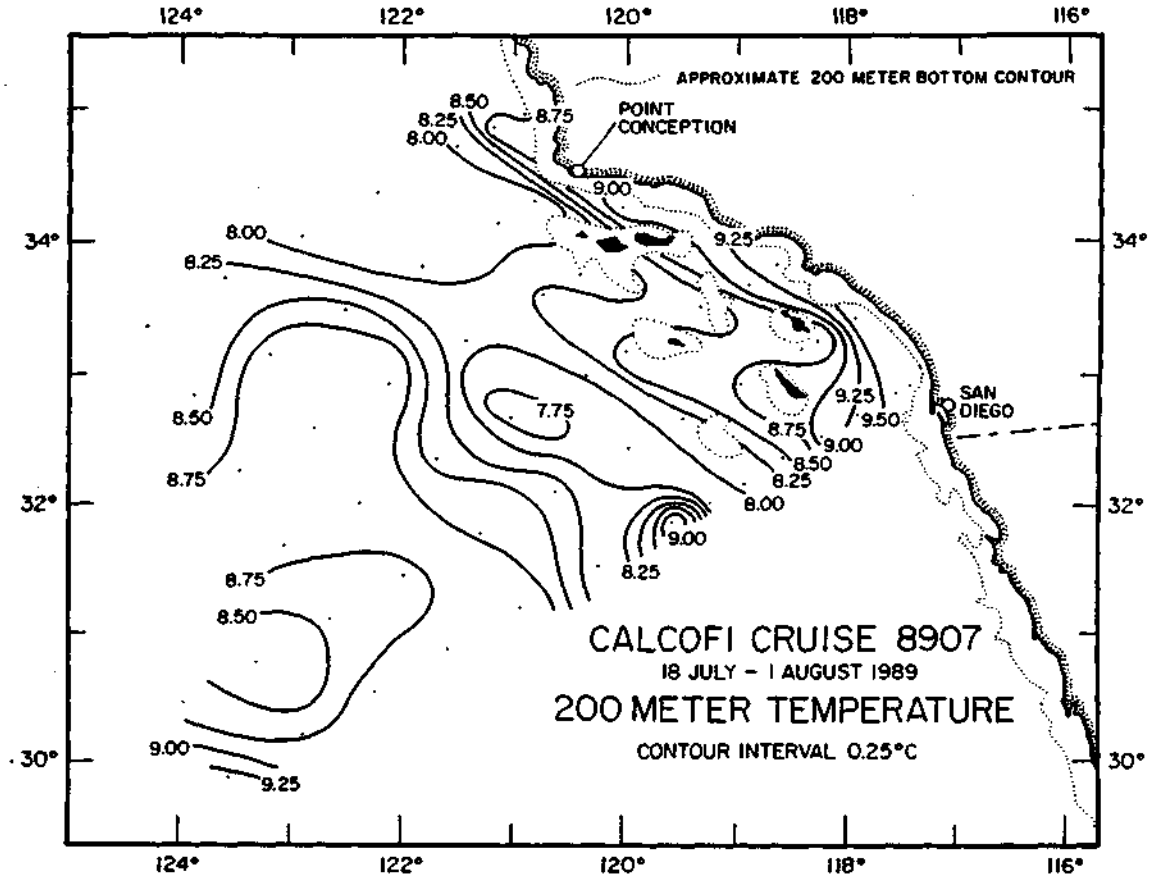

FIGURE 4C

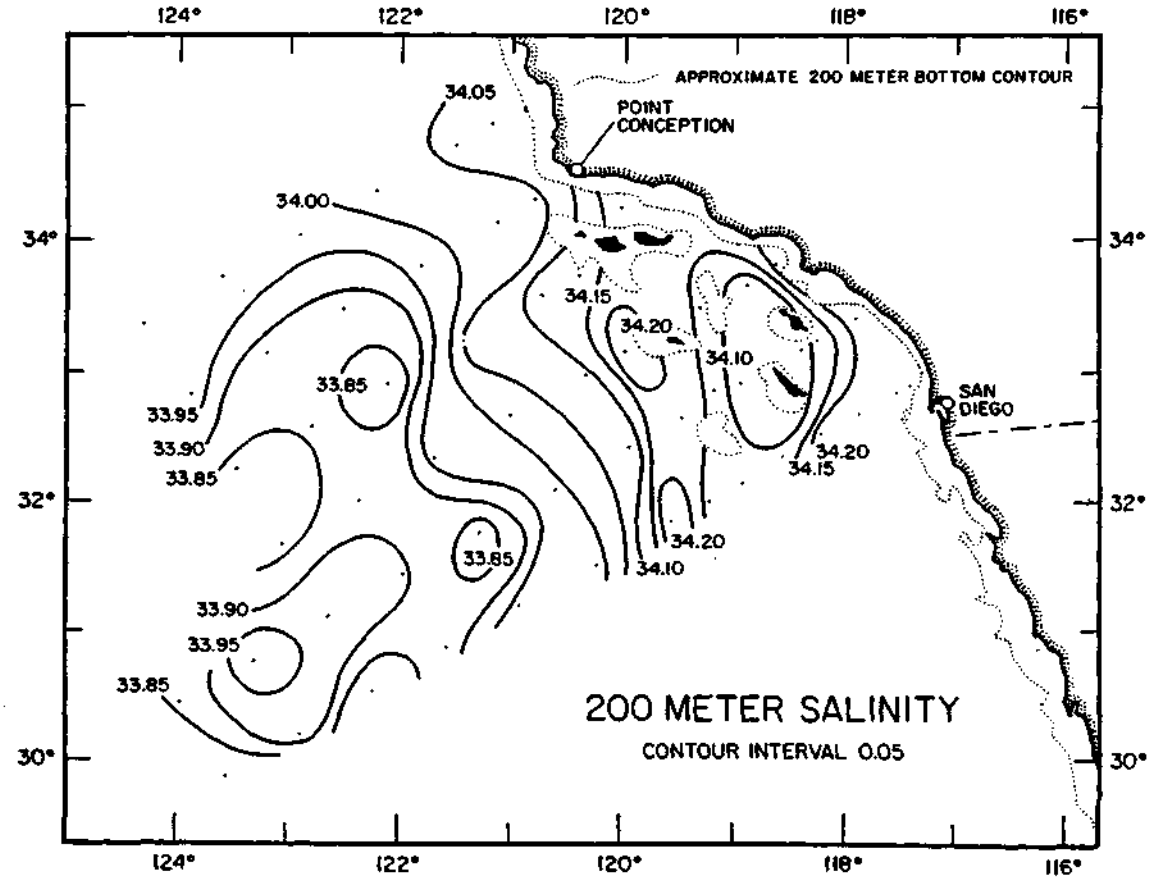

FIGURE 4D

CALCOFI CRUISE 8907

18–22 JULY 1989

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 93

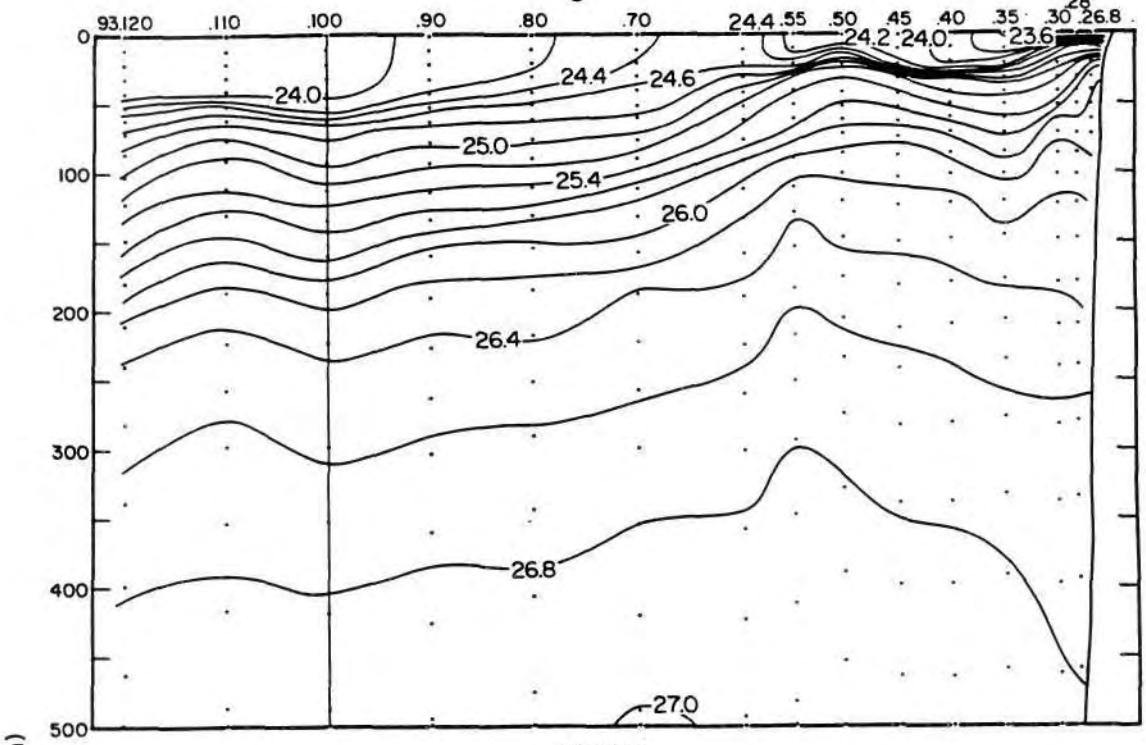

FIGURE 5A

TEMPERATURE (°C) ALONG CALCOFI LINE 93

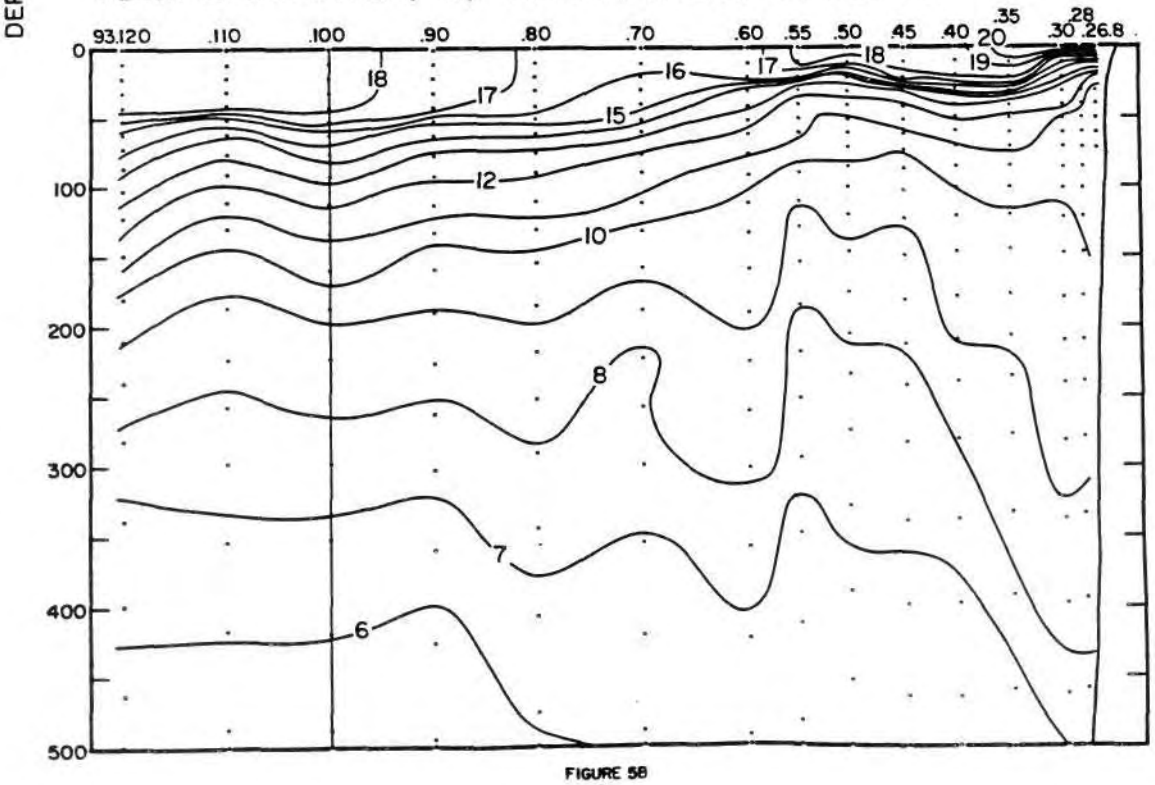

FIGURE 5B

CALCOFI CRUISE 8907

18–22 JULY 1989

SALINITY ALONG CALCOFI LINE 93

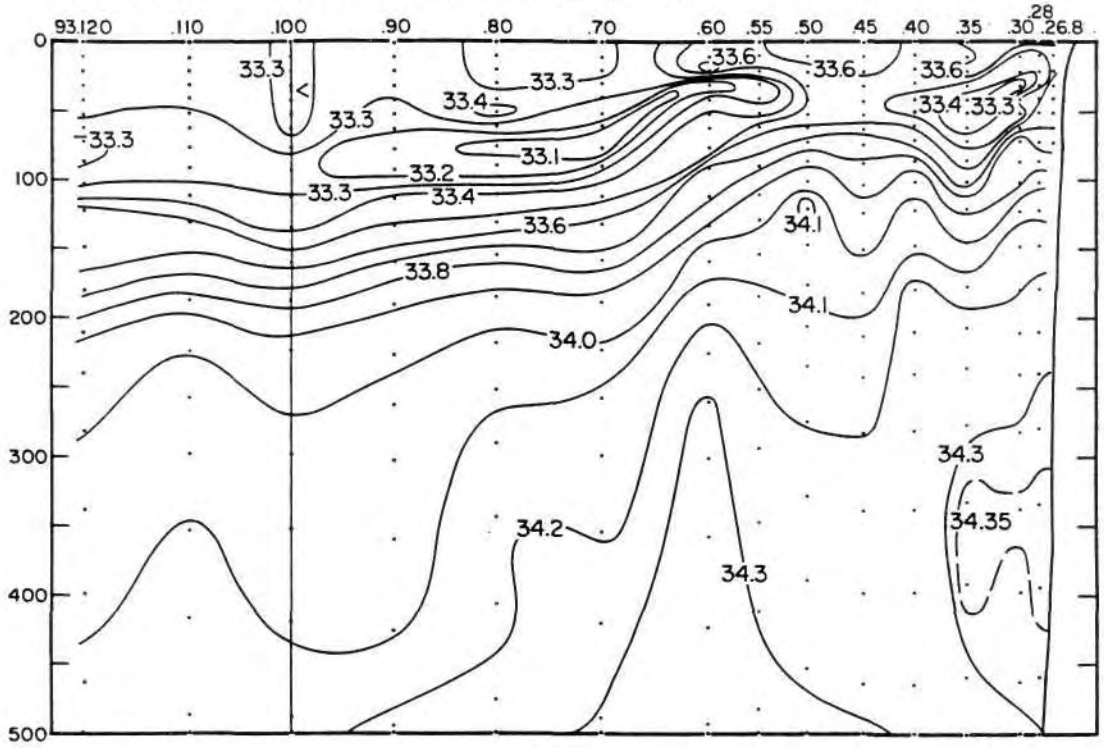

FIGURE 5C

SILICATE (μM/l) ALONG CALCOFI LINE 93

DEPTH (m)

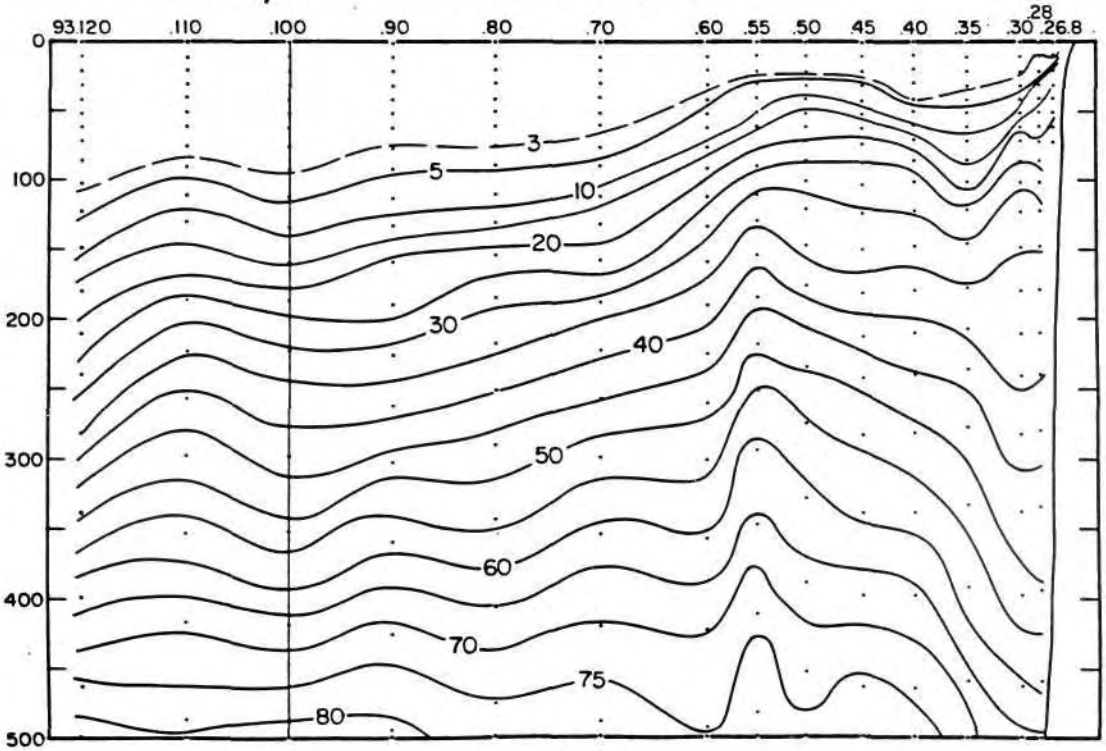

FIGURE 5D

CALCOFI CRUISE 8907

18–22 JULY 1989

PHOSPHATE (μM/l) ALONG CALCOFI LINE 93

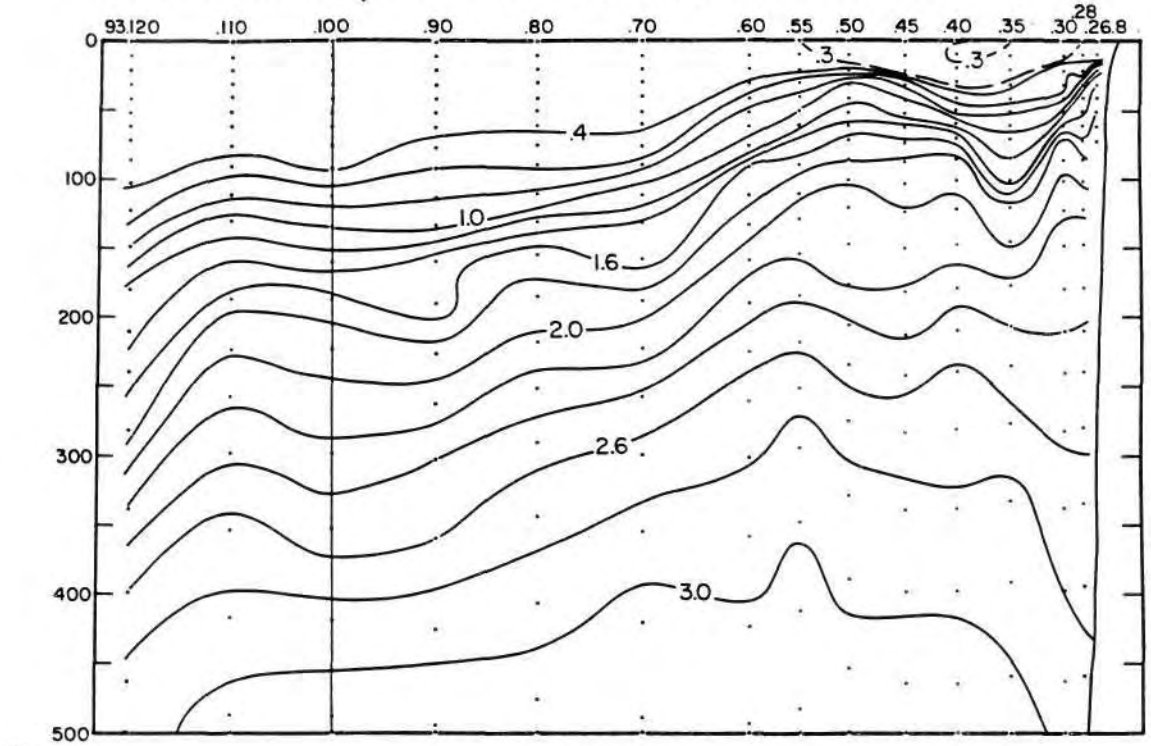

FIGURE 5E

NITRATE (μM/l) ALONG CALCOFI LINE 93

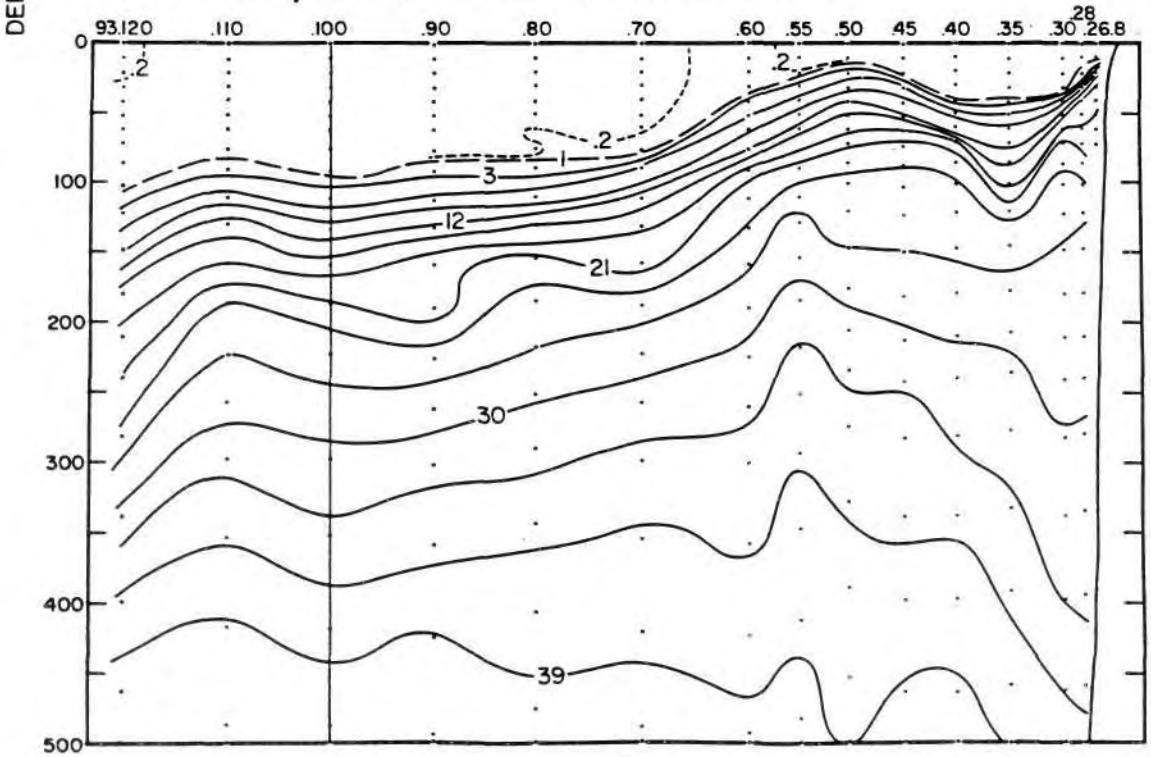

FIGURE 5F

DEPTH (m)

CALCOFI CRUISE 8907

18–22 JULY 1989

CHLOROPHYLL–a (μg/l) ALONG CALCOFI LINE 93

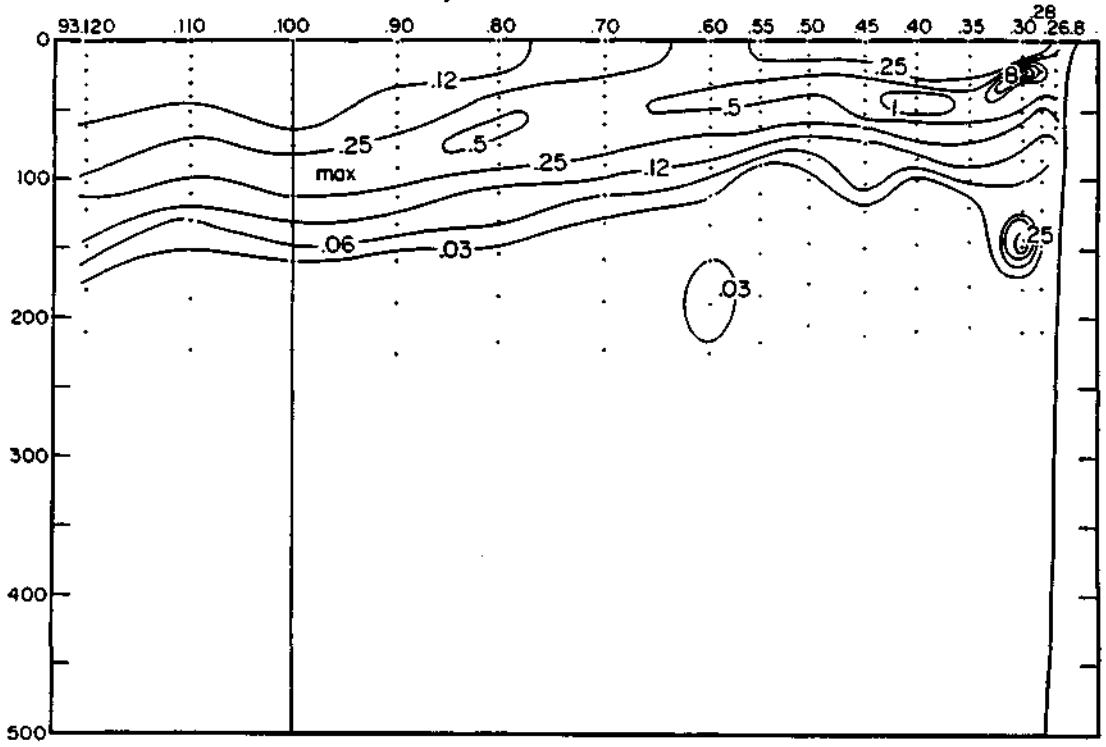

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 93

DEPTH (m)

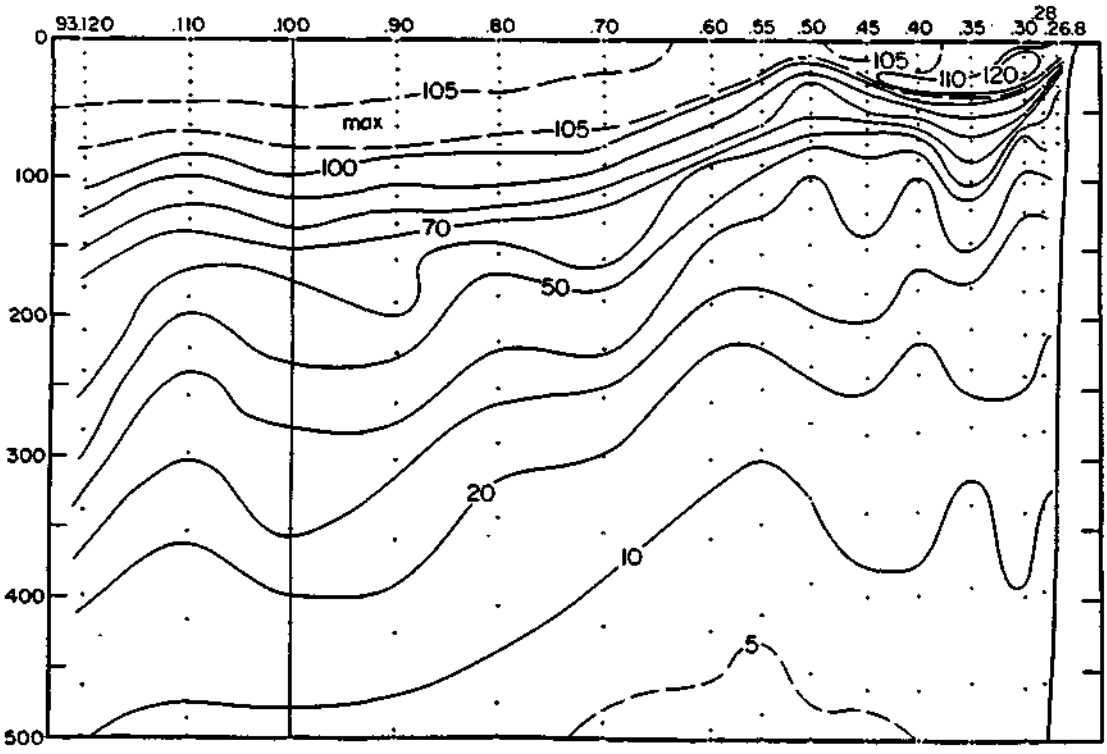

FIGURE 5H

CALCOFI CRUISE 8907

18–22 JULY 1989

OXYGEN (ml/l) ALONG CALCOFI LINE 93

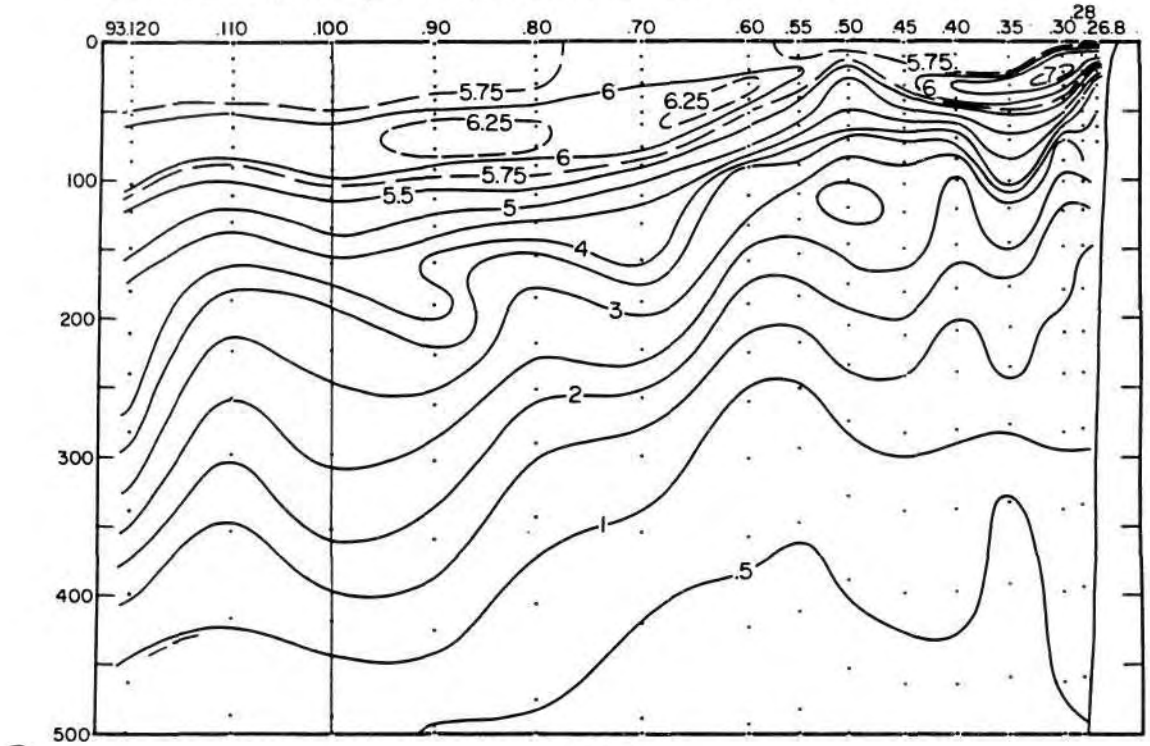

FIGURE 5I

NITRITE (μM/l) ALONG CALCOFI LINE 93

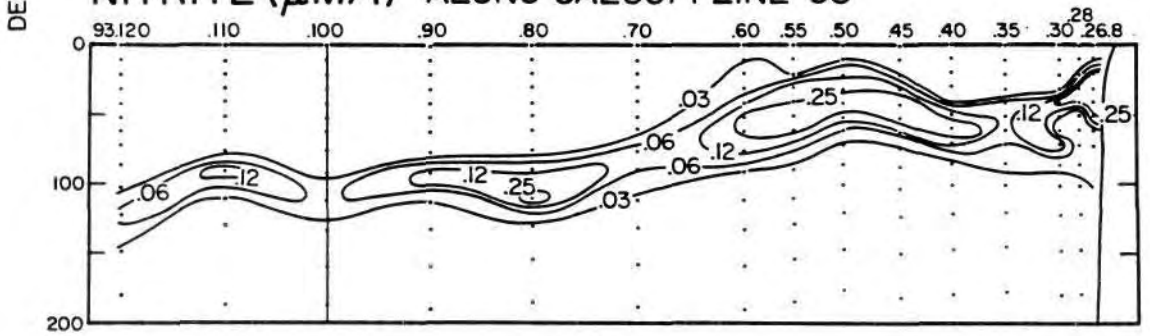

FIGURE 5J

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 93

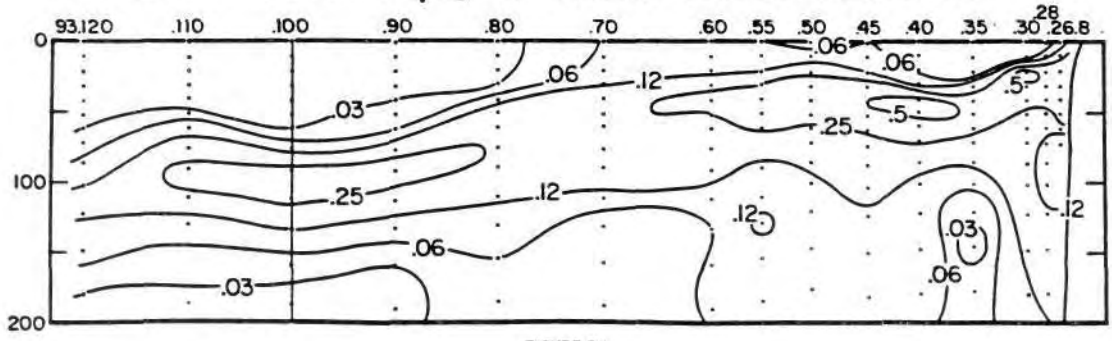

FIGURE 5K

PERSONNEL

CalCOFI Cruise 8907

SHIP'S CAPTAIN

Phillip L. Munsch, RV *New Horizon*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participation (Leg)
Mullin, Michael M. (Chief Scientist)	Professor, Director of MLRG, SIO	I, II
Abramenkoff, Dimitry N.	Fishery Biologist, NMFS	I, II
Costa, Adrian S.	Biological Student Trainee, NMFS	I.II
Cynar, Skip J.	Graduate Student, SIO	I
Gripp, Sherry L.	Staff Research Associate, SIO	I, II
Gruber, Dennis W.	Marine Technician, SIO	I
Harrison, Kevin G.	Graduate Student, SIO	I
Hays, Amy E.	Biological Aid, NMFS	I, II
Lowell, William R.	Staff Research Associate, SIO	I.II
Masten, Douglas M.	Marine Technician, SIO	I, II
Medeiros, Dorothy E.	Graduate Student, SDSU	I.II
Miller, Susan M.	Fisheries Technician, NMFS	I.II
Pyle, Peter B.	Biologist, Pt. Reyes Bird Observatory	I
Schmitt, James A.	Electronics Technician, SIO	I.II
Veit, Richard R.	Specialist, UCI	II

Leg I: San Diego to Dana Point, CA, 18 – 24 July 1989

Leg II: Dana Point to Port San Luis, CA, 24 July – 1 August 1989

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 77 49

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	HIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
35 5.4 N	120 46.7 U	01/08/89	0550 UTC	70 M	320	10 KT			1012.8 MB	12.4 C	LI.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	11.53	11.53	33.708	25.674	230.7	0.000	4.94	80.2	15.9	1.07	12.6	0.25	7.36	1.13	0
1	1	11.53	11.53	33.708	25.674	230.7	0.002	4.94	80.2	15.9	1.07	12.6	0.25	7.36	1.13	1
	10 ISL	11.51	11.51	33.711	25.680	230.3	0.023	4.92	79.8	16.0	1.10	12.7	0.26	6.94	1.05	10
1	11	11.51	11.51	33.711	25.680	23 0.3	0.025	4.92	79.8	16.0	1.10	12.7	0.26	6.88	1.04	11
	20 ISL	11.52	11.52	33.712	25.679	23 0.6	0.046	4.91	79.7	16.1	1.12	12.9	0.26	6.88	1.04	20
1	22	11.52	11.52	33.712	25.679	230.7	0.051	4.91	79.7	16.1	1.13	13.0	0.26	6.88	1.04	22
	30 ISL	11.40	11.40	33.718	25.706	228.3	0.06 9	4.68	75.7	16.2	1.17	13.8	0.25	5.96	1.02	30
1	32	11.34	11.34	33.711	25.712	227.8	0.074	4.57	73.9	16.2	1.18	14.0	0.25	5.59	1.01	32
1	43	10.56	10.55	33.747	25.879	212.2	0.098	3.45	54.8	21.6	1.63	19.3	0.26	2.27	-0.08	43
	50 ISL	10.25	10.24	33.787	25.964	204.2	0.112	3.13	49.4	24.5	1.82	20.9	0.25	0.88	0.64	50
1	53	10.12	10.11	33.805	26.000	200.9	0.118	2.99	47.1	25.8	1.90	21.6	0.24	0.28	0.95	53

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
35 1.5 N	120 55.3 W	01/08/89	0334 UTC	244 M	320	14 KT	3 20 03 05	0	1012.3 MB	13.5 C	12.4 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	12.34	12.34	33.577	25.420	254.8	0.000	7.09	117.0	2.3	0.18	1.0	0.11	19.98	2.29	0
1	1	12.34	12.34	33.577	25.420	254.8	0.003	7.09	117.0	2.3	0.18	1.0	0.11	19.98	2.29	1
	10 ISL	12.31	12.31	33.576	25.425	254.6	0.025	7.09	116.9	2.2	0.24	1.1	0.13	20.09	2.31	10
1	11	12.31	12.31	33.576	25.425	254.6	0.028	7.09	116.9	2.2	0.25	1.1	0.13	20.10	2.31	11
	20 ISL	11.39	11.39	33.632	25.641	234.3	0.050	5.13	83.0	11.8	1.01	11.3	0.20	7.68	1.44	20
1	22	11.16	11.16	33.649	25.6 96	229.1	0.055	4.66	75.0	14.2	1.19	13.8	0.22	4.69	1.20	22
	30 ISL	10.66	10.66	33.691	25.818	217.7	0.073	3.99	63.5	18.8	1.47	17.3	0.25	0.71	0.50	30
1	32	10.56	10.56	33.700	25.842	215.4	0.077	3.91	62.1	19.5	1.51	17.7	0.25	0.37	0.37	32
1	43	10.13	10.13	33.728	25.938	206.5	0.100	3.59	56.5	22.3	1.62	20.1	0.21	0.16	0.35	43
	50 ISL	10.04	10.03	33.778	25.992	201.5	0.114	3.35	52.6	24.0	1.70	21.2	0.22	0.15	0.38	50
1	53	10.00	9.99	33.802	26.018	199.1	0.120	3.24	50.9	24.7	1.73	21.7	0.23	0.15	0.38	53
1	64	9.63	9.62	33.870	26.133	188.4	0.142	2.90	45.2	27.9	1.86	24.3	0.05	0.08	0.25	64
1	74	9.52	9.51	33.906	26.179	184.2	0.160	2.77	43.1	29.3	1.91	24.6	0.03	0.10	0.23	75
	75 ISL	9.51	9.50	33.910	26.184	183.8	0.162	2.76	42.9	29.5	1.92	24.7	0.03	0.10	0.24	76
1	89	9.30	9.29	33.955	26.254	177.4	0.187	2.62	40.5	31.7	2.00	25.8	0.03	0.08	0.31	90
	100 ISL	9.18	9.17	33.984	26.296	173.6	0.207	2.54	39.2	33.1	2.05	26.6	0.04	0.07	0.26	101
1	109	9.10	9.09	34.003	26.324	171.2	0.222	2.48	38.2	34.2	2.08	27.1	0.04	0.07	0.21	110
	125 ISL	8.99	8.98	34.027	26.360	168.0	0.249	2.29	35.2	37.1	2.15	27.4	0.09	0.06	0.31	126
1	130	8.97	8.96	34.033	26.368	167.3	0.258	2.23	34.3	37.9	2.17	27.4	0.11	0.06	0.35	131
1	150	8.93	8.91	34.050	26.388	165.8	0.291	2.15	33.0	39.0	2.23	27.6	0.14	0.06	0.35	151
1	181	8.77	8.75	34.093	26.447	160.8	0.342	1.82	27.9	41.9	2.39	28.6	0.15	0.06	0.33	182
	200 ISL	8.74	8.72	34.098	26.456	160.3	0.372	1.79	27.4	42.7	2.38	28.9	0.14	0.08	0.32	202
1	211	8.72	8.70	34.101	26.462	160.0	0.390	1.77	27.1	43.2	2.38	29.1	0.13	0.09	0.32	213

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 77 55

LATITUDE	LONGITUDE	DAT/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 53.3 N	121 12.1 V	01/08/89	2336 UTC	555 M	320	18 KT	3 20 06 06	0	1013.5 MB	15.1 C	13.6 C	0/8

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
	0 ISL	12.75	12.75	33.636	25.3 86	258.0	0.000	5.96	99.2	5.8	0.67	7.2	0.16	1.73	0.58	0
1	1	12.75	12.75	33.636	25.386	258.0	0.003	5.96	99.2	5.8	0.67	7.2	0.16	1.73	0.58	1
1	10	12.72	12.72	33.634	25.391	257.9	0.026	5.95	99.0	5.7	0.68	7.2	0.17	1.93	0.64	10
	20 ISL	12.57	12.57	33.637	25.423	255.1	0.051	5.86	97.2	6.2	0.72	7.7	0.17	1.77	0.61	20
1	21	12.56	12.56	33.637	25.425	254.9	0.054	5.85	97.0	6.2	0.72	7.7	0.17	1.75	0.61	21
	30 ISL	11.67	11.67	33.681	25.628	23 5.8	0.076	4.93	80.2	12.3	1.13	12.3	0.22	0.63	0.49	30
1	31	11.56	11.56	33.687	25.653	233.5	0.078	4.81	78.1	13.1	1.18	12.9	0.23	0.50	0.47	31
1	41	10.77	10.77	33.716	25.818	217.9	0.101	3.96	63.2	18.2	1.48	16.6	0.28	0.26	0.24	41
	50 ISL	10.06	10.05	33.7 40	25.959	204.6	0.120	3.53	55.5	22.4	1.66	20.4	0.21	0.15	0.29	50
1	51	9.99	9.98	33.745	25.97 5	203.1	0.122	3.49	54.8	22.9	1.68	20.8	0.20	0.14	0.30	51
1	61	9.71	9.70	33.863	26.114	190.1	0.142	2.89	45.1	28.0	1.88	24.0	0.10	0.07	0.21	61
1	72	9.65	9.64	33.956	26.197	182.5	0.162	2.85	44.5	28.2	1.89	24.1	0.09	0.06	0.25	73
	75 ISL	9.61	9.60	33.961	26.208	181.6	0.168	2.77	43.2	28.6	1.91	24.3	0.08	0.06	0.25	76
1	86	9.46	9.45	33.957	26.229	179.7	0.188	2.46	38.2					0.06	0.25	87
	100 ISL	9.39	9.38	33.979	26.258	177.3	0.213	2.38	36.9	32.4	2.06	26.6	0.02	0.05	0.23	101
1	101	9.39	9.38	33.981	26.260	177.1	0.214	2.37	36.8	32.6	2.07	26.7	0.02	0.05	0.23	102
1	121	9.26	9.25	34.015	26.308	173.0	0.249	2.29	35.4	34.3	2.12	27.1	0.03	0.04	0.21	122
	125 ISL	9.22	9.21	34.022	26.3 20	171.9	0.256	2.27	35.1	34.6	2.13	27.2	0.04	0.04	0.21	126
1	147	8.99	8.97	34.056	26.3 83	166.3	0.293	2.18	33.5	36.3	2.17	27.8	0.09	0.03	0.21	146
	150 ISL	8.97	8.95	34.059	26.389	165.8	0.298	2.17	33.4	36.5	2.17	27.9	0.09	0.03	0.21	151
1	178	8.86	8.84	34.083	26.426	162.8	0.3 44	2.09	32.0	38.2	2.21	28.4	0.07	0.07	0.25	179
	200 ISL	8.78	8.76	34.099	26.451	160.8	0.380	2.00	30.6	39.2	2.25	28.9	0.06	0.05	0.34	202
1	208	8.75	8.73	34.105	26.460	160.1	0.393	1.96	30.0	39.6	2.27	29.1	0.06	0.04	0.37	210
1	23 8	8.64	8.61	34.132	26.499	156.9	0.440	1.76	26.9	41.6	2.35	29.8	0.03			240
	250 ISL	8.51	8.48	34.141	26.526	154.5	0.459	1.68	25.6	43.5	2.40	30.2	0.04			252
1	279	8.13	8.10	34.160	26.599	148.0	0.503	1.49	22.5	48.5	2.51	31.4	0.06			281
	300 ISL	7.91	7.88	34.169	26.639	144.4	0.534	1.39	20.9	50.8	2.56	32.2	0.05			303
1	336	7.61	7.58	34.184	26.695	139.6	0.585	1.22	18.2	54.2	2.64	33.6	0.02			339
1	3 96	7.32	7.28	34.230	26.773	133.0	0.667	0.83	12.3	60.9	2.81	35.3	0.01			3 99
	400 ISL	7.29	7.25	34.231	26.778	132.5	0.672	0.81	12.0	61.4	2.82	35.4	0.01			403
1	461	6.79	6.75	34.240	26.855	125.8	0.751	0.59	8.6	69.9	2.97	37.4	0.02			465
	500 ISL	6.43	6.38	34.262	26.920	119.9	0.7 99	0.46	6.7	76.3	3.05	38.4	0.04			504
1	530	6.15	6.10	34.280	26.971	115.2	0.83 4	0.36	5.2	81.2	3.11	39.2	0.06			535

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 A3. 9 N	121 32.4 W	01/08/89	1944 UTC	916 M	330	20 KT	330 04 06	0	1015.5 MB	16.2 C	14.5 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
1	0		14.32	14.32	33.616	25.051	289.9	0.000	6.22	106.9	1.6	0.29	0.8	0.06	3.84	0.83	0
	10	ISL	14.28	14.28	33.615	25.059	289.4	0.029	6.25	107.4	1.6	0.29	0.8	0.06	3.69	0.66	10
1	11		14.28	14.28	33.615	25.059	289.4	0.032	6.25	107.4	1.6	0.29	0.8	0.06	3.67	0.64	11
	20	ISL	14.19	14.19	33.614	25.078	287.9	0.058	6.21	106.5	1.5	0.28	0.8	0.06	3.80	0.83	20
1	21		14.18	14.18	33.614	25.080	287.8	0.061	6.21	106.5	1.5	0.28	0.8	0.06	3.82	0.85	21
	30	ISL	14.07	14.07	33.602	25.094	286.7	0.087	6.20	106.0	1.6	0.29	1.0	0.06	3.96	0.77	30
1	32		14.04	14.04	33.600	25.099	286.3	0.092	6.20	106.0	1.6	0.29	1.1	0.06	3.99	0.73	32
I	42		13.14	13.13	33.551	25.244	272.7	0.120	5.95	99.8	2.9	0.53	3.9	0.14	2.40	0.58	42
	50	ISL	12.59	12.58	33.553	25.354	262.4	0.142	5.71	94.7	4.7	0.75	6.5	0.19	1.38	0.56	50
1	52		12.41	12.40	33.546	25.384	259.6	0.147	5.64	93.1	5.4	0.81	7.3	0.20	1.16	0.55	52
1	62		10.77	10.76	33.358	25.539	244.8	0.172	5.22	83.1	11.7	1.15	12.6	0.27	0.34	0.62	62
1	71		10.52	10.51	33.391	25.609	238.4	0.194	5.05	80.0	13.2	1.22	14.0	0.15	0.22	0.26	72
	75	ISL	10.38	10.37	33.415	25.652	234.4	0.203	4.89	77.2	14.2	1.28	15.0	0.11	0.18	0.22	76
1	86		10.04	10.03	33.507	25.782	222.3	0.228	4.34	68.1	17.7	1.46	18.2	0.05	0.11	0.12	87
	100	ISL	9.84	9.83	33.683	25.953	206.3	0.258	3.67	57.4	22.7	1.67	21.9	0.04	0.06	0.10	101
1	101		9.83	9.82	33.696	25.964	205.2	0.260	3.63	56.7	23.1	1.68	22.1	0.04	0.06	0.10	102
1	121		9.04	9.03	33.830	26.198	183.3	0.299	3.11	47.8	28.5	1.85	24.8	0.02	0.02	0.06	122
	125	ISL	8.92	8.91	33.849	26.232	180.1	0.307	3.15	48.3	28.9	1.85	24.8	0.02	0.02	0.06	126
1	147		8.43	8.41	33.931	26.372	167.1	0.345	3.44	52.2	30.7	1.81	24.6	0.03	0.04	0.06	148
	150	ISL	8.38	8.36	33.940	26.387	165.8	0.350	3.42	51.8	31.3	1.82	24.8	0.03	0.04	0.06	151
1	177		8.05	8.03	34.012	26.493	156.1	0.393	2.91	43.8	37.3	2.01	27.4	0.02	0.01	0.07	178
	200	ISL	8.02	8.00	34.068	26.542	151.9	0.429	2.20	33.1	42.4	2.24	30.0	0.01	0.02	0.09	202
1	207		8.02	8.00	34.081	26.552	151.0	0.439	2.01	30.2	43.7	2.30	30.7	0.01	0.02	0.09	209
1	237		7.75	7.73	34.095	26.603	146.6	0.484	1.91	28.6	46.9	2.38	31.5	0.01			239
	250	ISL	7.70	7.68	34.120	26.631	144.2	0.503	1.72	25.7	48.9	2.45	32.1	0.01			252
1	277		7.54	7.51	34.164	26.688	139.1	0.541	1.33	19.8	53.8	2.61	33.6	0.01			279
	300	ISL	7.06	7.03	34.140	26.737	134.6	0.573	1.31	19.3	58.9	2.67	35.0	0.01			302
1	334		6.34	6.31	34.096	26.799	128.8	0.617	1.28	18.5	66.1	2.73	36.8	0.00			337
1	394		6.07	6.04	34.143	26.871	122.6	0.693	0.87	12.5	74.2	2.92	38.7	0.00			397
	400	ISL	6.04	6.01	34.147	26.878	122.0	0.700	0.84	12.1	75.0	2.93	38.9	0.00			403
1	461		5.76	5.72	34.198	26.954	115.4	0.772	0.56	8.0	82.2	3.05	40.3	0.00			465
	500	ISL	5.76	5.72	34.266	27.008	110.8	0.817	0.40	5.7	84.9	3.12	40.6	0.00			504
1	534		5.76	5.71	34.325	27.055	106.8	0.854	0.26	3.7	87.2	3.19	40.8	0.00			539

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 77 80

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 3.4 N	122 56.3 U	01/08/89	06 56 UTC	4226 M	330	15 XT			1016.6 MB	16.2 C	14.8 C		

CAST	DEPTH H	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	17.09	17.09	33.191	24.106	379.9	0.000	5.65	102.4	3.5	0.34	0.0	0.00	0.10	0.02	0
1	1	17.09	17.09	33.191	24.106	379.9	0.004	5.65	102.4	3.5	0.34	0.0	0.00	0.10	0.02	1
10 ISL		VI .09	17.09	33.190	24.106	380.3	0.038	5.63	102.0	3.5	0.35	0.0	0.00	0.10	0.03	10
		17.09	17.09	33.190	24.106	380.3	0.042	5.63	102.0	3.5	0.35	0.0	0.00	0.10	0.03	11
11																
	20 ISL	17.09	17.09	33.189	24.105	380.7	0.076	5.64	102.2	3.5	0.35	0.0	0.00	0.10	0.02	20
1	21	17.09	17.09	33.189	. 24.105	380.7	0.080	5.64	102.2	3.5	0.35	0.0	0.00	0.10	0.02	21
	30 ISL	17.10	17.10	33.188	24.103	381.2	0.114	5.65	102.4	3.4	0.35	0.0	0.01	0.10	0.03	30
1	32	17.10	17.09	33.188	24.103	381.3	0.122	5.65	102.4	3.4	0.35	0.0	0.01	0.10	0.03	32
1	42	17.03	17.02	33.183	24.116	380.4	0.160	5.66	102.4	3.4	0.34	0.0	0.00	0.12	0.03	42
	50 ISL	15.87	15.86	33.159	24.364	356.9	0.189	5.99	105.9	3.3	0.36	0.0	0.00	0.09	0.04	50
1	52	15.43	15.42	33.149	24.454	348.4	0.196	6.09	106.8	3.3	0.36	0.0	0.00	0.08	0.04	52
1	62	12.38	12.37	33.071	25.021	294.3	0.229	6.51	107.1	4.3	0.48	0.5	0.02	0.37	0.18	62
1	72	11.03	11.02	33.085	25.281	269.7	0.257	6.00	95.9	7.0	0.73	4.9	0.16	0.32	0.21	73
	75 ISL	11.05	11.04	33.149	25.328	265.3	0.265	5.85	93.6	7.9	0.80	6.3	0.18	0.31	0.21	76
1	86	11.35	11.34	33.394	25.464	252.6	0.293	5.32	85.8	11.3	1.05	10.9	0.26	0.25	0.20	87
	100 ISL	10.24	10.23	33.426	25.685	231.8	0.327	4.69	73.9	15.0	1.28	15.1	0.05	0.17	0.16	101
1	101	10.14	10.13	33.425	25.701	230.3	0.329	4.65	73.1	15.3	1.29	15.4	0.03	0.16	0.16	102
1	121	9.57	9.56	33.618	25.947	207.2	0.373	3.81	59.2	21.9	1.61	20.9	0.02	0.03	0.04	122
	125 ISL	9.44	9.43	33.649	25.992	203.0	0.381	3.73	57.8	23.0	1.65	21.6	0.02	0.03	0.04	126
1	147	8.76	8.74	33.793	26.213	182.2	0.424	3.48	53.1	27.9	1.78	24.0	0.01	0.01	0.03	148
	150 ISL	8.70	8.68	33.809	26.235	180.2	0.429	3.44	52.5	28.5	1.80	24.3	0.01	0.01	0.03	151
1	178	8.24	8.22	33.929	26.400	165.0	0.478	3.20	48.3	33.6	1.93	26.5	0.01	0.01	0.03	179
	200 ISL	7.86	7.84	33.978	26.495	156.2	0.513	3.38	50.6	36.1	1.90	26.4	0.00	0.00	0.03	202
1	208	7.73	7.71	33.991	26.524	153.6	0.525	3.45	51.5	37.3	1.89	26.4	0.00	0.00	0.03	210
1	238	7.45	7.43	34.052	26.613	145.6	0.570	2.17	32.2	47.3	2.34	31.8	0.00			240
	250 ISL	7.31	7.29	34.060	26.639	143.2	0.588	1.97	29.2	50.0	2.42	32.8	0.00			252
1	278 A	6.98	6.95	34.070	26.693	138.4	0.627	1.77	26.0	54.8	2.54	34.1	0.01			280
	300 ISL	6.81	6.78	34.090	26.732	134.9	0.657	1.52	22.2	58.5	2.65	35.3	0.01			302
1	334 A	6.58	6.55	34.122	26.788	130.0	0.702	1.16	16.9	63.7	2.80	36.9	0.00			337
1	394 A	6.14	6.11	34.157	26.873	122.4	0.778	0.79	11.4	71.9	2.98	38.9	0.00			397
	400 ISL	6.12	6.08	34.164	26.881	121.7	0.785	0.75	10.8	72.6	3.00	39.0	0.00			403
1	459 A	5.89	5.85	34.228	26.962	114.8	0.855	0.46	6.6	80.0	3.13	40.2	0.00			463
	500 ISL	5.57	5.53	34.241	27.011	110.3	0.901	0.38	5.4	86.5	3.18	41.1	0.00			504
1	527 A	5.36	5.32	34.250	27.044	107.3	0.930	0.32	4.5	90.8	3.22	41.7	0.00			532

A) THE SALINITY SAMPLES FROM 278 TO 527 METERS APPEAR TO HAVE BEEN ANALYZED IN REVERSE ORDER. THET ARE ASSUMED TO NOW BE IN THE CORRECT ORDER

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 43.7 N	123 37.9 W	1/08/89	0108 UTC	4527 M	330	19 K.T	340 06 06	1	1017.6 MB	16.8 C	15.3 C	1/8	CU

CAST	DEPTH H	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	17.19	17.19	33.202	24.091	381.4	0.000	5.69	103.3	3.1	0.36	0.0	0.00	0.12	0.02	0
1	1	17.19	17.19	33.202	24.091	381.4	0.004	5.69	103.3	3.1	0.36	0.0	0.00	0.12	0.02	1
	10 ISL	17.17	17.17	33.201	24.095	381.3	0.038	5.74	104.2	3.0	0.35	0.0	0.00	0.12	0.03	10
1	11	17.17	17.17	33.201	24.095	381.3	0.042	5.75	104.4	3.0	0.35	0.0	0.00	0.12	0.03	11
	20 ISL	17.13	17.13	33.200	24.104	380.8	0.076	5.71	103.6	2.9	0.35	0.0	0.00	0.12	0.02	20
1	22	17.12	17.12	33.200	24.107	380.6	0.084	5.70	103.4	2.9	0.35	0.0	0.00	0.12	0.02	22
	30 ISL	17.06	17.06	33.203	24.123	379.2	0.114	5.70	103.2	2.9	0.35	0.0	0.00	0.12	0.03	30
1	32	17.05	17.04	33.204	24.127	379.0	0.122	5.70	103.2	2.9	0.35	0.0	0.00	0.12	0.03	32
1	42	17.05	17.04	33.209	24.131	379.0	0.160	5.67	102.7	2.9	0.35	0.0	0.00	0.13	0.04	42
	50 ISL	16.97	16.96	33.242	24.175	375.0	0.190	5.71	103.3	3.0	0.35	0.0	0.00	0.19	0.05	50
1	51	16.96	16.95	33.246	24.181	374.5	0.194	5.72	103.4	3.0	0.35	0.0	0.00	0.20	0.05	51
1	63	12.92	12.91	33.159	24.985	297.9	0.234	6.76	112.6	4.2	0.42	0.0	0.00	0.65	0.31	63
1	72	11.69	11.68	33.152	25.214	276.2	0.260	6.36	103.2	5.8	0.61	3.1	0.11	0.69	0.43	73
	75 ISL	11.50	11.49	33.182	25.272	270.7	0.268	6.19	100.0	6.5	0.69	4.4	0.14	0.63	0.41	76
1	87	11.14	11.13	33.325	25.449	254.1	0.299	5.55	89.1	9.6	0.97	9.4	0.20	0.34	0.24	88
	100 ISL	10.74	10.73	33.392	25.572	242.6	0.332	5.12	81.5	11.8	1.14	12.6	0.08	0.24	0.19	101
1	103	10.65	10.64	33.405	25.598	240.2	0.339	5.02	79.8	12.4	1.17	13.3	0.04	0.23	0.19	104
1	123	9.93	9.92	33.573	25.852	216.4	0.385	4.03	63.1	19.1	1.52	19.3	0.02	0.08	0.08	124
	125 ISL	9.86	9.85	33.590	25.877	214.0	0.389	3.95	61.7	19.8	1.55	19.8	0.02	0.07	0.08	126
1	149	9.13	9.11	33.779	26.144	189.0	0.437	3.23	49.7	26.7	1.81	24.3	0.01	0.01	0.04	150
	150 ISL	9.11	9.09	33.785	26.152	188.2	0.439	3.21	49.4	26.9	1.82	24.4	0.01	0.01	0.04	151
1	180	8.67	8.65	33.926	26.332	171.6	0.493	2.77	42.3	32.0	2.00	27.1	0.00	0.01	0.05	181
	200 ISL	8.36	8.34	33.972	26.416	163.9	0.527	2.77	42.0	34.6	2.03	27.8	0.00	0.00	0.04	202
1	211	8.19	8.17	33.988	26.454	160.5	0.545	2.77	41.8	36.1	2.05	28.2	0.00	0.00	0.04	213
1	241	7.71	7.69	34.022	26.552	151.5	0.591	2.92	43.6	42.3	2.21	30.3	0.00			243
	250 ISL	7.57	7.55	34.025	26.575	149.4	0.605	2.80	41.7	43.9	2.24	30.8	0.00			252
1	282	7.14	7.11	34.032	26.641	143.4	0.652	2.22	32.7	49.4	2.35	32.4	0.00			284
	300 ISL	6.97	6.94	34.051	26.679	140.0	0.677	1.98	29.1	53.0	2.45	33.6	0.00			302
1	338	6.65	6.62	34.092	26.755	133.2	0.729	2.83 U		60.7	2.67	36.0	0.00			341
1	398	5.99	5.96	34.104	26.850	124.5	0.807	1.07	15.4	70.9	2.86	38.7	0.00			401
	400 ISL	5.97	5.94	34.105	26.854	124.2	0.809	1.06	15.2	71.2	2.87	38.8	0.00			403
1	462	5.57	5.53	34.153	26.941	116.3	0.884	0.67	9.5	81.5	3.05	40.7	0.00			466
	500 ISL	5.32	5.28	34.187	26.998	111.2	0.927	0.50	7.1	87.5	3.13	41.6	0.00			304
1	531	5.12	5.08	34.215	27.044	107.0	0.961	0.37	5.2	92.4	3.19	42.3	0.00			336

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 22.1 N	124 19.7 W	31/07/89	1759 UTC	4547 M	340	15 KT	3 40 05 06	1	1019.6 MB	17.9 C	15.8 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
	0 ISL	16.58	16.58	33.159	24.200	370.9	0.000	5.75	103.1	2.4	0.36	0.0	0.00	0.15	0.04	0
1	1	16.58	16.58	33.159	24.200	370.9	0.004	5.75	103.1	2.4	0.36	0.0	0.00	0.15	0.04	1
	10 ISL	16.55	16.55	33.158	24.207	370.6	0.037	5.75	103.1	2.4	0.36	0.0	0.00	0.16	0.04	10
1	17	16.52	16.52	33.157	24.213	370.3	0.063	5.75	103.0	2.4	0.36	0.0	0.00	0.16	0.04	17
	20 ISL	16.52	16.52	33.157	24.214	370.3	0.074	5.75	103.0	2.4	0.36	0.0	0.00	0.16	0.04	20
	30 ISL	16.52	16.52	33.158	24.215	370.5	0.111	5.76	103.2	2.4	0.37	0.0	0.00	0.16	0.04	30
1	32	16.52	16.51	33.158	24.215	370.6	0.119	5.76	103.2	2.4	0.37	0.0	0.00	0.16	0.04	32
1	A2	15.44	15.43	33.224	24.509	342.8	0.154	6.01	105.4	2.0	0.40	0.2	0.02	0.45	0.16	42
	50 ISL	14.42	14.41	33.266	24.762	318.9	0.181	6.10	104.9	2.4	0.49	1.2	0.06	0.71	0.29	50
1	52	14.18	14.17	33.269	24.814	313.9	0.187	6.11	104.5	2.5	0.51	1.5	0.07	0.75	0.32	52
1	62	13.28	13.27	33.183	24.932	302.9	0.218	6.16	103.4	3.1	0.57	1.8	0.09	0.61	0.30	62
1	73	11.34	11.33	32.935	25.109	286.1	0.250	6.26	100.7	4.0	0.55	1.2	0.09	0.45	0.27	74
	75 ISL	11.13	11.12	32.940	25.151	282.2	0.256	6.18	98.9	4.4	0.59	2.0	0.13	0.40	0.26	76
1	82	10.64	10.63	33.006	25.288	269.1	0.275	5.83	92.4	6.3	0.76	5.5	0.25	0.23	0.20	83
1	98	10.34	10.33	33.158	25.459	253.2	0.317	5.41	85.2	11.1	1.07	11.2	0.03	0.15	0.10	99
	100 ISL	10.29	10.28	33.182	25.486	250.7	0.322	5.34	84.1	11.5	1.10	11.7	0.03	0.14	0.10	101
1	113	9.97	9.96	33.353	25.674	233.1	0.354	4.81	75.3	14.5	1.26	14.8	0.02	0.08	0.08	114
	125 ISL	9.65	9.64	33.528	25.864	215.3	0.380	4.21	65.5	18.7	1.47	18.6	0.01	0.06	0.06	126
1	129	9.55	9.54	33.583	25.923	209.7	0.389	4.01	62.3	20.2	1.54	19.8	0.01	0.05	0.05	130
	150 ISL	9.16	9.14	33.782	26.142	189.2	0.431	3.23	49.8	26.8	1.84	24.3	0.00	0.01	0.04	151
1	154	9.09	9.07	33.808	26.173	186.3	0.438	3.12	48.0	27.8	1.88	24.9	0.00	0.01	0.04	155
1	180	8.62	8.60	33.919	26.334	171.4	0.485	2.90	44.2	32.1	1.98	26.8	0.00	0.01	0.04	181
	200 ISL	8.32	8.30	33.978	26.427	162.9	0.518	2.73	41.3	35.5	2.05	28.0	0.00	0.00	0.03	202
1	211	8.16	8.14	34.002	26.470	159.0	0.536	2.63	39.7	37.5	2.10	28.7	0.00	0.00	0.03	213
1	240	7.72	7.70	34.041	26.565	150.2	0.581	2.32	34.7	43.8	2.26	30.8	0.00			242
	250 ISL	7.59	7.57	34.039	26.583	148.7	0.596	2.35	35.0	44.9	2.27	30.9	0.00			252
1	280	7.23	7.20	34.026	26.624	145.1	0.640	2.42	35.7	47.8	2.30	31.0	0.00			282
	300 ISL	7.04	7.01	34.045	26.665	141.4	0.668	2.11	31.0	51.7	2.42	32.5	0.00			302
1	336	6.72	6.69	34.085	26.740	134.6	0.718	1.47	21.5	59.5	2.66	35.7	0.00			339
1	396	6.03	6.00	34.088	26.833	126.2	0.796	1.21	17.4	69.5	2.83	38.3	0.00			399
	400 ISL	5.98	5.95	34.088	26.839	125.6	0.801	1.19	17.1	70.3	2.84	38.5	0.00			403
1	461	5.36	5.32	34.110	26.932	116.9	0.875	0.85	12.0	81.9	3.01	40.9	0.00			465
	500 ISL	5.13	5.09	34.140	26.983	112.4	0.920	0.68	9.6	87.5	3.09	41.8	0.00			504
1	528	4.97	4.93	34.162	27.019	109.1	0.951	0.56	7.8	91.5	3.14	42.4	0.00			533

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 27.3 N	120 31.6 W	30/07/89	0326 UTC	73 M	310	25 KT	310 03 05	0	1011.5 MB	13.6 C	13.1 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	15.85	15.85	33.636	24.733	320.2	0.000	5.99	106.2	4.8	0.41	1.8	0.06	0.99	0.22	0
1	1	15.85	15.85	33.636	24.733	320.2	0.003	5.99	106.2	4.8	0.41	1.8	0.06	0.99	0.22	1
1	10	15.40	15.40	33.627	24.827	311.5	0.032	5.85	102.8	5.6	0.49	2.7	0.08	1.06	0.25	10
	20 ISL	14.85	14.85	33.613	24.937	301.4	0.062	5.68	98.7	6.4	0.56	3.7	0.10	1.14	0.26	20
1	21	14.76	14.76	33.610	24.954	299.8	0.065	5.65	98.0	6.5	0.58	3.8	0.10	1.15	0.26	21
	30 ISL	12.96	12.96	33.557	25.285	268.5	0.091	5.06	84.6	10.2	0.94	8.5	0.24	0.93	0.24	30
1	31	12.74	12.74	33.554	25.325	264.6	0.094	4.98	82.8	10.7	0.98	9.1	0.26	0.89	0.24	31
1	42	11.12	11.11	33.588	25.656	233.4	0.121	4.22	67.8	15.6	1.32	15.3	0.24	0.35	0.24	42
	50 ISL	10.90	10.89	33.609	25.712	228.2	0.139	3.96	63.3	16.8	1.42	16.3	0.30	0.32	0.21	50
1	52	10.84	10.83	33.615	25.727	226.8	0.144	3.89	62.1	17.1	1.44	16.5	0.31	0.31	0.20	52

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 19.4 N	120 48.5 W	30/07/89	0625 UTC	831 M	330	24 KT			1013.2 MB	13.7 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	14.98	14.98	33.631	24.922	302.2	0.000	6.05	105.4	4.4	0.40	1.8	0.06	4.74	0.49	0
1	1	14.98	14.98	33.631	24.922	302.2	0.003	6.05	105.4	4.4	0.40	1.8	0.06	4.74	0.49	1
	10 ISL	14.91	14.91	33.631	24.937	301.0	0.030	6.07	105.6	4.4	0.40	1.8	0.07	4.85	0.57	10
1	11	14.90	14.90	33.631	24.939	300.8	0.033	6.07	105.6	4.4	0.40	1.8	0.07	4.86	0.58	11
	20 ISL	13.70	13.70	33.524	25.110	284.9	0.060	6.18	104.8	2.2	0.36	2.5	0.10	4.78	0.89	20
1	22	13.36	13.36	33.490	25.152	280.9	0.065	6.19	104.3	1.9	0.35	2.7	0.11	4.76	0.94	22
	30 ISL	12.21	12.21	33.295	25.227	273.9	0.087	6.01	98.7	3.9	0.53	4.2	0.18	2.76	0.79	30
1	32	11.95	11.95	33.250	25.241	272.6	0.093	5.94	97.0	4.7	0.59	4.6	0.20	2.21	0.72	32
1	43	11.05	11.04	33.189	25.358	261.7	0.122	5.62	90.0	7.7	0.85	7.5	0.21	0.90	0.37	43
	50 ISL	10.61	10.60	33.336	25.550	243.6	0.140	5.10	80.9	11.3	1.07	11.5	0.14	0.32	0.22	50
1	53	10.48	10.47	33.414	25.633	235.7	0.147	4.85	76.8	13.0	1.17	13.2	0.11	0.16	0.18	53
1	63	10.36	10.35	33.584	25.787	221.3	0.170	4.18	66.1	17.7	1.42	16.7	0.17	0.11	0.17	63
1	74	10.12	10.11	33.702	25.920	208.9	0.194	3.74	58.8	21.4	1.60	19.7	0.09	0.11	0.18	75
	75 ISL	10.08	10.07	33.707	25.931	207.9	0.196	3.74	58.8	21.5	1.60	19.8	0.09	0.11	0.18	76
1	88	9.50	9.49	33.745	26.057	196.1	0.222	3.73	57.9	22.7	1.62	20.7	0.08	0.08	0.13	89
	100 ISL	9.06	9.05	33.787	26.161	186.4	0.245	3.80	58.4	24.2	1.63	21.4	0.03	0.06	0.08	101
1	104	8.94	8.93	33.802	26.192	183.6	0.252	3.81	58.4	24.8	1.64	21.7	0.02	0.05	0.07	105
1	123	8.67	8.66	33.884	26.298	173.7	0.286	3.62	55.2	28.1	1.73	23.3	0.02	0.02	0.04	124
	125 ISL	8.65	8.64	33.889	26.305	173.1	0.290	3.61	55.0	28.3	1.74	23.4	0.02	0.02	0.04	126
1	149	8.45	8.43	33.930	26.368	167.5	0.331	3.47	52.7	30.6	1.81	24.5	0.01	0.02	0.05	150
	150 ISL	8.44	8.42	33.932	26.372	167.2	0.332	3.46	52.5	30.8	1.81	24.6	0.01	0.02	0.05	151
1	181	8.03	8.01	33.995	26.483	157.1	0.383	3.05	45.9	36.6	1.99	27.3	0.01	0.03	0.05	182
	200 ISL	7.76	7.74	34.019	26.542	151.8	0.412	2.78	41.6	40.7	2.11	28.8	0.01	0.03	0.04	202
1	211	7.62	7.60	34.029	26.570	149.2	0.428	2.65	39.5	42.8	2.17	29.6	0.01	0.03	0.04	213
1	241	7.40	7.38	34.038	26.609	146.0	0.473	2.46	36.5	46.3	2.28	30.7	0.00			243
	250 ISL	7.39	7.37	34.053	26.622	144.8	0.486	2.30	34.1	47.6	2.34	31.2	0.00			252
1	282	7.34	7.31	34.104	26.670	140.9	0.532	1.75	25.9	52.4	2.52	33.0	0.01			284
	300 ISL	7.14	7.11	34.088	26.685	139.5	0.557	1.75	25.8	54.4	2.54	33.6	0.01			302
1	338	6.72	6.69	34.065	26.725	136.1	0.609	1.78	26.0	58.3	2.59	34.8	0.01			341
1	398	6.85	6.81	34.243	26.848	125.5	0.688	0.64	9.4	66.6	2.96	37.2	0.00			401
	400 ISL	6.84	6.80	34.245	26.851	125.3	0.690	0.63	9.2	66.9	2.97	37.3	0.00			403
1	461	6.46	6.42	34.285	26.934	118.0	0.764	0.41	6.0	74.1	3.11	38.7	0.01			465
	500 ISL	6.27	6.23	34.302	26.973	114.8	0.810	0.35	5.1	77.6	3.15	39.4	0.00			504
1	533	6.10	6.05	34.317	27.006	111.9	0.847	0.30	4.3	80.5	3.18	39.9	0.00			538

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 80 60

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 9.1 N	121 9.0 W	30/07/89	1017 UTC	2227 M	320	18 KT			1013.7 MB	14.2 C	13.6 C		

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OZTGBN ML/L	OZT 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	14.24	14.24	33.559	25.024	292.5	0.000	6.00	103.0	2.5	0.42	1.8	0.08	0.59	0.24	0
	10 ISL	14.19	14.19	33.553	25.030	292.2	0.029	6.00	102.8	2.6	0.43	1.8	0.08	0.56	0.22	10
1	11	14.19	14.19	33.552	25.030	292.2	0.032	6.00	102.8	2.6	0.43	1.8	0.08	0.56	0.22	11
	20 ISL	13.55	13.55	33.426	25.065	289.2	0.058	6.00	101.4	3.2	0.52	2.5	0.11	0.54	0.32	20
1	22	13.33	13.33	33.386	25.078	287.9	0.064	6.00	100.9	3.4	0.55	2.7	0.12	0.53	0.35	22
	30 ISL	12.10	12.10	33.191	25.167	279.6	0.087	5.91	96.8	4.8	0.67	3.9	0.18	0.72	0.40	30
1	32	11.78	11.78	33.149	25.194	277.1	0.092	5.87	95.4	5.3	0.70	4.4	0.19	0.75	0.41	32
I	42	10.60	10.60	33.094	25.363	261.2	0.119	5.58	88.4	8.2	0.90	8.1	0.22	0.31	0.25	42
	SO ISL	10.59	10.58	33.161	25.417	256.2	0.140	5.46	86.5	9.2	0.95	9.3	0.15	0.24	0.22	50
1	54	10.59	10.58	33.181	25.433	254.8	0.150	5.41	85.7	9.4	0.96	9.6	0.11	0.21	0.22	54
1	63	10.69	10.66	33.289	25.500	248.6	0.173	5.24	83.3	10.1	1.00	10.5	0.06	0.17	0.16	63
1	72	10.40	10.39	33.381	25.622	237.2	0.195	4.89	77.3	12.9	1.17	13.2	0.05	0.12	0.13	73
	75 ISL	10.32	10.31	33.434	25.677	232.0	0.202	4.69	74.0	14.3	1.24	14.4	0.06	0.11	0.13	76
1	88	10.01	10.00	33.644	25.894	211.7	0.231	3.95	62.0	19.6	1.50	18.6	0.11	0.08	0.13	89
	100 ISL	9.75	9.74	33.679	25.964	205.2	0.256	3.93	61.3	20.5	1.52	19.2	0.08	0.06	0.12	101
1	103	9.69	9.68	33.679	25.974	204.3	0.262	3.93	61.2	20.5	1.52	19.3	0.07	0.06	0.12	104
1	124	9.13	9.12	33.789	26.152	187.8	0.303	3.70	57.0	24.6	1.65	21.7	0.03	0.02	0.06	125
	125 ISL	9.11	9.10	33.794	26.159	187.1	0.305	3.69	56.8	24.8	1.66	21.8	0.03	0.02	0.06	126
1	150	8.76	8.74	33.892	26.291	175.0	0.350	3.34	51.0	28.9	1.82	24.3	0.01	0.02	0.05	151
1	180	8.32	8.30	33.979	26.427	162.5	0.401	3.06	46.3	34.3	1.95	26.3	0.01	0.01	0.07	181
	200 ISL	7.97	7.95	34.007	26.502	155.7	0.432	2.89	43.4	38.5	2.06	27.9	0.01	0.00	0.05	202
1	212	7.78	7.76	34.018	26.538	152.3	0.451	2.77	41.4	41.0	2.13	28.9	0.01	0.00	0.04	214
1	242	7.55	7.53	34.047	26.595	147.4	0.496	2.34	34.8	46.0	2.28	30.9	0.01			244
	250 ISL	7.47	7.45	34.052	26.610	146.0	0.508	2.25	33.4	47.3	2.32	31.4	0.01			252
1	283	7.10	7.07	34.062	26.670	140.7	0.555	1.95	28.7	52.7	2.46	33.2	0.01			285
	300 ISL	6.91	6.88	34.062	26.696	138.3	0.579	1.84	27.0	55.3	2.51	34.0	0.01			302
1	340	6.49	6.46	34.062	26.753	133.3	0.633	1.61	23.4	61.3	2.63	35.8	0.00			343
1	399	6.02	5.99	34.092	26.837	125.8	0.709	1.13	16.2	70.5	2.85	38.1	0.00			402
	400 ISL	6.01	5.98	34.092	26.838	125.7	0.711	1.12	16.1	70.6	2.85	38.1	0.00			403
1	462	5.73	5.69	34.137	26.909	119.5	0.787	0.80	11.4	77.3	2.99	39.8	0.00			466
	500 ISL	5.62	5.58	34.190	26.965	114.7	0.831	0.57	8.1	81.5	3.09	40.5	0.00			504
1	530	5.53	5.49	34.231	27.009	110.8	0.865	0.39	5.5	84.8	3.16	41.1	0.00			535

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 80 70

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 49.2 N	121 50.2 V	30/07/89	1621 UTC	3630 M	330	19 KT	33 0 08 08	1	1015.2 MB	17.0 C	15.0 C	1/8	CU

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SAL IN ITT PSS 78	SIGMA THETA	SVA	DTN HT	OXYGEN ML/L	OXT 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	15.31	15.31	33.455	24.714	322.0	0.000	5.92	103.7	1.6	0.44	0.7	0.04	0.50	0.13	0
1	1	15.31	15.31	33.455	24.714	322.0	0.003	5.92	103.7	1.6	0.44	0.7	0.04	0.50	0.13	1
	10 ISL	15.27	15.27	33.453	24.722	321.6	0.032	5.92	103.7	1.6	0.44	0.7	0.04	0.54	0.16	10
1	11	15.27	15.27	33.453	24.722	321.6	0.035	5.92	103.7	1.6	0.44	0.7	0.04	0.55	0.16	11
	20 ISL	15.29	15.29	33.453	24.718	322.3	0.064	5.94	104.0	1.5	0.44	0.7	0.04	0.57	0.16	20
1	21	15.29	15.29	33.453	24.718	322.3	0.068	5.94	104.0	1.5	0.44	0.7	0.04	0.57	0.16	21
	30 ISL	15.26	15.26	33.454	24.725	321.8	0.097	5.92	103.6	1.5	0.44	0.7	0.04	0.58	0.17	30
1	31	15.26	15.26	33.454	24.725	321.9	0.100	5.92	103.6	1.5	0.44	0.7	0.04	0.58	0.17	31
1	41	14.91	14.90	33.503	24.840	311.3	0.131	5.95	103.4	1.8	0.50	1.3	0.07	0.60	0.22	41
	50 ISL	14.48	14.47	33.480	24.914	304.4	0.159	5.92	102.0	2.2	0.58	2.1	0.10	0.68	0.32	50
1	51	14.43	14.42	33.482	24.926	303.3	0.162	5.92	101.9	2.2	0.59	2.2	0.10	0.69	0.33	51
1	62	11.28	11.27	33.073	25.227	274.6	0.194	6.02	96.8	5.2	0.80	5.1	0.38	0.60	0.37	62
1	72	10.51	10.50	33.065	25.357	262.4	0.221	5.66	89.5	8.1	0.96	8.5	0.40	0.18	0.10	73
	75 ISL	10.43	10.42	33.108	25.404	258.0	0.229	5.54	87.4	8.9	1.00	9.4	0.33	0.17	0.11	76
1	86	10.26	10.25	33.282	25.569	242.5	0.256	5.13	80.8	11.8	1.14	12.4	0.03	0.14	0.14	87
	100 ISL	9.54	9.53	33.322	25.720	228.3	0.289	4.76	73.8	15.7	1.35	15.8	0.01	0.08	0.08	101
1	101	9.49	9.48	33.324	25.730	227.4	0.291	4.73	73.2	16.0	1.37	16.1	0.01	0.08	0.07	102
1	121	8.96	8.95	33.593	26.025	199.7	0.334	3.80	58.2	23.8	1.71	22.2	0.01	0.03	0.04	122
	125 ISL	8.91	8.90	33.648	26.076	194.9	0.342	3.63	55.6	25.1	1.76	23.0	0.01	0.03	0.04	126
1	146	8.69	8.67	33.880	26.292	174.7	0.381	3.02	46.1	30.7	1.96	26.0	0.00	0.02	0.04	147
	150 ISL	8.62	8.60	33.897	26.317	172.5	0.388	3.04	46.3	31.2	1.96	26.1	0.00	0.02	0.04	151
1	176	8.17	8.15	33.940	26.419	163.1	0.431	3.15	47.5	33.8	1.98	26.8	0.00	0.01	0.04	177
	200 ISL	7.84	7.82	33.982	26.501	155.7	0.470	3.00	44.9	37.6	2.06	28.0	0.01	0.01	0.03	202
1	206	7.78	7.76	33.992	26.518	154.2	0.479	2.91	43.5	38.7	2.09	28.4	0.01	0.01	0.03	208
1	235	7.67	7.65	34.053	26.582	148.5	0.523	2.12	31.6	45.2	2.35	31.8	0.01			237
	250 ISL	7.44	7.42	34.046	26.610	146.1	0.545	2.15	31.9	47.2	2.35	31.9	0.01			252
1	275	6.99	6.96	34.023	26.654	142.0	0.581	2.33	34.2	50.4	2.36	32.1	0.01			277
	300 ISL	6.66	6.63	34.035	26.708	137.0	0.616	1.98	28.9	56.3	2.51	34.1	0.01			302
1	329	6.34	6.31	34.061	26.771	131.3	0.655	1.45	21.0	63.8	2.72	36.8	0.01			332
1	386	5.76	5.73	34.098	26.874	121.9	0.727	0.99	14.1	75.0	2.93	39.4	0.00			389
	400 ISL	5.62	5.59	34.099	26.892	120.2	0.744	0.93	13.2	77.3	2.96	39.9	0.00			403
1	449	5.29	5.25	34.126	26.953	114.8	0.801	0.75	10.6	84.0	3.07	41.1	0.00			453
	500 ISL	5.39	5.35	34.247	27.038	107.6	0.858	0.38	5.4	88.1	3.21	41.4	0.00			304
1	513	5.42	5.38	34.278	27.059	105.8	0.872	0.29	4.1	89.1	3.24	41.5	0.00			517

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 29.3 N	122 31.8 W	30/07/89	2341 UTC 3	987 M	3 40 20 KT	3 40 06 06	1	1015.8 MB	17.3 C	15.5 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	17.33	17.33	33.226	24.076	382.8	0.000	5.63	102.5	3.2	0.34	0.0	0.00	0.09	0.02	0
1	1	17.33	17.33	33.226	24.076	382.8	0.004	5.63	102.5	3.2	0.34	0.0	0.00	0.09	0.02	1
	10 ISL	17.30	17.30	33.225	24.083	382.4	0.038	5,62	102.3	3.2	0.33	0.0	0.00	0.09	0.03	10
1	11	17.30	17.30	33.225	24.083	382.5	0.042	5.62	102.3	3.2	0.33	0.0	0.00	0.09	0.03	11
	20 ISL	17.31	17.31	33.224	24.080	383.1	0.077	5.64	102.7	3.1	0.32	0.0	0.00	0.09	0.02	20
2	22	17.31	17.31	33.224	24.080	383.1	0.084	5.64	102.7	3.1	0.32	0.0	0.00	0.09	0.02	22
	30 ISL	17.30	17.30	33.225	24.084	383.1	0.115	5.64	102.6	3.1	0.34	0.0	0.00	0.09	0.03	30
1	32	17.30	17.29	33.225	24.084	383.1	0.123	5.64	102.6	3.1	0.34	0.0	0.00	0.09	0.03	32
1	42	17.27	17.26	33.227	24.093	382.6	0.161	5.64	102.6	3.1	0.33	0.0	0.00	0.09	0.02	42
	50 ISL	16.93	16.92	33.219	24.167	375.8	0.191	5.72	103.3	3.0	0.33	0.0	0.00	0.13	0.04	50
1	52	16.84	16.83	33.217	24.187	374.0	0.199	5.74	103.5	3.0	0.33	0.0	0.00	0.14	0.05	52
1	62	14.74	14.73	33.302	24.722	323.1	0.233	6.22	107.6	2.9	0.31	0.0	0.00	0.17	0.06	62
1	72	14.04	14.03	33.296	24.865	309.7	0.265	6.29	107.3	3.2	0.34	0.0	0.00	0.20	0.09	73
	75 ISL	13.76	13.75	33.284	24.914	305.1	0.274	6.26	106.2	3.3	0.35	0.0	0.00	0.23	0.11	76
1	86	12.82	12.81	33.250	25.076	289.8	0.307	6.04	100.4	3.9	0.43	0.0	0.02	0.31	0.19	87
	100 ISL	12.22	12.21	33.298	25.229	275.5	0.347	5.65	92.8	4.9	0.62	3.5	0.17	0.25	0.19	101
1	101	12.19	12.18	33.303	25.238	274.6	0.349	5.62	92.2	5.0	0.64	3.8	0.18	0.24	0.19	102
1	121	11.28	11.27	33.348	25.442	255.6	0.402	5.13	82.6	8.4	0.92	9.4	0.03	0.14	0.13	122
	125 ISL	11.12	11.10	33.369	25.487	251.3	0.413	5.04	80.9	9.1	0.97	10.3	0.03	0.12	0.11	126
1	147	10.25	10.23	33.519	25.757	226.0	0.465	4.55	71.7	13.9	1.21	14.7	0.01	0.04	0.04	148
	150 ISL	10.11	10.09	33.545	25.801	221.9	0.472	4.47	70.2	14.8	1.25	15.5	0.01	0.03	0.03	151
1	177	9.04	9.02	33.771	26.153	188.7	0.527	3.82	58.7	23.2	1.62	21.8	0.00	0.00	0.01	178
	200 ISL	8.64	8.62	33.884	26.304	174.7	0.569	3.54	53.9	27.7	1.76	24.2	0.00	0.00	0.01	202
1	208	8.56	8.54	33.910	26.337	171.7	0.583	3.48	52.9	28.9	1.79	24.6	0.00	0.00	0.01	210
1	237	8.23	8.21	33.972	26.436	162.7	0.631	3.37	50.9	32.3	1.86	25.7	0.00			239
	250 ISL	8.02	7.99	33.982	26.475	159.1	0.652	3.43	51.6	33.9	1.87	26.0	0.00			252
1	278	7.53	7.50	33.987	26.551	152.1	0.696	3.54	52.6	38.1	1.91	26.9	0.00			280
	300 ISL	7.17	7.14	33.985	26.600	147.6	0.729	3.35	49.4	42.5	2.01	28.4	0.00			302
1	334	6.66	6.63	33.982	26.667	141.4	0.778	2.86	41.7	50.2	2.22	31.3	0.00			337
1	395	5.88	5.85	34.005	26.786	130.4	0.861	1.94	27.7	65.4	2.60	36.5	0.00			398
	400 ISL	5.84	5.81	34.011	26.795	129.5	0.867	1.86	26.6	66.5	2.63	36.9	0.00			403
1	461	5.44	5.40	34.088	26.906	119.6	0.943	0.98	13.9	79.3	2.94	40.7	0.00			465
	500 ISL	5.18	5.14	34.131	26.970	113.6	0.989	0.75	10.6	86.2	3.04	41.8	0.00			504
1	533	4.96	4.92	34.167	27.024	108.7	1.025	0.55	7.7	92.1	3.13	42.8	0.00			538

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 9.4 N	123 13.2 W	31/07/89	0547 UTC	4225 M	340 23 KT			1017.8 MB	16.4 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	17.05	17.05	33.128	24.067	383.6	0.000	5.68	102.8	3.3	0.35	0.0	0.01	0.10	0.02	0
1	1	17.05	17.05	33.128	24.067	383.7	0.004	5.68	102.8	3.3	0.35	0.0	0.01	0.10	0.02	1
	10 ISL	17.04	17.04	33.127	24.069	383.8	0.038	5.67	102.6	3.2	0.35	0.0	0.01	0.10	0.02	10
1	11	17.04	17.04	33.127	24.069	383.8	0.042	5.67	102.6	3.2	0.35	0.0	0.01	0.10	0.02	11
	20 ISL	17.04	17.04	33.126	24.069	384.2	0.077	5.67	102.6	3.2	0.34	0.0	0.01	0.10	0.02	20
1	22	17.04	17.04	33.126	24.069	384.2	0.084	5.67	102.6	3.2	0.34	0.0	0.01	0.10	0.02	22
	30 ISL	17.05	17.05	33.125	24.066	384.7	0.115	5.67	102.6	3.2	0.34	0.0	0.01	0.11	0.03	30
1	32	17.05	17.04	33.125	24.066	384.8	0.123	5.67	102.6	3.2	0.34	0.0	0.01	0.11	0.03	32
1	42	17.04	17.03	33.125	24.069	384.9	0.161	5.69	103.0	3.2	0.35	0.0	0.01	0.10	0.03	42
	50 ISL	16.49	16.48	33.105	24.182	374.3	0.192	5.83	104.3	3.1	0.34	0.0	0.01	0.15	0.04	50
1	52	16.24	16.23	33.094	24.230	369.7	0.199	5.89	104.9	3.1	0.34	0.0	0.01	0.16	0.04	52
1	63	13.54	13.53	32.994	24.734	321.8	0.237	6.46	108.9	3.0		0.0	0.01	0.18	0.06	63
1	73	12.37	12.36	32.935	24.918	304.4	0.269	6.49	106.7	3.1	0.37	0.0	0.01	0.22	0.10	74
	75 ISL	12.22	12.21	32.936	24.947	301.7	0.275	6.46	105.9	3.1	0.38	0.0	0.01	0.24	0.11	76
1	87	11.72	11.71	32.985	25.079	289.3	0.310	6.15	99.7	3.6	0.46	0.0	0.05	0.32	0.19	88
	100 ISL	11.93	11.92	33.072	25.108	286.9	0.348	5.73	93.4	4.9	0.55	2.8	0.09	0.25	0.20	101
1	103	11.98	11.97	33.094	25.116	286.3	0.356	5.64	92.0	5.3	0.58	3.7	0.10	0.23	0.20	104
1	124	10.55	10.54	33.239	25.486	251.3	0.413	5.34	84.6	9.1	0.90	8.9	0.03	0.12	0.11	125
	125 ISL	10.50	10.49	33.246	25.502	249.8	0.415	5.31	64.0	9.4	0.92	9.2	0.03	0.11	0.11	126
1	149	9.62	9.60	33.475	25.827	219.2	0.471	4.61	71.6	16.2	1.26	15.5	0.01	0.02	0.03	150
	150 ISL	9.60	9.58	33.485	25.839	218.1	0.474	4.60	71.4	16.4	1.27	15.6	0.01	0.02	0.03	151
1	180	9.10	9.08	33.766	26.140	190.1	0.535	4.17	64.2	22.0	1.47	19.6	0.01	0.00	0.01	181
	200 ISL	8.82	8.80	33.891	26.282	176.9	0.571	3.15	48.2	29.2	1.85	24.9	0.00	0.01	0.02	202
1	212	8.63	8.61	33.940	26.350	170.6	0.592	2.71	41.3	32.9	2.03	27.3	0.00	0.01	0.03	214
1	242	7.93	7.91	33.974	26.482	158.3	0.642	3.92	58.8	33.0	1.74	24.3	0.00			244
	250 ISL	7.78	7.76	33.977	26.506	156.0	0.654	3.80	56.8	34.4	1.76	24.7	0.00			252
1	283 A	7.27	7.24	33.980	26.582	149.1	0.705	3.31	48.9	42.3	1.98	27.9	0.01			285
	300 ISL	7.03	7.00	33.981	26.616	146.0	0.730	3.07	45.1	45.9	2.09	29.4	0.01			302
1	339 A	6.52	6.49	33.988	26.690	139.2	0.785	2.51	36.4	54.3	2.34	32.7	0.00			342
1	3 99 A	5.83	5.80	34.023	26.606	128.5	0.866	1.63	23.3	68.4	2.68	37.4	0.00			402
	400 ISL	5.82	5.79	34.023	26.807	128.4	0.867	1.62	23.1	68.6	2.68	37.5	0.00			403
1	464 A	5.28	5.24	34.066	26.907	119.3	0.946	1.09	15.4	80.8	2.92	40.2	0.00			468
	500 ISL	5.10	5.06	34.112	26.965	114.1	0.988	0.80	11.2	86.9	3.02	41.0	0.00			504
1	532 A	4.94	4.90	34.154	27.016	109.4	1.024	0.55	7.7	92.3	3.11	41.7	0.00			537

A) THE SALINITY SAMPLES FROM 283 TO 532 METERS APPEAR TO HAVE BEEN ANALYZED IN REVERSE ORDER. THEY ARE ASSUMED TO NOW BE IN THE CORRECT ORDER.

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 80 100

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	HIND	SPEED	VAVES	VEATHER	BAROMETER	DRY	HET	CLOUD AMT TYPE
32 49.5 N	123 54.2 W	31/07/89	1142 UTC	4419 M	330	20 KT			1017.9 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	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
1 0		16.86	16.86	33.180	24.152	375.6	0.000	5.69	102.6	3.2	0.37	0.0	0.00	0.15	0.03	0
	10 ISL	16.84	16.84	33.179	24.156	375.5	0.038	5.70	102.8	3.2	0.36	0.0	0.00	0.15	0.04	10
1	11	16.84	16.84	33.179	24.156	375.5	0.041	5.70	102.8	3.2	0.36	0.0	0.00	0.15	0.04	11
	20 ISL	16.84	16.84	33.178	24.155	375.9	0.075	5.69	102.6	3.2	0.36	0.0	0.00	0.15	0.04	20
1	21	16.84	16.84	33.178	24.155	375.9	0.079	5.69	102.6	3.2	0.36	0.0	0.00	0.15	0.04	21
	30 ISL	16.86	16.86	33.184	24.156	376.2	0.113	5.70	102.8	3.1	0.35	0,0	0.00	0.14	0.04	30
1 31		16.86	16.85	33.184	24.156	376.2	0.116	5.70	102.8	3.1	0.35	0.0	0.00	0.14	0.04	31
1	41	16.85	16.£4	33.179	24.155	376.6	0.154	5.69	102.6	3.1	0.35	0.0	0.00	0.15	0.04	41
	50 ISL	16.86	16.85	33.179	24.153	377.1	0.188	5.70	102.8	3.0	0.35	0.0	0.00	0.15	0.04	50
1 51		16.86	16.85	33.179	24.153	377.2	0.192	5.70	102.8	3.0	0.35	0.0	0.00	0.15	0.04	51
1	61	15.67	15.66	33.146	24.399	353.9	0.228	5.97	105.2	2.8	0.37	0.0	0.00	0.34	0.15	61
1	71	14.86	14.85	33.198	24.616	333.4	0.263	6.19	107.3	3.1	0.39	0.0	0.00	0.36	0.19	72
	75 ISL	13.89	13.88	33.115	24.756	320.1	0.276	6.24	106.0	3.3	0.41	0.2	0.01	0.41	0.25	76
1	84	11.66	11.65	32.949	25.062	290.9	0.303	6.36	103.0	4.1	0.49	0.5	0.05	0.49	0.37	85
1	100	10.60	10.59	33.007	25.296	268.8	0.348	5.78	91.5	7.3	0.81	6.6	0.10	0.23	0.24	101
1	119	11.14	11.13	33.419	25.523	247.9	0.397	5.27	84.6	10.7	1.07	11.3	0.02	0.11	0.13	120
	125 ISL	10.88	10.86	33.463	25.603	240.3	0.412	5.02	80.2	12.5	1.18	13.1	0.02	0.08	0.10	126
1	143	9.77	9.75	33.527	25.843	217.6	0.453	4.25	66.3	18.4	1.48	18.4	0.01	0.03	0.05	144
	150 ISL	9.50	9.48	33.575	25.925	209.9	0.468	4.07	63.1	20.2	1.55	19.7	0.01	0.03	0.05	151
1	174	8.84	8.82	33.758	26.174	186.6	0.516	3.53	54.0	26.3	1.75	23.4	0.01	0.01	0.04	175
	200 ISL	8.45	8.43	33.959	26.392	166.2	0.561	2.71	41.1	34.5	2.05	27.7	0.01	0.00	0.03	202
1	204	8.41	8.39	33.984	26.418	163.9	0.568	2.60	39.4	35.7	2.09	28.3	0.01	0.00	0.03	206
1	233	8.00	7.98	34.033	26.518	154.7	0.614	2.40	36.1	40.5	2.20	29.9	0.01			235
	250 ISL	7.73	7.71	34.041	26.564	150.5	0.640	2.34	35.0	43.3	2.25	30.7	0.01			252
1	273	7.36	7.33	34.041	26.617	145.7	0.674	2.26	33.5	47.2	2.33	31.7	0.00			273
	300 ISL	6.95	6.92	34.039	26.673	140.6	0.713	2.07	30.4	52.3	2.44	33.2	0.00			302
1	328	6.59	6.56	34.041	26.723	136.1	0.752	1.83	26.6	57.7	2.56	34.9	0.01			331
1	387	6.14	6.11	34.076	26.809	128.3	0.830	1.26	18.1	67.4	2.80	37.9	0.00			390
	400 ISL	6.05	6.02	34.085	26.828	126.7	0.846	1.15	16.5	69.4	2.85	38.4	0.00			403
1	452	5.70	5.66	34.126	26.904	119.9	0.910	0.78	11.1	77.3	3.01	40.2	0.00			456
	500 ISL	5.43	5.39	34.169	26.971	113.9	0.966	0.55	7.8	84.5	3.11	41.4	0.00			504
1	522	5.30	5.26	34.190	27.003	110.9	0.991	0.45	6.4	87.8	3.16	42.0	0.00			527

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	VIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	HET	CLOUD AMT TYPE
34 16.2 N	120 2.3 W	29/07/89	2323 UTC	577 M	270	12 KT	26 0 01 06	1	1013.8 MB	16.2 C	14.7 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
1	0 A	18.08	18.08	33.663	24.230	368.1	0.000	6.43	119.1	2.4	0.21	0.0	0.01	0.75	0.10	0
1	10	16.01	16.01	33.630	24.693	324.3	0.035	7.69	136.8	2.4	0.15	0.0	0.01	0.70	0.17	10
	20 ISL	13.92	13.92	33.540	25.077	288.0	0.065	6.21	105.8	5.3	0.35	0.0	0.01	1.11	0.48	20
1	21	13.72	13.72	33.533	25.113	284.6	0.068	5.99	101.7	5.8	0.39	0.0	0.01	1.14	0.51	21
	30 ISL	12.17	12.17	33.578	25.454	252.3	0.092	4.80	78.9	12.0	0.94	8.7	0.15	0.84	0.40	30
1	35	11.47	11.47	33.628	25.624	236.3	0.104	4.25	68.8	15.7	1.26	14.3	0.23	0.57	0.28	35
1	50	10.31	10.30	33.773	25.943	206.3	0.138	3.28	51.9	22.9	1.67	20.8	0.23	0.12	0.20	50
1	64	9.82	9.81	33.858	26.092	192.3	0.166	2.92	45.7	26.0	1.82	23.2	0.04	0.06	0.11	64
	75 ISL	9.60	9.59	33.926	26.182	184.0	0.186	2.75	42.8	28.5	1.90	24.3	0.05	0.04	0.11	76
1	79	9.56	9.55	33.949	26.207	181.7	0.194	2.69	41.9	29.3	1.93	24.6	0.05	0.04	0.11	80
1	94	9.55	9.54	34.008	26.255	177.5	0.221	2.38	37.1	31.7	2.06	25.9	0.04	0.03	0.13	95
	100 ISL	9.50	9.49	34.024	26.275	175.7	0.231	2.33	36.2	32.2	2.08	26.1	0.04	0.03	0.14	101
1	108	9.42	9.41	34.042	26.303	173.2	0.245	2.29	35.6	32.9	2.09	26.4	0.05	0.03	0.15	109
	125 ISL	9.29	9.28	34.092	26.363	167.8	0.274	2.06	31.9	35.8	2.20	27.3	0.05	0.04	0.13	126
1	128	9.27	9.26	34.100	26.373	167.0	0.279	2.02	31.3	36.3	2.22	27.5	0.05	0.04	0.12	129
1	148	9.18	9.16	34.115	26.399	164.8	0.312	1.95	30.1	37.1	2.25	28.2	0.01	0.05	0.12	149
	150 ISL	9.17	9.15	34.115	26.401	164.7	0.316	1.95	30.1	37.2	2.25	28.2	0.01	0.05	0.12	151
1	179	9.05	9.03	34.132	26.434	162.1	0.363	1.85	28.5	38.5	2.30	28.7	0.01	0.03	0.13	180
	200 ISL	9.01	8.99	34.175	26.474	158.7	0.397	1.63	25.1	40.6	2.37	29.3	0.03	0.03	0.15	202
1	207	8.99	8.97	34.188	26.488	157.6	0.408	1.55	23.9	41.4	2.40	29.5	0.03	0.03	0.15	209
1	246	8.60	8.57	34.178	26.542	153.1	0.468	1.39	21.2	45.1	2.51	31.0	0.01	0.05	0.13	248
	250 ISL	8.57	8.54	34.178	26.546	152.7	0.474	1.37	20.9	45.5	2.52	31.1	0.01			252
1	296	8.27	8.24	34.185	26.598	148.5	0.544	1.12	17.0	50.3	2.65	32.5	0.00			298
	300 ISL	8.24	8.21	34.185	26.603	148.1	0.550	1.10	16.6	50.8	2.66	32.6	0.00			302
1	343	7.88	7.85	34.189	26.660	143.2	0.612	0.87	13.1	57.0	2.79	33.8	0.00			346
1	393	7.31	7.27	34.214	26.762	134.0	0.682	0.58	8.6	67.6	3.01	34.8	0.00			396
	400 ISL	7.23	7.19	34.217	26.776	132.7	0.691	0.54	8.0	68.9	3.03	34.9	0.00			403
1	433	6.89	6.85	34.230	26.833	127.6	0.734	0.36	5.3	75.7	3.15	35.3	0.00			437
1	47 0	6.57	6.53	34.243	26.886	122.7	0.780	0.15	2.2	87.5	3.35	33.8	0.00			474
	500 ISL	6.45	6.40	34.245	26.904	121.4	0.817	0.08	1.2	93.6	3.41	32.5	0.00			504
1	501	6.45	6.40	34.245	26.904	121.4	0.818	0.08	1.2	93.8	3.41	32.5	0.00			505
1	520	6.41	6.36	34.257	26.919	120.2	0.841	0.05	0.7	96.7	3.41	31.5	0.00			525
1	539	6.36	6.31	34.281	26.945	118.0	0.864	0.02	0.3	101.7	3.53	29.4	0.00			544
1	559	6.32	6.27	34.252	26.927	119.9	0.887	0.02	0.3	110.3	3.73	25.3	0.00			564
1	572	6.32	6.27	34.251	26.927	120.2	0.903	0.00	0.0	111.7	3.85	24.9	0.00			577

A) SANTA BARBARA BASIN STATION.

RV NEB HORIZON CALCOFI CRUISE 8907 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	HET	CLOUD AMT TYPE
34 13.5 N	119 24.8 U	29/07/89	1712 UTC	33 M	280	07 KT	27 0 03 07	1	1014.5 MB	16.3 C	15.0 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	18.14	18.14	33.608	24.173	373.5	0.000	5.91	109.6	2.4	0.27	0.0	0.00	0.46	0.12	0
1	1	18.14	18.14	33.608	24.173	373.6	0.004	5.91	109.6	2.4	0.27	0.0	0.00	0.46	0.12	1
	10 ISL	17.61	17.61	33.558	24.264	365.2	0.037	6.01	110.3	2.9	0.30	0.0	0.00	0.70	0.25	10
1	11	17.55	17.55	33.553	24.275	364.2	0.041	6.03	110.5	2.9	0.30	0.0	0.00	0.75	0.27	11
	20 ZSL	15.22	15.22	33.493	24.764	317.9	0.071	6.08	106.4	4.7	0.46	1.6	0.05	1.35	0.43	20
1	22	14.70	14.70	33.489	24.873	307.5	0.078	6.09	105.4	5.1	0.49	2.0	0.06	1.48	0.47	22

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 11.1 N	119 30.9 W	29/07/89	1514 UTC	118 M	290 09 KT	2 80 01 05	2	1014.2 MB	15.4 C	L4.5 C	8/8 SC

CAST	DEPTH M	TEMP DEC 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	18.77	18.77	33.577	23.993	390.7	0.000	5.69	106.7	3.1	0.29	0.0	0.00	0.29	0.08	0
1	10	18.12	18.12	33.584	24.160	375.1	0.038	5.87	108.8	2.9	0.28	0.0	0.01	0.80	0.26	10
	20 ISL	17.34	17.34	33.564	24.334	358.9	0.075	5.97	109.0	3.4	0.32	0.5	0.02	1.12	0.41	20
1	21	17.26	17.26	33.584	24.368	355.7	0.079	5.98	109.0	3.4	0.32	0.5	0.02	1.13	0.42	21
	30 ISL	13.66	13.66	33.473	25.079	288.1	0.108	5.63	95.4	7.3	0.68	4.8	0.11	0.71	0.32	30
1	31	13.25	13.25	33.469	25.159	280.5	0.110	5.58	93.8	7.8	0.72	5.4	0.12	0.65	0.31	31
1	42	11.91	11.90	33.492	25.436	254.3	0.140	5.02	82.0	10.4	1.00	9.9	0.24	0.46	0.31	42
	50 ISL	11.08	11.07	33.603	25.675	231.8	0.159	4.16	66.8	15.9	1.34	15.3	0.22	0.25	0.23	50
1	52	10.92	10.91	33.630	25.724	227.1	0.164	3.96	63.4	17.2	1.41	16.5	0.22	0.20	0.21	52
1	62	10.71	10.70	33.653	25.780	222.0	0.186	3.81	60.7	17.9	1.47	17.5	0.18	0.16	0.17	62
1	73	10.16	10.15	33.736	25.940	207.0	0.210	3.34	52.6	21.5	1.66	20.8	0.04	0.12	0.20	74
	75 ISL	10.08	10.07	33.760	25.972	204.0	0.214	3.25	51.1	22.4	1.70	21.4	0.04	0.11	0.19	76
1	87	9.71	9.70	33.910	26.151	187.2	0.237	2.72	42.5	27.8	1.92	24.3	0.02	0.07	0.12	88
	100 ISL	9.56	9.55	34.018	26.261	177.1	0.261	2.32	36.1	31.9	2.08	26.1	0.04	0.03	0.12	101
1	103	9.53	9.52	34.043	26.285	174.8	0.266	2.23	34.7	32.8	2.12	26.5	0.04	0.02	0.12	104

RV NEB HORIZON CALCOPI CRUISE 8907 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 52.7 N	120 8.0 W	29/07/89	0818 UTC	96 M	300 13 KT			1013.5 MB	18.4 C	17.8 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	15.55	15.55	33.589	24.764	317.2	0.000	6.13	108.0	3.3	0.35	1.1	0.04	2.40	0.51	0
1	10	15.41	15.41	33.596	24.801	314.0	0.032	6.09	107.0	3.8	0.37	1.4	0.05	3.21	0.71	10
	20 ISL	13.29	13.29	33.609	25.259	270.7	0.061	5.22	87.9	9.2	0.80	7.2	0.16	2.17	0.68	20
1	21	13.05	13.05	33.612	25.309	265.9	0.063	5.13	85.9	9.8	0.85	7.9	0.17	2.02	0.68	21
	30 ISL	12.10	12.10	33.572	25.462	251.5	0.087	4.82	79.1	11.8	1.09	10.9	0.27	0.99	0.80	30
1	31	12.03	12.03	33.568	25.473	250.6	0.089	4.79	78.5	12.0	1.11	11.2	0.28	0.89	0.81	31
1	A2	11.24	11.23	33.630	25.667	232.3	0.116	4.20	67.7	16.2	1.34	15.3	0.21	0.61	0.54	42
	50 ISL	10.39	10.38	33.728	25.894	210.9	0.134	3.52	55.7	21.2	1.63	20.0	0.10	0.30	0.34	50
1	52	10.20	10.19	33.752	25.945	206.1	0.138	3.37	53.1	22.4	1.69	21.0	0.08	0.23	0.30	52
1	63	10.01	10.00	33.796	26.012	199.9	0.160	3.19	50.1	24.5	1.76	22.0	0.10	0.20	0.40	63
	75 ISL	9.64	9.63	33.917	26.168	185.3	0.183	2.79	43.5	28.5	1.94	24.4	0.04	0.10	0.30	76
1	78	9.55	9.54	33.948	26.207	181.6	0.189	2.69	41.9	29.5	1.98	25.0	0.03	0.08	0.28	79

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 44.9 N	120 25.0 W	29/07/89	0416 UTC	1013 M	330 20 KT			1012.8 MB	13.9 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
	0 ISL	15.21	15.21	33.581	24.833	310.7	0.000	5.86	102.6	6.3	0.53	2.7	0.11	0.91	0.31	0
1	1	15.21	15.21	33.581	24.833	310.7	0.003	5.86	102.6	6.3	0.53	2.7	0.11	0.91	0.31	1
	10 ISL	15.19	15.19	33.580	24.837	310.6	0.031	5.85	102.3	6.2	0.53	2.7	0.10	0.90	0.31	10
1	11	15.19	15.19	33.580	24.837	310.6	0.034	5.85	102.3	6.2	0.53	2.7	0.10	0.90	0.31	11
	20 ISL	15.20	15.20	33.582	24.837	310.9	0.062	5.86	102.5	6.1	0.53	2.8	0.11	0.90	0.32	20
1	22	15.20	15.20	33.582	24.837	311.0	0.068	5.86	102.5	6.1	0.53	2.8	0.11	0.90	0.32	22
	30 ISL	14.23	14.23	33.639	25.089	287.2	0.092	5.58	95.8	6.5	0.68	5.3	0.14	1.16	0.46	30
1	32	13.91	13.91	33.653	25.167	279.8	0.098	5.48	93.4	6.6	0.73	6.1	0.15	1.20	0.49	32
1	42	12.33	12.32	33.633	25.466	251.5	0.125	4.77	78.7	11.8	1.11	10.9	0.22	0.72	0.38	42
	50 ISL	11.67	11.66	33.649	25.603	238.6	0.144	4.41	71.7	15.1	1.28	13.8	0.23	0.57	0.43	50
1	53	11.47	11.46	33.656	25.646	234.7	0.151	4.29	69.5	16.2	1.33	14.8	0.23	0.53	0.44	53
1	63	10.43	10.42	33.679	25.849	215.5	0.174	3.84	60.8	20.2	1.54	19.0	0.14	0.31	0.29	63
1	73	10.00	9.99	33.753	25.980	203.2	0.195	3.44	54.0	23.4	1.69	21.3	0.07	0.17	0.21	74
	75 ISL	9.95	9.94	33.764	25.997	201.6	0.199	3.38	53.0	23.9	1.71	21.6	0.07	0.16	0.20	76
1	87	9.67	9.66	33.822	26.089	193.0	0.222	3.10	48.3	26.7	1.83	23.3	0.06	0.10	0.16	88
	100 ISL	9.07	9.06	33.908	26.254	177.6	0.246	2.82	43.4	31.4	1.96	25.8	0.03	0.04	0.13	101
1	103	8.94	8.93	33.927	26.289	174.2	0.252	2.76	42.4	32.4	1.99	26.3	0.02	0.03	0.12	104
1	123	8.77	8.76	33.979	26.357	168.2	0.286	2.52	38.5	35.0	2.09	27.4	0.02	0.03	0.13	124
	125 ISL	8.74	8.73	33.983	26.365	167.5	0.289	2.52	38.5	35.2	2.09	27.5	0.02	0.03	0.13	126
1	149	8.43	8.41	34.029	26.449	159.9	0.329	2.51	38.1	37.8	2.13	28.1	0.02	0.02	0.09	150
	150 ISL	8.42	8.40	34.031	26.452	159.6	0.330	2.50	37.9	37.9	2.13	28.1	0.02	0.02	0.09	151
1	179	8.26	8.24	34.085	26.519	153.7	0.376	2.21	33.4	41.5	2.25	29.5	0.03	0.03	0.14	180
	200 ISL	8.15	8.13	34.120	26.564	149.9	0.408	1.98	29.9	44.3	2.35	30.2	0.02	0.02	0.09	202
1	210	8.10	8.08	34.132	26.581	148.4	0.422	1.89	28.5	45.4	2.39	30.5	0.02	0.02	0.06	212
1	23 9	7.96	7.94	34.134	26.603	146.7	0.465	1.79	26.9	46.9	2.44	31.1	0.01			241
	250 ISL	7.91	7.88	34.147	26.621	145.2	0.481	1.67	25.1	48.4	2.49	31.6	0.01			252
1	280	7.73	7.70	34.184	26.677	140.4	0.524	1.32	19.7	53.1	2.63	33.2	0.01			282
	300 ISL	7.52	7.49	34.185	26.708	137.7	0.552	1.21	18.0	55.6	2.68	34.0	0.01			302
1	336	7.17	7.14	34.188	26.760	133.1	0.601	1.05	15.5	59.8	2.77	35.3	0.01			339
1	396	7.00	6.96	34.276	26.854	125.1	0.678	0.55	8.1	66.3	2.98	36.7	0.00			399
	400 ISL	6.98	6.94	34.279	26.859	124.7	0.683	0.53	7.8	66.7	2.99	36.8	0.00			403
1	461	6.67	6.63	34.298	26.917	119.9	0.758	0.40	5.8	72.3	3.07	38.0	0.00			465
	500 ISL	6.48	6.43	34.301	26.945	117.7	0.804	0.38	5.5	75.3	3.10	38.6	0.00			504
1	531	6.33	6.28	34.304	26.967	115.8	0.840	0.36	5.2	77.7	3.13	39.0	0.00			536

RV NEB HORIZON CALCOFI CRUISE 8907 STATION 83 60

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 35.6 N	120 44.9 W	29/07/89	0029 UTC	1354 M	320	20 KT	3 00 06 06	2	1013.9 MB	14.9 C	13.7 C	8/8	ST

CAST	DEPTH M	TEMP DEC C	POT TEMP DEC C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	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	15.02	15.02	33.655	24.932	301.3	0.000	5.77	100.6	8.3	0.65	5.2	0.09	0.76	0.27	0
1	10	15.00	15.00	33.650	24.932	301.5	0.03 0	5.43 U		8.1	0.65	5.1	0.09	0.77	0.26	10
1	20	15.01	15.01	33.648	24.929	302.1	0.06 0	5.79	101.0	8.0	0.65	5.1	0.09	0.79	0.27	20
1	30	14.06	14.06	33.602	25.096	286.5	0.090	5.58	95.4	8.6	0.74	6.3	0.12	1.02	0.43	30
1	41	11.59	11.58	33.660	25.626	236.2	0.118	4.41	71.6	16.1	1.29	14.7	0.24	0.78	0.39	41
	50 ISL	11.05	11.04	33.717	25.769	222.8	0.139	3.99	64.1	18.8	1.47	17.5	0.29	0.68	0.43	50
1	51	11.02	11.01	33.723	25.779	221.9	0.141	3.95	63.4	19.1	1.49	17.7	0.29	0.67	0.43	51
1	61	10.03	10.02	33.811	26.020	199.1	0.162	3.28	51.5	24.3	1.77	22.2	0.22	0.29	0.23	61
1	71	9.82	9.81	33.833	26.073	194.3	0.182	3.16	49.4	25.6	1.80	23.0	0.15	0.20	0.22	72
	75 ISL	9.66	9.65	33.847	26.110	190.8	0.190	3.11	48.5	26.3	1.82	23.5	0.12	0.15	0.19	76
1	85	9.29	9.28	33.884	26.200	182.5	0.208	2.98	46.1	28.1	1.89	24.7	0.06	0.06	0.13	86
1	100	9.22	9.21	33.918	26.238	179.2	0.236	2.84	43.9	29.4	1.96	25.4	0.06	0.05	0.13	101
1	121	8.93	8.92	33.969	26.324	171.3	0.272	2.67	41.0	31.2	2.03	26.5	0.04	0.02	0.11	122
	125 ISL	8.88	8.87	33.978	26.339	170.0	0.279	2.65	40.6	31.8	2.04	26.7	0.04	0.02	0.11	126
1	147	8.66	8.64	34.025	26.411	163.5	0.316	2.54	38.8	35.4	2.11	27.5	0.06	0.01	0.10	148
	150 ISL	8.63	8.61	3 4.03 0	26.419	162.8	0.321	2.53	38.6	35.8	2.12	27.6	0.06	0.01	0.10	151
1	177	8.38	8.36	34.072	26.491	156.4	0.364	2.32	35.2	38.9	2.21	28.9	0.05	0.01	0.08	178
	200 ISL	8.25	8.23	34.120	26.549	151.3	0.399	1.95	29.5	42.4	2.33	30.2	0.02	0.01	0.07	202
1	208	8.22	8.20	34.137	26.567	149.8	0.411	1.81	27.4	43.6	2.38	30.7	0.01	0.01	0.06	210
1	23 9	8.06	8.04	34.182	26.626	144.6	0.457	1.47	22.1	47.8	2.54	32.0	0.01			241
	250 ISL	7.89	7.86	34.173	26.645	143.0	0.47 3	1.45	21.8	49.2	2.56	32.6	0.01			252
1	280	7.41	7.38	3 4.147	26.694	138.6	0.515	1.42	21.1	53.4	2.61	34.2	0.00			282
	300 ISL	7.25	7.22	34.181	26.7 43	134.2	0.542	1.17	17.3	57.1	2.72	35.1	0.00			3 02
1	337	7.05	7.02	34.258	26.832	126.2	0.590	0.67	9.9	63.8	2.92	36.6	0.00			3 40
1	397	6.64	6.60	34.279	26.905	120.0	0.664	0.45	6.6	70.5	3.04	38.2	0.00			400
	400 ISL	6.62	6.58	34.280	26.908	119.7	0.668	0.45	6.6	70.8	3.04	38.3	0.00			403
1	463	6.26	6.22	34.297	26.969	114.5	0.7 42	0.38	5.5	76.9	3.13	39.7	0.00			467
	500 ISL	6.01	5.97	34.314	27.015	110.5	0.7 83	0.31	4.5	80.9	3.17	40.5	0.00			504
1	532	5.80	5.75	34.329	27.053	107.0	0.818	0.25	3.6	84.3	3.20	41.2	0.00			537

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 83 70

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 14.8 N	121 26.9 V	28/07/89	1629 DTC 37	96 M	330	18 KT	33 0 06 05	2	1016.0 MB	16.0 C	14.1 C	8/8	ST

CAST	DEPTH M	TEMP DEC C	POT TEMP DEC C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	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	16.25	16.25	33.363	24.433	348.8	0.000	5.79	103.3	4.0	0.38	0.3	0.02	0.37	0.08	0
1	1	16.25	16.25	33.363	24.433	348.8	0.003	5.79	103.3	4.0	0.38	0.3	0.02	0.37	0.08	1
	10 ISL	16.25	16.25	33.363	24.433	349.1	0.03 5	5.79	103.3	4.0	0.38	0.3	0.02	0.37	0.08	10
1	16	16.24	16.24	33.362	24.435	349.1	0.056	5.79	103.3	4.1	0.38	0.3	0.02	0.37	0.08	16
	20 ISL	16.24	16.24	33.362	24.435	349.2	0.07 0	5.79	103.3	4.1	0.38	0.3	0.02	0.37	0.09	20
	30 ISL	16.23	16.23	33.362	24.438	349.3	0.105	5.79	103.3	4.2	0.38	0.3	0.02	0.36	0.10	30
1	32	16.23	16.22	33.362	24.438	349.3	0.112	5.79	103.3	4.2	0.38	0.3	0.02	0.36	0.10	32
1	41	15.65	15.64	33.463	24.646	329.7	0.142	5.79	102.1	4.5	0.50	1.6	0.06	0.37	0.15	41
	50 ISL	12.53	12.52	33.299	25.169	280.0	0.170	5.87	97.0	7.0	0.72	4.9	0.21	0.56	0.27	50
1	52	11.84	11.83	33.280	25.285	268.9	0.175	5.89	95.9	7.8	0.78	5.8	0.25	0.59	0.29	52
1	62	11.42	11.41	33.463	25.505	248.2	0.201	5.36	86.6	12.2	1.08	10.3	0.51	0.33	0.18	62
1	74	11.02	11.01	33.510	25.614	238.1	0.23 0	4.92	78.9	15.5	1.28	14.3	0.37	0.28	0.16	75
	75 ISL	10.98	10.97	33.518	25.627	236.9	0.233	4.86	77.8	15.9	1.30	14.7	0.34	0.27	0.16	76
1	83	10.64	10.63	33.594	25.747	225.6	0.251	4.32	68.7	19.5	1.45	17.9	0.07	0.22	0.12	84
1	97	10.08	10.07	33.718	25.940	207.5	0.281	3.70	58.2	24.5	1.68	21.7	0.02	0.07	0.10	98
	100 ISL	9.88	9.87	33.716	25.972	204.5	0.288	3.63	56.8	25.6	1.71	22.2	0.02	0.05	0.09	101
1	113	9.11	9.10	33.708	26.091	193.3	0.313	3.39	52.2	29.0	1.80	23.9	0.01	0.02	0.07	114
	125 ISL	8.94	8.93	33.816	26.203	182.9	0.336	3.05	46.8	28.2	1.89	25.5	0.01	0.01	0.08	126
1	129	8.93	8.92	33.857	26.237	179.8	0.343	2.95	45.2	27.8	1.91	25.9	0.01	0.01	0.08	130
	150 ISL	8.53	8.51	33.933	26.359	168.5	0.380	2.91	44.3	31.4	1.96	26.9	0.00	0.01	0.07	151
1	154	8.45	8.43	33.941	26.377	166.8	0.387	2.90	44.0	32.4	1.97	27.0	0.00	0.01	0.07	155
1	181	8.24	8.22	34.042	26.489	156.7	0.430	2.36	35.7	38.4	2.18	29.2	0.00	0.01	0.08	182
	200 ISL	8.05	8.03	34.061	26.532	152.8	0.460	2.19	33.0	41.1	2.25	30.2	0.01	0.01	0.07	202
1	212	7.91	7.89	34.064	26.555	150.8	0.478	2.12	31.8	42.6	2.29	30.8	0.01	0.01	0.07	214
1	241	7.52	7.50	34.090	26.633	143.8	0.521	1.87	27.8	47.7	2.43	32.4	0.01			243
	250 ISL	7.42	7.40	34.094	26.650	142.2	0.533	1.80	26.7	49.2	2.47	32.9	0.01			252
1	282	7.11	7.08	34.105	26.703	137.6	0.578	1.54	22.7	54.4	2.58	34.4	0.00			284
	300 ISL	6.99	6.96	34.122	26.733	135.0	-0.603	1.36	20.0	57.1	2.65	35.2	0.00			302
1	338	6.65	6.62	34.141	26.794	129.5	0.653	1.06	15.5	63.1	2.79	36.9	0.01			341
1	397	5.57	5.54	34.070	26.875	121.7	0.727	1.17	16.6	74.7	2.86	39.3	0.00			400
	400 ISL	5.56	5.53	34.075	26.880	121.3	0.731	1.15	16.3	75.2	2.87	39.4	0.00			403
1	460	5.44	5.40	34.167	26.968	113.7	0.801	0.58	8.2	83.7	3.08	41.3	0.00			464
	500 ISL	5.44	5.40	34.231	27.019	109.4	0.846	0.41	5.8	86.9	3.15	41.7	0.00			504
1	527	5.44	5.40	34.274	27.053	106.5	0.875	0.29	4.1	89.0	3.20	41.9	0.00			532

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 83 80

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 54.5 N	122 7.6 W	28/07/89	1001 UTC	417 2 M	290	17 KT			1016.2 MB	16.6 C	15.6 C	

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	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	17.57	17.57	33.266	24.049	385.3	0.000	5.58	102.1	2.9	0.32	0.0	0.01	0.09	0.02	0
1	10	17.56	17.56	33.265	24.052	385.5	0.03 9	5.58	102.1	2.4	0.32	0.0	0.00	0.09	0.02	10
1	20	17.56	17.56	33.265	24.052	385.8	0.077	5.59	102.3	2.5	0.31	0.0	0.00	0.09	0.02	20
1	30	17.58	17.57	33.285	24.063	385.1	0.116	5.58	102.1	2.5	0.32	0.0	0.00	0.09	0.02	30
1	40	17.58	17.57	33.264	24.047	386.9	0.154	5.58	102.1	2.5	0.32	0.0	0.00	0.09	0.02	40
1	50	17.59	17.58	33.265	24.046	3 87.4	0.193	5.58	102.1	2.5	0.31	0.0	0.00	0.09	0.02	50
1	60	17.54	17.53	33.265	24.058	3 86.5	0.232	5.59	102.2	2.5	0.32	0.0	0.00	0.09	0.02	60
i	70	13.62	13.61	33.102	24.801	315.6	0.267	6.31	106.6	2.4	0.33	0.0	0.00	0.24	0.10	71
	75 ISL	13.31	13.30	33.079	24.846	311.4	0.282	6.30	105.7	2.5	0.34	0.0	0.00	0.24	0.13	76
1	84	12.75	12.74	33.042	24.928	3 03.8	0.310	6.27	104.0	2.8	0.37	0.0	0.00	0.25	0.17	85
1	100	12.86	12.85	33.354	25.149	2 83.3	0.357	5.79	96.4	3.8	0.44	0.9	0.14	0.23	0.24	101
1	120	12.02	12.00	33.418	25.360	263.5	0.412	5.40	88.4	5.9	0.64	5.5	0.03	0.14	0.17	121
	125 ISL	11.82	11.80	33.434	25.410	258.9	0.425	5.35	87.2	6.3	0.67	6.2	0.03	0.12	0.15	126
1	145	10.95	10.93	33.503	25.622	23 8.9	0.475	5.07	81.1	9.3	0.84	9.5	0.01	0.06	0.07	146
	150 ISL	10.65	10.63	33.521	25.689	232.6	0.486	4.87	77.4	11.4	0.96	11.4	0.01	0.05	0.06	151
1	176	9.27	9.25	33.649	26.021	201.3	0.543	3.97	61.3	22.1	1.55	20.5	0.00	0.01	0.03	177
	200 ISL	8.91	8.89	33.835	26.224	182.4	0.589	4.17	63.9	23.5	1.48	20.1	0.00	0.00	0.01	202
1	207	8.86	8.84	33.884	26.270	178.1	0.601	4.26	65.2	23.7	1.46	20.0	0.00	0.00	0.01	209
1	236	8.19	8.17	33.970	26.441	162.2	0.651	3.76	56.7	32.2	1.72	23.9	0.00			238
	250 ISL	7.98	7.95	33.986	26.484	158.2	0.673	3.54	53.2	35.0	1.82	25.3	0.00			252
1	277	7.67	7.64	33.996	26.538	153.5	0.715	3.13	46.7	39.6	2.00	27.7	0.00			279
	300 ISL	7.36	7.33	34.008	26.592	148.5	0.750	2.77	41.0	44.6	2.16	29.8	0.00			3 02
1	334	6.94	6.91	34.027	26.665	141.8	0.799	2.26	33.1	51.9	2.37	32.6	0.00			337
1	3 94	6.48	6.44	34.078	26.767	132.7	0.882	1.47	21.3	62.1	2.67	36.2	0.00			3 97
	400 ISL	6.45	6.41	34.088	26.779	131.7	0.890	1.39	20.2	63.0	2.70	36.5	0.00			403
1	461	6.21	6.17	34.193	26.894	121.5	0.967	0.66	9.5	72.4	3.01	38.9	0.00			46 5
	500 ISL	5.95	5.91	34.227	26.954	116.1	1.013	0.49	7.0	78.3	3.10	39.9	0.00			504
1	529	5.75	5.70	34.252	26.999	112.1	1.046	0.36	5.1	82.7	3.16	40.7	0.00			534

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 83 90

LATITUDE	LONGITUDE	DAT/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 34.6 N	122 48.7 W	28/07/89	03 07 UTC	4261 M	350	21 KT 3 50 07 07		1	1016.5 MB	16.6 C	14.9 C	6/8 SC

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	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	17.33	17.33	33.223	24.074	3 83.0	0.000	5.63	102.5	3.0	0.32	0.0	0.00	0.10	0.02	0
1	1	17.33	17.33	33.223	24.074	383.0	0.004	5.63	102.5	3.0	0.32	0.0	0.00	0.10	0.02	1
	10 ISL	17.32	17.32	33.222	24.076	383.1	0.03 8	5.64	102.7	3.0	0.32	0.0	0.00	0.10	0.02	10
1	17	17.31	17.31	33.222	24.078	3 83.1	0.065	5.64	102.7	3.0	0.32	0.0	0.00	0.11	0.02	17
	20 ISL	17.29	17.29	33.219	24.081	3 83.0	0.077	5.65	102.8	3.0	0.32	0.0	0.00	0.11	0.02	20
	30 ISL	17.18	17.18	33.211	24.101	381.4	0.115	5.67	102.9	2.9	0.32	0.0	0.00	0.12	0.03	30
1	32	17.15	17.14	33.210	24.108	380.8	0.122	5.67	102.9	2.9	0.32	0.0	0.00	0.12	0.03	32
1	42	16.91	16.90	33.223	24.174	374.8	0.160	5.75	103.8	2.8	0.32	0.0	0.00	0.16	0.04	42
	50 ISL	15.75	15.74	33.238	24.451	348.6	0.189	6.09	107.5	2.9	0.35	0.0	0.02	0.22	0.06	50
1	52	15.41	15.40	33.242	24.530	3 41.1	0.196	6.18	108.4	2.9	0.36	0.0	0.02	0.24	0.07	52
1	63	13.95	13.94	33.220	24.825	313.2	0.23 2	6.37	108.4	3.1	0.36	0.0	0.00	0.35	0.17	63
1	73	13.16	13.15	33.218	24.983	298.3	0.263	6.25	104.6	3.3	0.38	0.0	0.00	0.34	0.20	74
	75 ISL	13.02	13.01	33.224	25.016	295.2	0.269	6.18	103.2	3.5	0.40	0.2	0.03	0.33	0.21	76
1	82	12.62	12.61	33.252	25.116	285.9	0.289	5.92	98.0	4.2	0.50	1.3	0.13	0.31	0.23	83
1	97	12.14	12.13	33.313	25.255	272.9	0.331	5.59	91.7	5.5	0.64	4.7	0.12	0.23	0.20	98
	100 ISL	12.04	12.03	33.323	25.282	270.4	0.339	5.54	90.6	5.9	0.68	5.4	0.10	0.21	0.19	101
1	113	11.63	11.62	33.364	25.391	260.3	0.373	5.33	86.5	7.8	0.84	8.2	0.02	0.13	0.14	114
	125 ISL	11.26	11.24	33.400	25.486	251.5	0.404	5.06	81.5	9.4	0.94	10.0	0.01	0.11	0.11	126
1	128	11.17	11.15	33.410	25.510	249.2	0.412	4.99	80.2	9.9	0.97	10.5	0.01	0.11	0.10	129
	150 ISL	10.39	10.37	33.521	25.734	228.3	0.464	4.44	70.2	14.9	1.25	15.3	0.01	0.04	0.05	151
1	154	10.24	10.22	33.546	25.779	224.0	0.47 3	4.34	68.4	16.0	1.31	16.2	0.01	0.03	0.04	155
1	179	9.43	9.41	33.724	26.054	198.3	0.526	3.66	56.7	22.9	1.62	21.3	0.00	0.01	0.02	180
	200 ISL	8.90	8.88	33.855	26.241	180.7	0.566	3.25	49.8	28.4	1.83	24.5	0.00	0.00	0.02	202
1	211	8.67	8.65	33.911	26.321	173.3	0.585	3.15	48.0	30.8	1.89	25.5	0.00	0.00	0.02	213
1	240	8.15	8.13	33.991	26.463	160.1	0.634	3.50	52.8	33.7	1.83	25.1	0.00			242
	250 ISL	8.00	7.97	34.002	26.494	157.3	0.650	3.43	51.5	35.5	1.87	25.7	0.00			252
1	281	7.56	7.53	34.015	26.568	150.5	0.6 97	2.95	43.9	42.1	2.07	28.6	0.00			283
	300 ISL	7.29	7.26	34.025	26.615	146.3	0.725	2.63	38.9	46.7	2.20	30.4	0.00			302
1	338	6.80	6.77	34.044	26.697	138.7	0.780	2.05	30.0	55.4	2.45	33.5	0.00			341
1	396	6.28	6.24	34.059	26.778	131.5	0.858	1.60	23.1	63.8	2.67	36.1	0.00			399
	400 ISL	6.26	6.22	34.065	26.785	130.9	0.863	1.54	22.2	64.5	2.69	36.3	0.00			403
1	46 2	5.96	5.92	34.169	26.906	120.1	0.941	0.71	10.2	75.9	3.02	39.5	0.00			466
	500 ISL	5.76	5.72	34.209	26.963	115.0	0.986	0.54	7.7	81.6	3.09	40.5	0.00			504
1	530	5.61	5.56	34.241	27.007	111.1	1.020	0.40	5.7	86.1	3.14	41.2	0.00			535

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 83 100

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	HEATHER	BAROMETER	DRT	HET	CLOUD AMT	TTPE
32 15.1 N	123 29.2 V	27/07/89	1830 OTC	413 9 M	350	23 KT	3 50 08 06	1	1019.0 MB	19.9 C	16.1 C	6/8	SC

CAST	DEPTH	TEMP	POT TEMP	SALINITT	SIGMA	SVA	DTN HT	OXTGBN	OXT	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRESS
M		DEC 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	17.51	17.51	33.267	24.065	383.9	0.000	5.60	102.4	2.6	0.33	0.0	0.00	0.11	0.03	0
	10 ISI	17.49	17.49	33.266	24.069	383.8	0.038	5.60	102.3	2.5	0.33	0.0	0.00	0.11	0.03	10
1	17	17.48	17.48	33.266	24.072	383.8	0.065	5.60	102.3	2.5	0.33	0.0	0.00	0.11	0.03	17
	20 ISL	17.48	17.48	33.266	24.072	383.9	0.077	5.60	102.3	2.5	0.33	0.0	0.00	0.11	0.03	20
	30 ISL	17.48	17.47	33.266	24.072	384.2	0.115	5.59	102.1	2.5	0.33	0.0	0.00	0.12	0.02	30
1	32	17.48	17.47	33.266	24.072	384.2	0.123	5.59	102.1	2.5	0.33	0.0	0.00	0.12	0.02	32
1	42	17.48	17.47	33.265	24.072	384.6	0.161	5.59	102.1	2.5	0.33	0.0	0.00	0.12	0.03	42
	50 ISL	17.46	17.45	33.265	24.077	384.4	0.192	5.60	102.2	2.4	0.33	0.0	0.00	0.13	0.03	50
1	52	17.46	17.45	33.265	24.077	384.4	0.200	5.60	102.2	2.4	0.33	0.0	0.00	0.13	0.03	52
1	63	16.44	16.43	33.254	24.308	362.7	0.241	5.81	104.0	2.4	0.34	0.0	0.00	0.23	0.07	63
1	72	15.18	15.17	33.242	24.581	336.9	0.272	6.06	105.8	2.4	0.34	0.0	0.00	0.26	0.09	73
	75 ISL	14.97	14.96	33.236	24.622	333.0	0.282	6.10	106.0	2.4	0.34	0.0	0.00	0.26	0.09	76
1	81	14.62	14.61	33.218	24.683	327.3	0.302	6.14	105.9	2.3	0.35	0.0	0.00	0.27	0.11	82
1	98	12.90	12.89	33.165	24.994	297.9	0.355	6.04	100.5	3.1	0.44	0.5	0.11	0.43	0.34	99
	100 ISL	12.80	12.79	33.170	25.018	295.7	0.361	6.01	99.8	3.3	0.46	0.8	0.13	0.42	0.33	101
1	113	12.36	12.35	33.216	25.139	284.4	0.399	5.77	95.0	4.4	0.61	3.2	0.23	0.27	0.24	114
	125 ISL	11.93	11.91	33.246	25.244	274.7	0.433	5.63	91.8	5.4	0.70	5.2	0.07	0.17	0.17	126
1	128	11.82	11.80	33.255	25.271	272.1	0.441	5.59	91.0	5.7	0.72	5.8	0.02	0.15	0.16	129
	150 ISL	10.98	10.96	33.403	25.539	246.9	0.498	4.97	79.5	10.1	1.02	11.3	0.00	0.06	0.08	151
1	154	10.82	10.80	33.438	25.595	241.7	0.508	4.83	77.0	11.2	1.09	12.4	0.00	0.05	0.07	155
1	180	9.66	9.64	33.692	25.991	204.3	0.566	3.84	59.8	20.3	1.52	20.0	0.00	0.01	0.03	181
	200 ISL	8.97	8.95	33.831	26.211	183.6	0.604	3.69	56.6	25.2	1.66	22.7	0.00	0.00	0.02	202
1	211	8.67	8.65	33.888	26.303	175.0	0.624	3.61	55.0	27.4	1.70	23.5	0.00	0.00	0.02	213
1	241	8.19	8.17	33.979	26.448	161.6	0.675	3.40	51.3	32.9	1.84	25.6	0.00			243
	250 ISL	8.06	8.03	33.993	26.478	158.9	0.689	3.32	50.0	34.6	1.88	26.2	0.00			252
1	283	7.63	7.60	34.024	26.566	150.9	0.740	2.90	43.2	41.1	2.06	28.6	0.00			285
	300 ISL	7.49	7.46	34.047	26.604	147.5	0.765	2.53	37.6	44.8	2.20	30.2	0.00			302
1	338	7.15	7.12	34.084	26.681	140.6	0.820	1.76	25.9	53.2	2.50	33.6	0.00			341
1	398	6.19	6.15	34.068	26.797	129.7	0.901	1.47	21.2	65.7	2.71	36.9	0.00			401
	400 ISL	6.16	6.12	34.067	26.800	129.5	0.904	1.47	21.2	66.1	2.71	37.0	0.00			403
1	464	5.44	5.40	34.066	26.888	121.2	0.984	1.22	17.3	77.6	2.87	39.6	0.00			468
	500 ISL	5.63	5.59	34.161	26.941	117.0	1.027	0.78	11.1	80.3	3.01	40.3	0.00			504
1	533	5.80	5.75	34.249	26.990	113.0	1.065	0.37	5.3	82.8	3.13	40.9	0.00			538

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 87 33

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	HEATHER	BAROMETER	DRT	HET	CLOUD AMT	TTPE
33 53.4 N	118 29.5 V	25/07/89	0830 UTC	54 M	070	05 KT			1012.6 MB	17.0 C	16.8 C		

CAST	DEPTH	TEMP	POT TEMP	SALINITT	SIGMA	SVA	DTN HT	OXTGBN	OXT	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRESS
	M	DEC 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	20.94	20.94	33.645	23.480	439.6	0.000	6.02	117.6	2.3	0.18	0.1	0.00	0.62	0.17	0
1	10	17.68	17.68	33.547	24.239	367.6	0.040	7.46	137.0	3.8	0.23	0.1	0.00	2.67	0.51	10
	20 ISL	13.26	13.26	33.415	25.115	284.4	0.073	5.93	99.6	8.8	0.86	3.6	0.33	1.75	0.64	20
1	21	12.88	12.88	33.413	25.188	277.4	0.076	5.71	95.2	9.3	0.92	4.0	0.36	1.66	0.65	21
1	30	12.07	12.07	33.495	25.408	256.7	0.100	4.68	76.7	9.5	0.86	4.1	0.16	0.29	0.40	30
1	42	11.29	11.28	33.499	25.556	242.9	0.130	3.96	63.8	14.9	1.51	13.0	0.44	0.19	0.25	42

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 87 35

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	HIND	SPEED	WAVES	HEATHER	BAROMETER	DRT	HET	CLOUD AMT	TTPE
33 49.7 N	118 37.7 V	25/07/89	1055 DTC	616 M	040	07 KT			1012.0 MB	16.5 C	16.5 C		

CAST	DEPTH	TEMP	POT TEMP	SALINITT	SIGMA	SVA	DTN HT	OXTGBN	OXT	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	20.23	20.23	33.655	23.677	420.9	0.000	5.84	112.6	1.7	0.21	0.1	0.00	0.31	0.10	0
1	10	19.45	19.45	33.627	23.859	403.8	0.041	6.09	115.7	1.8	0.22	0.1	0.00	0.29	0.11	10
	20 ISL	15.38	15.38	33.529	24.756	318.6	0.077	7.57	132.9	2.1	0.23	0.1	0.00	0.84	0.26	20
1	21	14.93	14.93	33.527	24.853	309.4	0.080	7.65	133.1	2.1	0.23	0.1	0.00	0.90	0.27	21
	30 ISL	12.67	12.67	33.484	25.285	268.4	0.106	5.67	94.1	7.3	0.50	0.2	0.03	7.60	1.20	30
1	31	12.49	12.49	33.480	25.317	265.4	0.109	5.39	89.1	8.0	0.55	0.2	0.03	8.13	1.28	31
1	41	11.38	11.37	33.514	25.551	243.3	0.135	4.26	68.8	12.0	1.29	10.9	0.29	0.61	0.42	41
	50 ISL	11.01	11.00	33.576	25.667	232.5	0.156	3.96	63.5	14.0	1.36	14.7	0.33	0.32	0.26	50
1	52	10.96	10.95	33.591	25.687	230.6	0.161	3.93	62.9	14.4	1.38	15.2	0.34	0.26	0.22	52
1	62	10.51	10.50	33.670	25.828	217.4	0.183	3.51	55.7	18.3	1.56	19.0	0.31	0.19	0.20	62
1	72	10.28	10.27	33.744	25.926	208.4	0.204	3.17	50.1	21.5	1.71	20.8	0.25	0.11	0.16	73
	75 ISL	10.22	10.21	33.761	25.949	206.2	0.211	3.11	49.1	22.1	1.73	21.3	0.22	0.11	0.15	76
1	87	10.00	9.99	33.819	26.032	198.5	0.235	2.98	46.8	23.7	1.79	22.7	0.09	0.09	0.12	88
	100 ISL	9.79	9.78	33.873	26.109	191.5	0.260	2.96	46.3	25.3	1.83	23.6	0.04	0.07	0.10	101
1	103	9.75	9.74	33.884	26.125	190.0	0.266	2.96	46.2	25.7	1.84	23.8	0.03	0.07	0.10	104
1	123	9.44	9.43	33.952	26.229	180.5	0.303	2.82	43.8	28.2	1.91	24.9	0.02	0.02	0.07	124
	125 ISL	9.45	9.44	33.962	26.235	179.9	0.307	2.79	43.3	28.4	1.92	25.0	0.02	0.02	0.07	126
1	148	9.52	9.50	34.059	26.300	174.3	0.347	2.38	37.0	30.9	2.05	26.3	0.02	0.02	0.06	149
	150 ISL	9.52	9.50	34.064	26.304	174.0	0.351	2.36	36.7	31.1	2.06	26.4	0.02	0.02	0.06	151
1	180	9.44	9.42	34.134	26.373	168.1	0.402	2.05	31.9	33.8	2.19	27.6	0.01	0.01	0.06	181
	200 ISL	9.49	9.47	34.209	26.424	163.8	0.435	1.68	26.1	36.1	2.32	28.6	0.01	0.01	0.06	202
1	209	9.50	9.48	34.241	26.447	161.7	0.450	1.52	23.7	37.1	2.37	29.0	0.01	0.01	0.06	211
1	240	9.34	9.31	34.280	26.504	156.9	0.499	1.29	20.0	39.8	2.47	29.7	0.01			242
	250 ISL	9.28	9.25	34.289	26.521	155.5	0.515	1.22	18.9	40.7	2.50	30.0	0.01			252
1	281	9.09	9.06	34.309	26.568	151.6	0.563	1.03	15.9	43.3	2.59	30.7	0.02			283
	300 ISL	9.01	8.98	34.316	26.587	150.2	0.591	0.96	14.8	44.4	2.62	31.0	0.02			302
1	337	8.83	8.79	34.324	26.622	147.5	0.646	0.86	13.2	46.5	2.67	31.5	0.01			340
1	397	8.36	8.32	34.331	26.701	140.8	0.733	0.68	10.3	51.6	2.79	32.9	0.01			400
	400 ISL	8.30	8.26	34.328	26.708	140.2	0.737	0.67	10.2	52.1	2.80	33.1	0.01			403
1	462	7.13	7.09	34.283	26.842	127.4	0.820	0.56	8.3	63.9	2.95	36.6	0.01			466
	500 ZSL	6.78	6.73	34.295	26.900	122.2	0.867	0.44	6.4	69.3	3.03	37.8	0.02			504
1	531	6.49	6.44	34.307	26.948	117.8	0.905	0.35	5.1	73.7	3.10	38.7	0.03			536

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 87 39

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 39.7 N	118 53.3 W	25/07/89	1450 UTC	7 42 M	250	05 KT	260 02 06	2	1012.4 MB	16.5 C	16.5 C	8/8	SC

CAST	DEPTH M	TEMP DEC 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.BAS
	0 ISL	18.65	18.65	33.557	24.008	389.3	0.000	5.68	106.3	2.3	0.31	0.0	0.00	0.23	0.05	0
1	1	18.65	18.65	33.557	24.008	389.3	0.004	5.68	106.3	2.3	0.31	0.0	0.00	0.23	0.05	1
	10 ISL	18.64	18.64	33.554	24.008	389.6	0.03 9	5.67	106.1	2.3	0.30	0.0	0.00	0.23	0.05	10
1	11	18.64	18.64	33.554	24.008	389.6	0.043	5.67	106.1	2.3	0.30	0.0	0.00	0.23	0.05	11
	20 ISL	17.43	17.43	33.502	24.265	365.5	0.077	6.04	110.4	2.3	0.32	0.0	0.01	0.28	0.08	20
1	21	17.26	17.26	33.496	24.301	362.1	0.080	6.09	110.9	2.3	0.32	0.0	0.01	0.28	0.09	21
	30 ISL	16.10	16.10	33.484	24.561	337.5	0.112	6.32	112.5	2.6	0.34	0.1	0.01	0.60	0.18	30
1	31	15.93	15.93	33.481	24.597	334.1	0.115	6.35	112.7	2.6	0.34	0.1	0.01	0.64	0.19	31
1	41	12.83	12.82	33.416	25.201	276.7	0.146	5.59	93.1	5.5	0.65	4.1	0.09	0.73	0.37	41
	50 ISL	12.43	12.42	33.454	25.309	266.7	0.170	5.29	87 .4	6.9	0.79	6.6	0.15	0.60	0.33	50
1	51	12.39	12.38	33.445	25.309	266.7	0.173	5.26	86.8	7.1	0.80	6.9	0.15	0.58	0.32	51
1	61	11.60	11.59	33.524	25.519	246.9	0.199	4.66	75.6	11.1	1.09	11.7	0.17	0.38	0.23	61
1	72	11.12	11.11	33.583	25.653	23 4.4	0.225	4.29	68.9	14.2	1.27	14.8	0.14	0.26	0.18	73
	75 ISL	10.92	10.91	33.609	25.709	229.1	0.23 2	4.15	66.4	15.6	1.34	16.0	0.12	0.22	0.16	76
1	86	10.26	10.25	33.712	25.904	210.7	0.256	3.62	57.1	20.3	1.58	19.9	0.03	0.08	0.09	87
	100 ISL	10.04	10.03	33.799	26.010	201.0	0.285	3.17	49.8	22.8	1.72	22.0	0.01	0.05	0.08	101
1	101	10.04	10.03	33.804	26.014	200.6	0.287	3.14	49.4	22.9	1.73	22.1	0.01	0.05	0.08	102
1	121	9.69	9.68	33.917	26.161	187.0	0.326	2.77	43.2	27.1	1.90	24.4	0.01	0.02	0.07	122
	125 ISL	9.65	9.64	33.934	26.181	185.2	0.333	2.71	42.3	27.7	1.93	24.7	0.01	0.02	0.07	126
1	147	9.52	9.50	34.012	26.264	177.8	0.373	2.44	38.0	30.4	2.04	26.0	0.01	0.02	0.07	148
	150 ISL	9.50	9.48	34.023	26.276	176.7	0.379	2.40	37.3	30.8	2.05	26.2	0.01	0.02	0.07	151
1	177	9.30	9.28	34.093	26.363	168.9	0.425	2.19	33.9	33.8	2.13	27.3	0.01	0.01	0.06	178
	200 ISL	9.06	9.04	34.091	26.401	165.7	0.46 4	2.29	35.3	34.6	2.13	27.5	0.00	0.01	0.05	202
1	208	8.98	8.96	34.0 90	26.413	164.7	0.477	2.32	35.7	34.9	2.13	27.6	0.00	0.01	0.04	210
1	23 8	8.86	8.83	34.160	26.487	158.2	0.525	1.95	29.9	38.5	2.28	29.0	0.00			240
	250 ISL	8.75	8.72	34.170	26.512	156.0	0.544	1.88	28.8	39.7	2.32	29.4	0.00			252
1	27 9	8.46	8.43	34.180	26.565	151.4	0.589	1.75	26.6	42.6	2.39	30.3	0.00			281
	300 ISL	8.28	8.25	34.194	26.604	148.0	0.620	1.57	23.8	45.2	2.47	31.2	0.00			302
1	335	7.99	7.96	34.221	26.669	142.3	0.671	1.22	18.4	49.9	2.61	32.7	0.00			338
1	3 95	7.53	7.49	34.284	26.786	132.0	0.753	0.68	10.1	58.7	2.85	35.2	0.01			398
	400 ISL	7.50	7.46	34.285	26.791	131.6	0.760	0.66	9.8	59.2	2.86	35.3	0.01			403
1	461	7.07	7.03	34.280	26.848	126.8	0.83 9	0.54	8.0	64.8	2.96	36.8	0.00			465
	500 ISL	6.77	6.72	34.292	26.899	122.3	0.887	0.44	6.4	69.3	3.03	37.8	0.00			504
1	529	6.54	6.49	34.301	26.937	118.9	0.922	0.36	5.2	72.6	3.08	38.6	0.00			534

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 30.4 N	119 19.0 W	25/07/89	1942 UTC	1831 M	240	02 KT	250 01 07	4	1013.4 MB	17.0 C	15.9 C	8/8	ST

CAST	DEPTH M	TEMP DEC 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	33.767	24.704	322.9	0.000	5.66	101.6	6.1	0.65	5.6	0.11	0.79	0.25	0
1	1	16.42	16.42	33.767	24.704	3 23.0	0.003	5.66	101.6	6.1	0.65	5.6	0.11	0.79	0.25	1
	10 ISL	15.75	15.75	33.750	24.844	310.0	0.03 2	5.63	99.7	6.8	0.67	6.0	0.11	0.97	0.36	10
1	11	15.60	15.60	33.747	24.875	3 07.0	0.03 5	5.63	99.4	6.9	0.67	6.0	0.11	1.01	0.38	11
	20 ISL	13.47	13.47	33.719	25.307	266.1	0.061	5.12	86.6	11.0	0.95	9.8	0.16	1.40	0.61	20
1	22	12.98	12.98	33.722	25.408	256.5	0.066	4.97	83.2	12.0	1.02	10.8	0.17	1.48	0.65	22
	30 ISL	12.05	12.05	33.761	25.619	236.7	0.086	4.48	73.5	14.6	1.24	13.9	0.22	1.47	0.66	30
1	32	11.88	11.88	33.774	25.661	23 2.7	0.090	4.34	71.0	15.4	1.29	14.7	0.23	1.47	0.66	32
1	42	10.80	10.79	33.870	25.932	207.1	0.112	3.47	55.5	21.8	1.63	19.4	0.31	1.20	0.58	42
	50 ISL	10.26	10.25	33.908	26.056	195.4	0.128	2.95	46.6	25.4	1.81	22.4	0.33	0.93	0.48	50
1	51	10.20	10.19	33.911	26.069	194.3	0.130	2.89	45.6	25.8	1.83	22.8	0.33	0.89	0.46	51
1	62	9.43	9.42	33.966	26.241	178.1	0.151	2.33	36.2	31.4	2.05	26.9	0.14	0.31	0.24	62
1	73	9.23	9.22	33.989	26.291	173.5	0.170	2.29	35.4	33.1	2.10	27.6	0.04	0.15	0.20	74
	75 ISL	9.20	9.19	33.992	26.298	172.9	0.174	2.28	35.2	33.3	2.11	27.7	0.04	0.13	0.19	76
1	86	9.09	9.08	34.009	26.330	170.1	0.192	2.24	34.5	34.4	2.13	27.9	0.03	0.06	0.16	87
	100 ISL	8.96	8.95	34.031	26.368	166.8	0.216	2.16	33.2	35.5	2.17	28.5	0.03	0.03	0.14	101
1	102	8.95	8.94	34.034	26.372	166.5	0.219	2.15	33.0	35.6	2.18	28.6	0.03	0.03	0.14	103
1	123	8.89	8.88	34.056	26.399	164.3	0.254	2.00	30.7	36.5	2.24	29.4	0.03	0.01	0.15	124
	125 ISL	8.88	8.87	34.058	26.402	164.0	0.257	1.99	30.5	36.6	2.25	29.5	0.03	0.01	0.15	126
1	148	8.74	8.72	34.080	26.442	160.7	0.295	1.89	28.9	37.7	2.29	30.0	0.05	0.01	0.13	149
	150 ISL	8.72	8.70	34.082	26.446	160.3	0.298	1.90	29.0	37.8	2.29	30.0	0.05	0.01	0.13	151
1	17 8	8.46	8.44	34.113	26.511	154.6	0.342	2.01	30.6	39.8	2.30	29.8	0.04	0.01	0.06	179
	200 ISL	8.30	8.28	34.141	26.557	150.5	0.376	1.87	28.3	42.5	2.37	30.4	0.03	0.01	0.05	202
1	210	8.22	8.20	34.156	26.5 82	148.4	0.390	1.75	26.5	44.2	2.42	30.9	0.02	0.01	0.05	212
1	240	7.91	7.89	34.218	26.677	139.8	0.43 4	1.19	17.9	51.0	2.64	33.1	0.01			242
	250 ISL	7.84	7.81	34.230	26.697	138.1	0.448	1.09	16.3	52.4	2.68	33.5	0.01			252
1	281	7.69	7.66	34.255	26.739	134.6	0.490	0.89	13.3	55.4	2.77	34.3	0.01			283
	300 ISL	7.63	7.60	34.270	26.759	132.9	0.515	0.79	11.8	56.8	2.82	34.7	0.01			3 02
1	336	7.49	7.46	34.288	26.794	130.2	0.563	0.65	9.7	59.3	2.89	35.3	0.00			339
1	3 96	7.02	6.98	34.281	26.855	125.0	0.639	0.54	7.9	65.7	2.96	37.0	0.00			3 99
	400 ISL	6.99	6.95	34.281	26.859	124.7	0.6 44	0.53	7.8	66.1	2.97	37.1	0.00			403
1	460	6.60	6.56	34.295	26.923	119.2	0.717	0.39	5.7	72.4	3.07	38.5	0.00			464
	500 ISL	6.38	6.33	34.311	26.965	115.6	0.764	0.34	4.9	76.4	3.12	39.1	0.00			504
1	527	6.23	6.18	34.322	26.994	113.1	0.795	0.31	4.5	79.1	3.15	39.5	0.00			532

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 19.3 N	119 39.8 W	25/07/89	2326 UTC	75 M	310	14 KT	300 02 05	2	1012.3 MB	16.8 C	16.2 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	16.72	16.72	33.663	24.555	337.2	0.000	5.95	107.4	3.0	0.38	0.8	0.04	0.93	0.29	0
1	1	16.72	16.72	33.663	24.555	337.2	0.003	5.95	107.4	3.0	0.38	0.8	0.04	0.93	0.29	1
	10 ISL	16.26	16.26	33.663	24.661	327.3	0.033	5.91	105.7	4.4	0.47	2.2	0.07	1.09	0.45	10
1	11	16.21	16.21	33.663	24.673	326.3	0.037	5.90	105.4	4.5	0.48	2.4	0.08	1.11	0.47	11
	20 ISL	14.29	14.29	33.681	25.109	285.0	0.06 4	5.25	90.2	9.2	0.83	7.9	0.16	1.04	0.51	20
1	23	13.58	13.58	33.695	25.267	270.1	0.072	4.99	84.5	11.0	0.96	9.9	0.19	1.01	0.52	23
	30 ISL	12.57	12.57	33.700	25.47 2	250.7	0.091	4.62	76.6	14.0	1.15	12.6	0.23	0.81	0.43	30
1	32	12.30	12.30	33.701	25.525	245.7	0.096	4.51	74.4	15.0	1.20	13.4	0.24	0.73	0.40	32
1	42	10.46	10.46	33.766	25.911	209.1	0.118	3.59	56.9	23.2	1.63	20.2	0.17	0.24	0.21	42
	50 ISL	10.26	10.25	33.777	25.954	205.2	0.135	3.51	55.4	24.1	1.67	20.8	0.17	0.21	0.21	50
1	53	10.18	10.17	33.781	25.971	203.6	0.141	3.48	54.9	24.4	1.69	21.0	0.17	0.20	0.21	53

IV NKW HORIZON CALCOFI CRUISE 8907 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 9.5 N	120 0.4 W	26/07/89	0345 PTC	1191 M	310	25 KT	310 04 06	1	1012.0 MB	14.8 C	14.8 C	7/8	SC

CAST	DEPTH M	TEMP DEC C	POT TEMP DEC 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	16.22	16.22	33.567	24.596	333.2	0.000	5.86	104.6	2.7	0.39	0.8	0.03	0.44	0.13	0
1	1	16.22	16.22	33.567	24.596	333.2	0.003	5.86	104.6	2.7	0.39	0.8	0.03	0.44	0.13	1
	10 ISL	16.20	16.20	33.571	24.604	332.7	0.033	5.86	104.6	2.7	0.40	0.8	0.04	0.46	0.13	10
1 11		16.20	16.20	33.571	24.604	332.8	0.037	5.86	104.6	2.7	0.40	0.8	0.04	0.46	0.13	11
	20 ISL	15.88	15.88	33.624	24.718	322.2	0.066	5.82	103.3	3.4	0.49	2.2	0.08	0.55	0.23	20
1	22	15.79	15.79	33.635	24.747	319.6	0.073	5.81	102.9	3.6	0.51	2.5	0.09	0.57	0.26	22
	30 ISL	15.50	15.50	33.631	24.809	313.9	0.098	5.79	102.0	3.8	0.54	2.7	0.11	0.59	0.29	30
1	32	15.34	15.34	33.626	24.840	311.0	0.104	5.79	101.6	3.9	0.55	2.8	0.12	0.60	0.30	32
1	42	13.18	13.17	33.634	25.301	267.3	0.133	5.11	85.8	9.8	0.99	8.5	0.38	0.50	0.34	42
	50 ISL	12.25	12.24	33.578	25.439	254.3	0.154	5.07	83.5	10.4	1.08	9.6	0.42	0.33	0.24	50
1	52	12.08	12.07	33.562	25.459	252.4	0.159	5.06	83.0	10.5	1.09	9.8	0.43	0.28	0.21	52
1	63	11.05	11.04	33.544	25.635	235.9	0.186	4.58	73.5	14.0	1.26	13.8	0.44	0.10	0.14	63
1	73	10.20	10.19	33.586	25.816	218.8	0.209	4.14	65.2	17.7	1.42	17.4	0.12	0.08	0.11	74
	75 ISL	10.08	10.07	33.608	25.853	215.3	0.213	4.03	63.3	18.7	1.46	18.2	0.11	0.07	0.11	76
1	87	9.56	9.55	33.751	26.052	196.6	0.238	3.39	52.7	24.2	1.71	22.3	0.02	0.04	0.09	88
	100 ISL	9.17	9.16	33.856	26.197	183.0	0.262	3.07	47.3	28.0	1.83	24.4	0.01	0.02	0.06	101
1	103	9.10	9.09	33.875	26.223	180.5	0.268	3.03	46.7	28.6	1.85	24.7	0.01	0.02	0.06	104
1	123	8.82	8.81	33.963	26.337	170.1	0.303	2.95	45.2	31.7	1.92	25.6	0.02	0.02	0.06	124
	125 ISL	8.84	8.83	33.978	26.345	169.4	0.306	2.88	44.1	32.1	1.94	25.8	0.02	0.02	0.06	126
1	149	9.12	9.10	34.152	26.438	161.2	0.346	1.93	29.8	37.3	2.25	28.3	0.01	0.01	0.05	150
	150 ISL	9.12	9.10	34.155	26.440	161.0	0.347	1.90	29.3	37.5	2.26	28.4	0.01	0.01	0.05	151
1	180	8.97	8.95	34.236	26.528	153.2	0.395	1.40	21.5	41.6	2.44	29.9	0.01	0.01	0.05	181
	200 ISL	8.59	8.57	34.208	26.566	149.9	0.425	1.47	22.4	43.6	2.46	30.5	0.01	0.01	0.04	202
1	211	8.35	8.33	34.185	26.585	148.2	0.441	1.55	23.5	44.8	2.47	30.9	0.01	0.01	0.04	213
1	241	7.91	7.89	34.176	26.644	142.9	0.485	1.42	21.3	49.2	2.53	32.4	0.01			243
	250 ISL	7.82	7.80	34.180	26.660	141.5	0.498	1.35	20.2	50.5	2.56	32.8	0.01			252
1	284	7.54	7.51	34.206	26.722	136.1	0.545	1.05	15.6	55.1	2.69	34.3	0.01			286
	300 ISL	7.45	7.42	34.217	26.743	134.3	0.567	0.95	14.1	56.8	2.74	34.7	0.01			302
1	339	7.23	7.20	34.236	26.790	130.4	0.618	0.78	11.5	60.6	2.83	35.6	0.00			342
1	399	6.75	6.71	34.236	26.856	124.7	0.695	0.63	9.2	66.8	2.92	37.1	0.00			402
	400 ISL	6.75	6.71	34.237	26.857	124.6	0.696	0.63	9.2	66.9	2.92	37.1	0.00			403
1	464	6.47	6.43	34.277	26.926	118.8	0.774	0.43	6.2	73.1	3.06	38.6	0.00			468
	500 ISL	6.24	6.20	34.294	26.970	114.9	0.816	0.36	5.2	77.1	3.10	39.4	0.00			504
1	531	6.04	5.99	34.309	27.008	111.6	0.851	0.30	4.3	80.5	3.13	40.1	0.00			536

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 87 60

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 59.3 N	120 21.3 W	26/07/89	0800 UTC	712 M	3	20 19 KT			1014.0 MB	14.5 C	13.3 C		

CAST	DEPTH M	TEMP DEC C	POT TEMP DEC C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ML/L	OXY PCT	SIO3 OM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
1	0	14.66	14.66	33.279	24.719	321.5	0.000	6.14	106.1	1.7	0.38	0.4	0.03	0.65	0.15	0
1	10	14.63	14.63	33.275	24.723	321.4	0.032	6.15	106.2	1.8	0.38	0.4	0.03	0.71	0.16	10
1	20	14.53	14.53	33.275	24.745	319.7	0.064	6.17	106.3	1.7	0.38	0.4	0.03	0.62	0.16	20
	30 ISL	13.58	13.58	33.228	24.906	304.6	0.095	6.13	103.5	3.0	0.48	1.1	0.06	0.59	0.24	30
1	31	13.46	13.46	33.221	24.925	302.8	0.098	6.13	103.3	3.2	0.49	1.2	0.06	0.59	0.25	31
1	41	12.37	12.36	33.103	25.047	291.3	0.128	6.10	100.4	4.0	0.53	1.6	0.10	0.59	0.26	41
	50 ISL	11.77	11.76	33.046	25.116	284.9	0.154	6.07	98.6	4.2	0.55	2.1	0.13	0.57	0.27	50
1	51	11.71	11.70	33.045	25.127	283.9	0.157	6.07	98.5	4.2	0.55	2.1	0.13	0.57	0.27	51
1	61	11.07	11.06	33.140	25.317	266.0	0.184	5.64	90.3	6.4	0.75	6.0	0.12	0.30	0.20	61
1	71	10.84	10.83	33.174	25.384	259.8	0.211	5.51	87.8	7.6	0.81	7.3	0.09	0.25	0.21	72
	75 ISL	10.71	10.70	33.247	25.464	252.3	0.221	5.32	84.6	8.9	0.89	8.7	0.07	0.21	0.18	76
1	85	10.35	10.34	33.459	25.691	230.9	0.245	4.74	74.8	12.8	1.12	13.0	0.04	0.10	0.11	86
	100 ISL	9.77	9.76	33.640	25.931	208.4	0.278	4.06	63.4	18.9	1.42	18.1	0.05	0.09	0.13	101
1	105	9.60	9.59	33.681	25.991	202.7	0.288	3.86	60.0	20.8	1.51	19.5	0.06	0.09	0.14	106
1	124	9.23	9.22	33.800	26.144	188.5	0.326	3.25	50.2	26.6	1.77	23.5	0.03	0.06	0.13	125
	125 ISL	9.20	9.19	33.807	26.155	187.5	0.327	3.23	49.8	26.9	1.78	23.7	0.03	0.06	0.13	126
1	150	8.64	8.62	33.960	26.363	168.1	0.372	2.77	42.2	33.5	2.00	26.9	0.01	0.03	0.13	151
1	181	8.46	8.44	34.037	26.451	160.3	0.423	2.42	36.8	37.1	2.13	28.3	0.01	0.02	0.13	182
	200 ISL	8.09	8.07	34.086	26.546	151.6	0.452	2.05	30.9	42.8	2.29	30.3	0.01	0.03	0.19	202
1	211	7.87	7.85	34.110	26.597	146.8	0.469	1.85	27.7	46.0	2.38	31.5	0.01	0.03	0.22	213
1	240	7.67	7.65	34.122	26.636	143.5	0.511	1.66	24.8	49.3	2.47	32.6	0.01			242
	250 ISL	7.64	7.62	34.131	26.648	142.6	0.525	1.58	23.6	50.1	2.50	32.9	0.01			252
1	280	7.55	7.52	34.163	26.686	139.4	0.567	1.33	19.8	52.6	2.61	33.7	0.02			282
	300 ISL	7.40	7.37	34.189	26.728	135.7	0.595	1.11	16.5	55.9	2.70	34.7	0.02			302
1	335	7.10	7.07	34.230	26.803	129.0	0.641	0.77	11.3	61.9	2.85	36.3	0.01			338
1	395	6.79	6.75	34.253	26.864	123.9	0.717	0.59	8.6	67.3	2.95	37.4	0.00			398
	400 ISL	6.75	6.71	34.256	26.872	123.3	0.723	0.57	8.3	68.0	2.96	37.6	0.00			403
1	461	6.27	6.23	34.296	26.967	114.7	0.796	0.34	4.9	76.1	3.10	39.4	0.00			465
	500 ISL	6.07	6.03	34.313	27.007	111.3	0.840	0.29	4.2	79.8	3.15	40.0	0.00			504
1	530	5.92	5.87	34.326	27.036	108.8	0.873	0.26	3.7	82.7	3.18	40.4	0.00			535

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 39.7 N	121 2.2 W	26/07/89	1520 UTC	3733 M	330	24 KT	330 08 08	2	1015.6 MB	15.9 C	14.4 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	16.33	16.33	33.405	24.447	347.5	0.000	5.82	104.0	1.4	0.38	0.3	0.02	0.36	0.09	0
1	1		16.33	16.33	33.405	24.447	347.5	0.003	5.82	104.0	1.4	0.38	0.3	0.02	0.36	0.09	1
	10	ISL	16.31	16.31	33.402	24.449	347.5	0.035	5.82	104.0	1.4	0.38	0.3	0.02	0.40	0.12	10
2	11		16.31	16.31	33.402	24.449	347.5	0.038	5.82	104.0	1.4	0.38	0.3	0.02	0.40	0.12	11
	20	ISL	16.32	16.32	33.402	24.448	348.0	0.070	5.83	104.2	1.4	0.38	0.3	0.02	0.37	0.10	20
1	22		16.32	16.32	33.402	24.448	348.1	0.076	5.83	104.2	1.4	0.38	0.3	0.02	0.36	0.10	22
	30	ISL	16.32	16.32	33.407	24.452	348.0	0.104	5.83	104.2	1.3	0.38	0.3	0.02	0.37	0.11	30
1	32		16.32	16.31	33.408	24.452	347.9	0.111	5.83	104.2	1.3	0.38	0.3	0.02	0.37	0.11	32
1	42		16.24	16.23	33.417	24.478	345.8	0.146	5.83	104.0	1.3	0.41	0.5	0.03	0.41	0.13	42
	50	ISL	14.41	14.40	33.505	24.948	301.2	0.172	5.74	98.8	3.8	0.71	4.4	0.23	0.61	0.22	50
1	52		13.86	13.85	33.538	25.089	287.8	0.178	5.70	97.0	4.7	0.80	5.7	0.30	0.66	0.25	52
1	63		11.82	11.81	33.672	25.594	239.9	0.207	5.16	84.2	10.7	1.24	12.2	0.74	0.64	0.36	63
1	73		10.64	10.63	33.661	25.799	220.5	0.230	4.17	66.3	18.0	1.56	19.2	0.16	0.38	0.20	74
	75	ISL	10.54	10.53	33.673	25.825	218.0	0.234	4.07	64.6	18.8	1.59	19.9	0.14	0.34	0.18	76
1	87		10.19	10.18	33.752	25.947	206.6	0.260	3.67	57.9	22.1	1.72	22.0	0.05	0.14	0.10	88
	100	ISL	9.64	9.63	33.773	26.056	196.5	0.286	3.24	50.5	25.1	1.83	23.9	0.03	0.04	0.08	101
1	103		9.52	9.51	33.777	26.079	194.3	0.292	3.15	48.9	25.7	1.85	24.3	0.02	0.03	0.08	104
1	123		9.09	9.08	33.887	26.235	179.9	0.329	2.76	42.5	29.9	1.98	26.4	0.01	0.02	0.07	124
	125	ISL	9.05	9.04	33.894	26.247	178.8	0.333	2.76	42.5	30.1	1.99	26.5	0.01	0.02	0.07	126
1	149		8.62	8.60	33.951	26.359	168.5	0.374	2.70	41.1	32.8	2.03	27.5	0.01	0.01	0.07	150
	150	ISL	8.60	8.58	33.953	26.364	168.1	0.376	2.70	41.1	33.0	2.03	27.6	0.01	0.01	0.07	151
1	179		7.92	7.90	34.006	26.508	154.7	0.423	2.62	39.3	39.1	2.14	29.3	0.01	0.01	0.05	180
	200	ISL	7.62	7.60	34.006	26.552	150.8	0.455	2.69	40.1	41.5	2.16	29.7	0.01	0.01	0.04	202
1	210		7.52	7.50	34.004	26.565	149.7	0.470	2.71	40.3	42.5	2.17	29.8	0.01	0.01	0.04	212
1	240		7.25	7.23	34.036	26.628	144.0	0.514	2.39	35.3	47.2	2.31	31.4	0.01			242
	250	ISL	7.12	7.10	34.046	26.654	141.7	0.528	2.22	32.7	49.6	2.38	32.3	0.01			252
1	280		6.74	6.71	34.071	26.726	135.1	0.570	1.73	25.3	56.7	2.58	34.8	0.02			282
	300	ISL	6.59	6.56	34.079	26.752	132.8	0.597	1.56	22.7	59.7	2.65	35.7	0.02			302
1	336		6.43	6.40	34.099	26.790	129.7	0.644	1.31	19.0	63.8	2.75	36.7	0.01			339
1	396		6.32	6.28	34.203	26.887	121.4	0.719	0.68	9.8	71.2	2.98	38.7	0.00			399
	400	ISL	6.31	6.27	34.208	26.892	120.9	0.724	0.66	9.5	71.6	2.99	38.8	0.00			403
1	461		6.01	5.97	34.246	26.961	115.0	0.796	0.43	6.2	78.0	3.12	40.2	0.00			465
	500	ISL	5.63	5.59	34.231	26.996	111.7	0.840	0.41	5.8	84.5	3.16	41.2	0.00			504
1	532		5.32	5.28	34.221	27.026	109.0	0.876	0.40	5.7	89.9	3.20	42.1	0.00			537

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 19.5 N	121 42.9 W	26/07/89	2346 UTC	3997 M	330	21 KT	330 07 06	1	1016.1 MB	18.3 C	15.7 C	1/8	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	15.73	15.73	33.396	24.576	335.2	0.000	5.97	105.5	1.0	0.42	0.6	0.04	0.41	0.09	0
1	1		15.73	15.73	33.396	24.576	335.2	0.003	5.97	105.5	1.0	0.42	0.6	0.04	0.41	0.09	1
	10	ISL	15.70	15.70	33.396	24.583	334.8	0.034	5.97	105.4	1.0	0.41	0.6	0.04	0.43	0.09	10
1	11		15.69	15.69	33.396	24.585	334.6	0.037	5.97	105.4	1.0	0.41	0.6	0.04	0.43	0.09	11
	20	ISL	15.67	15.67	33.393	24.587	334.7	0.067	5.97	105.3	1.0	0.41	0.6	0.04	0.40	0.10	20
1	21		15.67	15.67	33.393	24.587	334.7	0.070	5.97	105.3	1.0	0.41	0.6	0.04	0.40	0.10	21
	30	ISL	15.64	15.64	33.388	24.590	334.7	0.100	5.97	105.3	1.0	0.42	0.6	0.04	0.42	0.09	30
1	32		15.63	15.63	33.387	24.592	334.6	0.107	5.97	105.2	1.0	0.42	0.6	0.04	0.43	0.09	32
1	42		14.98	14.97	33.414	24.756	319.3	0.140	5.94	103.4	1.3	0.52	1.8	0.07	0.57	0.26	42
	50	ISL	14.92	14.91	33.406	24.763	318.8	0.165	5.93	103.1	1.2	0.53	1.8	0.07	0.66	0.22	50
1	52		14.90	14.89	33.404	24.766	318.6	0.172	5.93	103.0	1.2	0.53	1.8	0.07	0.68	0.20	52
1	62		13.06	13.05	33.116	24.924	303.7	0.203	6.24	104.2	2.8	0.54	1.1	0.06	0.65	0.25	62
1	72		11.70	11.69	33.039	25.124	284.7	0.232	5.83	94.5	4.7	0.66	4.0	0.10	0.31	0.23	73
	75	ISL	11.67	11.66	33.108	25.183	279.1	0.241	5.70	92.4	5.1	0.69	4.8	0.09	0.29	0.23	76
1	87		11.55	11.54	33.335	25.382	260.5	0.273	5.30	85.8	6.4	0.80	7.4	0.04	0.23	0.22	88
	100	ISL	11.36	11.35	33.429	25.490	250.5	0.306	5.24	84.6	7.6	0.83	8.4	0.02	0.13	0.13	101
1	102		11.30	11.29	33.434	25.505	249.2	0.311	5.23	84.3	7.9	0.84	8.6	0.02	0.12	0.12	103
1	122		9.87	9.86	33.423	25.745	226.5	0.359	4.52	70.6	15.5	1.38	16.7	0.01	0.06	0.06	123
	125	ISL	9.76	9.75	33.453	25.787	222.6	0.366	4.47	69.7	16.1	1.38	16.9	0.01	0.05	0.05	126
1	148		9.29	9.27	33.724	26.076	195.5	0.414	4.27	66.0	19.3	1.42	18.6	0.01	0.01	0.03	149
	150	ISL	9.25	9.23	33.737	26.092	194.0	0.418	4.23	65.3	19.7	1.44	18.9	0.01	0.01	0.03	151
1	179		8.70	8.68	33.864	26.279	176.7	0.471	3.85	58.7	25.6	1.65	22.4	0.01	0.01	0.03	180
	200	ISL	8.40	8.38	33.951	26.393	166.1	0.507	4.06	61.6	27.4	1.61	22.4	0.01	0.01	0.02	202
1	208		8.28	8.26	33.976	26.431	162.6	0.520	4.11	62.2	28.3	1.61	22.4	0.01	0.01	0.01	210
1	239		7.69	7.67	33.988	26.528	153.7	0.569	3.15	47.0	38.2	2.01	27.8	0.01			241
	250	ISL	7.51	7.49	33.995	26.559	150.8	0.586	2.93	43.5	40.9	2.10	29.0	0.01			252
1	280		7.08	7.05	34.016	26.637	143.8	0.630	2.48	36.5	47.2	2.30	31.5	0.01			282
	300	ISL	6.85	6.82	34.025	26.675	140.3	0.659	2.22	32.5	51.0	2.41	33.0	0.01			302
1	336		6.55	6.52	34.045	26.731	135.3	0.708	1.81	26.3	57.5	2.57	35.2	0.00			339
1	395		6.36	6.32	34.111	26.809	128.7	0.786	1.13	16.4	67.8	2.84	38.1	0.00			398
	400	ISL	6.36	6.32	34.122	26.818	128.0	0.793	1.07	15.5	68.2	2.86	38.2	0.00			403
1	460		6.30	6.26	34.253	26.929	118.2	0.867	0.48	6.9	74.4	3.09	39.4	0.00			464
	500	ISL	5.53	5.49	34.205	26.988	112.4	0.913	0.38	5.4	84.0	3.13	41.3	0.00			504
1	529		4.98	4.94	34.176	27.029	108.2	0.945	0.30	4.2	91.0	3.16	42.6	0.00			534

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
31 59.6 N	122 23.8 W	27/07/89	0546 UTC	4133 M	3 40 22 XT			1017.2 MB	16.4 C	14.7 C	

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DYN HT	OXTGEN 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	33.205	24.168	374.0	0.000	5.70	102.9	2.8	0.35	0.0	0.00	0.14	0.03	0
1	2 -	16.87	16.87	33.205	24.168	374.0	0.007	5.70	102.9	2.8	0.35	0.0	0.00	0.14	0.03	2
	10 ISL	16.84	16.84	33.205	24.176	373.6	0.037	5.72	103.2	2.6	0.33	0.0	0.00	0.15	0.03	10
1	12	16.83	16.83	33.205	24.178	373.4	0.045	5.72	103.1	2.6	0.33	0.0	0.00	0.15	0.03	12
	20 ISL	16.82	16.82	33.204	24.180	373.5	0.07 5	5.72	103.1	2.5	0.33	0.0	0.00	0.14	0.04	20
1	23	16.82	16.82	33.203	24.179	373.7	0.086	5.72	103.1	2.5	0.33	0.0	0.00	0.14	0.04	23
	30 ISL	16.54	16.54	33.166	24.216	370.4	0.112	5.77	103.4	2.5	0.34	0.0	0.00	0.16	0.05	30
1	33	16.37	16.36	33.157	24.248	367.4	0.123	5.80	103.6	2.5	0.35	0.0	0.00	0.18	0.05	33
1	43	15.63	15.62	33.234	24.475	346.1	0.159	6.01	105.8	2.7	0.34	0.0	0.00	0.24	0.08	43
	50 ISL	15.17	15.16	33.250	24.589	335.5	0.183	6.12	106.8	2.4	0.35	0.2	0.01	0.35	0.12	50
1	53	14.98	14.97	33.251	24.631	331.5	0.193	6.15	106.9	2.3	0.35	0.2	0.01	0.39	0.14	53
1	63	14.31	14.30	33.242	24.767	318.8	0.225	6.22	106.7	2.4	0.33	0.0	0.00	0.32	0.16	63
1	73	13.59	13 .58	33.225	24.902	306.1	0.256	6.28	106.1	2.9	0.38	0.0	0.00	0.31	0.20	74
	75 ISL	13 .49	13.48	33.226	24.924	304.1	0.262	6.27	105.7	3.0	0.39	0.1	0.01	0.31	0.20	76
1	88	12.92	12.91	33 .247	25.054	292.0	0.301	6.10	101.6	3.6	0.48	0.6	0.07	0.28	0.20	89
	100 ISL	12.39	12.38	33.265	25.171	281.1	0.336	5.78	95.2	4.4	0.55	2.6	0.16	0.19	0.18	101
1	103	12.26	12.25	33.273	25.202	278.2	0.344	5.70	93.7	4.6	0.57	3.2	0.17	0.17	0.17	104
1	123	11.41	11.39	33.412	25.468	253.2	0.397	5.39	87.1	6.9	0.71	6.6	0.03	0.08	0.10	124
	125 ISL	11.31	11.29	33.423	25.495	250.7	0.402	5.35	86.2	7.2	0.73	7.0	0.03	0.07	0.09	126
1	148	10.23	10.21	33.552	25.786	223.3	0.457	4.74	74.7	12.7	1.07	12.9	0.00	0.03	0.03	149
	150 ISL	10.15	10.13	33.567	25.811	220.9	0.461	4.65	73.1	13.5	1.11	13.6	0.00	0.03	0.03	151
1	179	9.19	9.17	33.786	26.141	189.9	0.521	3.49	53.8	24.9	1.69	22.7	0.00	0.01	0.02	180
	200 ISL	8.83	8.81	33.896	26.284	176.6	0.559	3.34	51.1	28.9	1.81	24.5	0.00	0.01	0.02	202
1	209	8.72	8.70	33.926	26.325	172.9	0.575	3.27	49.9	30.0	1.83	24.7	0.00	0.01	0.02	211
1	23 9	8.30	8.28	33.925	26.389	167.2	0.6 26	3.08	46.6	34.3	1.93	26.4	0.00			241
	250 ISL	8.14	8.11	33.938	26.423	164.1	0.644	3 .00	45.2	36.1	1.98	27.1	0.00			252
1	279	7.75	7.72	33.988	26.520	155.2	0.6 90	2.73	40.8	41.1	2.13	29.0	0.01			281
	300 ISL	7.57	7.54	34.032	26.581	149.7	0.722	2.37	35.3	45.1	2.27	30.6	0.01			302
1	335	7.31	7.28	34.098	26.670	141.7	0.773	1.76	26.0	51.8	2.49	33.1	0.00			338
1	395	6.69	6.65	34.131	26.781	131.6	0.855	1.24	18.1	62.2	2.77	36.3	0.00			398
	400 ISL	6.66	6.62	34.137	26.7 90	130.9	0.862	1.19	17.3	62.9	2.79	36.5	0.00			403
1	461	6.39	6.35	34.214	26.887	122.4	0.93 9	0.62	9.0	70.7	3.00	38.6	0.00			465
	500 ISL	6.12	6.08	34.246	26.947	117.0	0.986	0.46	6.6	76.1	3 .09	39.7	0.00			504
1	531	5.90	5.85	34.273	26.997	112.5	1.021	0.34	4.9	80.4	3.16	40.6	0.00			536

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
31 39.7 N	123 4.7 W	27/07/89	1207 UTC	4160 M	330 16 XT			1018.0 MB	16.7 C	14.8 C	

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OXTGEN ML/L	OXY PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PRAEO UG/L	PRESS D.BAR
	0 ISL	17.45	17.45	33.243	24.061	384.3	0.000	5.62	102.6	2.6	0.34	0.0	0.00	0.12	0.03	0
1	2	17.45	17.45	33.243	24.061	384.3	0.008	5.62	102.6	2.6	0.34	0.0	0.00	0.12	0.03	2
	10 ISL	17.43	17.43	33.239	24.063	384.4	0.03 8	5.61	102.4	2.7	0.33	0.0	0.00	0.12	0.02	10
1	14	17 .42	17.42	33.237	24.064	384.4	0.054	5.61	102.3	2.7	0.33	0.0	0.00	0.12	0.02	14
	20 ISL	17.43	17.43	33.237	24.062	384.9	0.077	5.62	102.5	2.6	0.34	0.0	0.00	0.12	0.02	20
1	23	17 .44	17.44	33.237	24.059	385.2	0.088	5.62	102.6	2.6	0.34	0.0	0.00	0.12	0.02	23
	30 ISL	17.45	17 .45	33.238	24.058	385.5	0.115	5.62	102.6	2.6	0.34	0.0	0.00	0.12	0.02	30
1	33	17.45	17 .44	33.238	24.058	385.6	0.127	5.62	102.6	2.6	0.34	0.0	0.00	0.12	0.02	33
1	43	17 .44	17.43	33.236	24.059	385.9	0.166	5.63	102.7	2.6	0.35	0.0	0.00	0.13	0.03	43
	50 ISL	16.48	16.47	33.227	24.277	365.2	0.192	5.88	105.3	2.5	0.36	0.0	0.00	0.24	0.06	50
1	54	15.85	15.84	33.231	24.424	351.3	0.206	6.03	106.7	2.5	0.36	0.0	0.00	0.31	0.09	54
1	65	14.98	14.97	33.282	24.655	329.6	0.244	6.18	107.4	2.6	0.37	0.0	0.00	0.34	0.16	65
1	75	14.33	14.32	33.240	24.761	319.7	0.276	6.16	105.7	2.9	0.39	0.1	0.01	0.43	0.20	76
1	90	12.95	12.94	33.180	24.996	297.5	0.322	6.09	101.5	3.4	0.45	0.7	0.06	0.33	0.18	91
	100 ISL	12.30	12.29	33.176	25.119	286.0	0.352	5.90	97.0	4.1	0.53	2.0	0.21	0.25	0.15	101
1	105	12.06	12.05	33.187	25.173	280.9	0.366	5.78	94.5	4.6	0.58	2.9	0.27	0.21	0.14	106
	125 ISL	11.64	11.62	33.338	25.369	262.7	0.420	5.29	85.8	7.3	0.84	7.9	0.05	0.16	0.19	126
1	126	11.62	11.60	33.347	25.380	261.7	0.423	5.27	85.5	7.5	0.85	8.2	0.03	0.16	0.19	127
	150 ISL	10.58	10.56	33.450	25.646	236.7	0.483	4.72	74.9	12.5	1.14	13.3	0.01	0.06	0.09	151
1	151	10.53	10.51	33.454	25.658	235.6	0.485	4.70	74.5	12.7	1.15	13.5	0.01	0.06	0.08	152
1	182	9.36	9.34	33.719	26.061	197.6	0.552	3.85	59.6	21.7	1.55	20.6	0.01	0.01	0.04	183
	200 ISL	8.82	8.80	33.843	26.2 44	180.4	0.5 86	3.47	53.1	26.9	1.75	23.7	0.00	0.00	0.04	202
1	212	8.52	8.50	33.909	26.342	171.2	0.607	3.25	49.4	30.3	1.87	25.4	0.00	0.00	0.04	214
1	241	8.04	8.02	33.997	26.484	156.1	0.655	2.82	42.4	37.3	2.06	28.3	0.00			243
	250 ISL	7.95	7.92	34.013	26.510	155.8	0.669	2.72	40.8	38.9	2.11	28.9	0.00			252
1	281	7.65	7.62	34.040	26.575	150.0	0.716	2.42	36.1	43.7	2.24	30.4	0.00			283
	300 ISL	7.35	7.32	34.040	26.618	146.0	0.745	2.30	34.1	47.3	2.32	31.5	0.00			302
1	335	6.79	6.76	34.038	26.694	139.0	0.794	2.07	30.3	54.2	2.47	33.6	0.00			338
1	394	6.21	6.18	34.080	26.804	129.0	0.873	1.36	19.6	65.9	2.77	37.4	0.00			397
	400 ISL	6.16	6.12	34.084	26.813	128.2	0.881	1.30	18.7	66.9	2.79	37.7	0.00			403
1	459	5.79	5.75	34.133	26.899	120.5	0.955	0.83	11.9	75.9	2.98	40.0	0.00			463
	500 ISL	5.64	5.60	34.187	26.960	115.1	1.003	0.59	8.4	81.4	3.09	41.0	0.00			504
1	528	5.53	5.49	34.224	27.003	111.3	1.03 5	0.42	6.0	85.1	3.16	41.7	0.00			533

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 29.1 N	117 46.1 H	25/07/89	0236 UTC	64 M	300	10 KT	310 01 04	1	1013.1 MB	18.6 C	17.9 C	1/8	CS

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITT 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	20.96	20.96	33.625	23.460	441.6	0.000	5.67	110.8	2.3	0.24	0.0	0.00	0.23	0.06	0
1	10	20.82	20.82	33.611	23.487	439.4	0.044	5.74	111.9	2.1	0.24	0.0	0.00	0.28	0.08	10
	20 ISL	15.64	15.64	33.463	24.648	328.9	0.082	6.81	120.1	2.5	0.29	0.0	0.00	0.45	0.13	20
1	21	15.06	15.06	33.465	24.777	316.6	0.086	6.88	120.0	2.5	0.30	0.0	0.00	0.47	0.13	21
	30 ISL	12.54	12.54	33.463	25.294	267.6	0.112	5.74	95.0	6.8	0.74	6.0	0.28	1.23	0.55	30
1	31	12.36	12.36	33.464	25.329	264.3	0.115	5.56	91.7	7.4	0.80	6.8	0.31	1.30	0.59	31
1	42	11.31	11.30	33.543	25.587	240.0	0.142	4.20	67.8	13.0	1.34	11.7	0.35	0.77	0.39	42
	50 ISL	11.10	11.09	33.581	25.654	233.7	0.161	4.00	64.3	14.9	1.41	14.2	0.33	0.55	0.35	50
1	52	11.05	11.04	33.591	25.671	23 2.2	0.166	3.95	63.4	15.4	1.43	14.8	0.32	0.50	0.34	52

RV NEH HORIZON CALCOFI CRUISE 8907 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	HAVES	WEATHER	BAROMETER	DRY	HET	CLOUD AMT	TYPE
33 25.3 *H*	117 54.2 W	24/07/89	2358 UTC	614 M									

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	21.01	21.01	33.651	23.466	441.0	0.000	5.67	110.9	2.1	0.23	0.0	0.00	0.18	0.04	0
1	1	21.01	21.01	33.651	23.466	441.0	0.004	5.67	110.9	2.1	0.23	0.0	0.00	0.18	0.04	1
	10 ISL	20.72	20.72	33.645	23.540	434.3	0.044	5.75	111.9	2.0	0.23	0.0	0.00	0.20	0.05	10
1	11	20.69	20.69	33.644	23.547	433.7	0.048	5.76	112.0	2.0	0.23	0.0	0.00	0.20	0.05	11
	20 ISL	16.91	16.91	33.542	24.418	350.8	0.083	7.06	127.8	2.1	0.23	0.0	0.01	0.56	0.17	20
1	21	16.44	16.44	33.539	24.525	3 40.7	0.087	7.20	129.1	2.1	0.23	0.0	0.01	0.61	0.19	21
	30 ISL	14.33	14.33	33.499	24.960	299.5	0.116	6.93	119.1	2.6	0.34	0.0	0.02	0.99	0.35	30
1	31	14.17	14.17	33.493	24.989	296.7	0.119	6.90	118.2	2.7	0.36	0.0	0.02	1.02	0.37	31
1	42	12.98	12.97	33.406	25.164	280.3	0.150	5.75	96.0	4.6	0.56	2.7	0.07	0.78	0.37	42
	50 ISL	12.20	12.19	33.422	25.328	264.9	0.172	5.29	86.9	7.2	0.80	7.0	0.23	0.58	0.33	50
1	52	12.05	12.04	33.430	25.362	261.6	0.177	5.21	85.3	7.8	0.86	8.0	0.27	0.53	0.32	52
1	62	11.77	11.76	33.430	25.415	256.8	0.203	4.94	80.4	9.7	1.00	10.3	0.33	0.37	0.25	62
1	72	11.29	11.28	33.508	25.564	242.9	0.228	4.47	72.1	11.6	1.14	12.7	0.27	0.20	0.17	73
	75 ISL	11.18	11.17	33.532	25.602	239.3	0.236	4.32	69.5	12.5	1.20	13.6	0.27	0.17	0.15	76
1	86	10.78	10.77	33.611	25.735	226.8	0.261	3.88	61.9	16.0	1.41	16.9	0.27	0.10	0.10	87
	100 ISL	10.15	10.14	33.673	25.893	212.1	0.292	3.80	59.8	. 19.6	1.55	19.7	0.04	0.04	0.08	101
1	101	10.11	10.10	33.678	25.904	211.1.	0.294	3.80	59.8	19.9	1.56	19.9	0.02	0.04	0.08	102
1	122	10.01	10.00	33.926	26.114	191.5	0.336	2.77	43.5	25.7	1.86	23.6	0.02	0.03	0.06	123
	125 ISL	10.01	10.00	33.952	26.135	189.6	0.342	2.66	41.8	26.5	1.90	24.0	0.02	0.03	0.06	126
1	147	9.98	9.96	34.095	26.252	179.0	0.383	2.02	31.8	31.1	2.13	26.5	0.01	0.01	0.07	148
	150 ISL	9.97	9.95	34.107	26.263	178.0	0.388	1.97	31.0	31.5	2.15	26.7	0.01	0.01	0.07	151
1	178	9.82	9.80	3 4.183	26.348	170.6	0.437	1.67	26.2	34.5	2.27	27.8	0.01	0.01	0.07	179
	200 ISL	9.60	9.58	34.224	26.417	164.4	0.474	1.55	24.2	36.5	2.34	28.5	0.01	0.01	0.06	202
1	209	9.50	9.48	34.238	26.445	161.9	0.488	1.51	23.5	37.3	2.37	28.8	0.01	0.01	0.05	211
1	238	9.26	9.23	34.280	26.517	155.6	0.534	1.26	19.5	40.6	2.48	29.9	0.01			240
	250 ISL	9.17	9.14	34.286	26.536	154.0	0.553	1.21	18.7	41.5	2.51	30.2	0.01			252
1	280	8.95	8.92	34.295	26.579	150.4	0.599	1.11	17.1	43.9	2.58	30.8	0.01			282
	300 ISL	8.77	8.74	34.311	26.620	146.8	0.628	0.94	14.4	46.3	2.65	31.5	0.01			3 02
1	337	8.43	8.39	34.340	26.6 96	140.1	0.681	0.64	9.7	51.1	2.79	32.8	0.01			3 40
1	3 96	7.96	7.92	34.349	26.775	133.5	0.762	0.49	7.4	56.8	2.90	34.3	0.00			3 99
	400 ISL	7.91	7.87	34.347	26.781	132.9	0.767	0.49	7.4	57.3	2.91	34.4	0.00			403
1	46 2	7.20	7.16	34.313	26.856	126.2	0.848	0.46	6.8	64.5	2.98	36.5	0.00			466
	500 ISL	6.89	6.84	34.317	26.902	122.1	0.895	0.39	5.7	68.6	3.04	37.5	0.00			504
1	531	6.64	6.59	34.322	26.940	118.7	0.932	0.33	4.8	71.9	3.09	38.4	0.00			536

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 15.4 N	118 14.8 V	24/07/89	203 9 UTC	323 M	290	08 KT	290 01 04	1	1013.8 MB	19.5 C	18.6 C	1/8	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	20.78	20.78	33.603	23.491	438.6	0.000	5.56	108.3	2.0	0.28	0.0	0.00	0.20	0.04	0
1	10	20.08	20.08	33.591	23.668	422.1	0.043	5.57	107.1	2.0	0.29	0.0	0.00	0.19	0.04	10
	20 ISL	18.70	18.70	33.543	23.985	392.2	0.084	5.82	109.0	2.0	0.31	0.0	0.00	0.23	0.05	20
1	22	18.32	18.32	33.528	24.068	384.3	0.092	5.89	109.5	2.0	0.31	0.0	0.00	0.24	0.05	22
	30 ISL	16.31	16.31	33.446	24.484	344.9	0.121	6.25	111.7	1.6	0.33	0.0	0.00	0.26	0.07	30
1	32	15.80	15.80	33.431	24.588	335.0	0.127	6.32	111.8	1.6	0.34	0.0	0.00	0.27	0.07	32
1	41	14.22	14.21	33.404	24.910	304.5	0.156	6.27	107.4	2.6	0.39	0.1	0.00	0.43	0.18	41
	50 ISL	13.19	13.18	33.389	25.109	285.7	0.183	5.98	100.3	3.8	0.49	1.5	0.04	0.91	0.39	50
1	51	13.11	13.10	33.389	25.125	284.2	0.186	5.94	99.5	3.9	0.51	1.7	0.04	0.95	0.41	51
1	62	12.67	12.66	33.460	25.267	27 1.0	0.216	5.69	94.4	6.1	0.77	6.2	0.31	0.71	0.41	62
1	72	12.06	12.05	33.455	25.380	260.4	0.243	5.25	86.0	8.1	0.92	8.6	0.40	0.40	0.29	73
	75 ISL	11.94	11.93	33.467	25.412	257.4	0.251	5.08	83.0	8.9	0.98	9.6	0.38	0.34	0.26	76
1	86	11.52	11.51													87
	100 ISL	10.70	10.69	33.649	25.779	223.0	0.311	3.73	59.4	16.5	1.45	18.1	0.06	0.08	0.10	101
1	101	10.64	10.63	33.659	25.797	221.2	0.313	3.68	58.5	16.8	1.47	18.4	0.04	0.08	0.10	102
1	122	9.98	9.97	33.844	26.055	197.1	0.357	3.02	47.4	23.6	1.76	22.8	0.01	0.04	0.07	123
	125 ISL	9.91	9.90	33.861	26.081	194.8	0.363	2.97	46.6	24.2	1.78	23.2	0.01	0.04	0.07	126
1	148	9.49	9.47	33.963	26.230	180.9	0.406	2.74	42.6	26.2	1.92	25.1	0.01	0.01	0.07	149
	150 ISL	9.46	9.44	33.972	26.242	179.8	0.410	2.71	42.1	28.6	1.93	25.3	0.01	0.01	0.07	151
1	173	9.08	9.06	34.061	26.373	167.8	0.450	2.44	37.6	33.0	2.08	27.2	0.00	0.01	0.05	174
1	199	8.66	8.64	34.101	26.471	158.8	0.492	2.29	35.0	36.9	2.18	28.4	0.00	0.01	0.03	201
	200 ISL	8.66	8.64	34.103	26.473	158.7	0.494	2.28	34.8	37.0	2.18	28.4	0.00			202
1	229	8.58	8.56	3 4.146	26.519	154.8	0.539	1.99	30.3	39.7	2.29	29.4	0.00			231
	250 ISL	8.48	8.45	34.179	26.561	151.3	0.571	1.71	26.0	42.4	2.41	30.4	0.01			252
1	260	8.43	8.40	34.194	26.580	149.6	0.587	1.58	24.0	43.7	2.46	30.9	0.01			262

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 11.3 N	118 23.6 V	24/07/89	1552 UTC	1176 M	270	08 KT	290 01 05	2	1016.6 MB	17.6 C	16.8 C	8/8	SC

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OXYGEN ML/L	OXY PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHABO UG/L	PRESS D.BAR
1	0	20.24	20.24	33.603	23.635	424.9	0.000	5.48	105.7	2.7	0.31	0.0	0.00	0.17	0.03	0
1	10	20.21	20.21	33.601	23.642	424.6	0.042	5.48	105.6	2.7	0.31	0.0	0.00	0.17	0.03	10
	20 ISL	19.92	19.92	33.579	23.701	419.3	0.085	5.55	106.4	2.4	0.30	0.0	0.00	0.18	0.04	20
1	21	19.89	19.89	33.577	23.708	418.7	0.089	5.56	106.5	2.4	0.30	0.0	0.00	0.18	0.04	21
	30 ISL	16.30	16.30	33.409	24.458	347.4	0.123	6.16	110.1	2.6	0.34	0.0	0.00	0.17	0.04	30
1	31	15.89	15.89	33.400	24.544	339.2	0.127	6.23	110.4	2.6	0.35	0.0	0.00	0.17	0.04	31
1	42	14.86	14.85	33.414	24.782	316.8	0.163	6.30	109.4	2.9	0.38	0.0	0.00	0.24	0.09	42
	50 ISL	14.15	14.14	33.402	24.9-23	303.5	0.188	6.32	108.1	2.9	0.43	0.5	0.02	0.49	0.21	50
1	52	13.97	13.96	33.397	24.957	300.4	0.194	6.32	107.7	2.9	0.45	0.7	0.02	0.56	0.24	52
1	63	12.91	12.90	33.360	25.143	282.9	0.226	5.95	99.2	4.7	0.62	3.4	0.12	0.71	0.34	63
1	73	12.06	12.05	33.394	25.333	264.9	0.253	5.42	88.8	7.2	0.87	7.7	0.29	0.50	0.28	74
	75 ISL	11.91	11.90	33.402	25.367	261.7	0.258	5.34	87.2	7.8	0.91	8.5	0.27	0.46	0.26	76
1	88	11.14	11.13	33.471	25.562	243.4	0.291	4.82	77.4	11.8	1.16	13.0	0.05	0.25	0.16	89
	100 ISL	10.79	10.78	33.558	25.693	231.2	0.320	4.27	68.1	14.9	1.34	15.8	0.13	0.14	0.11	101
1	104	10.70	10.69	33.591	25.734	227.3	0.329	4.09	65.1	16.0	1.40	16.6	0.17	0.12	0.10	105
1	124	9.92	9.91	33.778	26.014	201.1	0.372	3.25	50.9	23.3	1.71	22.2	0.01	0.03	0.07	125
	125 ISL	9.89	9.88	33.784	26.024	200.1	0.374	3.23	50.6	23.5	1.72	22.4	0.01	0.03	0.07	126
1	150	9.33	9.31	33.890	26.199	183.9	0.422	2.95	45.7	28.0	1.87	24.7	0.01	0.02	0.07	151
1	181	8.92	8.90	33.999	26.350	170.0	0.477	2.58	39.6	32.8	2.03	27.0	0.00	0.01	0.05	182
	200 ISL	8.88	8.86	34.058	26.403	165.4	0.508	2.35	36.0	34.8	2.11	27.8	0.00	0.01	0.05	202
1	212	8.84	8.82	34.090	26.435	162.6	0.528	2.22	34.0	36.1	2.16	28.2	0.00	0.01	0.05	214
1	241	8.40	8.37	34.137	26.540	153.0	0.574	1.99	30.2	41.1	2.29	29.8	0.01			243
	250 ISL	8.28	8.25	34.150	26.568	150.4	0.588	1.87	28.3	42.9	2.34	30.4	0.01			252
1	282	7.94	7.91	34.192	26.653	142.9	0.635	1.40	21.0	48.9	2.53	32.3	0.01			284
	300 ISL	7.83	7.80	34.213	26.686	140.0	0.660	1.20	18.0	51.2	2.61	33.1	0.01			302
1	337	7.68	7.65	34.253	26.739	135.5	0.711	0.86	12.8	55.2	2.75	34.4	0.00			340
1	395	7.36	7.32	34.315	26.834	127.3	0.787	0.48	7.1	61.4	2.92	36.0	0.00			398
	400 ISL	7.33	7.29	34.316	26.840	126.8	0.793	0.47	7.0	61.8	2.93	36.1	0.00			403
1	459	6.91	6.87	34.310	26.894	122.3	0.867	0.39	5.7	67.5	3.01	37.5	0.00			463
	500 ISL	6.48	6.43	34.302	26.945	117.6	0.916	0.35	5.1	73.1	3.07	38.9	0.00			504
1	526	6.21	6.16	34.299	26.978	114.5	0.946	0.33	4.8	76.7	3.10	39.8	0.00			531

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 90 45

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 55.2 N	118 56.6 V	24/07/89	1055 UTC	1804 M	020	06 KT			1016.2 MB	16.2 C	15.8 C		

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	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	19.84	19.84	33.599	23.736	415.2	0.000	5.47	104.7	2.1	0.31	0.0	0.00	0.16	0.03	0
1	1	19.84	19.84	33.599	23.736	415.2	0.004	5.47	104.7	2.1	0.31	0.0	0.00	0.16	0.03	1
1	10	19.48	19.48	33.580	23.815	408.0	0.041	5.49	104.4	2.1	0.30	0.0	0.00	0.17	0.04	10
1	20	18.70	18.70	33.561	23.999	390.8	0.081	5.80	108.6	1.9	0.29	0.0	0.00	0.22	0.05	20
	30 ISL	16.52	16.52	33.498	24.476	345.7	0.118	6.36	114.2	1.5	0.31	0.0	0.00	0.25	0.07	30
1	32	16.01	16.00	33.484	24.581	335.7	0.125	6.45	114.6	1.4	0.31	0.0	0.00	0.26	0.08	32
1	42	13.94	13.93	33.374	24.945	301.2	0.157	6.35	108.2	2.8	0.39	0.0	0.01	0.40	0.19	42
	50 ISL	13.11	13.10	33.372	25.112	285.5	0.180	6.01	100.6	4.2	0.56	2.4	0.10	0.62	0.33	50
1	52	12.98	12.97	33.377	25.142	282.7	0.186	5.91	98.7	4.5	0.61	3.2	0.13	0.66	0.36	52
1	62	12.39	12.38	33.408	25.281	269.7	0.213	5.47	90.2	6.1	0.82	6.2	0.26	0.47	0.30	62
1	72	11.71	11.70	33.461	25.450	253.7	0.240	4.90	79.7	9.4	1.03	10.4	0.24	0.26	0.27	73
	75 ISL	11.57	11.56	33.488	25.497	249.3	0.247	4.72	76.5	10.6	1.10	11.7	0.21	0.22	0.24	76
1	86	11.17	11.16	33.604	25.660	234.0	0.274	4.08	65.6	14.9	1.38	15.9	0.14	0.13	0.14	87
	100 ISL	10.85	10.84	33.753	25.834	217.8	0.305	3.26	52.1	19.8	1.72	20.1	0.29	0.07	0.10	101
1	102	10.81	10.80	33.772	25.856	215.8	0.310	3.16	50.5	20.4	1.76	20.6	0.31	0.07	0.10	103
1	123	10.31	10.30	33.883	26.030	199.6	0.353	2.65	41.9	24.4	1.90	23.3	0.02	0.04	0.08	124
	125 ISL	10.27	10.26	33.898	26.048	197.9	0.357	2.60	41.1	24.9	1.92	23.6	0.02	0.04	0.08	126
1	148	9.95	9.93	34.062	26.231	181.0	0.401	2.09	32.8	30.2	2.14	26.4	0.01	0.02	0.08	149
	150 ISL	9.94	9.92	34.074	26.242	180.0	0.404	2.07	32.5	30.5	2.15	26.5	0.01	0.02	0.08	151
1	179	9.63	9.61	34.167	26.367	168.7	0.455	1.82	28.4	33.8	2.27	27.9	0.02	0.01	0.07	180
	200 ISL	8.83	8.81	34.095	26.440	161.9	0.490	2.21	33.9	35.9	2.21	28.3	0.01	0.01	0.06	202
1	210	8.46	8.44	34.059	26.469	159.2	0.506	2.38	36.2	37.1	2.19	28.6	0.01	0.01	0.05	212
1	240	8.18	8.16	34.109	26.551	151.8	0.552	1.98	29.9	42.3	2.36	30.6	0.01			242
	250 ISL	8.07	8.04	34.120	26.576	149.6	0.567	1.87	28.2	44.0	2.40	31.1	0.01			252
1	281	7.79	7.76	34.151	26.642	143.7	0.613	1.57	23.5	48.5	2.52	32.5	0.00			283
	300 ISL	7.74	7.71	34.172	26.666	141.8	0.640	1.41	21.1	50.1	2.58	33.0	0.00			302
1	337	7.65	7.62	34.210	26.710	138.2	0.692	1.12	16.7	53.1	2.70	33.9	0.00			340
1	397	7.07	7.03	34.255	26.828	127.6	0.772	0.66	9.7	62.4	2.94	36.4	0.00			400
	400 ISL	7.04	7.00	34.256	26.833	127.2	0.775	0.64	9.4	62.8	2.95	36.5	0.00			403
1	462	6.54	6.50	34.281	26.920	119.4	0.852	0.42	6.1	71.5	3.09	38.5	0.00			466
	500 ISL	6.30	6.25	34.304	26.970	115.0	0.896	0.34	4.9	76.0	3.14	39.4	0.00			504
1	530	6.11	6.06	34.323	27.010	111.5	0.930	0.27	3.9	79.5	3.18	40.1	0.00			535

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 90 53

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TTPE
32 39.2 N	119 29.4 W	24/07/89	0552 UTC	1314 M	250	10 KT			1017.D MB	16.9 C	14.9 C		

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN BT	OXTGEN ML/L	OXT 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	17.70	17.70	33.550	24.236	367.6	0.000	5.88	108.1	1.9	0.33	0.0	0.00	0.20	0.05	0
1	1	17.70	17.70	33.550	24.236	367.6	0.004	5.88	108.1	1.9	0.33	0.0	0.00	0.20	0.05	1
	10 ISL	17.66	17.66	33.546	24.243	367.2	0.037	5.88	108.0	1.9	0.33	0.0	0.00	0.21	0.05	10
1	11	17.66	17.66	33.546	24.243	367.3	0.040	5.88	108.0	1.9	0.33	0.0	0.00	0.21	0.05	11
	20 ISL	15.99	15.99	33.500	24.598	333.7	0.072	6.17	109.6	2.3	0.38	0.5	0.02	0.37	0.14	20
1	21	15.75	15.75	33.495	24.648	328.9	0.07 5	6.20	109.6	2.3	0.38	0.6	0.02	0.39	0.16	21
	30 ISL	13.s5	13.55	33.442	25.077	288.2	0.103	6.00	101.4	4.0	0.62	3.8	0.13	0.6^	0.33	30
1	32	13.10	13.10	33.437	25.164	280.0	0.109	5.95	99.6	4.6	0.69	4.7	0.16	0.66	0.36	32
1	42	11.93	11.92	33.454	25.403	257.5	0.136	5.24	85.6	8.4	0.97	9.2	0.27	0.58	0.35	42
	50 ISL	11.73	11.72	33.497	25.47 4	250.9	0.156	5.00	81.4	9.7	1.06	10.8	0.27	0.45	0.27	50
1	52	11.70	11.69	33.506	25.487	249.7	0.161	4.96	80.7	10.0	1.08	11.1	0.27	0.41	0.24	52
1	62	11.02	11.01	33.502	25.607	238.4	0.185	4.68	75.0	12.4	1.22	13.8	0.11	0.23	0.15	62
1	72	10.42	10.41	33.515	25.723	227.6	0.209	4.44	70.2	14.7	1.34	16.0	0.02	0.12	0.10	73
	75 ISL	10.36	10.35	33.543	25.755	224.6	0.215	4.30	68.0	15.5	1.39	16.7	0.02	0.12	0.10	76
1	86	10.24	10.23	33.675	25.879	213.1	0.2 40	3.72	58.7	18.9	1.57	19.5	0.02	0.10	0.09	87
	100 ISL	9.74	9.73	33.816	26.073	194.9	0.268	3.13	48.9	24.3	1.81	23.0	0.01	0.04	0.08	101
1	102	9.66	9.65	33.834	26.101	192.3	0.272	3.06	47.7	25.1	1.84	23.5	0.01	0.03	0.08	103
1	122	8.91	8.90	33.974	26.331	170.7	0.308	2.65	40.7	31.9	2.05	26.7	0.01	0.01	0.06	123
	125 ISL	8.83	8.82	33.988	26.355	168.5	0.313	2.59	39.7	32.8	2.08	27.1	0.02	0.01	0.06	126
1	147	8.46	8.44	34.063	26.471	157.7	0.349	2.16	32.8	38.2	2.24	29.3	0.07	0.01	0.06	148
	150 ISL	8.43	8.41	34.072	26.483	156.7	0.354	2.11	32.0	38.7	2.26	29.5	0.07	0.01	0.06	151
1	179	8.28	8.26	34.145	26.563	149.6	0.398	1.76	26.6	42.4	2.40	30.7	0.02	0.01	0.04	180
	200 ISL	8.19	8.17	34.177	26.602	146.2	0.429	1.59	24.0	44.2	2.48	31.3	0.01	0.01	0.04	202
1	209	8.16	8.14	34.189	26.616	145.1	0.443	1.53	23.1	44.9	2.51	31.5	0.01	0.01	0.04	211
1	23 8	8.16	8.14	34.245	26.661	141.4	0.484	1.32	19.9	47.5	2.64	32.3	0.01			240
	250 ISL	7.99	7.96	34.235	26.679	139.9	0.501	1.24	18.7	48.9	2.67	32.9	0.01			252
1	278	7.52	7.49	34.199	26.719	136.3	0.540	1.07	15.9	52.8	2.72	34.4	0.01			280
	300 ISL	7.31	7.28	34.211	26.758	132.8	0.569	0.90	13.3	56.3	2.79	35.3	0.01			302
1	333	7.10	7.07	34.243	26.813	128.0	0.612	0.68	10.0	61.4	2.90	36.4	0.00			336
1	391	6.75	6.71	34.265	26.879	122.4	0.685	0.52	7.6	67.2	3.01	37.7	0.00			394
	400 ISL	6.73	6.69	34.272	26.887	121.8	0.6 96	0.49	7.2	67.7	3.02	37.8	0.00			403
1	454	6.64	6.60	34.316	26.935	118.1	0.761	0.35	5.1	70.4	3.09	38.2	0.00			458
	500 ISL	6.42	6.37	34.340	26.983	114.0	0.814	0.29	4.2	74.3	3.13	39.0	0.00			504
1	520	6.32	6.27	34.351	27.005	112.1	0.837	0.26	3.8	76.0	3.15	39.4	0.00			524

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 90 60

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TTPE
32 25.3 K	119 58.0 V	24/07/89	0101 UTC	845 M	290	09 KT	300 02 07	1	1017.0 MB	18.2 C	17.0 C	5/8	AC

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OXTGEN ML/L	OXT 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	17.77	17.77	33.519	24.195	371.4	0.000	5.80	106.7	1.9	0.33	0.0	0.00	0.24	0.04	0
1	10	17.01	17.01	33.519	24.377	354.5	0.036	5.87	106.4	1.7	0.32	0.0	0.00	0.25	0.05	10
1	20	16.54	16.54	33.527	24.493	3 43.7	0.071	5.91	106.2	1.7	0.32	0.0	0.01	0.35	0.10	20
1	29	15.12	15.12	33.645	24.903	304.9	0.100	5.95	104.0	3.0	0.50	2.7	0.08	0.77	0.31	29
	30 ISL	14.87	14.87	33.648	24.960	299.5	0.103	5.89	102.4	3.6	0.55	3.3	0.10	0.84	0.34	30
1	38	13.01	13.00	33.657	25.352	262.3	0.126	5.34	89.4	8.7	0.97	8.4	0.26	1.24	0.53	38
1	48	12.07	12.06	33.639	25.521	246.5	0.151	4.88	80.1	12.7	1.19	12.1	0.41	1.02	0.48	48
	50 ISL	11.91	11.90	33.642	25.553	243.4	0.156	4.76	77.8	13.4	1.23	12.8	0.41	0.90	0.44	50
1	57	11.40	11.39	33.669	25.669	232.6	0.173	4.32	69.9	16.0	1.37	15.2	0.41	0.47	0.28	57
1	67	10.81	10.80	33.755	25.842	216.3	0.195	3.67	58.6	20.7	1.58	19.0	0.33	0.17	0.20	68
	75 ISL	10.23	10.22	33.792	25.972	204.1	0.212	3.29	51.9	23.8	1.72	21.8	0.16	0.11	0.18	76
1	80	9.88	9.87	33.810	26.045	197.1	0.222	3.11	48.7	25.4	1.80	23.4	0.05	0.08	0.17	81
1	94	9.21	9.20													95
	100 ISL	9.16	9.15	33.888	26.224	180.4	0.260	2.85	43.9	29.9	1.97	25.3	0.03	0.05	0.13	101
1	114	9.05	9.04	33.928	26.273	176.0	0.285	2.67	41.1	31.9	2.01	26.7	0.02	0.03	0.12	115
	125 ISL	8.88	8.87	33.950	26.317	172.0	0.304	2.63	40.3	33.3	2.04	27.3	0.02	0.02	0.12	126
1	137	8.68	8.67	33.969	26.364	167.8	0.324	2.60	39.7	34.6	2.06	27.8	0.02	0.02	0.12	138
	ISO ISL	8.51	8.49	33.989	26.406	164.1	0.346	2.54	38.6	36.1	2.10	28.4	0.02	0.01	0.10	151
1	167	8.29	8.27	34.014	26.459	159.2	0.373	2.43	36.8	38.3	2.16	29.2	0.02	0.01	0.08	168
1	196	7.85	7.83	34.063	26.563	149.7	0.418	2.09	31.3	44.0	2.32	31.2	0.01	0.01	0.07	198
	200 ISL	7.81	7.79	34.072	26.576	148.6	0.424	2.03	30.4	44.7	2.35	31.5	0.01			202
1	225	7.63	7.61	34.121	26.641	142.8	0.460	1.66	24.8	49.0	2.50	32.9	0.01			227
	250 ISL	7.39	7.37	34.139	26.690	138.4	0.496	1.44	21.4	52.6	2.60 .	34.0	0.01			252
1	264	7.25	7.22	34.144	26.714	136.4	0.515	1.35	20.0	54.4	2.65	34.5	0.01			266
	300 ISL	7.02	6.99	34.159	26.758	132.6	0.563	1.13	16.6	58.7	2.74	35.8	0.01			302
1	320	6.91	6.88	34.170	26.781	130.6	0.590	1.01	14.8	61.1	2.79	36.4	0.01			323
1	380	6.56	6.53	34.238	26.883	121.7	0.665	0.58	8.4	69.4	3.00	38.3	0.00			383
	400 ISL	6.47	6.43	34.254	26.907	119.6	0.689	0.49	7.1	71.4	3.04	38.7	0.00			403
1	448	6.25	6.21	34.284	26.960	115.1	0.746	0.36	5.2	75.9	3.10	39.5	0.00			452
	500 ISL	5.94	5.90	34.306	27.018	110.1	0.804	0.30	4.3	81.2	3.17	40.6	0.00			504
1	521	5.81	5.76	34.315	27.041	108.0	0.827	0.27	3.9	83.4	3.20	41.0	0.00			525

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	HEATHER	BAROMETER	DRT	WET	CLOUD AMT TYPE
32 5.4 N	120 38.4 W	23/07/89	1818 OTC	382 4 M	330	01 KT 3 40 02 06		2	1018.9 MB	18.8 C	17.9 C	8/8 SC

CAST	DEPTH M	TEMP DEC C	POT TEMP DE6 C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OXYGEN ML/L	OXT 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	17.34	17.34	33.247	24.090	381.5	0.000	5.68	103.5	2.4	0.49	0.1	0.00	0.15	0.03	0
1	10 .	15.69	15.69	33.236	24.462	346.3	0.036	5.96	105.1	2.0	0.39	0.1	0.01	0.38	0.09	10
	20 ISL	15.59	15.59	33.236	24.484	344.5	0.071	5.97	105.1	1.9	0.38	0.2	0.02	0.45	0.12	20
1	21	15.58	15.58	33.236	24.487	344.3	0.074	5.97	105.0	1.9	0.38	0.2	0.02	0.46	0.12	21
	30 ISL	15.30	15.30	33.274	24.578	335.9	0.105	5.98	104.6	2.0	0.42	0.6	0.03	0.41	0.14	30
1	31	15.26	15.26	33.278	24.590	334.8	0.108	5.98	104.6	2.0	0.43	0.7	0.03	0.41	0.14	31
1	41	14.72	14.71	33.266	24.698	324.8	0.141	6.06	104.8	2.1	0.45	0.9	0.03	0.59	0.23	41
	50 ISL	13.89	13.88	33.204	24.824	312.9	0.170	6.20	105.4	2.5	0.48	1.1	0.04	0.45	0.21	50
1	52	13.71	13.70	33.195	24.854	310.1	0.176	6.22	105.3	2.6	0.49	1.2	0.04	0.41	0.21	52
1	62	13.37	13.36	33.269	24.981	298.3	0.207	6.13	103.1	3.7	0.57	2.1	0.07	0.32	0.27	62
1	72	12.70	12.69	33.194	25.055	291.4	0.236	6.05	100.3	4.2	0.61	2.5	0.12	0.22	0.17	73
	75 ISL	12.52	12.51	33.181	25.080	289.1	0.245	6.02	99.4	4.2	0.59	2.6	0.12	0.22	0.18	76
1	87	11.91	11.90	33.189	25.202	277.7	0.279	5.78	94.2	4.1	0.55	3.0	0.13	0.22	0.22	88
	100 ISL	11.47	11.46	33.338	25.399	259.2	0.314	5.29	85.5	7.2	0.81	7.8	0.04	0.13	0.14	101
1	102	11.41	11.40	33.364	25.431	256.2	0.319	5.21	84.1	7.8	0.86	8.7	0.03	0.11	0.12	103
1	123	10.41	10.40	33.467	25.688	23 2.1	0.370	4.78	75.6	12.3	1.12	13.2	0.02	0.03	0.05	124
	125 ISL	10.33	10.32	33.484	25.715	229.5	0.375	4.70	74.2	12.9	1.15	13.8	0.02	0.03	0.05	126
1	150	9.52	9.50	33.710	26.027	200.2	0.429	3.77	58.5	21.0	1.54	20.6	0.01	0.01	0.03	151
1	181	8.85	8.83	33.937	26.313	173.6	0.486	3.27	50.1	28.7	1.80	24.7	0.01	0.01	0.03	182
	200 ISL	8.49	8.47	33.987	26.408	164.8	0.519	3.19	48.5	31.9	1.85	25.8	0.01	0.01	0.03	202
1	211	8.30	8.28	33.998	26.446	161.3	0.537	3.15	47.7	33.5	1.88	26.3	0.01	0.01	0.03	213
1	241	7.93	7.91	34.021	26.519	154.7	0.584	2.70	40.5	38.8	2.07	28.9	0.01			243
	250 ISL	7.83	7.81	34.028	26.539	152.9	0.598	2.59	38.8	40.4	2.12	29.5	0.01			252
1	283	7.48	7.45	34.056	26.612	146.4	0.647	2.20	32.7	46.3	2.29	31.6	0.01			285
	300 ISL	7.31	7.28	34.070	26.647	143.2	0.672	1.98	29.3	49.5	2.38	32.7	0.01			302
1	338	6.94	6.91	34.105	26.726	136.1	0.725	1.49	21.9	56.8	2.58	35.0	0.00			341
1	398	6.45	6.41	34.168	26.842	125.7	0.803	0.85	12.3	67.5	2.85	38.0	0.00			401
	400 ISL	6.42	6.38	34.167	26.845	125.4	0.806	0.84	12.2	67.9	2.86	38.1	0.00			403
1	463	5.48	5.44	34.141	26.943	116.1	0.882	0.73	10.3	81.0	2.98	40.8	0.00			467
	500 ISL	5.41	5.37	34.188	26.989	112.2	0.924	0.53	7.5	85.1	3.05	41.4	0.00			504
1	531	5.35	5.31	34.227	27.027	108.9	0.958	0.37	5.2	88.6	3.11	41.9	0.00			536

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRT	HET	CLOUD AMT TTPE
31 44.9 N	121 19.0 W	23/07/89	1142 OTC	3521 M	360	04 KT			1016.7 MB	16.1 C	15.7 C	

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITT PSS 7 8	SIGMA THETA	SVA	DTN HT	OZTGEN ML/L	OXT 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	17.40	17.40	33.224	24.058	384.5	0.000	5.61	102.3	2.4	0.34	0.0	0.00	0.09	0.02	0
1	1	17.40	17.40	33.224	24.058	384.5	0.004	5.61	102.3	2.4	0.34	0.0	0.00	0.09	0.02	1
	10 ISL	17.33	17.33	33.217	24.070	3 83.7	0.03 8	5.62	102.3	2.4	0.34	0.0	0.00	0.09	0.03	10
1	16	17.27	17.27	33.211	24.079	383.0	0.061	5.63	102.4	2.4	0.34	0.0	0.00	0.09	0.03	16
	20 ISL	17.26	17.26	33.211	24.082	382.9	0.077	5.63	102.4	2.4	0.34	0.0	0.00	0.10	0.03	20
	30 ISL	17.23	17.23	33.211	24.089	382.5	0.115	5.64	102.5	2.3	0.33	0.0	0.00	0.12	0.03	30
1	31	17.23	17.22	33.211	24.089	382.6	0.119	5.64	102.5	2.3	0.33	0.0	0.00	0.12	0.03	31
1	42	15.26	15.25	33.245	24.565	337.5	0.158	6.05	105.8	2.3	0.34	0.0	0.00	0.16	0.06	42
	50 ISL	14.84	14.83	33.257	24.665	328.1	0.185	6.11	105.9	2.4	0.35	0.0	0.00	0.18	0.08	50
1	52	14.81	14.80	33.259	24.673	327.4	0.192	6.12	106.0	2.4	0.36	0.0	0.00	0.19	0.09	52
1	62	14.58	14.57	33.301	24.755	319.9	0.224	6.11	105.4	2.8	0.41	0.1	0.01	0.34	0.18	62
1	72	14.28	14.27	33.307	24.823	313.7	0.256	6.06	103.9	2.8	0.44	0.7	0.02	0.34	0.23	73
	7 5 ISL	14.20	14.19	33.311	24.843	311.8	0.265	6.05	103.5	2.8	0.46	0.8	0.03	0.34	0.25	76
1	81	14.00	13.99	33.313	24.887	307.9	0.284	6.01	102.4	2.9	0.49	1.1	0.04	0.32	0.29	82
1	96	12.84	12.83	33.252	25.074	290.3	0.328	5.87	97.6	3.5	0.54	1.9	0.25	0.24	0.19	97
	100 ISL	12.56	12.55	33.245	25.123	285.7	0.340	5.81	96.1	3.8	0.58	2.7	0.21	0.21	0.18	101
1	112	11.91	11.90	33.249	25.249	273.8	0.374	5.63	91.8	5.0	0.70	5.4	0.03	0.14	0.15	113
	125 ISL	11.63	11.61	33.299	25.340	265.4	0.409	5.44	88.2	6.3	0.78	7.1	0.01	0.10	0.12	126
1	127	11.59	11.57	33.310	25.356	263.9	0.414	5.41	87.7	6.6	0.79	7.4	0.01	0.09	0.12	128
	150 ISL	10.54	10.52	33.462	25.662	235.1	0.47 1	4.76	75.5	12.0	1.11	13.0	0.01	0.03	0.05	151
1	153	10.38	10.36	33.487	25.709	230.7	0.47 8	4.66	73.6	12.9	1.16	13.9	0.01	0.02	0.04	154
1	178	9.23	9.21	33.708	26.073	196.3	0.S32	3.94	60.8	21.3	1.53	20.5	0.00	0.00	0.02	179
	200 ISL	8.74	8.72	33.837	26.252	179.6	0.573	3.72	56.8	25.5	1.66	22.9	0.01	0.00	0.02	202
1	209	8.61	8.59	33.877	26.303	174.9	0.589	3.66	55.7	27.0	1.69	23.5	0.01	0.00	0.02	211
1	238	8.04	8.02	33.985	26.475	158.9	0.637	3.15	47.4	35.0	1.92	27.1	0.00			240
	250 ISL	7.91	7.88	34.014	26.517	155.1	0.656	2.87	43.0	38.0	2.02	28.5	0.00			252
1	27 9	7.67	7.64	34.067	26.594	148.2	0.700	2.18	32.5	44.9	2.27	31.4	0.00			281
	3 00 ISL	7.45	7.42	34.110	26.659	142.2	0.731	1.72	25.5	50.3	2.45	33.3	0.00			302
1	335	7.12	7.09	34.170	26.753	133.7	0.779	1.11	16.4	58.2	2.69	35.7	0.00			338
1	3 94	6.77	6.73	34.213	26.835	126.6	0.856	0.73	10.7	64.6	2.85	37.5	0.00			397
	400 ISL	6.73	6.69	34.218	26.845	125.8	0.863	0.69	10.1	65.4	2.87	37.7	0.00			403
1	459	6.36	6.32	34.266	26.932	118.1	0.935	0.41	5.9	72.9	3.01	39.2	0.00			463
	500 ISL	6.14	6.10	34.299	26.987	113.3	0.983	0.32	4.6	77.6	3.09	40.1	0.00			504
1	525	6.00	5.95	34.319	27.021	110.3	1.011	0.26	3.7	80.5	3.14	40.7	0.00			53 0

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT TTPE
31 25.5 N	121 59.9 W	23/07/89	0541 UTC	3801 M	3 50 06 KT			1016.3 MB	16.4 C	15.8 C	

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OXYGEN ML/L	OXT 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	17.45	17.45	33.230	24.051	385.2	0.000	5.61	102.4	2.4	0.33	0.0	0.00	0.08	0.02	0
1	1	17.45	17.45	33.230	24.051	385.2	0.004	5.61	102.4	2.4	0.33	0.0	0.00	0.08	0.02	1
	10 ISL	17.44	17.44	33.230	24.053	385.3	0.039	5.62	102.6	2.5	0.34	0.0	0.00	0.08	0.02	10
1	11	17.44	17.44	33.230	24.053	385.3	0.042	5.62	102.6	2.5	0.34	0.0	0.00	0.08	0.02	11
	20 ISL	17.42	17.42	33.229	24.058	385.2	0.077	5.61	102.3	2.4	0.33	0.0	0.00	0.09	0.02	20
1	22	17.42	17.42	33.229	24.058	385.3	0.085	5.61	102.3	2.4	0.33	0.0	0.00	0.09	0.02	22
	30 ISL	17.42	17.42	33.236	24.063	385.0	0.116	5.61	102.3	2.4	0.33	0.0	0.00	0.09	0.02	30
1	32	17.42	17.41	33.237	24.064	385.0	0.123	5.61	102.3	2.4	0.33	0.0	0.00	0.09	0.02	32
1	A3	17.39	17.38	33.229	24.066	385.2	0.166	5.63	102.6	2.4	0.33	0.0	0.00	0.11	0.03	43
	50 ISL	16.19	16.18	33.255	24.365	356.8	0.192	5.98	106.5	2.4	0.34	0.0	0.01	0.17	0.05	50
1	53	15.64	15.63	33.274	24.504	343.7	0.202	6.14	108.2	2.4	0.35	0.0	0.01	0.20	0.06	53
1	64	15.04	15.03	33.321	24.672	327.9	0.239	6.21	108.1	2.3	0.38	0.0	0.00	0.35	0.14	64
1	74	14.59	14.58	33.347	24.789	317.1	0.271	6.15	106.1	2.5	0.42	0.2	0.01	0.41	0.23	75
	75 ISL	14.54	14.53	33.347	24.800	316.1	0.274	6.14	105.8	2.6	0.43	0.2	0.01	0.40	0.23	76
1	88	13.77	13.76	33.319	24.939	303.0	0.315	5.98	101.4	3.4	0.50	0.6	0.04	0.27	0.19	89
	100 ISL	12.80	12.79	33.246	25.077	290.1	0.350	5.88	97.7	4.0	0.52	1.4	0.08	0.23	0.17	101
1	104	12.48	12.47	33.225	25.123	285.8	0.362	5.84	96.4	4.3	0.52	1.9	0.10	0.22	0.16	105
1	124	11.56	11.54	33.262	25.325	266.9	0.417	5.51	89.2	6.8	0.79	6.7	0.25	0.13	0.16	125
	125 ISL	11.50	11.48	33.269	25.341	265.3	0.420	5.47	88.4	7.1	0.81	7.1	0.24	0.13	0.16	126
1	150	10.15	10.13	33.505	25.763	225.5	0.481	4.49	70.6	15.5	1.31	16.2	0.02	0.04	0.07	151
1	181	9.05	9.03	33.795	26.170	187.1	0.545	3.67	56.4	24.9	1.66	22.3	0.00	0.01	0.04	182
	200 ISL	8.60	8.58	33.905	26.327	172.5	0.579	3.35	51.0	29.7	1.82	24.6	0.00	0.01	0.03	202
1	211	8.40	8.38	33.947	26.391	166.6	0.598	3.21	48.7	32.2	1.89	25.6	0.00	0.01	0.03	213
1	242	7.91	7.89	33.999	26.505	156.1	0.648	2.91	43.6	37.9	2.04	28.1	0.01			244
	250 ISL	7.77	7.75	34.005	26.530	153.8	0.660	2.83	42.3	39.6	2.08	28.7	0.01			252
1	281	7.31	7.28	34.029	26.615	146.0	0.707	2.47	36.5	46.3	2.25	31.1	0.00			283
	300 ISL	7.16	7.13	34.060	26.660	141.9	0.734	2.09	30.8	50.3	2.39	32.7	0.00			302
1	338	6.95	6.92	34.124	26.740	134.8	0.787	1.34	19.7	57.9	2.67	35.5	0.00			341
1	396	6.48	6.44	34.172	26.841	125.8	0.862	0.87	12.6	67.3	2.89	38.0	0.00			399
	400 ISL	6.45	6.41	34.177	26.849	125.1	0.867	0.84	12.2	67.9	2.90	38.1	0.00			403
1	461	6.11	6.07	34.241	26.944	116.7	0.941	0.48	6.9	76.1	3.06	39.7	0.00			465
	500 ISL	5.88	5.84	34.262	26.990	112.6	0.986	0.41	5.9	80.3	3.13	40.5	0.00			504
1	530	5.71	5.66	34.279	27.025	109.6	1.019	0.36	5.1	83.6	3.18	41.1	0.00			535

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT TTPE
31 6.2 N	122 39.6 W	22/07/89	2358 UTC	4731 M	030 10 KT	3 50 08 06	2	1015.4 MB	17.1 C	16.1 C	8/8 SC

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	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	18.37	18.37	33.350	23.919	397.8	0.000	5.52	102.6	2.3	0.33	0.0	0.00	0.09	0.02	0
1	1	18.37	18.37	33.350	23.919	397.8	0.004	5.52	102.6	2.3	0.33	0.0	0.00	0.09	0.02	1
	10 ISL	18.35	18.35	33.349	23.924	397.7	0.040	5.53	102.8	2.3	0.33	0.0	0.00	0.09	0.02	10
1	16	18.33	18.33	33.348	23.928	397.5	0.064	5.53	102.7	2.3	0.33	0.0	0.00	0.09	0.02	16
	20 ISL	18.32	18.32	33.347	23.930	397.4	0.080	5.53	102.7	2.3	0.33	0.0	0.00	0.09	0.02	20
	30 ISL	18.30	18.29	33.345	23.934	397.4	0.119	5.52	102.5	2.2	0.32	0.0	0.00	0.10	0.02	30
1	31	18.30	18.29	33.345	23.934	397.4	0.123	5.52	102.5	2.2	0.32	0.0	0.00	0.10	0.02	31
1	41	18.30	18.29	33.345	23.934	397.8	0.163	5.53	102.7	2.1	0.32	0.0	0.00	0.11	0.02	41
	50 ISL	17.68	17.67	33.331	24.075	384.6	0.198	5.70	104.6	2.2	0.33	0.0	0.00	0.15	0.04	50
1	51	17.56	17.55	33.327	24.101	382.2	0.202	5.73	104.9	2.2	0.33	0.0	0.00	0.16	0.04	51
1	61	15.43	15.42	33.254	24.535	340.9	0.238	6.22	109.1	2.3	0.34	0.0	0.00	0.23	0.07	61
1	71	14.45	14.44	33.220	24.721	323.4	0.271	6.36	109.3	2.4	0.35	0.0	0.00	0.23	0.06	72
	75 ISL	14.16	14.15	33.214	24.777	318.2	0.284	6.37	108.9	2.5	0.36	0.0	0.00	0.25	0.07	76
1	81	13.73	13.72	33.214	24.866	309.8	0.303	6.39	108.2	2.6	0.38	0.0	0.00	0.29	0.11	82
1	95	12.44	12.43	33.268	25.163	281.7	0.344	5.87	96.8	4.5	0.55	2.3	0.15	0.41	0.26	96
	100 ISL	12.16	12.15	33.304	25.245	274.0	0.358	5.65	92.7	5.4	0.64	4.2	0.13	0.36	0.25	101
1	110	11.73	11.72	33.374	25.380	261.4	0.385	5.26	85.5	7.2	0.83	8.0	0.06	0.21	0.20	111
1	125	11.16	11.14	33.431	25.528	247.5	0.423	4.92	79.0	9.9	1.01	11.2	0.02	0.13	0.16	126
1	150	10.03	10.01	33.584	25.845	217.7	0.481	4.18	65.6	16.9	1.39	17.4	0.01	0.03	0.04	151
1	177	9.09	9.07	33.769	26.143	189.6	0.536	3.67	56.5	24.0	1.66	22.3	0.01	0.01	0.02	178
	200 ISL	8.54	8.52	33.921	26.349	170.4	0.578	3.39	51.6	30.0	1.82	24.8	0.00	0.00	0.02	202
1	206	8.42	8.40	33.953	26.392	166.4	0.588	3.33	50.5	31.5	1.85	25.3	0.00	0.00	0.02	208
1	236	7.95	7.93	34.004	26.503	156.2	0.636	2.95	44.3	37.4	2.04	27.9	0.00			238
	250 ISL	7.79	7.77	34.015	26.535	153.3	0.658	2.83	42.3	39.7	2.10	28.7	0.00			252
1	277	7.50	7.47	34.027	26.587	148.7	0.699	2.60	38.6	43.9	2.21	30.1	0.00			279
	300 ISL	7.24	7.21	34.040	26.634	144.5	0.732	2.32	34.3	48.1	2.34	31.7	0.00			302
1	331	6.87	6.84	34.054	26.696	138.9	0.776	1.94	28.4	54.0	2.51	33.8	0.00			334
1	389	6.16	6.13	34.068	26.800	129.2	0.854	1.42	20.5	65.3	2.76	37.2	0.00			392
	400 ISL	6.09	6.06	34.082	26.820	127.5	0.868	1.29	18.5	67.5	2.81	37.8	0.00			403
1	451	5.80	5.76	34.155	26.915	118.9	0.931	0.74	10.6	76.9	3.03	40.4	0.00			455
	500 ISL	5.43	5.39	34.193	26.990	112.1	0.988	0.53	7.5	84.3	3.12	41.6	0.00			504
1	514	5.32	5.28	34.204	27.012	110.1	1.003	0.47	6.6	86.4	3.15	42.0	0.00			518

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	VAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
30 45.1 N	123 20.1 V	22/07/89	1627 UTC	47 26 M	360	15 KT	360 07 06	2	1015.0 MB	17.5 C	15.8 C	8/8	SC

CAST	DEPTH M	TEMP DEC C	POT TEMP DEC C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OZTGEN ML/L	OXT PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	FHAEO UG/L	PRESS D.BAR
	0 ISL	18.48	18.48	33.418	23.944	395.4	0.000	5.50	102.5	1.9	0.32	0.0	0.00	0.10	0.02	0
1 1		18.48	18.48	33.418	23.944	395.4	0.004	5.50	102.5	1.9	0.32	0.0	0.00	0.10	0.02	1
	10 ISL	18.48	18.48	33.418	23.944	395.7	0.040	5.50	102.5	1.9	0.32	0.0	0.00	0.09	0.02	10
1	16	18.48	18.48	33.418	23.944	395.9	0.063	5.50	102.5	1.9	0.31	0.0	0.00	0.08	0.02	16
	20 ISL	18.48	18.48	33.418	23.945	396.0	0.079	5.51	102.7	1.9	0.31	0.0	0.00	0.07	0.02	20
	30 ISL	18.47	18.46	33.418	23.948	396.1	0.119	5.53	103.0	1.9	0.30	0.0	0.00	0.04	0.01	30
1	32	18.47	18.44	33.4.18	23.94*	396..2	0.127	5.S3	103-. 0	1.9 -	0.30	0.0	0.00-	0.04	0.01	32
1	42	18.48	18.47	33.418	23.945	396.7	0.166	5.50	102.5	2.0	0.31	0.0	0.00	0.07	0.01	42
	SO ISL	17.38	17.37	33.402	24.201	372.6	0.197	5.76	105.1	2.2	0.31	0.0	0.00	0.17	0.04	50
1	52	17.04	17.03	33.398	24.279	365.2	0.204	5.85	106.0	2.3	0.31	0.0	0.00	0.20	0.05	52
1	62	15.83	15.82	33.373	24.538	340.7	0.240	6.24	110.4	2.6	0.31	0.0	0.00	0.30	0.11	62
1	73	13.04	13.03	33.387	25.138	283.6	0.274	6.82	114.0	5.4	0.40	0.0	0.01	0.84	0.37	74
	75 ISL	12.72	12.71	33.398	25.210	276.8	0.280	6.58	109.3	6.0	0.48	1.4	0.05	0.84	0.42	76
1	82	11.88	11.87	33.436	25.399	258.8	0.298	5.57	90.9	8.2	0.78	7.2	0.16	0.85	0.52	83
1	97	11.14	11.13	33.482	25.571	242.7	0.336	4.75	76.3	11.4	1.05	12.8	0.02	0.20	0.21	98
	100 ISL	10.95	10.94	33.486	25.608	239.3	0.343	4.66	74.6	12.1	1.09	13.5	0.02	0.18	0.17	101
1	113	10.19	10.18	33.522	25.768	224.1	0.373	4.33	68.2	15.2	1.23	16.1	0.01	0.09	0.08	114
	125 ISL	9.75	9.74	33.618	25.917	210.2	0.399	3.96	61.8	18.9	1.41	19.2	0.00	0.04	0.04	126
1	128	9.66	9.65	33.645	25.953	206.8	0.406	3.87	60.3	19.8	1.45	19.9	0.00	0.03	0.04	129
	150 ISL	9.19	9.17	33.784	26.139	189.6	0.449	3.43	52.9	24.7	1.63	23.0	0.00	0.01	0.03	151
1	154	9.12	9.10	33.805	26.166	187.0	0.457	3.38	52.0	25.5	1.65	23.4	0.00	0.01	0.03	155
1	180	8.50	8.48	33.935	26.365	168.4	0.503	3.19	48.5	31.3	1.77	25.7	0.00	0.01	0.02	181
	200 ISL	8.29	8.27	33.964	26.420	163.5	0.536	3.16	47.8	32.9	1.80	26.3	0.00	0.00	0.02	202
1	210	8.22	8.20	33.969	26.435	162.3	0.553	3.14	47 .4	33.6	1.81	26.5	0.00	0.00	0.02	212
1	240	7.81	7.79	34.010	26.528	153.8	0.600	2.83	42.3	39.2	1.96	28.3	0.00			2 42
	250 ISL	7.65	7.63	34.016	26.556	151.2	0.615	2.73	40.7	41.3	2.01	29.0	0.00			252
1	282	7.16	7.13	34.030	26.636	143.9	0.662	2.38	35.1	48.0	2.16	31.4	0.01			284
	300 ISL	6.94	6.91	34.040	26.675	140.4	0.688	2.14	31.4	51.7	2.26	32.8	0.01			302
1	338	6.53	6.50	34.062	26.747	133.8	0.740	1.66	24.1	59.2	2.45	35.4	0.00			341
1	398	5.93	5.90	34.094	26.850	124.5	0.818	1.14	16.3	70.4	2.66	38.3	0.00			401
	400 ISL	5.91	5.88	34.096	26.854	124.1	0.820	1.12	16.0	70.8	2.67	38.4	0.00			403
1	463	5.48	5.44	34.153	26.952	115.2	0.895	0.67	9.5	81.7	2.86	40.6	0.00			467
	500 ISL	5.36	5.32	34.199	27.003	110.8	0.937	0.50	7.1	85.8	2.94	41.4	0.00			504
1	532	5.26	5.22	34.239	27.047	106.9	0.972	0.36	5.1	89.4	3.00	42.0	0.00			537

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	VAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
30 26.1 N	123 59.6 V	22/07/89	0946 UTC	43 01 M	360	22 KT			1014.3 MB	17.4 C	15.8 C		

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OZTGEN ML/L	OXT 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	18.19	18.19	33.358	23.969	392.9	0.000	5.55	102.8	2.3	0.33	0.0	0.00	0.08	0.02	0
	10 ISL	18.18	18.18	33.357	23.972	393.1	0.039	5.54	102.6	2.2	0.32	0.0	0.00	0.08	0.02	10
1	17	18.17	18.17	33.356	23.973	393.2	0.067	5.53	102.4	2.2	0.32	0.0	0.00	0.08	0.02	17
	20 ISL	18.17	18.17	33.356	23.974	393.3	0.079	5.53	102.4	2.2	0.32	0.0	0.00	0.08	0.02	20
	30 ISL	18.18	18.17	33.355	23.971	393.9	0.118	5.54	102.6	2.2	0.32	0.0	0.00	0.08	0.01	30
1	32	18.18	18.17	33.355	23.971	393.9	0.126	5.54	102.6	2.2	0.32	0.0	0.00	0.08	0.01	32
1	42	18.19	18.18	33.360	23.973	394.1	0.165	5.54	102.6	2.2	0.34	0.0	0.00	0.08	0.02	42
	50 ISL	17.96	17.95	33.332	24.008	391.0	0.197	5.61	103.5	2.2	0.32	0.0	0.00	0.10	0.02	50
1	52	17.90	17.89	33.325	24.017	390.2	0.204	5.63	103.7	2.2	0.32	0.0	0.00	0.10	0.02	52
1	63	15.33	15.32	33.260	24.562	338.4	0.245	6.24	109.2	2.3	0.33	0.0	0.00	0.21	0.07	63
1	72	14.06	14.05	33.246	24.822	313.7	0.274	6.45	110.0	2.4	0.35	0.0	0.00	0.27	0.13	73
	7 5 ISL	13.65	13.64	33.247	24.907	305.7	0.281	6.41	108.4	2.7	0.37	0.0	0.00	0.33	0.16	76
1	81	12.94	12.93	33.257	25.057	291.5	0.301	6.23	103.8	3.5	0.42	0.1	0.01	0.44	0.22	82
1	97	12.05	12.04	33.303	25.265	272.0	0.346	5.53	90.5	5.5	0.68	5.6	0.10	0.29	0.26	98
	100 ISL	11.89	11.88	33.316	25.305	268.2	0.354	5.45	88.9	5.9	0.71	6.2	0.09	0.26	0.25	101
1	113	11.30	11.29	33.383	25.466	253.2	0.388	5.16	83.1	8.1	0.84	8.9	0.01	0.13	0.16	114
	125 ISL	10.92	10.90	33.461	25.594	241.1	0.418	4.77	76.3	11.6	1.08	12.6	0.01	0.06	0.09	126
1	128	10.83	10.81	33.482	25.627	238.1	0.425	4.67	74.5	12.6	1.15	13.6	0.01	0.05	0.07	129
	150 ISL	9.81	9.79	33.641	25.926	209.9	0.474	3.94	61.5	19.4	1.48	19.4	0.00	0.04	0.04	151
1	154	9.63	9.61	33.670	25.978	205.0	0.483	3.83	59.6	20.5	1.52	20.2	0.00	0.04	0.04	155
1	180	8.97	8.95	33.817	26.200	184.3	0.533	3.70	56.8	24.8	1.63	22.5	0.00	0.07	0.04	181
	200 ISL	8.66	8.64	33.886	26.303	174.8	0.569	3.49	53.2	28.1	1.73	24.2	0.00	0.04	0.03	202
1	211	8.51	8.49	33.916	26.349	170.5	0.588	3.33	50.6	30.2	1.80	25.2	0.00	0.03	0.03	213
1	240	7.95	7.93	34.006	26.504	156.1	0.635	2.82	42.3	38.1	2.03	28.4	0.00			242
	250 ISL	7.83	7.81	34.015	26.529	153.9	0.651	2.80	41.9	39.6	2.06	28.7	0.00			252
1	282	7.48	7.45	34.016	26.581	149.4	0.699	2.73	40.5	43.5	2.12	29.4	0.00			284
	300 ISL	7.19	7.16	34.016	26.622	145.6	0.726	2.56	37.8	47.3	2.21	30.7	0.00			302
1	338	6.63	6.60	34.029	26.708	137.6	0.780	2.06	30.0	55.6	2.44	33.9	0.00			341
1 3	97	6.30	6.26	34.101	26.809	128.7	0.858	1.23	17.8	65.0	2.74	37.6	0.00			400
	400 ISL	6.28	6.24	34.105	26.814	128.2	0.862	1.19	17.2	65.6	2.76	37.8	0.00			403
1	462	5.79	5.75	34.183	26.938	116.9	0.938	0.60	8.6	77.1	3.02	40.4	0.00			446
	500 ISL	5.59	5.55	34.217	26.990	112.3	0.982	0.46	6.5	82.2	3.09	41.3	0.00			504
1	530	5.43	5.39	34.245	27.031	108.6	1.015	0.35	5.0	86.3	3.15	42.0	0.00			534

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 93 26.8

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT TTPE
32 56.7 N	117 18.4 W	18/07/89	2051 UTC	63 M	280	07 XT	250 02 07	0	1015.5 MB	20.4 C	18.3 C	0/8

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	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	21.23	21.23	33.654	23.409	446.5	0.000	5.67	111.4	1.6	0.22	0.0	0.00	0.28	0.06	0
1	1	21.23	21.23	33.654	23.409	446.5	0.004	5.67	111.4	1.6	0.22	0.0	0.00	0.28	0.06	1
	10 ISL	15.95	15.95	33.510	24.614	331.8	0.039	6,72	119.3	2.7	0.34	0.0	0.01	0.56	0.21	10
1	11	15.15	15.15	33.514	24.795	314.6	0.043	6.81	119.0	2.8	0.35	0.0	0.01	0.60	0.23	11
	20 ISL	11.78	11.78	33.530	25.490	248.7	0.068	5.03	82.0	10.1	1.03	9.9	0.21	0.69	0.33	20
1	22	11.32	11.32	33.537	25.580	240.1	0.073	4.54	73.3	11.9	1.19	12.3	0.26	0.71	0.34	22
	30 LSL	10.94	10.94	33.590	25.689	229.9	0.092	3.99	63.9	15.1	1.39	15.4	0.28	0.65	0.37	30
1	32	10.85	10.85	33.604	25.716	227.4	0.096	3.94	63.0	15.6	1.41	15.7	0.29	0.64	0.37	32
1	43	10.62	10.61	33.682	25.818	218.0	0.121	3.61	57.4	18.0	1.53	17.3	0.27	0.41	0.36	43
	50 ISL	10.51	10.50	33.682	25.837	216.3	0.136			19.2	1.59	18.0	0.25	0.31	0.34	50
1	53	10.46	10.45	33.682	25.846	215.5	0.143			19.7	1.61	18.3	0.24	0.27	0.33	53

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT TTPE
32 54.0 N	117 23.9 W	18/07/89	2304 UTC	645 M	250	09 KT	27 0 02 06	0	1014.5 MB	20.5 C	19.0 C	0/8

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OXTGEN ML/L	OXT 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	21.01	21.01	33.642	23.459	441.6	0.000	5.51	107.8	2.6	0.30	0.1	0.00	0.18	0.04	0
1	1	21.01	21.01	33.642	23.459	441.7	0.004	5.51	107.8	2.6	0.30	0.1	0.00	0.18	0.04	1
	10 ISL	16.24	16.24	33.500	24.541	338.8	0.040	6.59	117.7	3.1	0.32	0.1	0.01	0.28	0.07	10
1	11	15.54	15.54	33.499	24.698	323.9	0.043	6.73	118.5	3.2	0.32	0.1	0.01	0.29	0.07	11
	20 ISL	13.26	13.26	33.443	25.136	282.3	0.070	6.50	109.2	4.0	0.45	1.4	0.06	0.88	0.29	20
I	23	12.87	12.87	33.430	25.203	276.0	0.079	6.42	107.0	4.2	0.54	1.9	0.07	1.04	0.37	23
	30 ISL	12.08	12.08	33.511	25.419	255.7	0.097	5.46	89.5	9.6	0.94	8.9	0.40	0.84	0.45	30
1	32	11.92	11.92	33.536	25.468	251.0	0.102	5.16	84.3	11.2	1.06	11.0	0.47	0.74	0.46	32
1	42	11.06	11.05	33.564	25.648	234.1	0.126	4.21	67.6	14.0	1.29	15.2	0.14	0.36	0.32	42
	50 ISL	10.74	10.73	33.602	25.734	226.0	0.145	4.00	63.8	15.8	1.37	16.6	0.05	0.19	0.17	50
1	52	10.70	10.69	33.614	25.751	224.6	0.149	3.98	63.4	16.2	1.38	16.8	0.04	0.16	0.14	52
1	62	10.66	10.65	33.694	25.821	218.2	0.171	3.60	57.3	18.1	1.49	18.5	0.03	0.15	0.13	62
1	73	10.50	10.49	33.763	25.902	210.6	0.195	3.34	53.0	20.2	1.62	20.1	0.03	0.09	0.10	74
	75 ISL	10.46	10.45	33.776	25.920	209.0	0.199	3.27	51.9	20.8	1.65	20.5	0.03	0.09	0.10	76
1	87	10.23	10.22	33.856	26.022	199.6	0.224	2.84	44.8	24.3	1.82	22.6	0.05	0.08	0.11	88
	100 ISL	10.15	10.14	33.959	26.116	190.9	0.249	2.45	38.6	27.1	1.95	24.5	0.02	0.05	0.08	101
1	102	10.15	10.14	33.974	26.128	189.8	0.253	2.40	37.9	27.5	1.97	24.7	0.02	0.04	0.08	103
1	122	10.10	10.09	34.071	26.212	182.3	0.290	1.94	30.6	31.1	2.16	26.5	0.01	0.04	0.13	123
	125 ISL	10.09	10.08	34.082	26.223	181.4	0.296	1.89	29.8	31.6	2.18	26.7	0.01	0.04	0.14	126
1	148	9.99	9.97	34.150	26.293	175.1	0.337	1.57	24.7	34.9	2.31	27.8	0.01	0.03	0.18	149
	ISO ISL	9.98	9.96	34.155	26.299	174.7	0.340	1.55	24.4	35.1	2.32	27.9	0.01	0.03	0.18	151
1	179	9.87	9.85	34.215	26.365	169.0	0.390	1.39	21.8	37.1	2.36	28.4	0.01	0.02	0.16	180
	200 ISL	9.75	9.73	34.238	26.403	165.8	0.425	1.35	21.1	37.6	2.39	28.8	0.01	0.01	0.12	202
1	210	9.69	9.67	34.248	26.421	164.3	0.442	1.33	20.8	37.9	2.41	29.0	0.01	0.01	0.10	212
1	239	9.59	9.56	34.296	26.476	159.7	0.489	1.17	18.3	39.8	2.48	29.7	0.01			241
	250 ISL	9.52	9.49	34.302	26.492	158.3	0.506	1.15	17.9	40.2	2.49	29.8	0.01			252
1	279	9.29	9.26	34.312	26.538	154.5	0.551	1.09	16.9	41.6	2.53	30.1	0.01			281
	300 ISL	9.10	9.07	34.338	26.589	150.0	0.583	0.92	14.2	43.9	2.61	30.7	0.01			302
1	334	8.83	8.79	34.380	26.666	143.3	0.633	0.64	9.8	47.8	2.74	31.8	0.01			337
1	394	8.69	8.65	34.379	26.688	142.3	0.719	0.55	8.4	50.5	2.76	32.2	0.01			397
	400 ISL	8.60	8.56	34.372	26.696	141.5	0.727	0.56	8.5	51.1	2.76	32.4	0.01			403
1	459	7.59	7.54	34.302	26.792	132.5	0.808	0.60	8.9	59.4	2.84	35.1	0.01			463
	500 ISL	7.03	6.98	34.300	26.870	125.3	0.861	0.48	7.1	66.5	2.94	36.8	0.02			504
1	528	6.64	6.59	34.302	26.925	120.2	0.896	0.39	5.7	71.4	3.01	37.9	0.03			533

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT TTPE
32 50.7 N	117 32.4 W	19/07/89	0153 UTC	860 M	300	08 XT	290 02 06	1	1013.7 MB	19.5 C	18.1 C	7/8 cc

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OXTGEN ML/L	OXT 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	20.89	20.89	33.641	23.491	438.6	0.000	5.53	108.0	3.1	0.29	0.0	0.00	0.16	0.03	0
	1	20.89	20.89	33.641	23.491	438.7	0.004	5.53	108.0	3.1	0.29	0.0	0.00	0.16	0.03	1
	10 ISL	17.30	17.30	33.502	24.295	362.2	0.040	6.61	120.5	2.1	0.26	0.0	0.00	0.21	0.06	10
	11	16.76	16.76	33.492	24.415	350.9	0.044	6.76	121.9	2.0	0.26	0.0	0.00	0.22	0.06	11
	20 ISL	14.53	14.53	33.445	24.876	307.2	0.074	7.06	121.8	2.4	0.50	0.0	0.00	7.32	0.49	20
	22	14.17	14.17	33.430	24.940	301.1	0.080	7.13	122.1	2.5	0.55	0.0	0.00	8.49	0.57	22
	30 ISL	12.93	12.93	33.301	25.092	286.8	0.103	6.58	109.7	3.5	0.48	0.0	0.02	2.49	0.30	30
	32	12.72	12.72	33.282	25.119	284.3	0.109	6.40	106.2	4.0	0.47	0.0	0.02	0.66	0.22	32
	42	12.47	12.46	33.500	25.336	263.9	0.136	5.79	95.7	8.7	0.79	6.7	0.28	0.82	0.45	42
	50 ISL	11.25	11.24	33.498	25.563	242.4	0.157	4.97	80.1	12.6	1.15	12.6	0.12	0.43	0.25	50
	52	10.94	10.93	33.498	25.618	237.2	0.161	4.75	76.0	13.5	1.23	13.9	0.06	0.32	0.19	52
	62	10.53	10.52	33.665	25.821	218.1	0.184	3.73	59.2	17.9	1.47	18.0	0.04	0.18	0.13	62
	72	10.42	10.41	33.841	25.977	203.5	0.205	2.77	43.9	23.8	1.84	21.8	0.23	0.15	0.14	73
	75 ISL	10.36	10.35	33.864	26.005	200.9	0.211	2.78	44.0	24.0	1.84	22.2	0.21	0.14	0.14	76
	87	10.13	10.12	33.895	26.069	195.1	0.235	2.83	44.6	24.9	1.85	22.8	0.04	0.11	0.13	88
	100 ISL	10.07	10.06	33.893	26.078	194.5	0.260	2.23	35.1	28.8	2.05	25.1	0.02	0.07	0.13	101
	102	10.07	10.06	33.894	26.079	194.4	0.264	2.13	33.5	29.4	2.08	25.5	0.02	0.06	0.13	103
	123	9.93	9.92	34.073	26.243	179.4	0.303	1.92	30.2	32.1	2.18	26.2	0.02	0.05	0.13	124
	125 ISL	9.92	9.91	34.083	26.252	178.5	0.307	1.89	29.7	32.3	2.19	26.3	0.02	0.07	0.13	126
	149	9.85	9.83	34.154	26.320	172.6	0.349	1.64	25.7	34.5	2.29	27.4	0.01	0.26	0.17	150
	150 ISL	9.84	9.82	34.156	26.323	172.3	0.351	1.64	25.7	34.6	2.29	27.4	0.01	0.25	0.17	151
	180	9.65	9.63	34.199	26.389	166.7	0.402	1.62	25.3	36.2	2.31	28.0	0.01	0.01	0.08	181
	200 ISL	9.65	9.63	34.239	26.421	164.1	0.435	1.44	22.5	37.8	2.37	28.6	0.01	0.02	0.09	202
	211	9.65	9.63	34.257	26.435	163.0	0.453	1.35	21.1	38.6	2.40	28.9	0.01	0.02	0.09	213
	241	9.46	9.43	34.252	26.463	160.9	0.501	1.40	21.8	39.2	2.42	29.1	0.01			243
	250 ISL	9.42	9.39	34.262	26.477	159.7	0.516	1.35	21.0	39.8	2.45	29.3	0.01			252
	282	9.30	9.27	34.308	26.533	155.0	0.566	1.11	17.2	42.5	2.57	30.1	0.01			284
	300 ISL	9.18	9.15	34.328	26.569	152.0	0.594	0.98	15.2	44.1	2.61	30.6	0.01			302
	338	8.90	8.86	34.354	26.634	146.4	0.651	0.76	11.7	47.5	2.69	31.5	0.01			341
	398	8.43	8.39	34.342	26.699	141.1	0.737	0.65	9.9	51.9	2.80	32.9	0.00			401
	400 ISL	8.41	8.37	34.341	26.701	140.9	0.740	0.64	9.7	52.1	2.80	33.0	0.00			403
	463	7.52	7.47	34.317	26.814	130.5	0.825	0.50	7.4	60.9	2.89	35.6	0.00			467
	500 X8L	7.00	6.95	34.286	26.863	125.9	0.872	0.50	7.4	66.0	2.96	37.0	0.00			504
	530	6.58	6.53	34.263	26.902	122.2	0.910	0.50	7.3	70.2	3.01	38.2	0.00			535

RV NEB HORIZON CALCOFI CRUISE 8907 STATION 93 35

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 40.7 N	117 52.6 W	19/07/89	0606 UTC	1334 M	350	06 KT			1014.3 MB	20.5 C	17.5 C	

CAST	DEPTH M	TEMP DEC C	POT TEMP DEC C	SALINITT 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	20.44	20.44	33.606	23.584	429.7	0.000	5.51	106.7	2.7	0.30	0.0	0.00	0.14	0.03	0
1	1	20.44	20.44	33.606	23.584	429.7	0.004	5.51	106.7	2.7	0.30	0.0	0.00	0.14	0.03	1
	10 ISL	19.91	19.91	33.594	23.715	417.6	0.042	5.61	107 .5	2.5	0.29	0.0	0.00	0.13	0.03	10
1	11	19.80	19.80	33.593	23 .743	415.0	0.047	5.63	107.7	2.5	0.29	0.0	0.00	0.13	0.03	11
	20 ISL	18.47	18.47	33.640	24.117	379.6	0.082	5.74	107.1	2.0	0.26	0.0	0.00	0.16	0.04	20
1	21	18.27	18.27	33.641	24.167	374.8	0.086	5.75	106.9	2.0	0.26	0.0	0.00	0.17	0.04	21
	3 0 ISL	15.62	15.62	33.499	24.680	3 26.1	0.118	6.42	113.2	2.5	0.31	0.0	0.01	0.29	0.11	30
1	32	15.00	15.00	33.464	24.790	315.7	0.124	6.54	113.9	2.6	0.33	0.0	0.01	0.33	0.13	32
1	42	12.80	12.79	33.330	25.140	2 82.5	0.154	6.11	101.6	4.7	0.53	1.8	0.07	0.60	0.32	42
	50 ISL	11.99	11.98	33.314	25.284	269.0	0.176	5.66	92.5	6.8	0.75	5.9	0.11	0.57	0.39	50
1	52	11.87	11.86	33.317	25.308	266.7	0.181	5.56	90.6	7.3	0.80	6.9	0.11	0.56	0.39	52
1	62	11.35	11.34	33.351	25.431	255.3	0.208	5.27	85.0	8.9	0.94	9.2	0.09	0.46	0.33	62
1	72	11.15	11.14	33.475	25.563	242.9	0.232	4.88	78.4	11.0	1.05	11.5	0.06	0.28	0.20	73
	75 ISL	11.05	11.04	33.496	25.598	239.7	0.2 40	4.78	76.7	11.6	1.08	12.1	0.05	0.25	0.18	76
1	86	10.61	10.60	33.553	25.720	228.3	0.265	4.48	71.2	13.9	1.20	14.3	0.03	0.16	0.14	87
	100 ISL	10.09	10.08	33.639	25.876	213.6	0.2 96	4.14	65.1	17.4	1.37	17.2	0.03	0.07	0.07	101
1	101	10.06	10.05	33.647	25.888	212.5	0.298	4.11	64.6	17.7	1.38	17.4	0.03	0.07	0.07	102
1	121	9.96	9.95	33.894	26.098	193.0	0.339	2.84	44.6	25.7	1.85	23.4	0.01	0.02	0.04	122
	125 ISL	9.86	9.85	33.918	26.133	189.7	0.347	2.82	44.2	26.7	1.88	23.9	0.01	0.02	0.03	126
1	146	9.37	9.35	34.003	26.281	176.1	0.385	2.71	42.0	30.5	1.97	25.4	0.01	0.02	0.02	147
	150 ISL	9.38	9.36	34.029	26.300	174.4	0.392	2.62	40.6	31.2	2.00	25.8	0.01	0.02	0.02	151
1	177	9.45	9.43	34.161	26.392	166.2	0.43 8	1.92	29.8	35.4	2.23	28.1	0.01	0.01	0.05	178
	200 ISL	9.34	9.32	34.232	26.466	159.7	0.47 6	1.57	24.4	38.6	2.37	29.3	0.01	0.01	0.04	202
1	207	9.27	9.25	34.243	26.486	157.9	0.487	1.51	23.4	39.5	2.40	29.6	0.01	0.01	0.04	209
1	236	8.68	8.65	34.215	26.558	151.4	0.532	1.57	24.0	42.6	2.43	30.5	0.01			238
	250 ISL	8.53	8.50	34.228	26.592	148.4	0.552	1.42	21.6	44.6	2.49	31.2	0.01			252
1	277	8.39	8.36	34.275	26.650	143.3	0.5 92	1.04	15.8	48.4	2.64	32.5	0.01			27 9
	300 ISL	8.42	8.39	34.326	26.6 86	140.4	0.624	0.77	11.7	50.4	2.74	32.8	0.01			302
1	333	8.46	8.42	34.388	26.729	137.0	0.670	0.47	7.2	52.8	2.86	33.1	0.00			336
1	392	7.92	7.88	34.3 90	26.813	129.8	0.749	0.34	5.1	58.9	2.95	34.7	0.00			395
	400 ISL	7.78	7.74	34.379	26.825	128.7	0.759	0.35	5.2	60.1	2.96	35.1	0.00			403
1	459	6.76	6.72	34.296	26.903	121.2	0.833	0.42	6.1	68.8	3.01	38.1	0.00			463
	500 ISL	6.49	6.44	34.291	26.935	118.5	0.882	0.39	5.7	72.8	3.06	38.9	0.00			504
1	529	6.30	6.25	34.288	26.958	116.6	0.916	0.37	5.4	75.6	3.10	39.4	0.00			534

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 93 40

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 31.2 N	118 13.3 V	19/07/89	1026 UTC	1522 M	310	06 1KT			1013.3 MB	18.0 C	16.8 C	

CAST	DEPTH M	TEMP DEG C	POT TEMP DBG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	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	18.88	18.88	33.549	23.944	3 95.4	0.000	5.50	103.4	2.3	0.30	0.1	0.00	0.14	0.03	0
1	10	18.87	18.87	33.548	23.946	3 95.5	0.040	5.51	103.5	2.3	0.31	0.0	0.00	0.14	0.03	10
1	20	18.87	18.87	33.546	23.945	3 96.0	0.079	5.54	104.1	2.2	0.29	0.0	0.00	0.14	0.03	20
1	30	15.16	15.16	33.532	24.807	314.0	0.115	6.51	113.8	1.2	0.26	0.0	0.00	0.26	0.09	30
1	41	13.27	13.26	33.491	25.172	279.5	0.147	6.13	103.0	2.6	0.42	0.8	0.02	1.85	0.72	41
1	50	12.17	12.16	33.476	25.375	260.4	0.172	5.42	89.0	6.7	0.74	6.8	0.13	1.63	0.73	50
1	60	11.59	11.58	33.585	25.568	242.2	0.197	4.49	72.9	10.7	1.19	11.8	0.44	0.49	0.36	60
1	71	10.94	10.93	33.673	25.755	224.6	0.222	3.60	57.7	15.9	1.56	18.0	0.15	0.26	0.26	72
	75 ISL	10.77	10.76	33.711	25.815	219.0	0.231	3.35	53.5	17.8	1.65	19.6	0.09	0.20	0.23	76
1	86	10.39	10.38	33.820	25.966	204.8	0.255	2.85	45.1	22.6	1.83	22.8	0.02	0.09	0.16	87
	100 ISL	10.03	10.02	33.948	26.128	189.8	0.282	2.50	39.3	27.1	1.97	24.7	0.01	0.02	0.07	101
1	101	10.01	10.00	33.956	26.137	188.9	0.284	2.49	39.1	27.3	1.98	24.8	0.01	0.02	0.06	102
1	122	9.72	9.71	34.021	26.237	179.8	0.323	2.42	37.8	29.6	2.02	25.5	0.01	0.01	0.07	123
	125 ISL	9.68	9.67	34.026	26.248	178.9	0.328	2.41	37.6	29.8	2.03	25.6	0.01	0.01	0.07	126
1	148	9.43	9.41	34.069	26.3 23	172.1	0.369	2.25	34.9	31.8	2.11	26.5	0.01	0.03	0.08	149
	150 ISL	9.42	9.40	34.078	26.331	171.4	0.372	2.21	34.3	32.2	2.13	26.6	0.01	0.03	0.08	151
1	179	9.29	9.27	34.208	26.455	160.3	0.420	1.65	25.6	37.8	2.36	28.7	0.01	0.02	0.08	180
	200 ISL	9.10	9.08	34.239	26.510	155.4	0.453	1.51	23.3	40.1	2.42	29.4	0.01	0.02	0.07	202
1	210	9.01	8.99	34.247	26.531	153.6	0.469	1.45	22.3	41.0	2.45	29.6	0.01	0.02	0.06	212
1	240	8.81	8.78	34.295	26.600	147.5	0.514	1.02	15.6	45.2	2.62	31.0	0.00			242
	250 ISL	8.65	8.62	34.290	26.622	145.6	0.528	1.02	15.6	46.6	2.64	31.4	0.00			252
1	281	8.07	8.04	34.255	26.683	140.1	0.573	1.02	15.4	50.8	2.69	32.5	0.00			283
	300 ISL	7.78	7.75	34.240	26.714	137.3	0.599	0.98	14.7	53.6	2.73	33.5	0.00			302
1	338	7.31	7.28	34.224	26.769	132.4	0.650	0.85	12.6	58.9	2.82	35.5	0.00			341
1	3 98	6.86	6.82	34.250	26.852	125.2	0.728	0.61	8.9	66.0	2.97	37.3	0.00			401
	400 ISL	6.85	6.81	34.251	26.855	125.0	0.730	0.60	8.8	66.3	2.97	37.4	0.00			403
1	464	6.39	6.35	34.287	26.945	117.0	0.808	0.39	5.7	74.3	3.09	39.3	0.00			468
	500 ISL	6.17	6.13	34.296	26.981	113.9	0.849	0.35	5.0	77.7	3.14	39.9	0.00			s04
1	532	5.97	5.92	34.304	27.012	111.1	0.885	0.32	4.6	80.7	3.18	40.5	0.00			537

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TTPE
32 20.9 N	L18 33.9 W	19/07/89	1445 UTC	147 2 M	290	09 KT	3 20 04 08	2	1013.1 MB	16.5 C	15.9 C	8/8	CI

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OXYGEN ML/L	OXY PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHABO UG/L	PRESS D.BAR
	0 ISL	18.78	18.78	33.688	24.075	382.9	0.000	5.58	104.8	1.6	0.24	0.0	0.00	0.18	0.06	0
1	1	18.78	18.78	33.688	24.075	382.9	0.004	5.58	104.8	1.6	0.24	0.0	0.00	0.18	0.06	1
	10 ISL	18.76	18.76	33.684	24.078	383.0	0.038	5.58	104.7	1.5	0.24	0.0	0.00	0.19	0.06	10
1	11	18.76	18.76	33.684	24.078	383.0	0.042	5.58	104.7	1.5	0.24	0.0	0.00	0.19	0.06	11
	20 ISL	18.10	18.10	33.642	24.210	370.8	0.076	5.86	108.6	1.4	0.27	0.0	0.01	0.29	0.11	20
1	22	17.95	17.95	33.634	24.240	367.9	0.083	5.93	109.5	1.4	0.28	0.0	0.01	0.34	0.12	22
	30 ISL	13.80	13.80	33.534	25.097	286.4	0.110	5.97	101.5	4.6	0.67	5.0	0.16	0.69	0.34	30
1	32	12.76	12.76	33.540	25.311	266.1	0.115	5.98	99.5	5.5	0.77	6.4	0.21	0.78	0.40	32
1	A3	11.81	11.80	33.517	25.475	250.7	0.144	5.33	86.9	9.1	1.01	9.9	0.38	0.87	0.50	43
	50 ISL	11.43	11.42	33.523	25.549	243.7	0.161	5.01	81.0	11.4	1.13	11.8	0.46	0.72	0.47	50
1	53	11.29	11.28	33.536	25.585	240.4	0.168	4.86	78.4	12.5	1.18	12.8	0.49	0.62	0.45	53
1	63	10.78	10.77	33.667	25.778	222.2	0.191	4.03	64.3	18.2	1.47	18.0	0.07	0.26	0.26	63
1	7 4	10.15	10.14	33.739	25.944	206.7	0.215	3.46	54.5	21.8	1.66	21.1	0.03	0.12	0.18	75
	75 ISL	10.11	10.10	33.745	25.955	205.6	0.217	3.42	53.8	22.1	1.67	21.3	0.03	0.12	0.18	76
1	88	9.79	9.78	33.818	26.066	195.3	0.243	3.05	47.7	25.4	1.82	23.5	0.02	0.10	0.19	89
	100 ISL	9.58	9.57	33.857	26.132	189.3	0.266	2.89	45.0	27.1	1.88	24.7	0.01	0.08	0.17	101
1	104	9.52	9.51	33.868	26.150	187.6	0.274	2.85	44.3	27.5	1.90	25.0	0.01	0.07	0.16	105
1	124	9.11	9.10	33.942	26.275	176.1	0.310	2.62	40.4	30.8	2.01	26.5	0.01	0.02	0.10	125
	125 ISL	9.10	9.09	33.944	26.278	175.8	0.312	2.62	40.4	30.9	2.01	26.5	0.01	0.02	0.10	126
1	150	8.80	8.78	33.993	26.364	168.1	0.355	2.61	39.9	32.4	2.05	27.0	0.01	0.02	0.10	151
1	182	8.51	8.49	34.071	26.470	158.5	0.407	2.26	34.4	37.4	2.21	28.9	0.01	0.02	0.09	183
	200 ISL	8.29	8.27	34.106	26.532	153.0	0.435	2.03	30.7	40.5	2.31	29.9	0.01	0.01	0.07	202
1	213	8.12	8.10	34.126	26.573	149.2	0.455	1.86	28.1	42.9	2.38	30.7	0.01	0.01	0.05	215
1	2 42	7.70	7.68	34.145	26.650	142.3	0.497	1.50	22.4	48.5	2.53	32.5	0.01			244
	250 ISL	7.65	7.63	34.156	26.666	140.9	0.508	1.41	21.0	49.7	2.57	32.9	0.01			252
1	283	7.51	7.48	34.200	26.721	136.1	0.554	1.09	16.2	54.0	2.72	34.1	0.01			285
	300 ISL	7.42	7.39	34.211	26.743	134.3	0.577	0.99	14.7	55.7	2.77	34.5	0.01			302
1	339	7.19	7.16	34.225	26.787	130.7	0.629	0.83	12.3	59.4	2.85	35.4	0.00			342
1	399	6.70	6.66	34.251	26.875	122.9	0.705	0.58	8.5	67.1	2.97	37.4	0.00			402
	400 ISL	6.69	6.65	34.252	26.877	122.7	0.706	0.58	8.5	67.2	2.97	37.4	0.00			403
1	46 4	6.15	6.11	34.285	26.974	114.0	0.782	0.37	5.3	76.3	3.11	39.3	0.00			468
	500 ISL	5.94	5.90	34.305	27.017	110.2	0.822	0.32	4.6	80.1	3.16	40.1	0.00			504
1	531	5.76	5.71	34.323	27.054	106.9	0.856	0.28	4.0	83.3	3.20	40.7	0.00			536

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 93 50

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TTPE
32 8.9 N	118 55.0 W	19/07/89	2016 UTC	1958 M	250	11 KT	260 04 07	2	1014.0 MB	18.1 C	17.1 C	8/8	CI

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OXYGEN ML/L	OXT PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UC/L	PRESS D.BAR
	0 ISL	18.69	18.69	33.686	24.096	380.8	0.000	5.61	105.2	1.6	0.24	0.0	0.00	0.17	0.05	0
1	1	18.69	18.69	33.686	24.096	380.9	0.004	5.61	105.1	1.6	0.24	0.0	0.00	0.17	0.05	1
	10 ISL	17.54	17.54	33.671	24.367	355.4	0.037	5.78	106.0	1.6	0.23	0.0	0.00	0.20	0.07	10
1	11	17.30	17.30	33.666	24.421	350.3	0.040	5.79	105.7	1.6	0.23	0.0	0.00	0.20	0.07	11
	20 ISL	14.13	14.13	33.573	25.059	289.8	0.069	5.47	93.7	1.6	0.40	3.0	0.08	0.38	0.18	20
1	22	13.45	13.45	33.566	25.193	277.0	0.075	5.35	90.3	1.6	0.48	3.9	0.10	0.44	0.22	22
	30 ISL	12.53	12.53	33.574	25.382	259.2	0.096	4.78	79.2	6.2	1.03	7.7	0.19	0.80	0.55	30
1	32	12.42	12.42	33.572	25.401	257.4	0.102	4.66	77.0	7.5	1.16	8.6	0.21	0.85	0.61	32
1	42	11.41	11.40	33.498	25..533	245.0	0.127	4.82	77.9	11.7	1.16	12.0	0.33	0.34	0.34	42
	50 ISL	11.00	10.99	33.550	25.648	234.3	0.146	4.51	72.3	14.8	1.31	14.9	0.21	0.32	1.25	50
1	52	10.93	10.92	33.568	25.675	231.8	0.151	4.42	70.7	15.4	1.35	15.6	0.17	0.32	1.43	52
1	62	10.55	10.54	33.601	25.767	223.2	0.173	4.30	68.3	16.9	1.44	17.3	0.05	0.16	0.21	62
1	72	10.37	10.36	33.756	25.919	209.0	0.195	3.24	51.3	20.9	1.70	20.9	0.02	0.10	0.19	73
	75 ISL	10.27	10.26	33.784	25.958	205.3	0.201	3.18	50.2	21.8	1.73	21.4	0.02	0.08	0.18	76
1	86	9.89	9.88	33.861	26.083	193.7	0.223	2.98	46.7	24.7	1.80	22.6	0.01	0.04	0.13	87
	100 ISL	9.71	9.70	33.958	26.189	183.9	0.249	2.57	40.1	28.1	1.98	24.8	0.01	0.02	0.11	101
1	101	9.71	9.70	33.965	26.195	183.4	0.251	2.54	39.7	28.3	1.99	25.0	0.01	0.02	0.11	102
1	121	9.73	9.72	34.103	26.300	173.9	0.287	2.09	32.7	32.0	2.12	26.6	0.01	0.02	0.09	122
	125 ISL	9.62	9.61	34.097	26.313	172.6	0.294	2.14	33.4	32.3	2.12	26.7	0.01	0.02	0.09	126
1	147	8.89	8.87	34.025	26.375	167.0	0.331	2.56	39.3	33.7	2.07	27.0	0.01	0.02	0.08	148
	150 ISL	8.81	8.79	34.023	26.386	166.0	0.336	2.54	38.9	34.2	2.08	27.2	0.01	0.02	0.08	151
1	176	8.25	8.23	34.046	26.490	156.4	0.378	2.35	35.5	39.0	2.20	29.0	0.00	0.01	0.06	177
	200 ISL	8.12	8.10	34.112	26.562	150.0	0.415	1.87	28.2	43.7	2.38	30.8	0.00	0.01	0.06	202
1	206	8.10	8.08	34.129	26.578	148.6	0.424	1.75	26.4	44.8	2.42	31.2	0.00	0.01	0.06	208
1	235	7.70	7.68	34.151	26.655	141.7	0.466	1.58	23.6	49.6	2.53	32.3	0.00			237
	250 ISL	7.58	7.56	34.168	26.686	139.0	0.487	1.40	20.9	51.9	2.59	33.1	0.00			252
1	27 5	7.45	7.42	34.199	26.729	135.2	0.521	1.07	15.9	55.5	2.70	34.3	0.00			277
	300 ISL	7.34	7.31	34.229	26.768	131.8	0.555	0.85	12.6	58.3	2.80	35.0	0.01			302
1	329	7.20	7.17	34.257	26.810	128.3	0.592	0.68	10.0	61.2	2.89	35.6	0.01			332
1	389	6.77	6.73	34.269	26.879	122.4	0.668	0.54	7.9	67.5	2.96	37.1	0.00			392
	400 ISL	6.71	6.67	34.272	26.890	121.5	0.681	0.51	7.5	68.5	2.98	37.3	0.00			403
1	453	6.47	6.43	34.292	26.938	117.5	0.744	0.38	5.5	72.8	3.07	38.2	0.00			457
	500 ISL	6.26	6.22	34.309	26.979	114.1	0.799	0.32	4.6	76.6	3.12	38.9	0.00			504
1	523	6.16	6.11	34.318	27.000	112.4	0.825	0.29	4.2	78.5	3.14	39.3	0.00			528

RV HEW HORIZON CALCOFI CRUIS1 8907 STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
)2 0.4 N	119 14.0 W	20/07/89	0000 UTC	1586 M	3 20 20 KT	3 20 07 07	1	1012.0 MB	18.2 C	16.5 C	1/8	CI

UST 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	18.33	18.33	33.598	24.119	378.7	0.000	5.69	105.9	1.8	0.30	0.0	0.00	0.22	0.06	0
1 10	18.33	18.33	33.596	24.117	379.2	0.03 8	5.68	105.7	2.0	0.31	0.0	0.00	0.23	0.06	10
20 ISL	16.43	16.43	33.500	24.498	3 43.3	0.07 4	5.99	107.4	1.6	0.35	0.0	0.01	0.35	0.11	20
1 21	16.13	16.13	33.483	24.553	338.0	0.077	6.02	107.2	1.6	0.35	0.0	0.01	0.37	0.12	21
30 ISL	12.44	12.44	33.249	25.147	281.5	0.105	5.90	97.3	4.9	0.66	3.8	0.18	0.51	0.25	30
1 31	12.07	12.07	33.234	25.206	276.0	0.108	5.89	96.4	5.3	0.70	4.3	0.20	0.52	0.26	31
1 41 L	11.44	11.43	33.265	25.347	262.7	0.135	5.54	89.5	7.0	0.83	7.1	0.25	0.44	0.28	41
1 30 ISL	11.23	11.22	33.352	25.453	252.9	0.158	5.27	84.8	9.6	0.99	9.8	0.28	0.37	0.28	50
1 51	11.22	11.21	33.365	25.465	251.8	0.161	5.24	84.3	9.9	1.01	10.1	0.29	0.36	0.28	51
1 61	11.31	11.30	33.519	25.568	242.1	0.185	4.93	79.5	12.3	1.18	12.9	0.47	0.37	0.32	61
1 75	10.45	10.44													76
1 90	9.50	9.49	33.768	26.075	194.4	0.249	3.41	52.9	24.5	1.73	22.6	0.01	0.03	0.09	91
1 100 ISL	9.23	9.22	33.850	26.183	184.4	0.267	3.04	46.9	27.8	1.87	24.7	0.01	0.02	0.09	101
1 110	9.07	9.06	33.918	26.262	177.0	0.2 86	2.77	42.6	30.7	1.98	26.2	0.01	0.01	0.09	111
125 ISL	8.71	8.70	33.978	26.366	167.4	0.311	2.63	40.2	34.1	2.04	27.4	0.01	0.02	0.11	126
1 129	8.62	8.61	33.989	26.388	165.3	0.318	2.62	39.9	34.9	2.05	27.6	0.01	0.02	0.12	130
150 ISL	8.32	8.30	34.035	26.471	157.8	0.352	2.42	36.7	38.1	2.16	28.8	0.01	0.01	0.09	151
1 154	8.28	8.26	34.042	26.482	156.8	0.358	2.37	35.9	38.7	2.18	29.0	0.01	0.01	0.08	155
1 184	8.02	8.00	34.109	26.574	148.5	0.404	1.90	28.6	43.6	2.37	30.9	0.00	0.01	0.08	185
200 ISL	7.90	7.88	34.137	26.614	145.0	0.428	1.65	24.8	46.3	2.47	32.0	0.00	0.01	0.06	202
1 218	7.77	7.75	34.164	26.655	141.4	0.453	1.39	20.8	49.5	2.58	33.1	0.00	0.00	0.04	220
250 ISL	7.49	7.47	34.207	26.729	134.8	0.498	1.00	14.9	55.1	2.75	34.2	0.00			252
1 251	7.48	7.46	34.208	26.731	134.6	0.499	0.99	14.7	55.3	2.75	34.2	0.00			253
1 294	7.18	7.15	34.238	26.798	128.9	0.555	0.72	10.6	61.4	2.88	35.7	0.00			296
1 300 ISL	7.14	7.11	34.241	26.806	128.2	0.563	0.69	10.2	62.0	2.89	35.9	0.00			302
1 348	6.85	6.82	34.264	26.864	123.2	0.624	0.53	7.8	66.4	2.99	37.0	0.00			351
400 ISL	6.48	6.44	34.291	26.935	117.0	0.6 86	0.39	5.7	73.0	3.07	38.3	0.00			403
1 412	6.41	6.37	34.297	26.949	115.8	0.7 00	0.36	5.2	74.4	3.08	38.6	0.00			415
1 482	6.23	6.19	34.313	26.986	113.2	0.780	0.29	4.2	78.2	3.15	39.5	0.00			486
500 ISL	6.18	6.14	34.318	26.997	112.4	0.800	0.28	4.0	79.1	3.16	39.6	0.00			504
1 563	5.99	5.94	34.334	27.034	109.5	0.870	0.25	3.6	82.4	3.19	40.1	0.00			568

1 RV NEW HORIZON CALCOFI CRUISE 8907 STATION 93 60

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 51.2 N	119 34.4 V	20/07/89	0429 UTC	1924 M	330 18 KT			1011.5 MB	16.8 C	15.5 C		

UST DEPTH N	TEMP DEG C	POT TEMP DBG 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	16.67	16.67	33.581	24.504	3 42.0	0.000	5.84	105.2	1.2	0.38	0.4	0.03	0.30	0.06	0
1 1	16.67	16.67	33.581	24.504	3 42.1	0.003	5.84	105.2	1.2	0.38	0.4	0.03	0.30	0.06	1
10 ISL	16.65	16.65	33.582	24.509	341.8	0.034	5.84	105.2	1.2	0.37	0.4	0.03	0.28	0.06	10
1 11	16.65	16.65	33.582	24.509	341.9	0.03 8	5.84	105.2	1.2	0.37	0.4	0.03	0.28	0.06	11
20 ISL	16.60	16.60	33.600	24.535	339.7	0.068	5.87	105.6	1.0	0.38	0.4	0.03	0.30	0.07	20
1 21	16.59	16.59	33.602	24.539	339.4	0.072	5.87	105.6	1.0	0.38	0.4	0.03	0.30	0.07	21
30 ISL	13.69	13.69	33.198	24.860	308.9	0.101	6.32	107.0	2.2	0.40	0.3	0.03	0.44	0.18	30
1 32	13.06	13.06	33.135	24.938	301.5	0.107	6.40	106.9	2.6	0.41	0.3	0.03	0.48	0.21	32
1 42	13.18	13.17	33.380	25.104	286.0	0.136	6.08	101.9	3.8	0.67	3.4	0.12	0.74	0.41	42
50 ISL	12.57	12.56	33.416	25.252	272.1	0.159	5.80	96.0	5.5	0.82	5.8	0.24	0.43	0.26	50
1 52	12.39	12.38	33.414	25.285	269.0	0.164	5.74	94.7	6.0	0.85	6.4	0.26	0.34	0.21	52
1 62	11.90	11.89	33.415	25.379	260.2	0.191	5.50	89.8	7.7	0.93	8.4	0.26	0.31	0.18	62
75 ISL	11.17	11.16	33.437	25.530	246.1	0.223	5.07	81.5	10.8	1.09	11.9	0.16	0.19	0.16	76
1 77	11.06	11.05	33.450	25.560	243.3	0.228	4.96	79.5	11.5	1.13	12.6	0.14	0.17	0.16	78
1 92	10.44	10.43	33.708	25.870	214.1	0.263	3.48	55.1	19.5	1.65	20.3	0.02	0.11	0.17	93
100 ISL	10.07	10.06	33.751	25.967	205.0	0.27 9	s.44	54,1	22.1	1.6.9	22.1	0.02	0.07	0.13	101
1 112	9.62	9.61	33.784	26.068	195.6	0.303	3.37	52.5	24.7	1.75	23.3	0.01	0.03	0.07	113
125 ISL	9.58	9.57	33.900	26.166	186.6	0.328	3.04	47.3	27.0	1.84	24.2	0.02	0.02	0.06	126
1 133	9.55	9.54	33.957	26.215	182.0	0.343	2.80	43.6	28.2	1.90	24.6	0.03	0.02	0.06	134
150 ISL	9.43	9.41	34.018	26.283	176.0	0.373	2.44	37.9	31.1	2.05	26.0	0.02	0.02	0.07	151
1 159	9.35	9.33	34.041	26.314	173.2	0.389	2.28	35.3	32.7	2.12	26.8	0.01	0.03	0.07	160
1 190	9.06	9.04	34.178	26.468	159.1	0.441	1.84	28.4	37.7	2.29	28.8	0.00	0.05	0.06	191
200 ISL	9.02	9.00	34.207	26.498	156.5	0.456	1.68	25.9	39.1	2.35	29.3	0.00	0.04	0.06	202
1 225	8.90	8.88	34.260	26.559	151.2	0.495	1.29	19.8	42.6	2.50	30.6	0.00	0.02	0.06	227
250 ISL	8.60	8.57	34.293	26.632	144.6	0.532	0.99	15.1	47.0	2.65	32.0	0.00			252
1 261	8.46	8.43	34.302	26.661	142.0	0.548	0.89	13.5	48.9	2.70	32.6	0.00			263
300 ISL	8.12	8.09	34.307	26.716	137.3	0.602	0.76	11.5	52.9	2.78	33.8	0.00			302
1 302	8.10	8.07	34.307	26.719	137.0	0.605	0.76	11.5	53.1	2.78	33.8	0.00			304
1 3S8	7.52	7.48	34.321	26.816	128.5	0.679	0.55	8.2	60.2	2.92	35.7	0.00			361
400 ISL	7.01	6.97	34.307	26.877	123.0	0.732	0.45	6.6	66.0	2.99	37.3	0.00			403
1 424	6.75	6.71	34.302	26.908	120.2	0.761	0.41	6.0	69.1	3.02	38.1	0.00			428
1 493	6.45	6.40	34.345	26.983	113.9	0.842	0.28	4.1	74.7	3.13	39.3	0.02			497
500 ISL	6.40	6.35	34.347	26.991	113.2	0.850	0.28	4.1	75.4	3.14	39.4	0.02			504
1 572	5.87	5.82	34.367	27.075	105.6	0.929	0.23	3.3	83.0	3.20	40.9	0.01			577

XV NEW HORIZON

CALCOFI CRUISE 8907

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TTPE
30 50.9 N	121 35.6 V	21/07/89	0329 UTC	46 24 M	350	25 KT	360 10 06	1	1011.5 MB	16.9 C	15.9 C	2/8	AC

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OZTGEN 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	17.63	17.63	33.347	24.097	380.8	0.000	5.64	103.4	2.5	0.35	0.1	0.00	0.10	0.03	0
1	2	17.63	17.63	33.347	24.097	380.8	0.008	5.64	103.4	2.5	0.35	0.1	0.00	0.10	0.03	2
	10 ISL	17.62	17.62	33.344	24.098	381.1	0.038	5.64	103.4	2.4	0.35	0.1	0.00	0.10	0.02	10
1	12	17.62	17.62	33.344	24.098	381.1	0.046	5.64	103.4	2.4	0.35	0.1	0.00	0.10	0.02	12
	20 ISL	17.64	17.64	33.355	24.102	381.0	0.076	5.64	103.4	2.3	0.34	0.1	0.00	0.12	0.03	20
1	22	17.64	17.64	33.358	24.104	380.9	0.084	5.64	103.4	2.3	0.34	0.1	0.00	0.12	0.03	22
	30 ISL	17.63	17.62	33.358	24.107	380.9	0.114	5.64	103.4	2.3	0.34	0.1	0.00	0.11	0.02	30
1	33	17.63	17.62	33.358	24.107	381.0	0.126	5.64	103.4	2.3	0.34	0.1	0.00	0.11	0.02	33
1	43	17.03	17.02	33.297	24.203	372.1	0.163	5.80	105.0	2.3	0.34	0.1	0.00	0.15	0.03	43
	50 ISL	15.75	15.74	33.247	24.458	347.9	0.189	6.09	107.5	2.2	0.34	0.1	0.00	0.15	0.04	50
1	53	15.17	15.16	33.234	24.576	336.7	0.199	6.21	108.4	2.2	0.34	0.1	0.00	0.15	0.04	53
1	63	14.22	14.21	33.216	24.766	318.9	0.232	6.34	108.5	2.3	0.35	0.1	0.00	0.20	0.06	63
	75 ISL	13.12	13.11	33.172	24.956	301.0	0.269	6.32	105.7	3.0	0.42	0.1	0.01	0.30	0.14	76
1	76	12.88	12.87	33.162	24.996	297.2	0.278	6.31	105.0	3.2	0.44	0.1	0.01	0.33	0.17	79
1	93	12.05	12.04	33.146	25.143	283.5	0.321	5.89	96.3	4.5	0.60	2.9	0.21	0.47	0.31	94
	100 ISL	11.91	11.90	33.226	25.231	275.2	0.341	5.68	92.6	5.1	0.65	4.3	0.17	0.39	0.28	101
i	114	11.65	11.64	33.411	25.423	257.3	0.378	5.27	85.6	7.0	0.78	7.3	0.02	0.18	0.17	115
	125 ISL	11.10	11.08	33.469	25.569	243.6	0.406	4.97	79.8	9.5	0.94	10.3	0.02	0.11	0.12	126
1	134	10.59	10.57	33.506	25.688	232.4	0.427	4.72	74.9	12.1	1.10	12.9	0.02	0.08	0.08	135
	150 ISL	9.75	9.73	33.627	25.925	210.0	0.463	4.16	64.9	18.1	1.41	18.0	0.01	0.03	0.04	151
1	160	9.32	9.30	33.709	26.059	197.3	0.483	3.89	60.1	21.4	1.57	20.6	0.01	0.01	0.03	161
1	191	8.99	8.97	33.899	26.261	178.7	0.541	4.14	63.6	23.1	1.51	20.5	0.00	0.01	0.02	192
	200 ISL	8.83	8.81	33.931	26.312	174.0	0.557	3.97	60.8	25.4	1.59	21.7	0.00	0.01	0.02	202
1	227	8.35	8.33	33.991	26.433	162.9	0.603 .	3.31	50.1	32.9	1.89	25.7	0.00	0.01	0.03	229
	250 ISL	8.07	8.04	34.016	26.495	157.3	0.639	3.04	45.8	36.4	2.02	27.4	0.01			252
1	263	7.92	7.89	34.023	26.523	154.8	0.660	2.91	43.7	38.3	2.08	28.2	0.01			265
	300 ISL	7.34	7.31	34.047	26.625	145.4	0.715	2.27	33.6	47.6	2.37	31.7	0.00			302
1	304	7.27	7.24	34.049	26.637	144.3	0.721	2.20	32.5	48.7	2.40	32.1	0.00			306
1	360	6.37	6.34	34.037	26.749	133.9	0.799	1.86	26.9	59.9	2.60	35.4	0.00			363
	400 ISL	5.91	5.88	34.061	26.826	126.7	0.851	1.41	20.2	68.4	2.81	37.8	0.00			403
1	426	5.72	5.68	34.090	26.873	122.4	0.883	1.10	15.7	73.4	2.95	39.1	0.00			430
1	495	5.70	5.66	34.217	26.977	113.6	0.965	0.49	7.0	81.0	3.17	40.8	0.00			499
	500 ISL	5.68	5.64	34.222	26.983	113.0	0.970	0.48	6.8	81.5	3.18	40.9	0.00			504
1	574	5.37	5.32	34.290	27.075	105.0	1.051	0.29	4.1	89.6	3.26	42.1	0.00			579

RV NEW HORIZON

CALCOFI CRUISE 8907

STATION 93 100

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TTPE
30 31.0 N	122 15.8 V	21/07/89	1016 UTC	4833 M	3 40	23 KT			1013.0 MB	17.0 C	16.8 C		

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OXTGEN ML/L	OXT 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	18.37	18.37	33.289	23.872	402.2	0.000	5.54	103.0	1.7	0.36	0.0	0.00	0.06	0.01	0
1	2	18.37	18.37	33.289	23.872	402.3	0.008	5.54	103.0	1.7	0.36	0.0	0.00	0.06	0.01	2
	10 ISL	18.37	18.37	33.288	23.872	402.6	0.040	5.53	102.8	1.7	0.35	0.0	0.01	0.07	0.01	10
1	12	18.37	18.37	33.288	23.872	402.7	0.048	5.53	102.8	1.7	0.35	0.0	0.01	0.07	0.01	12
	20 ISL	18.36	18.36	33.287	23.874	402.7	0.081	5.53	102.8	1.6	0.35	0.0	0.00	0.07	0.01	20
1	23	18.36	18.36	33.287	23.874	402.8	0.093	5.53	102.8	1.6	0.35	0.0	0.00	0.07	0.01	23
	30 ISL	18.37	18.36	33.286	23.871	403.4	0.121	5.54	103.0	1.6	0.34	0.0	0.00	0.07	0.01	30
1	33	18.37	18.36	33.286	23.871	403.5	0.133	5.55	103.1	1.6	0.34	0.0	0.00	0.07	0.01	33
1	43	18.13	18.12	33.277	23.924	398.8	0.173	5.60	103.6	1.6	0.34	0.0	0.00	0.07	0.01	43
	50 ISL	17.43	17.42	33.267	24.086	383.5	0.200	5.75	104.9	1.6	0.33	0.0	0.01	0.08	0.02	50
1	53	17.05	17.04	33.265	24.174	375.2	0.212	5.83	105.6	1.6	0.33	0.0	0.01	0.09	0.02	53
1	63	15.71	15.70	33.282	24.495	344.8	0.248	6.13	108.1	1.6	0.31	0.0	0.00	0.10	0.03	63
	75 ISL	14.55	14.54	33.311	24.770	318.9	0.288	6.12	105.5	1.7	0.33	0.0	0.00	0.16	0.06	76
1	78	14.30	14.29	33.311	24.823	313.9	0.297	6.12	105.0	1.8	0.33	0.0	0.00	0.19	0.08	79
1	92	13.12	13.11	33.217	24.991	298.1	0.340	6.12	102.4	2.4	0.39	0.0	0.00	0.38	0.26	93
	100 ISL	12.65	12.64	33.233	25.096	288.3	0.363	5.94	98.4	3.1	0.48	1.5	0.02	0.33	0.26	101
1	113	12.04	12.03	33.301	25.265	272.3	0.400	5.55	90.8	4.9	0.67	5.0	0.05	0.26	0.26	114
	125 ISL	11.51	11.49	33.351	25.403	259.5	0.432	5.27	85.3	7.2	0.85	8.2	0.03	0.17	0.18	126
1	134	11.15	11.13	33.395	25.502	250.1	0.455	5.05	81.1	9.1	0.98	10.5	0.01	0.10	0.12	135
	150 ISL	10.65	10.63	33.499	25.672	234.3	0.493	4.60	73.1	12.5	1.19	13.9	0.00	0.05	0.06	151
1	160	10.34	10.32	33.571	25.782	223.9	0.516	4.31	68.1	15.0	1.32	16.0	0.00	0.03	0.04	161
1	188	9.22	9.20	33.776	26.128	191.3	0.574	3.51	54.2	24.1	1.73	22.6	0.00	0.01	0.02	189
	200 ISL	8.90	8.88	33.839	26.229	181.9	0.597	3.47	53.2	26.5	1.80	23.9	0.00	0.01	c.02	202
1	224	8.45	8.43	33.933	26.372	168.6	0.639	3.38	51.3	30.4	1.87	25.3	0.00	0.00	0.02	226
	250 ISL	8.11	8.08	33.992	26.470	159.7	0.682	3.11	46.9	34.7	2.01	27.2	0.00			252
1	258	8.02	7.99													260
1	299	7.52	7.49	34.034	26.589	148.9	0.757	2.53	37.6	42.9	2.27	30.5	0.00			301
	300 ISL	7.51	7.48	34.034	26.591	148.7	0.759	2.52	37.5	43.1	2.27	30.6	0.00			302
1	354	6.80	6.77	34.044	26.698	139.0	0.836	2.11	30.8	53.2	2.50	33.4	0.00			357
	400 ISL	6.25	6.21	34.070	26.791	130.4	0.898	1.51	21.8	63.4	2.75	36.8	0.00			403
1	420	6.05	6.01	34.087	26.830	126.8	0.924	1.24	17.8	67.8	2.86	38.2	0.00			423
1	488	5.60	5.56	34.170	26.951	115.8	1.007	0.62	8.8	80.0	3.14	40.8	0.00			492
	500 ISL	5.53	5.49	34.180	26.968	114.3	1.020	0.58	8.2	81.7	3.16	41.1	0.00			504
I	567	5.16	5.11	34.239	27.059	106.1	1.094	0.36	5.1	91.3	3.25	42.5	0.00			572

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	VAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
30 11.4 N	122 55.2 W	21/07/89	17 52 UTC	4552 M	360 26 KT	360 10 07	2	1014.8 MB	18.2 C	16.6 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	18.33	18.33	33.369	23.943	3 95.4	0.000	5.54	102.9	1.8	0.33	0.0	0.00	0.09	0.02	0
1	1	18.33	18.33	33.369	23.943	395.5	0.004	5.54	102.9	1.8	0.33	0.0	0.00	0.09	0.02	1
	10 ISL	18.32	18.32	33.367	23.945	395.7	0.040	5.54	102.9	1.8	0.33	0.0	0.00	0.09	0.01	10
1	11	18.32	18.32	33.367	23.945	395.7	0.044	5.54	102.9	1.8	0.33	0.0	0.00	0.09	0.01	11
	20 ISL	18.29	18.29	33.366	23.952	395.3	0.07 9	5.56	103 .2	1.8	0.33	0.0	0.00	0.09	0.02	20
1	21	18.29	18.29	33.366	23.952	3 95.4	0.083	5.56	103.2	1.8	0.33	0.0	0.00	0.09	0.02	21
	30 ISL	18.30	18.29	33.363	23.947	3 96.1	0.119	5.55	103.0	1.8	0.32	0.0	0.00	0.09	0.02	30
1	31	18.30	18.29	33.363	23.948	3 96.1	0.123	5.55	103 .0	1.8	0.32	0.0	0.00	0.09	0.02	31
1	41	18.20	18.19	33.355	23.966	394.7	0.162	5.57	103.2	1.8	0.31	0.0	0.00	0.10	0.01	41
	50 ISL	16.12	16.11	33.247	24.375	355.9	0.196	5.96	106.0	1.8	0.32	0.0	0.00	0.13	0.03	50
1	52	15.59	15.58	33.230	24.481	3 45.8	0.203	6.06	106.6	1.8	0.32	0.0	0.00	0.14	0.04	52
1	62	14.20	14.19	33.245	24.792	316.4	0.236	6.23	106.6	2.0	0.31	0.0	0.00	0.19	0.08	62
	75 ISL	13.17	13 .16	33.220	24.983	298.4	0.276	6.11	102.3	2.3	0.32	0.0	0.00	0.27	0.16	76
1	77	13.06	13.05	33.216	25.002	296.7	0.282	6.09	101.7	2.3	0.32	0.0	0.00	0.28	0.17	78
1	91	12.18	12.17	33.257	25.204	277.6	0.322	5.69	93.3	3.8	0.53	2.8	0.14	0.33	0.29	92
	100 ISL	11.90	11.89	33.301	25.291	269.5	0.3 47	5.53	90.2	4.9	0.63	4.9	0.10	0.28	0.26	101
1	111	11.60	11.59	33.366	25.398	259.6	0.376	5.30	85.9	6.8	0.76	7.8	0.02	0.18	0.23	112
	125 ISL	10.83	10.81	3 3.47 3	25.620	238.7	0.411	4.76	75.9	11.2	1.03	12.6	0.01	0.08	0.11	126
1	130	10.54	10.52	33.515	25.7 03	230.8	0.423	4.56	72.3	12.9	1.13	14.3	0.01	0.05	0.07	131
	150 ISL	9.66	9.64	33.656	25.962	206.4	0.466	4.05	63.1	18.2	1.40	18.9	0.01	0.03	0.05	151
1	157	9.42	9.40													158
1	187	8.83	8.81	33 .862	26.257	178.9	0.537	3.42	52.3	26.8	1.73	24.0	0.01	0.00	0.02	188
	200 ISL	8.62	8.60	33.920	26.336	171.7	0.560	3.21	48.9	29.9	1.83	25.3	0.01	0.00	0.02	202
1	223	8.28	8.26	33.996	26.447	161.4	0.598	2.88	43.6	34.9	1.98	27.0	0.00	0.00	0.03	225
	250 ISL	7.93	7 .90	34.037	26.532	153.7	0.641	2.58	38.7	39.8	2.13	28.7	0.00			252
1	258	7.84	7.81	34.043	26.550	152.1	0.653	2.50	37 .4	41.1	2.17	29.2	0.00			260
1	298	7.38	7.35	34.074	26.641	143.9	0.712	2.06	30.5	48.0	2.37	32.2	0.00			3 00
	300 ISL	7.36	7.33	34.075	26.644	143.6	0.715	2.04	30.2	48.4	2.38	32.3	0.00			3 02
1	354	6.78	6.75	34.104	26.747	134.3	0.790	1.43	20.9	58.2	2.65	35.8	0.00			357
	400 ISL	6.22	6.18	3 4.107	26.824	127.3	0.850	1.14	16.4	66.5	2.80	38.3	0.00			403
1	417	6.04	6.00	34.110	26.849	124.9	0.872	1.06	15.2	69.4	2.85	39.1	0.00			420
1	487	5.68	5.64	34.176	26.947	116.3	0.956	0.61	8.7	78.4	3.04	41.1	0.00			491
	500 ISL	5.59	5.55	34.186	26.966	114.6	0.971	0.57	8.1	80.5	3.06	41.4	0.00			504
1	565	5.11	5.06	34.236	27.062	105.7	1.043	0.35	4.9	90.8	3.18	42.9	0.00			57 0

RV NEW HORIZON CALCOFI CRUISE 8907 STATION 93 120

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	VIND SPEED	HAVES	HEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
29 50.7 K	123 3 5.2 W	22/07/89	03 22 UTC	47 82 M	010 20 KT	3 50 12 06	2	1013.8 MB	17.8 C	16.1 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	18.51	18.51	33.306	23.851	404.3	0.000	5.51	102.7	2.1	0.33	0.4	0.01	0.07	0.01	0
1	1	18.51	18.51	33.306	23.851	404.3	0.004	5.51	102.7	2.1	0.33	0.4	0.01	0.07	0.01	1
	10 ISL	18.51	18.51	33.303	23.849	404.8	0.040	5.51	102.7	2.0	0.31	0.3	0.00	0.07	0.01	10
1	11	18.51	18.51	33.303	23.849	404.8	0.045	5.51	102.7	2.0	0.31	0.3	0.00	0.07	0.01	11
	20 ISL	18.50	18.50	33.303	23.852	404.9	0.081	5.52	102.9	2.0	0.31	0.2	0.00	0.06	0.01	20
1	22	18.50	18.50	33.303	23.852	405.0	0.089	5.52	102.8	2.0	0.31	0.2	0.00	0.06	0.01	22
	30 ISL	18.52	18.51	33.303	23.847	405.7	0.121	5.51	102.7	2.0	0.31	0.1	0.00	0.07	0.02	30
1	32	18.52	18.51	33.303	23.847	405.7	0.130	5.51	102.7	2.0	0.31	0.1	0.00	0.07	0.02	32
1	42	18.51	18.50	33.302	23.849	405.9	0.170	5.51	102.7	1.9	0.32	0.1	0.01	0.07	0.01	42
	50 ISL	17.38	17.37	33.310	24.130	379.3	0.202	5.74	104.7	2.0	0.30	0.1	0.00	0.08	0.02	50
1	52	17.04	17.03	33.311	24.212	371.6	0.209	5.81	105.2	2.0	0.30	0.1	0.00	0.09	0.02	52
1	62	15.88	15.87	33.248	24.430	351.0	0.245	6.02	106.5	2.0	0.32	0.1	0.00	0.13	0.03	62
1	72	15.28	15.27	33.305	24.608	334.3	0.279	6.13	107.2	2.0	0.31	0.0	0.00	0.13	0.04	73
	75 ISL	15.08	15.07	33.317	24.660	329.4	0.289	6.12	106.6	2.0	0.31	0.0	0.00	0.14	0.04	76
1	87	14.22	14.21	33.332	24.856	311.0	0.328	6.04	103.4	2.1	0.33	0.0	0.00	0.16	0.07	88
	100 ISL	13.29	13.28	33.265	24.995	298.0	0.367	6.12	102.8	2.6	0.37	0.0	0.01	0.28	0.11	101
1	102	13.17	13.16	33.260	25.015	296.1	0.373	6.12	102.5	2.7	0.38	0.0	0.01	0.30	0.12	103
1	123	12.95	12.93	33.554	25.286	270.8	0.433	5.43	90.7	4.4	0.50	3.5	0.08	0.21	0.13	124
	125 ISL	12.85	12.83	33.556	25.308	268.8	0.438	5.39	89.8	4.6	0.52	3.9	0.08	0.20	0.13	126
1	149	11.37	11.35	33.517	25.558	245.3	0.500	5.04	81.4	8.3	0.80	8.9	0.02	0.10	0.09	150
	150 ISL	11.32	11.30	33.520	25.569	244.2	0.502	5.01	80.8	8.6	0.82	9.2	0.02	0.10	0.09	151
1	180	9.94	9.92	33.662	25.921	211.0	0.571	4.31	67.5	16.9	1.26	16.8	0.01	0.02	0.03	181
	200 ISL	9.31	9.29	33.804	26.136	190.9	0.611	4.36	67.4	20.1	1.34	18.3	0.01	0.01	0.02	202
1	211	9.03	9.01	33.878	26.239	181.2	0.631	4.38	67.3	21.6	1.36	18.6	0.01	0.01	0.02	213
1	240	8.43	8.41	33.984	26.415	164.8	0.682	4.29	65.1	27.2	1.49	20.9	0.00			242
	250 ISL	8.29	8.26	33.995	26.445	162.1	0.698	4.19	63.4	28.9	1.54	21.7	0.00			252
1	282	7.86	7.83	33.996	26.510	1S6.2	0.749	3.72	55.7	34.7	1.73	24.5	0.00			284
	3 00 ISL	7.53	7.50	33.997	26.559	151.7	0.777	3.38	50.2	39.3	1.88	26.6	0.00			3 02
1	338	6.86	6.83	34.009	26.662	142.2	0.832	2.62	38.3	49.7	2.20	31.0	0.00			3 41
1	399	6.29	6.25	34.069	26.7 85	131.0	0.916	1.53	22.1	63.9	2.60	36.6	0.01			402
	400 ISL	6.28	6.24	34.070	26.7 87	130.8	0.917	1.52	22.0	64.1	2.61	36.7	0.01			403
1	463	5.66	5.62	34.120	26.904	119.9	0.996	0.92	13.1	76.8	2.86	40.1	0.00			467
	500 ISL	5.45	5.41	34.161	26.963	114.7	1.03 9	0.71	10.1	82.4	2.95	41.1	0.00			504
1	534	5.26	5.22	34.199	27.015	109.9	1.078	0.51	7.2	87.6	3.04	42.1	0.00			539

PRIMART PRODUCTIVITT CASTS

I RV NSW HORIZON — CALCOFI CRUISE 8907 — STATION 77 60

1 LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
I 34 43.8 N	121 32.6 W	1/ 8/89	1909 UTC	11 M	1209 - 1944 PST	1212 PST	1944 PST	2080.4 MG C/M2

1 DEPTH M	TEMP DEC C	SALINITT PSS 7 8	SIGMA THETA	DISS O2 ML/L	OXT PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL UG/L	PHAEO UG/L	LIGHT PCT	UPTAKE (MG C/M3) 1	2	MEAN	DARK
1	14.27	33.619	25.064	6.28	107.9	2.1	0.29	0.8	0.06	3.97	0.61	99.	29.8	30.4	30.1	0.33
	14.26	33.617	25.065	6.29	108.0	2.1	0.29	0.8	0.06	3.63	0.68	38.	93.6	89.7	91.7	0.49
	14.25	33.616	25.067	6.29	108.0	2.0	0.29	0.8	0.06	3.38	0.63	19.	90.6	86.5	88.6	0.41
	14.18	33.616	25.082	6.26	107.3	1.9	0.29	0.8	0.06	4.12	0.73	4.7	52.2	54.8	53.5	0.44
	14.13	33.614	25.091	6.23	106.7	1.9	0.29	0.9	0.05	4.06	0.78	2.3	23.4	21.7	22.6	0.30
*	13.16	33.546	25.237	5.95	99.8	3.3	0.57	4.2	0.14	1.99	0.56	0.25	1.3	0.93	1.1	0.24

RV NEW HORIZON — CALCOFI CRUISE 8907 — STATION 77 100

LATITUDE	LONGITUDB	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 23.1 N	124 19.1 W	31/ 7/89	1920 UTC	22 M	1226 - 1942 PST	1223 PST	1941 PST	268.1 MG C/M2

M DEPTH	TEMP DEC C	SALINITT PSS 78	SIGMA THETA	DISS O2 ML/L	OXT PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL UG/L	PHAEO UG/L	LIGHT PCT	UPTAKE (MG C/M3) 1	2	MEAN	DARK
1 ° 0	16.63	33.162	24.191	5.75	103.3	2.6	0.37	0.0	0.00	0.14	0.04	99.	1.4	1.4	1.4	0.12
15	16.56	33.159	24.206	5.76	103.3	2.6	0.37	0.0	0.00	0.15	0.03	38.	3.5	3.5	3.5	0.14
25	16.53	33.158	24.212	5.76	103.2	2.4	0.37	0.0	0.00	0.15	0.04	19.	3.2	3.1	3.1	0.14
46	15.11	33.196	24.560	6.08	105.9	2.3	0.41	0.3	0.02	0.45	0.18	4.7	5.0	4.4	4.7	0.22
36	14.02	33.242	24.827	6.15	104.8	2.7	0.52	1.6	0.07	0.71	0.28	2.3	4.3	4.1	4.2	0.12
89	10.85	33.072	25.303	5.72	91.1	7.9	0.90	8.1	0.23	0.20	0.15	0.25	0.19	0.13	0.16	0.06

RV NEW HORIZON — CALCOFI CRUISE 8907 — STATION 80 70

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 49.7 N	121 50.7 W	30/ 7/89	1843 UTC	16 M	1214 - 1940 PST	1212 PST	1938 PST	601.5 MG C/M2

DEPTH M	TEMP DEC C	SALINITT PSS 7 8	SIGMA THETA	DISS O2 ML/L	OXT PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL UG/L	PHAEO UG/L	LIGHT PCT	UPTAKE (MG C/M3) 1	2	MEAN	DARK
1	15.32	33.459	24.715	5.94	104.1	2.1	0.44	0.8	0.04	0.65	0.16	99.	6.4	6.6	6.5	0.20
11	15.31	33.459	24.718	5.95	104.3	1.9	0.44	0.8	0.04	0.59	0.16	38.	18.1	18.2	18.2	0.27
19	15.31	33.459	24.718	5.97	104.6	1.8	0.43	0.8	0.05	0.70	0.24	19.	14.9	17.9	16.4	0.47
34	15.24	33.459	24.734	5.93	103.8	1.7	0.44	0.8	0.05	0.68	0.21	4.7	9.7	9.7	9.7	0.50
43	14.30	33.370	24.867	5.99	102.8	2.5	0.54	1.7	0.08	0.77	0.32	2.3	5.9	5.4	5.6	0.13
66	10.68	33.101	25.355	5.63	89.3	9.0	0.98	9.3	0.35	0.35	0.25	0.25	0.24	0.48	0.36	0.07

RV NEW HORIZON — CALCOFI CRUISE 8907 — STATION 83 40.5

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	SECCHI DEPTH	tNCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 13.5 N	119 24.2 V	29/ 7/89	1851 UTC	16 M	1207 - 193 5 PST	1204 PST	1935 PST	488.6 MG C/M2

DEPTH M	TEMP DEC C	SALINITT PSS 7 8	SIGMA THETA	DISS O2 ML/L	OXT PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL UG/L	PHAEO UG/L	LIGHT PCT	UPTAKE (MG C/M3) 1	2	MEAN	DARK
0	18.30	33.591	24.121	5.91	109.9	2.4	0.27	0.0	0.00	0.44	0.11	99.	11.4	11.2	11.3	0.21
10	16.76	33.523	24.438	6.14	110.8	3.4	0.34	0.1	0.02	1.08	0.37	38.	32.2	32.1	32.1	0.27
18	16.21	33.528	24.569	6.12	109.2	3.7	0.37	0.5	0.03	1.57	0.48	19.	35.3	36.3	35.8	0.42

RV NEW HORIZO* — CALCOFI CRUISE 8907 — STATION 83 70

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 15.1 N	121 26.5 V	28/ 7/89	1919 UTC	16 M	1213 - 1940 PST	1212 PST	1933 PST	216.5 MG C/M2

DEPTH M	TEMP DEC C	SALINITT PSS 78	SIGMA THETA	DISS O2 ML/L	OXT PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL UG/L	PHAEO UG/L	LIGHT PCT	UPTAKE (MG C/M3) 1	2	MEAN	DARK
0	16.23	33.367	24.440	5.82	103.8	3.9	0.39	0.4	0.02	0.40	0.10	99.	6.3	6.6	6.4	0.11
10	16.25	33.366	24.436	5.82	103.9	3.7	0.38	0.4	0.02	0.37	0.08	38.	8.3	8.3	8.3	0.11
18	16.25	33.366	24.436	5.81	103.7	3.8	0.38	0.3	0.02	0.35	0.09	19.	5.9	5.0	5.5	0.12
33	16.13	33.405	24.494	5.81	103.4	3.8	0.42	0.7	0.03	0.38	0.16	4.7	2.2	2.1	2.1	0.18
42	14.31	33.463	24.937	5.87	100.8	4.7	0.63	3.2	0.12	0.52	0.26	2.3	1.4	1.1	1.3	0.12
64	11.39	33.491	25.532	5.20	84.0	13.0	1.17	12.1	0.52	0.28	0.15	0.25	0.10	0.11	0.11	0.10

PRIMART PRODUCTIVITT CASTS

RV NEW HORIZON — CALCOFI CRUISE B907 — STATIONE 83 100

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 13.4. N	123 29.3 W	27/ 7/89	1919 UTC	27 M	1208 - 1940 PST	1220 PST	193 8 PST	107.0 MG C/M2

DEPTH M	TEMP DEC C	SALINITT PSS 78	SIGMA THETA	DISS O2 ML/L	OZT 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	17.51	33.266	24.064	5.5.9	102.2	3.0	0.35	0.1	0.00	0.11	0.03	99.	0.64	0.68	0.66	0.17
19	17.52	33.266	24.062	5.60	102.4	2.9	0.35	0.1	0.00	0.12	0.03	38.	2.0	2.1	2.0	0.18
31	17.49	33.272	24.074	5.60	102.3	2.8	0.35	0.1	0.00	0.12	0.02	19.	1.8	1.7	1.8	0.18
57	17.01	33.258	24.178	5.73	103.7	2.8	0.35	0.1	0.00	0.19	0.06	4.7	1.3	1.2	1.2	0.31
70	15.16	33.240	24.584	6.08	106.1	2.9	0.36	0.1	0.00	0.23	0.08	2.3	0.63	0.12	0.38	0.23
109A	12.78	33.182	25.031	5.93	98.5	4.1	0.52	1.5	0.30	0.33	0.29	0.25	0.14	0.15	0.15	0.09

A) DARK VALUE ASSUMED, ORIGINAL SAMPLE LOST.

RV NEW HORIZON — CALCOFI CRUISE 8907 — STATION 87 45

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	SECCHI DEPTH	ENCUBATION: TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 30.0 N	119 19.2 W	25/ 7/89	1906 UTC	12 M	1208 - 1940 PST	1203 PST	1931 PST	776.3 MG C/M2

DEPTH M	TEMP DEG C	SALINITT PSS 78	SIGMA THETA	DISS O2 ML/L	OZT 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	16.05	33.754	24.779	5.68	101.2	6.7	0.65	5.7	0.11	0.84	0.28	99.	29.2	29.5	29.3	0.25
9	15.65	33.743	24.861	5.65	99.9	6.9	0.67	5.9	0.11	0.99	0.35	38.	32.7		32.7	0.29
15	15.09	33.732	24.976	5.65	98.7	7.7	0.72	6.6	0.12	1.14	0.48	19.	26.9	25.7	26.3	0.32
26	12.35	33.758	25.559	4.66	77.0	13.9	1.17	13.1	0.20	1.51	0.62	4.7	14.0	13.1	13.6	0.45
32	11.66	33.816	25.734	4.16	67.7	16.4	1.38	15.8	0.25	1.38	0.62	2.3	5.4	4.7	5.0	0.41
50	10.32	33.911	26.048	2.97	47.0	25.5	1.82	22.8	0.33	0.90	0.49	0.25	0.16	0.25	0.20	0.29

RV NEW HORIZON — CALCOFI CRUISE 8907 — STATION 87 74

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 32.7 N	121 18.3 V	26/ 7/89	1936 UTC	17 M	1211 - 1936 PST	1211 PST	1936 PST	422.0 MG C/N2

DEPTH M	TEMP DEG C	SALINITT PSS 78	SIGMA THETA	DISS O2 ML/L	OZT 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	16.26	33.512	24.545	5.88	105.0	1.9	0.47	1.0	0.05	0.39	0.09	99.	3.6	3.5	3.6	0.19
12	16.28	33.509	24.538	5.88	105.1	1.7	0.46	1.0	0.05	0.43	0.10	38.	12.6	13.1	12.8	0.21
19	16.27	33.509	24.541	5.87	104.9	1.6	0.52	1.0	0.05	0.40	0.10	19.	12.2	12.2	12.2	0.19
35	15.93	33.548	24.649	5.92	105.1	1.2	0.48	1.5	0.06	0.49	0.17	4.7	5.5	7.4	6.5	0.57
44	12.81	33.551	25.310	5.71	95.1	6.7	0.92	7.5	0.40	0.82	0.42	2.3	3.4	3.8	3.6	0.36
68	11.05	33.615	25.690	4.42	70.9	15.1	1.44	17.2	0.11	0.40	0.26	0.25	0.11	0.30	0.20	0.16
87	9.97	33.789	26.014	3.29	51.6	24.0	1.82	23.5	0.02	0.12	0.13					
102	9.24	33.846	26.178	2.89	44.6	28.3	1.94	25.8	0.02	0.03	0.08					
123	8.75	33.895	26.294	2.88	44.0	30.8	1.97	26.5	0.02	0.02	0.08					
143	8.35	33.947	26.3 97	2.98	45.1	33.1	1.99	27.1	0.02	0.01	0.07					
173	7.96	33.994	26.493	2.79	41.9	37.2	2.08	28.5	0.02	0.01	0.05					
201	7.61	34.007	26.554	2.69	40.1	41.4	2.16	29.7	0.06	0.01	0.04					

RV NEW HORIZON — CALCOFI CRUISE 8907 — STATION 90 35

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUI
33 15.7 N	118 14.9 W	24/ 7/89	1916 UTC	22 M	L156 - 1931 PST	1159 PST	1931 PST	406.8 MG C/M2

DEPTH M	TEMP DBG C	SALINITT PSS 78	SIGMA THETA	DISS O2 ML/L	OZT 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	20.72	33.602	23.507	5.54	107.8	2.3	0.29	0.0	0.00	0.23	0.04	99.	5.5	5.7	5.6	0.30
15	18.74	33.539	23.972	5.85	109.7	2.3	0.30	0.0	0.00	0.23	0.05	38.	8.4	9.2	8.8	0.21
25	17.35	33.495	24.278	6.11	111.5	1.9	0.31	0.0	0.00	0.26	0.06	19.	8.0	8.2	8.1	0.24
46	13.30	33.403	25.098	5.93	99.7	3.9	0.49	1.3	0.04	0.69	0.29	4.7	6.7	6.6	6.7	0.33
56	12.65	33.414	25.235	5.50	91.2	5.5	0.68	4.7	0.13	0.83	0.41	2.3	1.1	1.2	1.2	0.26
88	11.35	33.554	25.589	4.33	69.9	12.9	1.22	14.5	0.08	0.16	0.16	0.25	-0.03	0.05	0.01	0.20

RV NEW HORIZON — CALCOFI CRUISE 8907 — STATION 90 70

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 5.7 N	120 38.6 V	23/ 7/89	1937 UTC	24 M	1208 - 1937 PST	1208 PST	193 2 PST	431.5 MG C/M2

DEPTH M	TEMP DEG C	SALINITT PSS 7 8	SIGMA THETA	DISS O2 ML/L	OZT PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO 2 UM/L	CHL UG/L	PHAEO UG/L	LIGHT PCT	UPTAKE (MG C/M3) 1	2	MEAN	DARK
0	16.65	33.249	24.253	5.78	103.9	2.6	0.35	0.1	0.01	0.22	0.04	99.	3.7	4.1	3.9	0.14
17	15.66	33.232	24.466	5.98	105.4	2.1	0.37	0.2	0.01	0.34	0.09	38.	8.2	8.3	8.2	0.18
27	15.59	33.342	24.566	5.98	105.3	1.8	0.41	0.7	0.03	0.51	0.15	19.	8.7	8.0	8.4	0.16
50	14.07	33.197	24.782	6.19	105.6	2.6	0.45	0.8	0.03	0.43	0.29	4.7	5.1	4.3	4.7	0.10
62	13.44	33.228	24.935	6.18	104.1	3.3	0.53	1.6	0.05	0.44	0.29	2.3	2.7	2.7	2.7	0.07
97	11.95	33.315	25.293	5.40	88.2	6.5	0.76	6.8	0.04	0.21	0.15	0.25	0.18	0.19	0.19	0.05

PRIMART PRODUCTIVITT CASTS

RV NEW HORIZON — CALCOFI CRUISE iB907 — STATION 90 110

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 45.6 N	123 20.3 V	22/ 7/89	1901 UTC	27 M	1215 - 1939 PST	1219 PST	193 8 PST	140.4 MG C/M2

DEPTH H	TEMP DEC C	SALINITY PSS 7 8	SIGMA THETA	DISS O2 ML/L	OZT PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO 2 UM/L	CHL UG/L	FHAEO UG/L	LIGHT PCT	UPTAKE (MG C/M3) 1	2	MEAN	DARK
2	18.47	33.420	23.948	5.48	102.1	2.2	0.32	0.0	0.00	0.10	0.02	99.	2.4	2.5	2.5	0.10
20	18.49	33.420	23.944	5.49	102.3	2.1	0.32	0.0	0.00	0.11	0.02	38.	2.2	2.5	2.3	0.07
32	18.49	33.420	23.944	5.50	102.5	2.1	0.31	0.0	0.00	0.11	0.02	19.	1.4	1.5	1.4	0.11
58	15.78	33.369	24.546	6.25	110.5	2.8	0.31	0.0	0.00	0.35	0.13	4.7	1.2	1.2	1.2	0.09
71	12.96	33.369	25.140	6.71	112.0	5.1	0.40	0.0	0.00	0.78	0.36	2.3	1.1	1.1	1.1	0.08
109	10.55	33.488	25.680	4.49	71.2	13.6	1.15	14.8	0.01	0.13	0.17	0.25	0.03	0.02	0.02	0.07

RV NEB HORIZON — CALCOFI CRUISE 8907 — STATION 93 26.9

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 56.7 N	117 18.9 W	18/ 7/89	1942 OTC	15 M	1205 - 1929 PST	1155 PST	1925 PST	530.8 MG C/M2

DEPTH M	TEMP DEC C	SALINITY PSS 7 8	SIGMA THETA	DISS O2 ML/L	OZT 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	20.76	33.640	23.525	5.77	112.4	1.9	0.23	0.0	0.00	0.25	0.07	99.	11.7	12.8	12.2	0.24
10	15.74	33.527	24.675	6.97	123.2	2.7	0.29	0.0	0.01	0.52	0.21	38.	25.0	22.8	23.9	0.07
18	12.01	33.506	25.428	5.06	82.8	8.8	0.93	8.2	0.22	0.88	0.37	19.	19.3	18.6	18.9	0.27
32	11.05	33.576	25.659	4.16	66.8	12.9	1.31	13.8	0.22	0.41	0.26	4.7	4.0	3.9	4.0	0.07
39	10.76	33.618	25.743	3.86	61.6	15.6	1.45	16.2	0.27	0.42	0.31	2.3	0.75	0.63	0.69	0.05
62	10.37	33.761	25.923	3.15	49.9	21.6	1.72	20.4	0.16	0.15	0.23	0.25	0.03	0.04	0.03	0.03

RV NEW HORIZON — CALCOFI CRUISE 19907 — STATION 93 50

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	SECCHI DEPTH	tNCUBATIOK1 TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 10.4 N	118 54.1 W	19/ 7/89	1905 UTC	18 M	1158 - 1931 PST	1202 PST	1930 PST	436.5 MG C/M2

DEPTH M	TEMP DEC C	SALINITT PSS 7 8	SIGMA THETA	DISS O2 ML/L	OZT 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	18.69	33.690	24.099	5.75	107.8	1.8	0.24	0.0	0.00	0.15	0.05	99.	5.6	5.7	5.6	0.24
12	18.06	33.613	24.197	6.24	115.5	1.5	0.21	0.0	0.00	0.27	0.11	38.	14.9	15.1	15.0	0.24
21	13.83	33.580	25.126	5.41	92.1	1.5	0.40	3.5	0.08	0.41	0.23	19.	14.6	14.6	14.6	0.23
38	12.09	33.552	25.449	4.61	75.6	9.4	1.09	9.9	0.23	0.33	0.40	4.7	3.2	2.9	3.1	0.11
43	11.17	33.519	25.593	4.76	76.5	13.0	1.22	13.4	0.36	0.34	0.34	2.3	1.5	1.6	1.5	0.05
72	10.46	33.773	25.917	3.17	50.3	21.5	1.69	21.1	0.03	0.06	0.18	0.25	0.05	0.06	0.05	0.04

RV NEW HORIZON — CALCOFI CRUISE 13907 — STATION 93 80

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	SECCHI DEPTHC	tNCUBATIOKI TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 11.3 N	120 55.8 W	20/ 7/89	1920 UTC	21 M	1203 - 1936 PST	1210 PST	1936 PST	180.6 MG C/M2

DEPTH N	TEMP DEC C	SALINITT PSS 7 8	SIGMA THETA	DISS O2 ML/L	OZT 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	16.91	33.224	24.174	5.71	103.1	2.6	0.34	0.1	0.00	0.10	0.02	99.	0.86	0.81	0.83	0.19
15	16.92	33.223	24.171	5.70	103.0	2.6	0.34	0.1	0.00	0.10	0.02	38.	2.6	2.8	2.7	0.10
25	16.91	33.223	24.174	5.72	103.3	2.5	0.33	0.1	0.00	0.10	0.02	19.	2.2	2.3	2.3	0.17
45	15.94	33.398	24.532	6.02	106.8	1.8	0.33	0.1	0.00	0.34	0.10	4.7	3.8	4.3	4.1	0.18
55	15.36	33.373	24.642	6.15	107.8	1.6	0.33	0.1	0.01	0.42	0.15	2.3	2.3	2.0	2.1	0.12
85	12.03	33.014	25.044	6.17	100.7	3.7	0.47	0.6	0.04	0.37	0.25	0.25	0.32	0.27	0.30	0.06

RV NEW HORIZON — CALCOFI CRUISE 8907 — STATIONC 93 110

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	SECCHI DEPTH	CNCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 13.1 N	122 55.5 W	21/ 7/89	1927 UTC	23 M	1214 - 193 9 PST	1218 PST	1940 PST	82.1 MG C/M2

DEPTH M	TEMP DEG C	SALINITT PSS 7 8	SIGMA THETA	DISS O2 ML/L	OZT 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	18.33	33.370	23.944	5.52	102.6	1.9	0.38	0.0	0.00	0.08	0.02	99.	1.6	1.4	1.5	0.21
15	18.34	33.369	23.942	5.51	102.4	1.9	0.36	0.0	0.00	0.08	0.02	38.	2.0	2.1	2.0	0.12
28	18.31	33.367	23.948	5.53	102.7	1.9	0.36	0.0	0.00	0.08	0.02	19.	1.3	1.4	1.4	0.19
49	16.08	33.240	24.379	5.96	105.9	1.9	0.36	0.0	0.00	0.12	0.03	4.7	0.62	0.64	0.63	0.10
59	14.69	33.219	24.669	6.25	108.0	2.0	0.36	0.0	0.00	0.17	0.06	2.3	0.34	0.32	0.33	0.09
92	12.17	31.272	25.218	5.64	92.5	4.6	0.60	3.9	0.09	0.28	0.29	0.25	0.13	0.17	0.15	0.06

Secchi Disk Observations

CalCOFI Cruise 8907

line	Sta.	Day	Mo	Local Time (+8: PST)	Secchi Depth (m)	Forel Water Color	Weather	Clouds Type/Amt	
77	55	1	08	1505	8	4	0	▪	0
77	60	1	08	1055	11	5	0	–	0
77	90	31	07	1645	30	1		cu	1/8
77	100	31	07	1100	22	2		sc	4/8
80	70	30	07	1025	16	3		cu	1/8
80	80	30	07	1515	34	1		cu	1/8
82	47	29	07	1355	14	3		cu	4/8
83	40.5	29	07	1040	16	4		sc	7/8
83	42	29	07	0720	14	3	2	sc	8/8
83	60	28	07	1350	11	4	2	ST	8/8
83	70	28	07	1050	16	2	2	ST	878
83	100	27	07	1105	27	2	1	ST	6/8
87	39	25	07	0745	22	2	2	SC	8/8
87	45	25	07	1050	12	4	4	ST	8/8
87	50	25	07	1510	11	4	2	SC	8/8
87	70	26	07	0755	16	2	2	ST	8/8
87	74	26	07	1111	17	2	2	ST	8/8
87	80	26	07	1612	14	2	1	AC	1/8
90	30	24	07	1533	17	4	1	CC	1/8
90	35	24	07	1101	22	2	2	CC	8/8
90	37	24	07	0856	26	2	2	SC	8/8
90	60	23	07	1728	17	4	1	AC	5/8
90	70	23	07	1115	24	2	2	SC	8/8
90	100	22	07	1530	25	1	2	SC	8/8
90	110	22	07	1045	27	1	2	SC	8/8
93	26.9	18	07	1126	15	3	0	–	0
93	28	18	07	1543	21	3	0	–	0
93	30	18	07	1717	17	2	1	CC	7/8
93	45	19	07	0715	22	2	2	CI	8/8
93	50	19	07	1046	18	2	2	CI	8/8
93	55	19	07	1645	14	2	1	CC	1/8
93	80	20	07	1105	21	2	1	CI	7/8
93	110	21	07	1100	23	1	2	sc	8/8

CalCOFI Cruise 8907

MACROZOOPLANKTON BIOMASS
Net Mesh Size: 0.505 mm

Line	Sta.	Position		Date	Local Time (+8:PST)		Water Volume	Max. Tow	Volume per 1000 m	Strained
				Mo/Day	Start	End	Strained (m)	Depth (m)	Total (cm)	Small (cm)
77	49	35 05.7N	120 47.3W	8/01	2216	2224	134	69	186	186
77	51	35 02.1N	120 55.9W	8/01	2010	2033	430	214	244	244
77	55	34 53.3N	121 13.1W	8/01	1623	1645	405	213	345	286
77	60	34 44.3N	121 32.6W	8/01	1229	1252	419	223	91	91
77	70	34 23.8N	122 15.7W	8/01	0546	0608	396	215	98	98
77	80	34 03.7N	122 56.4W	7/31	2345	0007	443	213	45	45
77	90	33 44.3N	123 38.5W	7/31	1810	1832	404	213	47	47
77	100	33 23.3N	124 19.4W	7/31	1157	1219	401	212	50	50
80	51	34 27.4N	120 32.8W	7/29	2007	2015	208	71	43	43
80	55	34 19.8N	120 48.9W	7/29	2315	2337	392	210	181	181
80	60	34 09.9N	121 09.8W	7/30	0319	0341	409	214	269	269
80	70	33 49.5N	121 50.3W	7/30	0930	0952	387	216	194	194
80	80	33 29.4N	122 32.3W	7/30	1644	1707	421	221	19	19
80	90	33 10.2N	123 13.4W	7/30	2230	2252	433	206	32	32
80	100	32 49.8N	123 54.4W	7/31	0442	0504	398	214	43	43
82	47	34 15.9N	120 02.8W	7/29	1558	1620	399	209	123	123
83	40.6	34 13.1N	119 25.6W	7/29	0957	1001	61	27	163	163
83	42	34 11.3N	119 32.1 W	7/29	0757	0809	222	108	85	85
83	51	33 52.8N	120 08.1W	7/29	0226	0236	169	83	148	148
83	55	33 45.8N	120 26.6W	7/28	2135	2158	477	213	130	130
83	60	33 36.1N	120 45.2W	7/28	1715	1738	444	228	74	74
83	70	33 153N	121 27.6W	7/28	0929	0951	426	209	153	153
83	80	32 54.8N	122 07.9W	7/28	0259	0321	471	211	28	28
83	90	32 35.0N	122 49.0W	7/27	1958	2022	456	232	22	22
83	100	32 16.8N	123 29.9W	7/27	1229	1251	447	221	13	13
87	33	33 53.1N	118 30.4W	7/25	0125	0131	101	50	398	398
87	35	33 49.8N	118 38.4W	7/25	0354	0416	372	209	153	153
87	40	33 39.2N	118 59.2W	7/25	0804	0826	400	202	40	40
87	45	33 30.6N	119 19.6W	7/25	1230	1253	423	220	158	158
87	50	33 19.2N	119 40.4W	7/25	1555	1604	152	79	204	125
87	55	33 09.7N	120 01.0W	7/25	2040	2103	424	211	151	151
87	60	32 59.3N	120 23.6W	7/26	0142	0204	423	219	83	83
87	70	32 40.9N	121 03.0W	7/26	0834	0856	437	210	62	62
87	80	32 19.4N	121 433W	7/26	1643	1706	405	219	54	54
87	90	31 59.9N	122 24.4W	7/26	2242	2304	419	205	162	55
87	100	31 40.3N	123 06.0W	7/27	0511	0533	412	217	29	29
90	28	33 28.9N	117 46.3W	7/24	1905	1914	144	74	292	292
90	30	33 25.2N	117 543W	7/24	1651	1713	373	214	56	56
90	35	33 153N	118 14.9W	7/24	1314	1336	376	216	29	29
90	37	33 11.2N	U8 24.7W	7/24	0906	0928	389	216	62	62
90	45	32 55.4N	118 58.0W	7/24	0352	0414	398	208	294	294
90	53	32 39.1N	119 30.4W	7/23	2244	2306	407	215	81	81
90	60	32 25.4N	119 59.2W	7/23	1800	1822	426	219	66	66
90	70	32 06.0N	120 38.0W	7/23	1217	1239	422	217	62	62
90	80	31 43.7N	121 18.6W	7/23	0450	0512	407	209	52	32
90	90	31 26.1N	122 00.9W	7/22	2238	2300	432	209	65	65
90	100	31 07.2N	122 40.1W	7/22	1653	1715	425	205	19	19
90	110	30 45.4N	123 20.6W	7/22	0931	0953	444	207	16	16
90	120	30 26.6N	123 59.5W	7/22	0222	0245	431	222	19	19
93	26.7	32 56.0N	117 19.2W	7/18	1334	1344	178	95	118	118
93	28	32 53.1N	117 24.6W	7/18	1557	1619	396	210	45	45
93	30	32 50.5N	117 33.9W	7/18	1904	1926	388	215	67	67
93	35	32 40.8N	117 53.8W	7/18	2313	2335	410	212	93	93
93	40	32 30.9N	118 143W	7/19	0345	0407	423	216	187	128
93	45	32 21.2N	118 35.0W	7/19	0800	0822	423	220	54	54
93	50	32 09.9N	118 56.1W	7/19	1305	1328	424	239	253	253
93	55	32 00.4N	119 14.6W	7/19	1655	1719	425	231	26	26
93	60	31 51.8N	119 35.0W	7/19	2132	2155	422	218	64	64
93	70	31 30.0N	120 15.8W	7/20	0436	0459	423	224	40	40
93	80	31 11.7N	120 57.1W	7/20	1238	1300	463	214	24	24
93	90	30 51.1N	121 36.5W	7/20	2011	2033	444	209	25	25
93	100	30 31.8N	122 16.2W	7/21	0251	0313	459	222	22	22
93	110	30 12.1N	122 55.1W	7/21	1037	1100	460	214	13	13
93	120	29 51.2N	123 35.2W	7/21	1958	2021	468	212	17	17

PERSONNEL

CalCOFI Cruise 8908

SHIP'S CAPTAIN

Phillip L. Munsch, RV *New Horizon*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

Mullin, Michael M.	Professor, Director of MLRG, SIO
Roemmich, Dean H. (Chief Scientists)	Associate Professor, SIO
Bray, Nancy A.	Associate Research Oceanographer, SIO
Chereskin, Teresa K.	Assistant Research Oceanographer, SIO
Gripp, Sherry L.	Staff Research Associate, SIO
Lowell, William R.	Staff Research Associate, SIO
Masten, Douglas M.	Marine Technician, SIO
Morris, Michele Y.	Graduate Student, SIO
Schmitt, James A.	Electronics Technician, SIO
Shull, Suzanne	Development Technician, SIO
Stockinger, Lisa M.	Programmer/Analyst, SIO
Tynan, Cynthia T.	Graduate Student, SIO

FIGURES

Cruise 8908

1. Cruise 8908, track and station positions.

2. Sections along CalCOFI line 93 (vertical exaggeration 200): A) potential density; B) potential temperature; C) salinity; D) silicate; E) phosphate; F) nitrate; G) oxygen saturation; and H) oxygen. The line at a depth of 500 m is to indicate the usual CalCOFI maximum sampling depth.

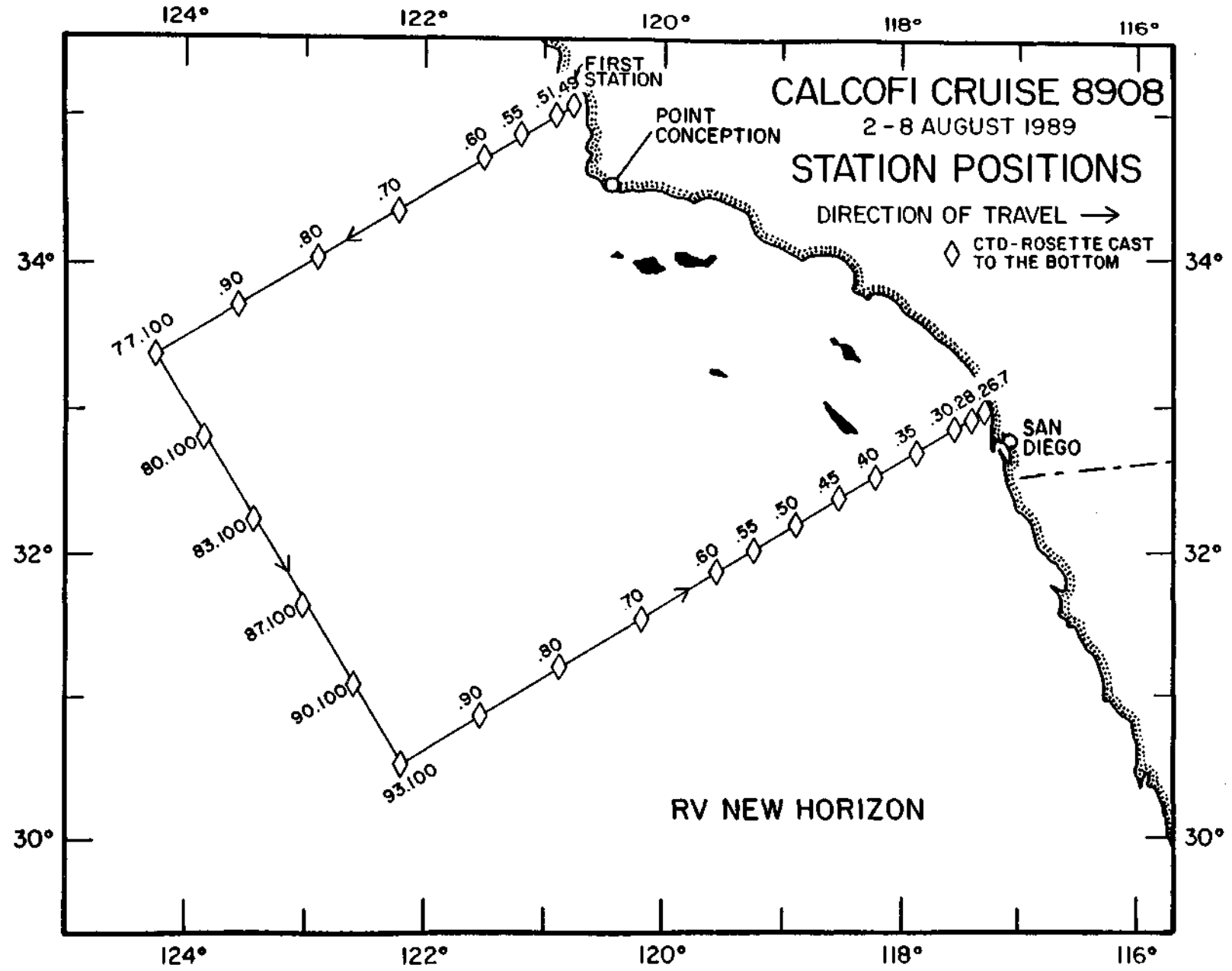
CALCOFI CRUISE 8908
2 - 8 AUGUST 1989
STATION POSITIONS
DIRECTION OF TRAVEL →
CTD - ROSETTE CAST TO THE BOTTOM
FIRST STATION
POINT CONCEPTION
SAN DIEGO
RV NEW HORIZON
124°
122°
120°
118°
116°
34°
32°
30°
77.100
80.100
83.100
87.100
90.100
93.100
.90
.80
.70
.60
.55
.51.49
.45
.50
.40
.35
.30
.28
.26.7

FIGURE 1

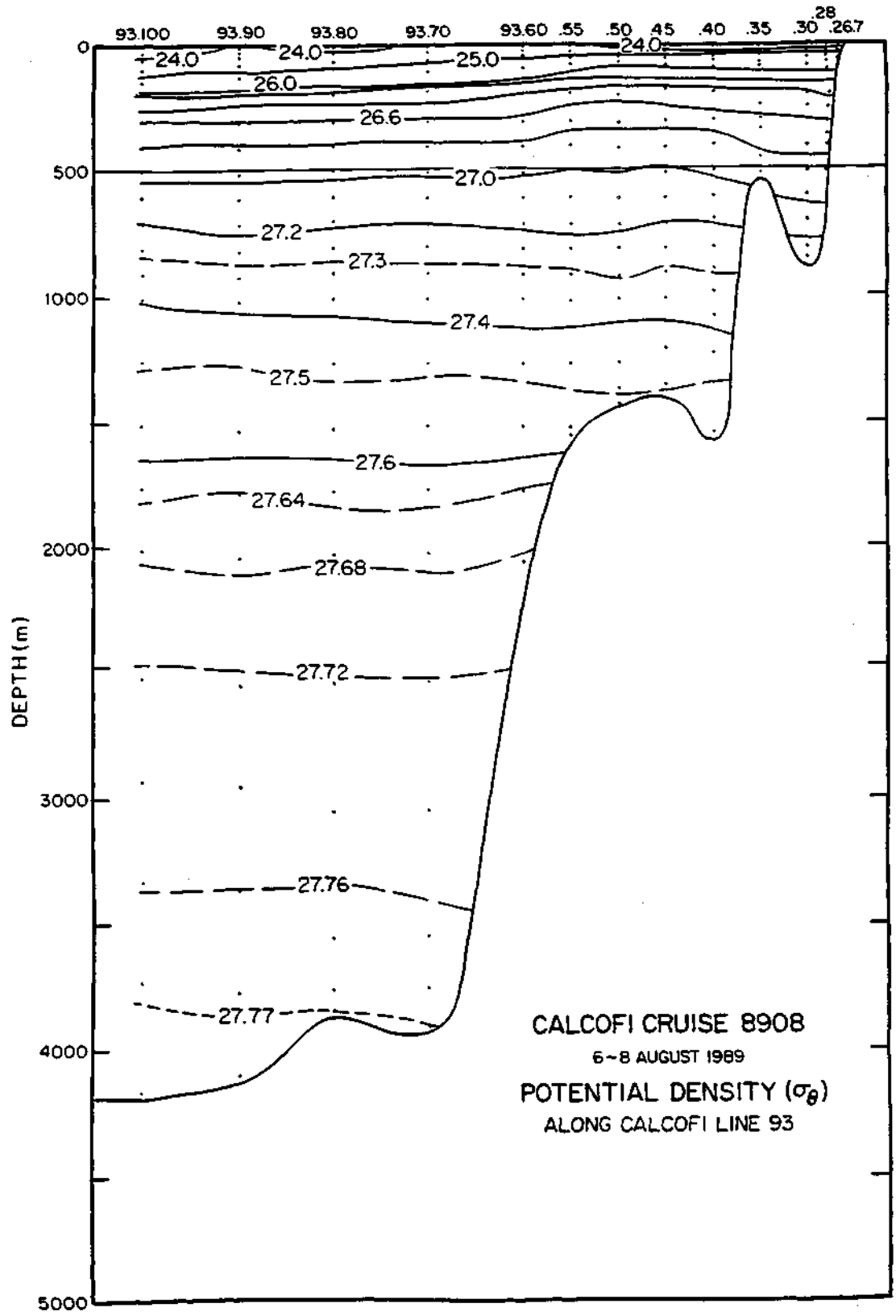
93.100
93.90
93.80
93.70
93.60
.55
.50
.45
.40
.35
.30
.28
.26.7
0
500
1000
2000
3000
4000
5000
DEPTH(m)
24.0
24.0
24.0
25.0
26.0
26.6
27.0
27.2
27.3
27.4
27.5
27.6
27.64
27.68
27.72
27.76
27.77
CALCOFI CRUISE 8908
6-8 AUGUST 1989
POTENTIAL DENSITY (σ_θ)
ALONG CALCOFI LINE 93

FIGURE 2A

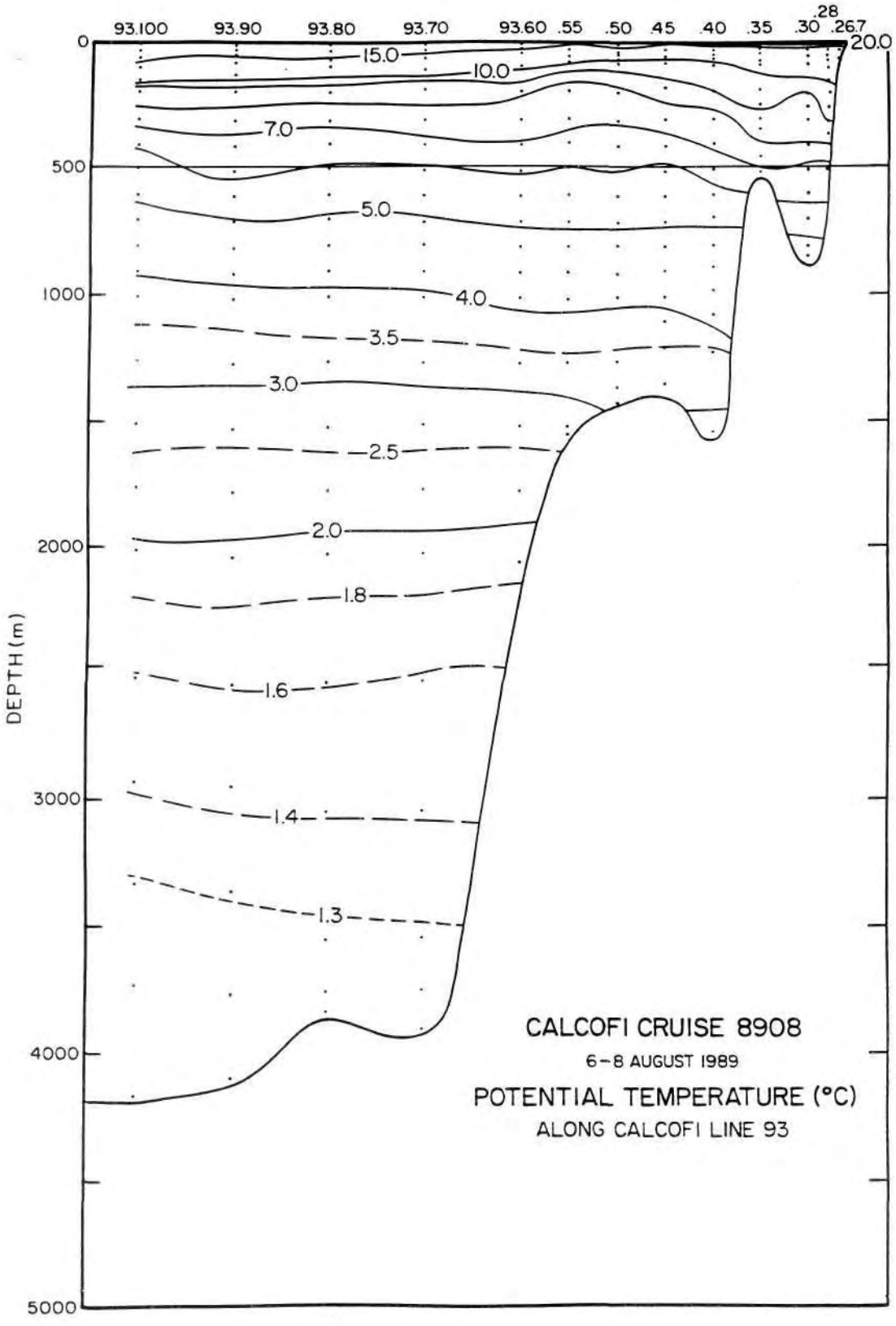
93.100
93.90
93.80
93.70
93.60
.55
.50
.45
.40
.35
.30
.28
.26.7
20.0
0
500
1000
2000
3000
4000
5000
DEPTH (m)
15.0
10.0
7.0
5.0
4.0
3.5
3.0
2.5
2.0
1.8
1.6
1.4
1.3
CALCOFI CRUISE 8908
6-8 AUGUST 1989
POTENTIAL TEMPERATURE (°C)
ALONG CALCOFI LINE 93

FIGURE 28

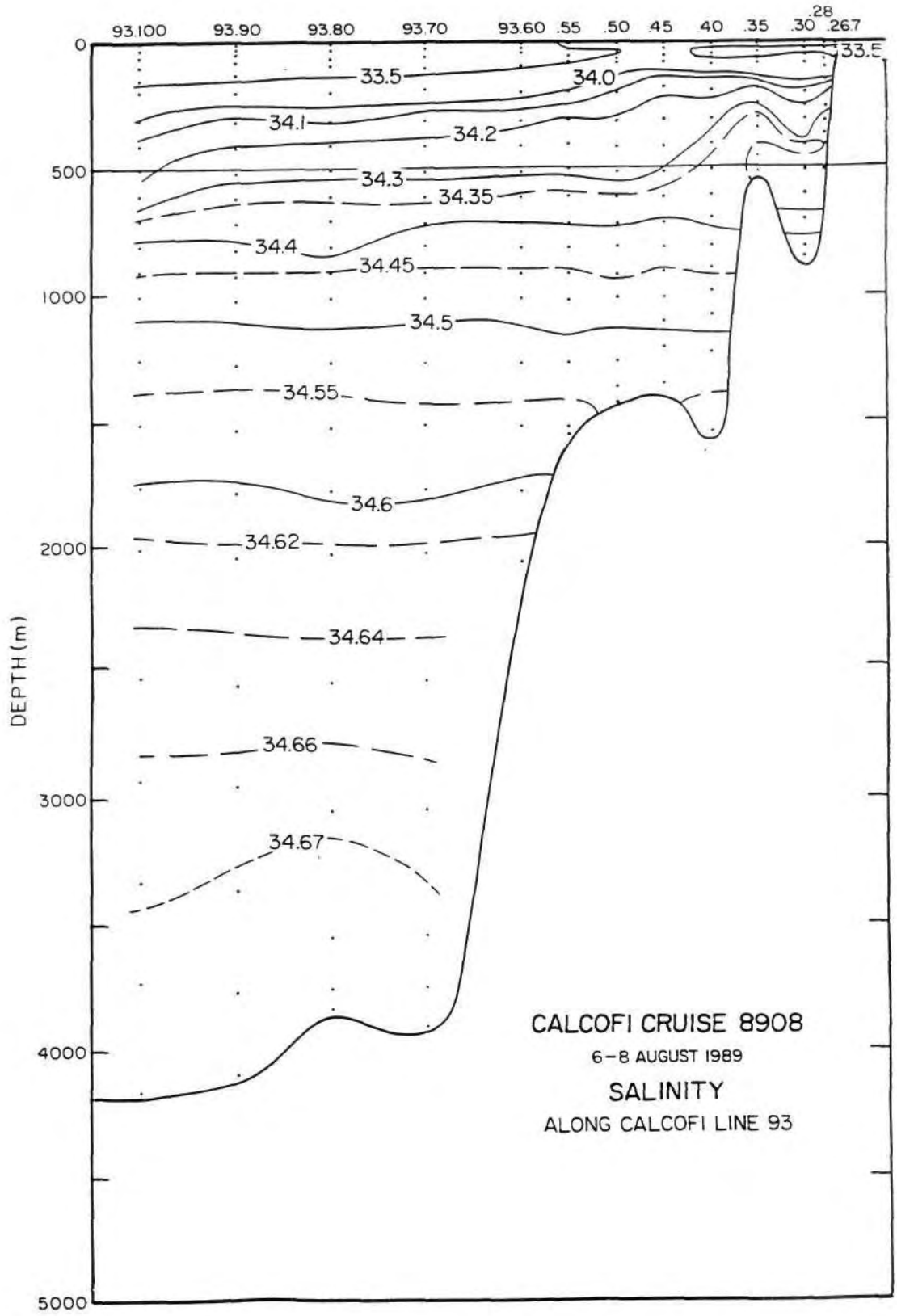
93.100
93.90
93.80
93.70
93.60
.55
.50
.45
.40
.35
.30
.28
.267
0
500
1000
2000
3000
4000
5000
DEPTH (m)
33.5
34.0
34.1
34.2
34.3
34.35
34.4
34.45
34.5
34.55
34.6
34.62
34.64
34.66
34.67
CALCOFI CRUISE 8908
6-8 AUGUST 1989
SALINITY
ALONG CALCOFI LINE 93

FIGURE 2C

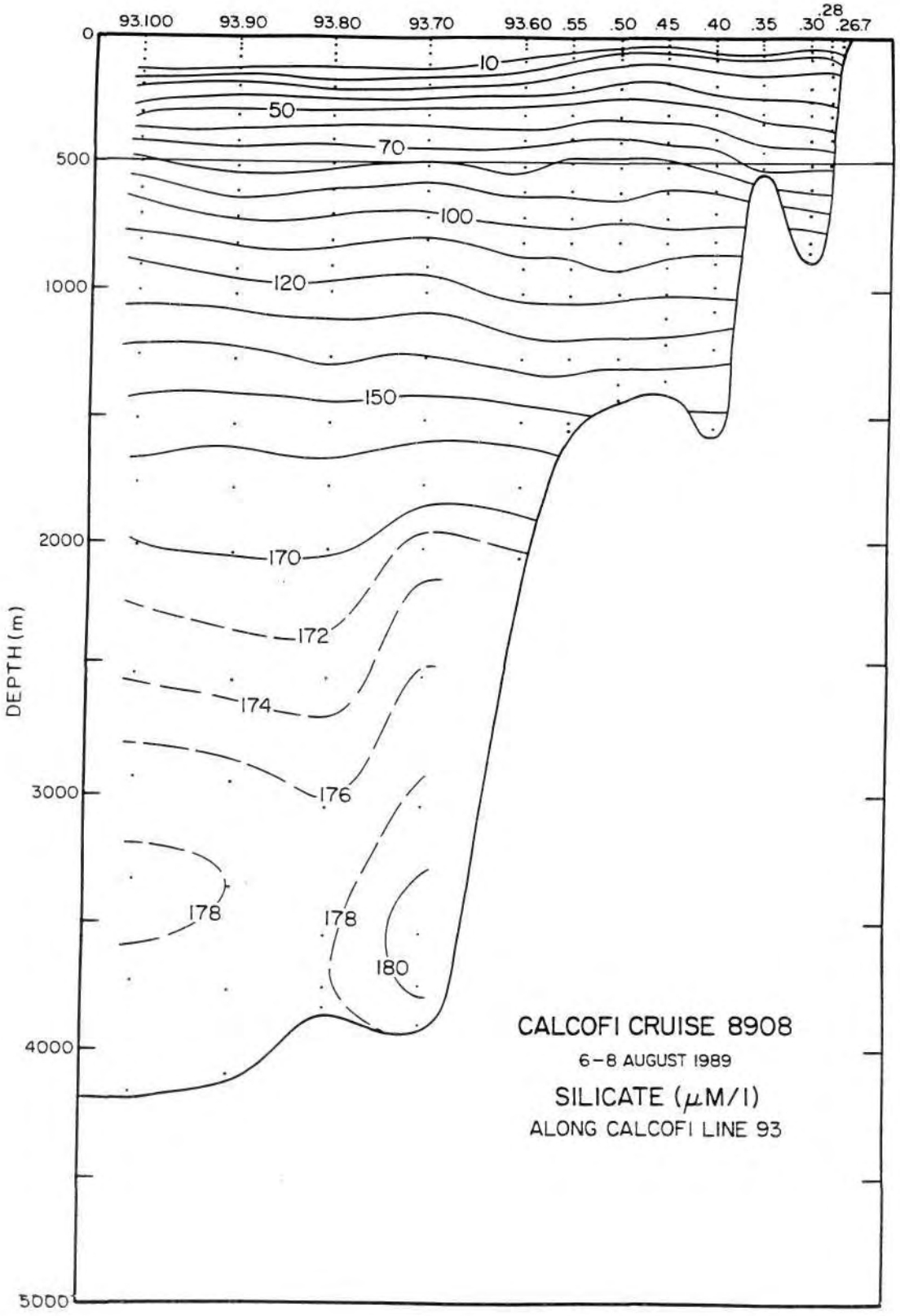
93.100
93.90
93.80
93.70
93.60
.55
.50
.45
.40
.35
.30
.28
.26.7
0
500
1000
2000
3000
4000
5000
DEPTH (m)
10
50
70
100
120
150
170
172
174
176
178
178
180
CALCOFI CRUISE 8908
6-8 AUGUST 1989
SILICATE (μM/l)
ALONG CALCOFI LINE 93

FIGURE 2D

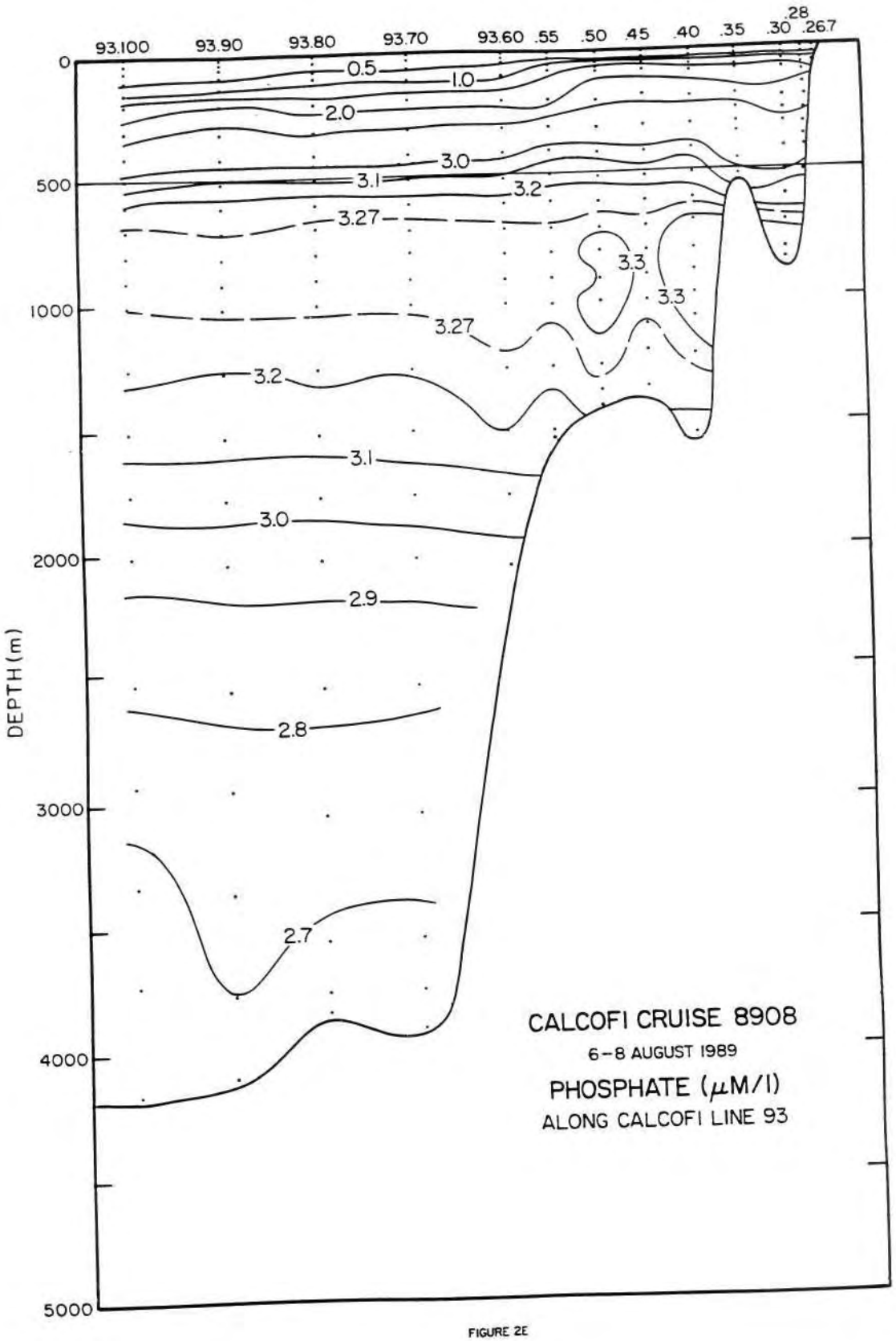
93.100
93.90
93.80
93.70
93.60
.55
.50
.45
.40
.35
.30
.28
.26.7
0
500
1000
2000
3000
4000
5000
DEPTH (m)
0.5
1.0
2.0
3.0
3.1
3.2
3.27
3.3
3.3
3.27
3.2
3.1
3.0
2.9
2.8
2.7
CALCOFI CRUISE 8908
6-8 AUGUST 1989
PHOSPHATE (μM/l)
ALONG CALCOFI LINE 93

FIGURE 2E

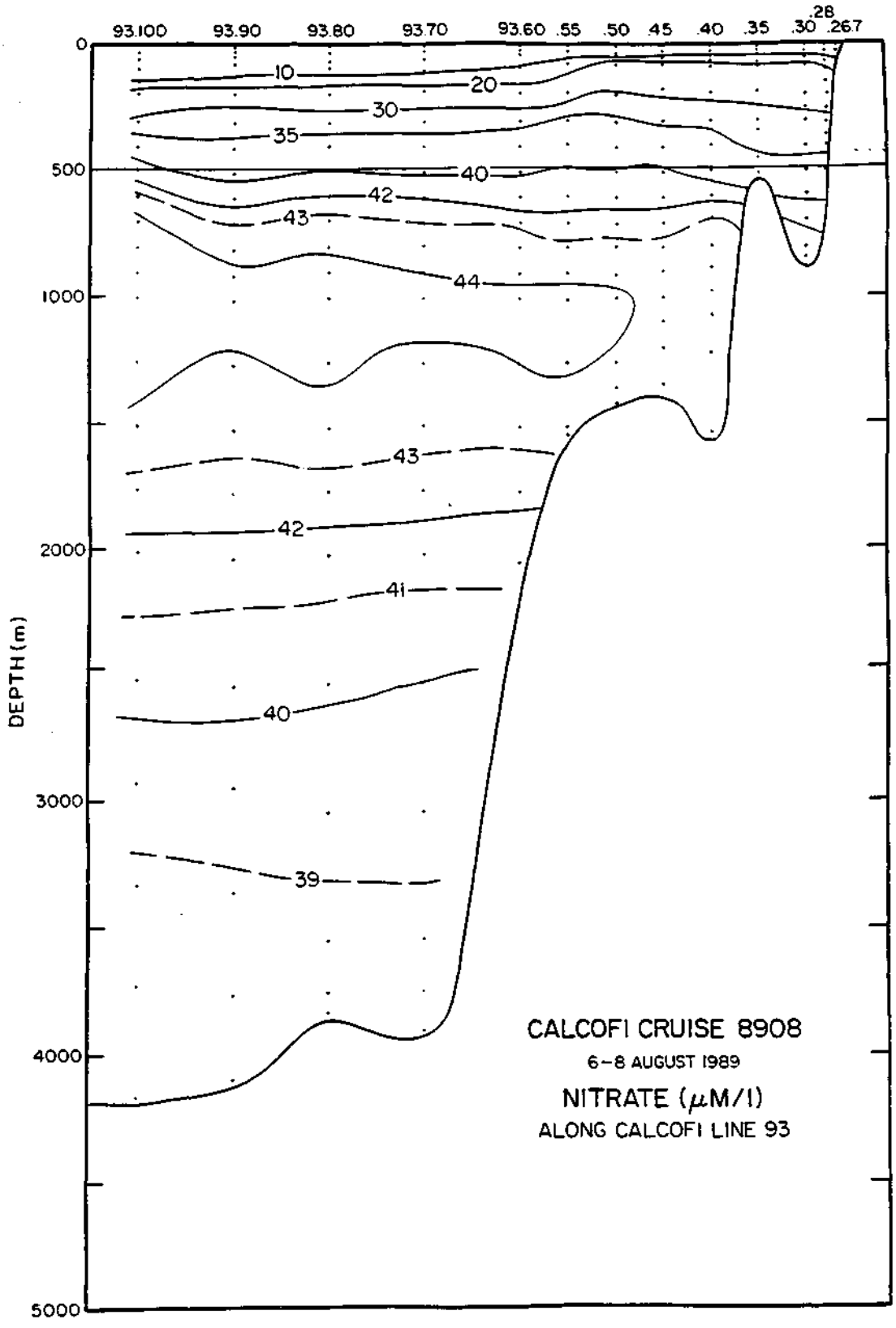
93.100
93.90
93.80
93.70
93.60
.55
.50
.45
.40
.35
.30
.28
.26.7
0
500
1000
2000
3000
4000
5000
DEPTH (m)
10
20
30
35
40
42
43
44
43
42
41
40
39
CALCOFI CRUISE 8908
6-8 AUGUST 1989
NITRATE (μM/l)
ALONG CALCOFI LINE 93

FIGURE 2F

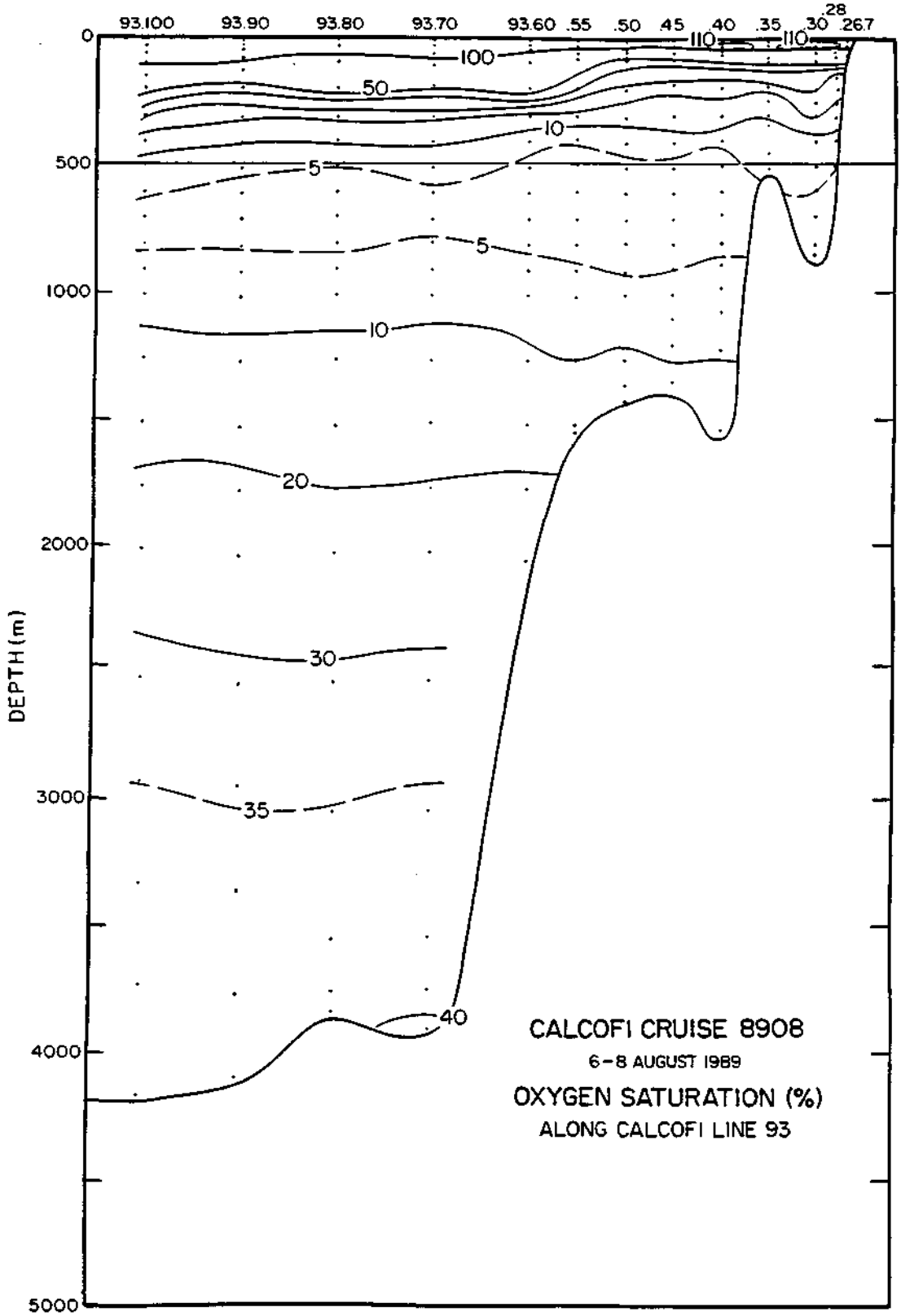
93.100
93.90
93.80
93.70
93.60
.55
.50
.45
.40
.35
.30
.28
26.7
0
500
1000
2000
3000
4000
5000
DEPTH (m)
110
100
50
10
5
5
10
20
30
35
40
CALCOFI CRUISE 8908
6-8 AUGUST 1989
OXYGEN SATURATION (%)
ALONG CALCOFI LINE 93

FIGURE 26

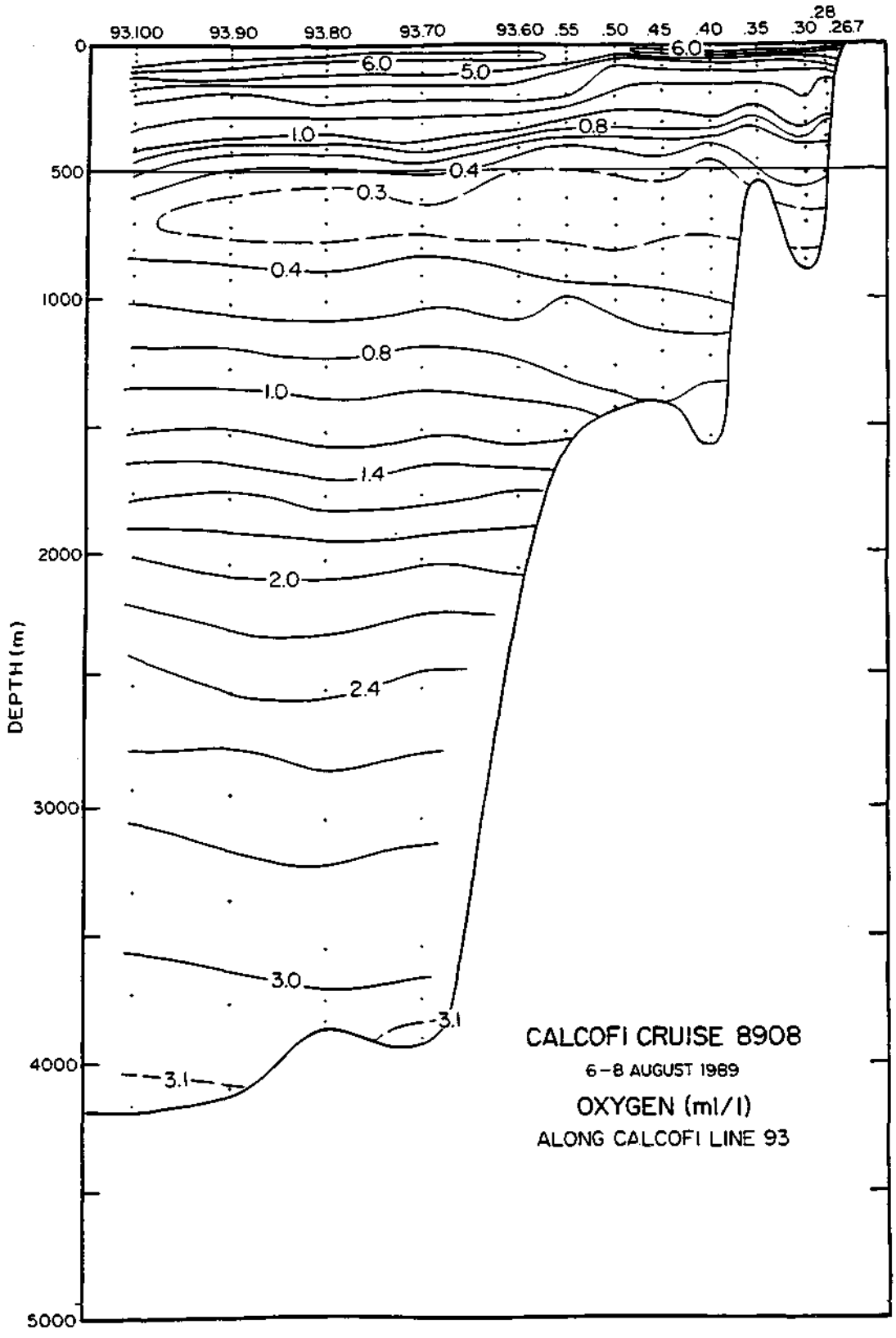
93.100
93.90
93.80
93.70
93.60
.55
.50
.45
.40
.35
.30
.28
.26.7
0
500
1000
2000
3000
4000
5000
DEPTH (m)
6.0
5.0
1.0
0.8
0.4
0.3
0.4
0.8
1.0
1.4
2.0
2.4
3.0
3.1
3.1
CALCOFI CRUISE 8908
6-8 AUGUST 1989
OXYGEN (ml/l)
ALONG CALCOFI LINE 93

FIGURE 2H

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
35 5.7 N	120 46.9 W	02/08/89	2338 UTC	73 M	300	18 KT	3 20 04	2	1012 2 MB	13.8 C	12.8 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
2	2	12.103	12.103	33.694	25.556	241.9	0.005	6.09	100.0	9.2	0.57	7.0	0.22	11.54	1.44	2
2	12	12.022	12.020	33.692	25.570	240.9	0.029	5.98	98.1	9.0	0.59	7.2	0.21	12.44	2.04	12
2	33	11.300	11.296	33.719	25.7 25	226.6	0.078	4.35	70.2	16.4	1.21	14.0	0.34	5.77	0.82	33
2	54	10.404	10.398	33.764	25.919	208.6	0.124	3.33	52.7	24.3	1.83	19.3	0.29	0.90	1.04	54
2	66	10.153	10.145	33.796D	25.988	202.3	0.148	3.01	47.4	28.8	2.05	21.1	0.29	0.27	1.59	66

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
35 1.7 N	120 55.3 W	03/08/89	0153 UTC	250 M	320	15 KT	320 04	2	1011.6 MB	13.8 C	13.0 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
2	1	12.569	12.569	33.648	25.431	253.8	0.003	6.99	115.9	2.2	0.23	1.1	0.06	13.64	1.70	1
2	11	12.563	12.562	33.647	25.432	254.0	0.028	6.98	115.7	2.2	0.28	1.1	0.06	12.44	1.55	11
2	31	10.850	10.846	33.716	25.803	219.1	0.075	4.05	64.8	17.6	1.49	16.6	0.28	14.59	1.60	31
2	52	9.921	9.915	33.762	26.000	200.8	0.119	3.45	54.1	23.0	1.73	21.1	0.22	3.31	0.62	52
2	102	9.415	9.404	33.956	26.236	179.4	0.214	2.78	43.1	30.9	2.03	25.9	0.05	2.53	0.62	103
2	151	9.043	9.027	34.026	26.351	169.4	0.300	2.38	36.6	35.1	2.14	27.6	0.07	0.05	0.24	152
2	203	8.754	8.732	34.101	26.457	160.3	0.3 86	1.98	30.3	41.0	2.36	29.2	0.15	0.05	0.35	204
2	240	8.452	8.427	34.140	26.534	153.5	0.444	1.72	26.1	48.0	2.54	30.3	0.13	0.06	0.39	242

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 55.1 N	121 12.1 W	03/08/89	0530 UTC	559 M	330	16 KT	3 20 06	2	1012.1 MB	13.5 C	12.9 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
2	2	12.402	12.402	33.641	25.458	251.3	0.005	6.40	105.8	3.4	0.39	5.2	0.17	9.03	1.32	2
2	31	12.045	12.041	33.633	25.520	246.1	0.077	6.01	98.6	4.0	0.57	6.5	0.18	6.52	1.62	31
2	52	10.498	10.492	33.706	25.858	214.4	0.125	3.70	58.7	20.1	1.58	18.8	0.22	0.15	0.23	52
2	102	9.533	9.522	33.881	26.158	186.8	0.226	2.93	45.6	27.9	1.88	24.2	0.05	0.06	0.19	103
2	150	8.875	8.859	34.013	26.368	167.7	0.311	2.72	41.7	32.9	2.02	26.4	0.03	0.05	0.10	151
2	202	8.146	8.125	33.993	26.464	159.3	0.396	3.09	46.6	35.3	1.98	26.8	0.02	0.02	0.06	203
2	300	7.83 8	7.808	34.169	26.650	143.4	0.544	1.42	21.3	50.5	2.57	32.8	0.02	0.02	0.09	302
2	396	7.298	7.260	34.234	26.7 80	132.4	0.677	0.81	12.0	62.2	2.87	35.1	0.05	0.03	0.15	399
2	494	6.432	6.3 87	34.261	26.919	119.9	0.800	0.49	7.1	74.6	3.07	38.1	0.03	0.01	0.08	498
2	548	6.025	5.977	34.300	27.003	112.3	0.863	0.32	4.6	86.9	3.22	38.7	0.23	0.08	0.47	552

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
3 4 44.8 N	121 32.8 W	03/08/89	0940 UTC	904 M	320	20 KT	3 20 06	2	1013.4 MB	15.5 C	14.8 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
2	0	14.220	14.220	33.552	25.023	292.6	0.000	6.48	111.1	1.3	0.28	0.0	0.02	6.16	0.83	0
2	31	14.098	14.094	33.589	25.078	288.2	0.090	6.38	109.2	1.3	0.30	0.5	0.05	4.78	0.79	31
2	52	10.894	10.888	33.314	25.483	250.0	0.147	5.32	84.9	9.8	1.07	10.8	0.26	0.05	0.11	52
2	102	9.561	9.550	33.704	26.015	200.4	0.259	3.62	56.3	22.3	1.65	21.5	0.03	0.05	0.13	103
2	152	8.3 93	8.377	33.946	26.390	165.5	0.351	3.28	49.7	31.8	1.88	25.5	0.02	0.03	0.05	153
2	196	7.529	7.510	34.015	26.572	148.8	0.420	2.88	42.8	41.9	2.12	28.9	0.02	0.02	0.05	197
2	295	7.099	7.071	34.163	26.750	133.3	0.559	1.20	17.7	58.2	2.73	35.2	0.01	0.01	0.05	297
2	395	6.697	6.661	34.243	26.869	123.4	0.688	0.67	9.8	68.5	2.97	37.5	0.00	0.01	0.04	398
2	500	5.796	5.753	34.261	27.000	111.6	0.811	0.40	5.7	82.7	3.14	40.6	0.00	0.01	0.03	504
2	600	5.471	5.420	34.354	27.114	101.8	0.918	0.24	3.4	91.4	3.23	41.5	0.00	0.01	0.04	604
2	704	5.060	5.002	34.378	27.182	96.0	1.021	0.27	3.8	101.2	3.26	42.3	0.02	0.03	0.09	709
2	805	4.7 95	4.730	34.410	27.238	91.4	1.115	0.32	4.5	107.2	3.28	43.0	0.01	0.73	0.25	811
2	891	4.654	4.582	34.421	27.263	89.7	1.193	0.32	4.5	110.1	3.29	43.2	0.01	0.50	0.20	898

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 77 70

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TTPE
34 25.4 N	122 15.0 W	03/08/89	1557 UTC	3968 M	310	10 KT	3 20 05	2	1015 1 MB	16.3 C	15.1 C	8/8	SC

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OZTGEN ML/L	OZY PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
2	0	15.223	15.223	33.485	24.756	318.0	0.000	6.00	105.0	3.3	0.47	1.4	0.07	0.54	0 15	0
2	34	14.782	14.777	33.595	24.938	301.7	0.105	5.97	103.6	3.8	0.60	3.3	0.13	0.77	0.33	34
2	55	12.152	12.145	33.549	25.435	254.8	0.164	5.23	85.9	9.2	1.07	9.3	0.35	0.37	0.26	55
2	105	9.564	9.552	33.699	26.011	200.8	0.278	3.42	53.2					0.05	0.08	106
2	154	8.529	8.513	33.982	26.397	164.9	0.367	2.67	40.6							155
2	204	7.675	7.655	34.021	26.556	150.5	0.446	2.66	39.7					0.03	0.09	205
2	307	6.534	6.506	34.059	26.744	133.7	0.592	1.75	25.4	61.3	2.60	35.4	0.02			309
2	409	6.110	6.074	34.218	26.926	117.7	0.721	0.54	7.8	80.7	3.06	39.9	0.01			412
2	609	5.255	5.204	34.341	27.129	100.1	0.939	0.28	4.0	96.6	3.25	42.1	0.00			614
2	708	4.964	4.906	34.388	27.201	94.2	1.035	0.26	3.6	103.3	3.29	42.5	0.00			713
2	809	4.533	4.469	34.411	27.268	88.2	1.127	0.31	4.3	111.7	3.31	43.2	0.00			815
2	911	4.222	4.151	34.440	27.325	83.3	1.214	0.40	5.5	118.8	3.30	43.7	0.00			919
2	1013	3.888	3.811	34.472	27.385	77.8	1.296	0.57	7.8	127.1	3.29	44.1	0.00			1022
2	1268	3.236	3.144	34.517	27.486	68.6	1.483	0.77	10.3	143.1	3.23	44.2	0.00			1280
2	1522	2.711	2.603	34.557	27.567	61.1	1.648	1.09	14.4	158.7	3.16	43.4	0.00			1537
2	1773	2.313	2.189	34.590	27.628	55.3	1.794	1.42	18.6	170.5	3.07	42.5	0.00			1792
2	2023	2.041	1.900	34.617	27.673	51.1	1.927	1.87	24.4	176.0	2.99	41.5	0.00			2046
2	2526	1.769	1.588	34.649	27.722	47.3	2.174	2.35	30.4	177.5	2.85	40.0	0.00			2558
2	3028	1.632	1.405	34.665	27.748	45.9	2.408	2.70	34.7	177.7	2.75	38.9	0.00			3070
2	3535	1.550	1.273	34.672	27.763	45.7	2.641	2.91	37.3	180.4	2.70	38.3	0.00			3588
2	3910	1.524	1.207	34.680	27.774	45.8	2.812	3.05	39.0	181.2	2.69	37.7	0.00			3972

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 77 80

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TTPE
34 4 N	122 56 W	04/08/89	0207 UTC	4224 M	300	11 KT	3 20 04	2	1014.9 MB	17.8 C	16.0 C	8/8	SC

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OZTGEN ML/L	OZT PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
2	0	17.203	17.203	33.197	24.084	382.0	0.000	5.68	103.2	3.7	0.38	0.1	0.00	0.12	0 03	0
2	35	13.977	13.972	33.183	24.790	315.8	0.122	6.27	106.7	3.6	0.40	0.1	0.00	0.32	0 13	35
2	66	11.566	11.558	33.309	25.359	262.3	0.212	5.87	95.1	8.1	0.86	6.6	0.23	0.45	0 26	66
2	97	10.011	10.000	33.493	25.776	223.1	0.287	4.43	69.4	17.1	1.41	14.6	0.03	0.11	0 10	97
2	115	9.708	9.695	33.660	25.957	206.2	0.326	3.72	58.0	22.4	1.67	21.5	0.02	0.05	0 06	116
2	206	7.985	7.964	34.007	26.500	156.0	0.490	2.78	41.8	38.7	2.09	28.7	0.01	0.01	0 03	207
2	309	6.7 89	6.761	34.083	26.729	135.3	0.640	1.57	23.0	58.5	2.61	35.5	0.00	0.00	0 02	311
2	613	5.147	5.097	34.345	27.145	98.5	0.996	0.33	4.6	97.7	3.26	42.8	0.00			617
2	714	4.699	4.642	34.386	27.229	91.1	1.092	0.24	3.3	107.3	3.30	43.6	0.00			719
2	816	4.368	4.305	34.429	27.300	84.9	1.181	0.33	4.6	114.7	3.30	44.3	0.00			822
2	918	4.061	3.991	34.459	27.357	80.0	1.265	0.44	6.0	121.9	3.29	44.7	0.00			926
2	1019	3.846	3.769	34.479	27.395	76.8	1.345	0.54	7.4	126.7	3.27	45.0	0.00			1028
2	1272	3.208	3.116	34.530	27.499	67.4	1.527	0.85	11.4	140.1	3.20	44.3	0.00			1284
2	1529	2.712	2.604	34.565	27.573	60.6	1.692	1.15	15.2	156.1	3.15	43.9	0.00			1544
2	17 83	2.334	2.209	34.596	27.631	55.1	1.83 9	1.48	19.4	165.4	3.05	42.9	0.00			1802
2	2037	2.064	1.921	34.623	27.676	51.0	1.973	1.89	24.6	171.4	2.96	42.1	0.00			2060
2	2543	1.768	1.585	34.650	27.7 23	47.2	2.222	2.33	30.1	176.1	2.85	40.6	0.00			2575
2	3561	1.524	1.245	34.685	27.776	44.5	2.689	2.96	37.9	180.3	2.69	38.8	0.01			3614
2	3964	1.491	1.169	34.685	27.781	45.1	2.870	3.23	41.3	175.4	2.64	38.0	0.01			4027
2	4201	1.503	1.154	34.687	27.7 83	45.8	2.977	3.30	42.2	171.7	2.61	37.7	0.01			4270

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 77 90

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TTPE
33 43.8 N	123 37.9 W	04/08/89	0930 UTC	4152 M	330	18 KT		2	1015.1 KB	17.2 C	15.6 C	8/8	ST

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OZTGEN ML/L	OZT PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
2	0	17.260	17.260	33.188	24.064	3 84.0	0.000	5.63	102.4	3.4	0.38	0.0	0.00	0.11	0 03	0
2	33	17.170	17.165	33.189	24.087	382.9	0.127	5.64	102.4	3.4	0.37	0.0	0.00	0.13	0 04	33
2	66	11.934	11.926	33.197	25.203	277.0	0.235	6.43	104.9	5.7	0.59	2.3	0.07	0.57	0 35	66
2	84	10.777	10.767	33.322	25.511	248.1	0.283	5.30	84.4	10.7	1.06	10.9	0.14	0.27	0 23	84
2	145	8.743	8.728	33.863	26.271	176.8	0.412	3.06	46.7	29.5	1.92	25.7	0.01	0.01	0 04	146
2	195	8.100	8.080	33.993	26.471	158.5	0.496	2.78	41.9	36.7	2.07	28.2	0.00	0.00	0 04	196
2	307	6.874	6.846	34.072	26.709	137.2	0.662	1.68	24.6	55.9	2.57	34.6	0.00			309
2	412	5.870	5.835	34.116	26.875	122.2	0.798	0.96	13.7	72.9	2.93	38.9	0.00			415
2	514	5.234	5.192	34.190	27.011	110.0	0.916	0.48	6.8	87.5	3.12	41.5	0.00			518
2	616	4.598	4.550	34.251	27.132	98.9	1.023	0.32	4.4	103.6	3.23	43.3	0.00			620
2	717	4.366	4.311	34.336	27.225	90.9	1.119	0.27	3.7	112.2	3.30	44.2	0.00			722
2	819	4.103	4.041	34.407	27.310	83.4	1.208	0.34	4.7	119.4	3.31	44.3	0.00			825
2	921	3.836	3.767	34.447	27.370	78.2	1.290	0.44	6.0	125.8	3.28	44.5	0.00			929
2	1021	3.580	3.505	34.479	27.422	73.7	1.366	0.58	7.9	130.9	3.27	44.5	0.00			1030
2	1265	3.162	3.071	34.528	27.502	67.0	1.538	0.92	12.3	140.8	3.20	43.7	0.00			1277
2	1520	2.719	2.611	34.567	27.574	60.5	1.700	1.22	16.2	152.9	3.14	43.1	0.00			1s35
2	1770	2.343	2.219	34.596	27.630	55.2	1.845	1.50	19.7	163.6	3.06	42.5	0.00			1789
2	2009	2.085	1.944	34.618	27.670	51.5	1.972	1.84	24.0	170.0	2.99	41.8	0.00			2031
2	2484	1.776	1.598	34.645	27.718	47.5	2.207	2.29	29.6	175.7	2.86	40.6	0.00			2515
2	2960	1.620	1.400	34.661	27.745	45.8	2.430	2.62	33.7	178.7	2.78	39.5	0.00			3000
2	3453	1.532	1.264	34.676	27.767	44.9	2.653	2.90	37.2	179.3	2.71	38.7	0.01			3504
2	3834	1.498	1.190	34.692	27.7 85	44.4	2.823	3.14	40.2	176.4	2.66	38.0	0.00			3894
2	4143	1.504	1.161	34.683	27.780	45.9	2.963	3.27	41.8	172.6	2.62	37.5	0.00			4211

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 23.9 N	124 19.9 W	04/08/89	1653 DTC	4467 M	340	12 KT	3 40 04	2	1017.1 MB	16.6 C	15.3 C	8/8	SC

CAST	DEPTH M	TEMP DEC 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
2	0	17.075	17.075	33.229	24.139	376.8	0.000	5.70	103.3	3.2	0.35	0.0	0.00	0.17	0.04	0
2	36	15.121	15.116	33.293	24.632	330.9	0.127	6.03	105.2	2.4	0.46	1.1	0.06	0.40	0.22	36
2	51	12 233	12.226	33.098	25.070	289.4	0.174	6.29	103.2	3.9	0.50	0.9	0.06	0.57	0.34	51
2	98	10.057	10 046	33.267	25.592	240.6	0.298	5.16	80.9	11.8	1.09	11.8	0.02	0.08	0.09	96
2	144	9.026	9.011	33.778	26.160	167.4	0.397	3.16	48.5	29.3	1.89	25.0	0.01	0.01	0.04	145
2	188	8.2 89	8.270	33.956	26.414	163.9	0.474	3.19	48.2	34.3	1.91	26.0	0.01	0.00	0.02	189
2	311	6.817	6.7 88	34.059	26.707	137.5	0.660	1.81	26.5	57.6	2.53	34.1	0.00			313
2	409	5.7 94	5.759	34.096	26.868	122.7	0.7 87	1.06	15.1	74.8	2.87	38.7	0.00			412
2	507	5.301	5.259	34.172	26.989	112.1	0.902	0.55	7.8	87.0	3.07	41.4	0.00			510
2	605	4.710	4.663	34.238	27.109	101.1	1.007	0.34	4.7	102.2	3.22	43.2	0.00			609
2	708	4.543	4.488	34.335	27.205	92.9	1.107	0.22	3.1	109.6	3.28	43.7	0.00			713
2	813	4.224	4.162	34.390	27.284	86.1	1.201	0.27	3.7	118.3	3.30	44.2	0.00			819
2	913	4.045	3.976	34.451	27.352	80.3	1.284	0.42	5.8	122.3	3.27	43.8	0.00			920
2	1016	3.714	3.638	34.483	27.412	74.9	1.364	0.56	7.6	129.8	3.25	43.9	0.00			1025
2	1272	3.189	3.097	34.526	27.498	67.5	1.546	0.81	10.9	141.8	3.20	43.2	0.00			1284
2	1518	2.721	2.614	34.561	27.569	60.9	1.7 04	1.11	14.7	156.0	3.13	42.8	0.00			1533
2	1773	2.284	2.161	34.595	27.634	54.6	1.851	1.48	19.4	167 .4	3.04	42.3	0.00			1792
2	2036	2.001	1.85 9	34.620	27.678	50.5	1.989	1.87	24.3	175.2	2.96	41.4	0.00			2059
2	2543	1.735	1.553	34.648	27.724	47.0	2.236	2.34	30.2	177 .4	2.83	39.8	0.00			2575
2	3049	1.574	1.347	34.665	27.752	45.2	2.469	2.72	34.9	180.1	2.74	38.9	0.00			3091
2	3553	1.490	1.213	34.675	27.770	44.7	2.696	3.07	39.3	178.5	2.65	37.8	0.00			3606
2	4059	1.497	1.164	34.690	27.785	45.1	2.923	3.29	42.1	172.3	2.60	37.3	0.00			4124
2	4442	1.533	1.155	34.685	27.782	47.1	3.099	3.35	42.8	171.5	2.59	37.4	0.00			4518

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 49.0 N	123 54.5 W	05/08/89	0016 UTC	4416 M	340	12 KT	3 40 03	2	1017. L MB	18.8 C	16.6 C	8/8	SC

CAST	DEPTH M	TEMP DEC 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.EAR
2	0	17.186	17.186	33.096	24.010	3 89.0	0.000	5.68	103.1	3.7	0.39	0.0	0.00	0.10	0.02	0
2	32	17.055	17.050	33.083	24.033	388.0	0.124	5.72	103.5	3.4	0.42	0.0	0.00	0.13	0.03	32
2	59	13.815	13.807	33.028	24.704	324.6	0.221	6.41	108.7	3.4	0.41	0.0	0.00	0.37	0.19	59
2	91	11.608	11.597	33.015	25.123	285.2	0.318	6.02	97.4	4.9	0.59	1.7	0.15	0.30	0.17	91
2	143	9.737	9.721	33.425	25.769	224.6	0.451	4.61	71.8	15.8	1.29	15.3	0.02	0.03	0.03	144
2	185	8.697	8.677	33.847	26.266	178.0	0.535	3.30	50.3	29.3	1.83	24.6	0.01	0.00	0.03	186
2	305	7.202	7.173	34.048	26.645	143.5	0.728	2.08	30.7	50.5	2.40	32.3	0.00			307
2	406	6.059	6.024	34.090	26.831	126.5	0.864	1.16	16.7	69.6	2.81	37.9	0.00			409
2	511	5.603	5.560	34.212	26.985	112.9	0.990	0.47	6.7	85.0	3.11	40.7	0.00			514
2	611	4.908	4.859	34.252	27.098	102.5	1.098	0.32	4.5	99.7	3.23	42.6	0.00			615
2	712	4.489	4.434	34.326	27.204	93.0	1.197	0.22	3.0	111.5	3.28	43.4	0.00			717
2	814	4.209	4.147	34.394	27.289	85.6	1.288	0.26	3.6	119.6	3.30	44.0	0.00			620
2	919	3.920	3.851	34.443	27.358	79.5	1.374	0.38	5.2	126.4	3.28	44.1	0.00			926
2	1018	3.685	3.610	34.476	27.409	75.1	1.451	0.54	7.3	131.5	3.26	44.1	0.00			1026
2	1273	3.099	3.008	34.531	27.510	66.1	1.631	0.90	12.1	144.5	3.17	43.5	0.00			1285
2	1527	2.703	2.595	34.565	27.574	60.5	1.792	1.16	15.4	156.7	3.11	42.9	0.00			1542
2	1781	2.286	2.162	34.600	27.638	54.3	1.937	1.52	19.9	168.9	3.04	41.9	0.00			1800
2	2036	2.025	1.883	34.621	27.677	50.7	2.071	1.81	23.6	175.7	2.98	41.3	0.00			2059
2	2543	1.737	1.555	34.653	27.728	46.6	2.318	2.36	30.5	178.2	2.86	39.6	0.00			2574
2	3050	1.5 89	1.361	34.667	27.753	45.2	2.551	2.69	34.6	181.2	2.76	38.7	0.00			3092
2	3555	1.497	1.220	34.679	27.772	44.5	2.777	3.03	38.8	179.0	2.68	38.1	0.00			3608
2	4060	1.498	1.165	34.685	27.781	45.5	3.004	3.28	41.9	173.1	2.62	37.5	0.00			4125
2	4392	1.531	1.159	34.686	27.782	46.8	3.157	3.30	42.2	172.8	2.64	37.5	0.00			4466

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 15.4 N	123 30.0 W	05/08/89	07 25 UTC	4149 M	340	10 KT	330 03	2	1016.9 MB	17.8 C	16.0 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
2	0	17.817	17.817	33.306	24.021	388.1	0.000	5.56	102.3	3.3	0.36	0.0	0.00	0.08	0.02	0
2	28	17.369	17.364	33.267	24.099	381.5	0.108	5.65	103.0	3.2	0.35	0.0	0.00	0.14	0.04	28
2	55	15.562	15.554	33.277	24.523	341.9	0.205	6.12	107.7	3.2	0.39	0.0	0.00	0.28	0.12	55
2	87	14.144	14.131	33.237	24.798	316.5	0.311	6.13	104.7	3.1	0.39	0.0	0.00	0.30	0.21	87
2	128	11.772	11.756	33.351	25.355	264.2	0.430	5.35	87.0	8.0	0.90	8.3	0.02	0.06	0.0S	129
2	177	9.810	9.790	33.669	25.948	208.4	0.546	3.89	60.8	19.9	1.53	19.5	0.01	0.01	0.03	178
2	227	8.414	8.390	33.952	26.392	166.7	0.639	3.24	49.1	32.1	1.91	25.8	0.00	0.00	0.02	228
2	307	7.154	7.125	34.018	26.628	145.1	0.764	2.61	38.5	47.5	2.26	30.9	0.00			309
2	404	6.321	6.285	34.094	26.801	129.6	0.897	1.36	19.7	65.2	2.78	37.0	0.00			406
2	506	5.673	5.630	34.198	26.965	114.8	1.022	0.62	8.8	79.7	3.09	40.1	0.00			509
2	606	5.153	5.103	34.283	27.095	103.2	1.131	0.33	4.6	94.0	3.25	42.3	0.00			610
2	710	4.920	4.862	34.371	27.192	94.9	1.234	0.26	3.6	102.2	3.32	43.0	0.00			715
2	809	4.580	4.516	34.416	27.267	88.4	1.325	0.34	4.7	110.4	3.33	43.6	0.00			815
2	904	4.294	4.224	34.447	27.323	83.5	1.406	0.39	5.4	117.1	3.33	44.2	0.00			911
2	997	3.956	3.880	34.458	27.367	79.5	1.482	0.52	7.1	123.8	3.31	44.6	0.00			1005
2	1236	3.364	3.273	34.513	27.471	70.3	1.661	0.83	11.2	138.3	3.25	44.5	0.00			1247
2	1503	2.811	2.704	34.557	27.558	62.2	1.83 8	1.11	14.8	154.6	3.18	43.9	0.00			1517
2	17 47	2.460	2.337	34.589	27.615	57.0	1.983	1.42	18.7	163.5	3.11	42.9	0.00			1765
2	1978	2.171	2.032	34.612	27.658	52.9	2.110	1.74	22.7	170.7	3.01	42.0	0.00			1999
2	2462	1.822	1.646	34.646	27.715	48.0	2.354	2.29	29.6	175.9	2.88	40.5	0.00			2492
2	2963	1.627	1.407	34.662	27.746	45.8	2.589	2.64	34.0	181.1	2.79	39.6	0.00			3003
2	3449	1.524	1.257	34.676	27.768	44.8	2.809	2.95	37.8	161.6	2.73	38.7	0.00			3499
2	4091	1.504	1.167	34.683	27.779	45.8	3.100	3.25	41.6	174.5	2.65	37.7	0.00			4157

LATITUDE	LONGITUDE	DAT/MO/YR	MESSENGER	BOTTOM	HIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 39.9 N	123 4.2 W	05/08/89	1504 UTC	4152 M	360	07 KT	3 40 03	2	1018.2 MB	17.3 C	L5.5 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
2	0	17.424	17.424	33.271	24.088	381.6	0.000	5.63	102.7	2.9	0.31	0.0	0.01	0.10	0.02	0
2	27	17.131	17.127	33.264	24.153	376.3	0.102	5.64	102.3	3.0	0.31	0.0	0.00	0.11	0.03	27
2	54	15.582	15.574	33.351	24.576	336.8	0.199	6.03	106.2	1.8	0.36	0.0	0.01	0.44	0.18	54
2	86	13.163	13.151	33.146	24.927	304.0	0.301	6.12	102.4	3.2	0.45	0.5	0.07	0.30	0.23	86
2	126	11.475	11.459	33.358	25.415	258.4	0.414	5.26	85 .0	8.3	0.92	8.9	0.02	0.07	0.08	127
2	178	9.104	9.0 85	33.801	26.166	187.5	0.530	3.62	55.7	24.6	1.66	22.2	0.01	0.00	0.02	179
2	228	8.273	8.250	33.986	26.441	162.1	0.617	3.26	49.3	32.9	1.87	25.5	0.01	0.00	0.02	229
2	310	7.212	7.182	34.042	26.639	144.1	0.742	2.31	34.1	48.5	2.31	31.2	0.01			312
2	411	6.046	6.010	34.071	26.817	127.8	0.880	1.36	19.5	67.5	2.75	36.8	0.01			414
2	515	5.544	5.501	34.173	26.961	115.2	1.006	0.64	9.1	82.8	3.06	40.5	0.00			518
2	615	5.074	5.024	34.274	27.097	102.9	1.115	0.30	4.2	96.0	3.23	42.6	0.00			619
2	720	4.695	4.638	34.333	27.188	95.1	1.219	0.27	3.8	105.7	3.28	43.6	0.00			725
2	819	4.311	4.248	34.391	27.276	87.1	1.309	0.32	4.4	115.2	3.30	44.1	0.00			825
2	921	4.179	4.108	34.449	27.337	82.2	1.396	0.42	5.8	119.3	3.30	44.1	0.00			928
2	1023	3.890	3.813	34.464	27.379	78.5	1.47 8	0.52	7.1	124.6	3.26	44.1	0.00			1031
2	1275	3.299	3.206	34.539	27.498	67.8	1.662	0.87	11.7	140.5	3.22	43.9	0.00			1286
2	1528	2.748	2.639	34.573	27.577	60.4	1.824	1.18	15.7	154.6	3.15	43.1	0.00			1543
2	1780	2.344	2.219	34.602	27.635	54.8	1.969	1.88U		164.9	3.07	42.1	0.00			1798
2	2028	2.059	1.917	34.627	27.679	50.6	2.100	1.92	25.0	171.0	2.96	41.3	0.00			2050
2	2535	1.7 80	1.598	34.653	27.725	47.2	2.348	2.48	32.1	175.4	2.83	40.0	0.00			2566
2	3052	1.600	1.372	34.667	27.752	45.4	2.587	2.76	35.5	177.8	2.74	39.0	0.00			3093
2	3559	1.528	1.249	34.677	27.769	45.1	2.816	2.99	38.3	179.0	2.64	38.4	0.00			3611
2	4128	1.526	1.184	34.685	27.780	46.1	3.076	3.19	40.8	176.7	2.64	37.8	0.00			4195

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 6.0 N	122 39.5 W	05/08/89	2224 UTC	4027 M	020	08 KT	350 03	2	1017 .2 MB	20.4 C	18.0 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
2	0	18.501	18.501	33.358	23.893	400.3	0.000	5.50	102.5	3.6	0.36	0.0	0.00	0.07	0.02	0
2	27	18.022	18.017	33.321	23.983	392.6	0.107	5.56	102.7	3.5	0.35	0.0	0.00	0.10	0.02	27
2	53	15.672	15.664	33.262	24.487	345.2	0.203	6.01	105.9	3.5	0.35	0.0	0.00	0.16	0.04	53
2	85	13.238	13.226	33.218	24.968	300.1	0.306	6.23	104.5	3.6	0.41	0.0	0.00	0.26	0.15	85
2	99	12.708	12.695	33.256	25.102	287.6	0.347	5.98	99.2	4.3	0.50	1.0	0.07	0.41	0.28	99
2	125	11.369	11.353	33.358	25.434	256.5	0.418	5.29	85.3	7.7	0.86	8.1	0.03	0.16	0.17	126
2	197	8.823	8.802	33.887	26.278	177.2	0.574	3.29	50.3	29.1	1.83	24.7	0.01	0.00	0.02	198
2	307	7.257	7.228	34.051	26.640	144.0	0.751	2.23	33.0	49.4	2.35	32.0	0.00			309
2	408	6.157	6.121	34.069	26.802	129.4	0.889	1.42	20.4	66.9	2.73	37.1	0.00			410
2	507	5.515	5.472	34.169	26.961	115.0	1.010	0.63	8.9	84.0	3.07	41.1	0.00			510
2	603	5.030	4.981	34.258	27.089	103.5	1.115	0.34	4.8	97.5	3.24	42.8	0.00			607
2	700	4.706	4.650	34.342	27.193	94.3	1.211	0.26	3.6	106.8	3.28	44.0	0.00			705
2	804	4.248	4.186	34.392	27.283	86.1	1.304	0.32	4.4	116.3	3.29	44.5	0.00			810
2	908	4.047	3.978	34.452	27.353	80.2	1.391	0.45	6.2	121.6	3.28	44.5	0.00			915
2	1006	3.7 85	3.710	34.481	27.403	75.8	1.467	0.61	8.3	128.0	3.26	44.6	0.00			1014
2	1254	3.264	3.173	34.535	27.498	67.6	1.645	0.86	11.6	142.0	3.21	44.1	0.00			1265
2	1508	2.779	2.672	34.569	27.571	61.0	1.808	1.18	15.7	155.3	3.15	43.5	0.00			1522
2	1762	2.358	2.235	34.599	27.631	55.1	1.956	1.62	21.3	165.5	3.05	42.5	0.00			1780
2	2016	2.054	1.913	34.626	27.679	50.6	2.090	1.93	25.2	171.2	2.94	41.4	0.00			2038
2	2516	1.7 86	1.605	34.653	27.724	47.2	2.334	2.38	30.8	175.0	2.82	40.1	0.00			2547
2	3021	1.620	1.394	34.666	27.750	45.6	2.569	2.72	35.0	177.0	2.73	39.3	0.00			3061
2	3525	1.535	1.260	34.675	27.767	45.3	2.798	2.99	38.3	178.8	2.68	38.8	0.00			3577
2	4007	1.523	1.195	34.679D	27.774	46.2	3.018	3.15	40.3							4070

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD	AMT	TYPE
32 57.5 N	117 18.1 V	08/08/89	1231 UTC	67 M	310	07 KT	2 80 03	2	1011.4 MB	20.3 C	19.7 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
2	0	21.057	21.057	33.620D	23.430	444.5	0.000	6.06	118.6	3.3	0.23	0.0	0.00	0.63	0.28	0
2	10	15.195	15.193	33.467	24.749	319.0	0.038	7.23	126.4	3.7	0.31	0.0	0.00	0.37	0.18	10
2	15	13.894	13.892	33.382	24.960	299.0	0.054	6.80	115.7	3.7	0.38	0.0	0.00	0.51	0.23	15
2	18	13.564	13.561	33.362	25.012	294.1	0.063	6.66	112.6	3.8	0.40	0.0	0.00	0.56	0.30	18
2	23	13.204	13.201	33.352	25.077	288.0	0.077	6.48	108.7	4.0	0.43	0.0	0.01	0.75	0.36	23
2	30	13.100	13.096	33.368	25.110	285.1	0.097	6.47	108.3	4.2	0.44	0.1	0.02	2.52	0.70	30
2	34	12.701	12.696	33.401	25.215	275.3	0.108	6.05	100.4	5.3	0.61	2.5	0.10	1.11	0.51	34
2	39	12.181	12.176	33.412	25.323	265.0	0.122	5.65	92.8	6.7	0.75	5.6	0.17	0.74	0.56	39
2	49	11.589	11.583	33.455	25.467	251.5	0.148	4.97	80.6	10.1	1.03	10.0	0.27	0.50	0.44	49
2	51	11.369	11.363	33.469	25.519	246.7	0.153	4.86	78.5	10.7	1.08	11.0	0.24	0.42	0.38	51

RV NEW HORIZON CALCOFI CRUISI 8908 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 55.2 M	117 24.2 W	08/08/89	1041 UTC	581 M	290	08 KT	290 03	1	1011.9 MB	20.0 C	18.9 C	7/8	CU

CAS1	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
2	1	' 22.129	22.129	33.660	23.166	469.7	0.005	5.45	108.8	3.6	0.25	0.0	0.00	0.12	0.07	1
2	9	18.632	18.630	33.548	24.006	3 89.8	0.039	6.37	119.2	3.5	0.27	0.0	0.00	0.13	0.08	9
2	24	14.368	14.365	33.380	24.860	308.8	0.091	6.52	112.0	3.3	0.37	0.0	0.00	0.16	0.08	24
2	64	11.318	11.310	33.514	25.563	242.7	0.202	4.69	75.7	11.6	1.10	11.9	0.16	0.44	0.36	64
2	103	10.345	10.333	33.825	25.978	204.1	0.2 89	2.97	47.0	23.0	1.77	21.8	0.03	0.05	0.10	103
2	153	10.100	10.082	34.061	26.205	183.6	0.386	1.84	29.0	32.0	2.20	26.6	0.01	0.01	0.11	154
2	203	9.856	9.833	34.202	26.357	170.2	0.474	1.49	23.4	36.0	2.36	28.3	0.01	0.00	0.11	204
2	253	9.375	9.3 47	34.266	26.488	158.7	0.557	1.31	20.3	39.9	2.48	29.4	0.02			254
2	305	9.138	9.104	34.364	26.604	148.8	0.636	0.76	11.7	45.2	2.69	30.8	0.01			307
2	356	8.561	8.523	34.344	26.680	142.2	0.711	0.75	11.4	49.7	2.76	32.2	0.00			358
2	406	8.138	8.096	34.350	26.749	136.2	0.780	0.55	8.3	54.6	2.89	33.4	0.00			409
2	507	6.679	6.632	34.279	26.901	122.1	0.911	0.51	7.4	69.2	3.04	37.9	0.00			510
2	557	6.431	6.380	34.319	26.966	116.4	0.970	0.32	4.6	75.7	3.15	38.0	0.05			561

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 93 30

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 51.4 N	117 32.4 W	08/08/89	0759 UTC	85 8 M	290	10 KT	290 03	1	1012.8 MB	19.8 C	18.4 C	2/8	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
2	1	22.649	22.649	33.703	23.052	480.6	0.005	5.60	112.9	3.9	0.16	0.0	0.00	0.27	0.12	1
2	11	17.806	17.804	33.552	24.212	370.2	0.047	7.06	130.0	4.3	0.21	0.0	0.00	0.42	0.18	11
2	23	12.681	12.678	33.450	25.256	271.0	0.0 86	6.98	115.9	7.3	0.40	0.0	0.00	1.89	0.68	23
2	33	11.889	11.885	33.483	25.433	254.4	0.112	5.16	84.3	9.6	0.89	6.8	0.38	1.3B	0.89	33
2	43	11.386	11.381	33.540	25.571	241.5	0.137	4.53	73.2	11.8	1.15	11.2	0.63	0.41	0.59	43
2	83	10.390	10.380	33.757	25.917	209.5	0.227	3.25	51.5	21.2	1.65	20.6	0.03	0.06	0.23	s3
2	193	9.171	9.150	34.134	26.416	164.1	0.433	2.11	32.6	35.7	2.18	27.5	0.01	0.00	0.07	194
2	252	8.787	8.760	34.212	26.539	153.5	0.526	1.67	25.6	41.5	2.40	29.7	0.00			253
2	305	8.234	8.202	34.218	26.630	145.7	0.606	1.40	21.2	48.3	2.55	31.6	0.00			307
2	406	8.093	8.051	34.369	26.771	134.1	0.7 47	0.50	7.5	56.1	2.92	33.8	0.00			409
2	506	6.762	6.715	34.273	26.885	123.7	0.876	0.54	7.9	69.0	3.00	37.6	0.00			509
2	600	6.209	6.155	34.311	26.989	114.6	0.988	0.35	5.1	78.7	3.15	39.7	0.00			604
2	701	5.550	5.490	34.371	27.119	102.7	1.098	0.22	3.1	92.3	3.29	41.3	0.05			706
2	809	4.807	4.741	34.431	27.254	90.1	1.202	0.30	4.2	107.1	3.32	42.9	0.00			815
2	843	4.771	4.703	34.433	27.260	89.8	1.232	0.31	4.3	108.5	3.32	43.0	0.00			850

RV NEW HORIZON CALCOFI CRUISE 8908 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 53.0 W	08/08/89	0446 UTC	547 M	270	14 KT	290 03	1	1011.9 MB	18.7 C	17.5 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
. 2	0	20.817	20.817	33.630	23.502	437.6	0.000	5.43	105.9	3.9	0.27	0.0	0.01	0.15	0.06	0
2	11	14.849	14.847	33.319	24.710	322.7	0.042	6.30	109.3	3.9	0.36	0.0	0.00	0.11	0.05	11
2	25	13.479	13.476	33.315	24.993	296.1	0.085	6.41	108.1	4.3	0.40	0.0	0.02	0.38	0.17	25
2	38	12.699	12.694	33.347	25.173	279.3	0.123	6.28	104.2	4.3	0.48	1.3	0.06	1.15	0.43	38
2	64	10.866	10.858	33.640	25.742	225.7	0.188	3.81	60.9	16.8	1.49	16.4	0.39	0.24	0.28	64
2	84	10.428	10.418	33.702	25.867	214.2	0.232	3.66	58.0	20.5	1.63	20.2	0.03	0.08	0.13	84
2	194	9.367	9.345	34.225	26.456	160.5	0.438	1.58	24.5	37.9	2.36	28.7	0.01	0.00	0.08	195
2	25 2	9.326	9.298	34.349	26.561	151.8	0.529	0.85	13.2	44.3	2.64	30.5	0.01			253
2	300	8.915	8.882	34.362	26.637	145.3	0.600	0.74	11.4	47.4	2.72	31.4	0.01			302
2	346	8.685	8.648	34.386	26.693	140.8	0.666	0.51	7.8	51.1	2.85	32.2	0.01			348
2	452	7.565	7.520	34.326	26.815	130.3	0.810	0.53	7.9	60.5	2.95	35.2	0.01			455
2	517	6.923	6.874	34.328	26.907	122.0	0.892	0.36	5.3	69.6	3.06	37.3	0.01			521

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TTPE
32 31.2 N	118 13.2 W	08/08/89	0040 UTC	1572 M	280	13 KT	290 03	1	1011.5 MB	19.3 C	17.4 C	3/8	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
2	0	20.295	20.295	33.627	23.639	424.5	0.000	5.48	105.8	2.9	0.27	0.0	0.00	0.15	0.05	0
2	12	18.863	18.861	33.611	23.996	390.8	0.049	5.57	104.7	2.8	0.28	0.0	0.00	0.14	0.06	12
2	27	13.839	13.835	33.373	24.965	298.9	0.101	6.55	111.3	4.2	0.46	0.6	0.04	0.43	0.16	27
2	41	12.356	12.351	33.422	25.298	267.5	0.140	5.80	95.6	6.9	0.81	6.3	0.19	0.47	0.24	41
2	62	10.716	10.709	33.576	25.719	227.8	0.192	4.35	69.3	15.8	1.39	16.2	0.13	0.51	0.37	62
2	84	9.986	9.976	33.768	25.994	202.0	0.240	3.23	50.7	22.9	1.77	22.3	0.03	0.16	0.17	84
2	193	9.113	9.092	34.180	26.462	159.8	0.437	1.76	27.2	37.9	2.34	29.3	0.01	0.00	0.0B	194
2	303	7.720	7.690	34.245	26.727	136.1	0.600	0.97	14.5	54.2	2.77	34.1	0.01			305
2	401	7.190	7.151	34.343	26.880	122.9	0.727	0.37	5.5	65.1	3.05	36.7	0.01			404
2	505	6.470	6.424	34.358	26.991	113.4	0.849	0.23	3.3	76.1	3.17	39.3	0.00			508
2	605	5.679	5.627	34.361	27.094	104.0	0.958	0.24	3.4	87.8	3.26	41.6	0.00			609
2	700	5.170	5.112	34.386	27.176	96.8	1.053	0.25	3.5	96.7	3.31	43.0	0.00			705
2	797	4.7 86	4.722	34.426	27.252	90.1	1.144	0.33	4.6	105.8	3.32	43.5	0.00			803
2	893	4.530	4.459	34.446	27.297	86.4	1.229	0.37	5.1	112.7	3.32	43.6	0.00			900
2	990	4.343	4.265	34.459	27.328	84.0	1.311	0.38	5.2	117.6	3.34	43.6	0.00			998
2	1084	4.102	4.018	34.477	27.368	80.6	1.389	0.50	6.9	123.0	3.33	43.9	0.00			1093
2	1230	3.508	3.416	34.523	27.465	71.2	1.500	0.72	9.7	137.1	3.28	44.0	0.00			1241
2	1346	2.786	2.675	34.578	27.577	60.6	1.708	1.14	15.1	155.2	3.17	43.1	0.00			1561

RV HEW HORIZON CALCOFI CRUISE 8908 STATION 93 45

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	HET	CLOUD AMT	TYPE
32 20.7 N	118 33.4 W	07/08/89	2103 UTC	140 8 M	310	12 KT	SIO 03	1	1012.7 MB	19.9 C	17.3 C	5/8	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
2	0	19.849	19.849	33.718	23.825	406.7	0.000	5.46	104.6	2.3	0.28	0.1	0.00	0.13	0 04	0
2	6	19.618	19.617	33.712	23.880	401.7	0.024	5.51	105.1	2.2	0.29	0.1	0.00	0.15	0 04	6
2	22	14.730	14.727	33.644	24.986	296.7	0.080	6.11	105.9	3.5	0.40	1.0	0.04	0.51	0 16	22
2	43	11.645	11.640	33.585	25.558	242.7	0.137	4.98	80.9	12.5	1.14	12.2	0.22	0.58	0 33	43
2	59	10.517	10.510	33.670	25.827	217.5	0.174	3.90	61.9	18.5	1.52	18.7	0.14	0.51	0 38	59
2	76	10.063	10.054	33.790	25.998	201.5	0.209	3.20	50.3	23.1	1.76	22 4	0.04	0.19	0 22	76
2	184	8.811	8.791	34.195	26.521	153.9	0.401	1.66	25.4	40.2	2.37	29.8	0.02	0.00	0 08	185
2	307	7.576	7.546	34.250	26.751	133.7	0.578	0.89	13.3	55.5	2.76	34.4	0.01			309
2	409	6.590	6.553	34.266	26.901	120.5	0.708	0.50	7.3	69.2	3.01	38.1	0.01			412
2	512	5.840	5.796	34.306	27.030	109.0	0.826	0.31	4.4	82.2	3.16	40.7	0.00			516
2	613	5.45 7	5.405	34.376	27.133	100.1	0.931	0.23	3.3	90.8	3.25	41.5	0.00			617
2	715	5.064	5.005	34.407	27.205	94.1	1.030	0.25	3.5	97.7	3.28	42.5	0.00			7 20
2	812	4.696	4.631	34.435	27.269	88.4	1.119	0.33	4.6	105.1	3.29	43.3	0.00			818
2	909	4.401	4.329	34.454	27.317	84.4	1.203	0.36	5.0	113.0	3.29	43.4	0.00			916
2	1006	4.149	4.071	34.472	27.359	80.9	1.2 83	0.43	5.9	118.7	3.27	43.5	0.00			1014
2	1102	3.894	3.810	34.492	27.402	77.1	1.359	0.54	7.4	124.1	3.27	43.8	0.00			1112
2	1203	3.596	3.506	34.514	27.449	72.7	1.434	0.67	9.1	131.2	3.24	43.8	0.00			1214
2	1354	3.293	3.193	34.539	27.499	68.3	1.541	0.78	10.5	141.6	3.23	43.4	0.00			1367

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	HET	CLOUD AMT	TYPE
32 11.0 N	118 53.4 W	07/08/89	1735 UTC	1435 M	310	13 KT	310 03	1	1015.7 MB	18.3 C	16.1 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
2	0	18.885	18.885	33.622	23.998	390.2	0.000	5.56	104.6	3.1	0.29	0.1	0.00	0.19	0 06	0
2	11	18.844	18.842	33.619	24.007	3 89.8	0.043	5.56	104.5	3.1	0.29	0.1	0.00	0.20	0 06	11
2	28	15.171	15.167	33.464	24.752	319.2	0.103	5.95	104.0	4.1	0.46	1.5	0.07	0.36	0 16	28
2	43	11.359	11.354	33.331	25.413	256.5	0.146	5.53	89.2	8.6	0.87	7.9	0.21	0.65	0 30	43
2	64	10.234	10.227	33.715	25.911	209.6	0.195	3.56	56.2	20.7	1.62	20.3	0.04	0.21	0 22	64
2	85	9.895	9.885	33.876	26.094	192.6	0.238	2.84	44.5	25.6	1.88	23.9	0.02	0.05	0 12	85
2	195	8.020	8.000	34.115	26.579	148.3	0.425	1.98	29.8	44.2	2.36	30.8	0.02	0.00	0 04	196
2	309	7.235	7.205	34.226	26.781	130.8	0.584	0.85	12.6	59.7	2.84	35.8	0.01			311
2	409	6.511	6.474	34.279	26.922	118.4	0.709	0.44	6.4	72.5	3.06	38.6	0.00			412
2	511	6.052	6.007	34.321	27.015	110.6	0.826	0.30	4.3	81.6	3.17	40.1	0.00			515
2	613	5.657	5.604	34.365	27.100	103.5	0.935	0.27	3.8	88.0	3.25	41.6	0.00			617
2	714	5.163	5.104	34.398	27.186	95.9	1.035	0.23	3.2	99.2	3.29	42.4	0.00			719
2	815	4.831	4.765	34.426	27.247	90.8	1.130	0.30	4.2	104.6	3.32	43.3	0.00			821
2	916	4.533	4.460	34.445	27.296	86.7	1.219	0.35	4.9	109.9	3.30	43.8	0.00			923
2	1018	4.131	4.052	34.477	27,365	80.4	1.305	0.49	6.7	119.1	3.31	44.2	0.00			1027
2	1268	3.441	3.347	34.525	27.474	70.5	1.493	0.76	10.3	138.4	3.29	43.7	0.00			1280
2	1373	3.308	3.206	34.539	27.498	68.6	1.566	0.80	10.8	143.2	3.25	43.6	0.00			1386
2	1433	3.276	3.169	34.539	27.501	68.7	1.607	0.80	10.8	145.5	3.25	43.4	0.00			1447

RV HER HORIZON CALCOFI CRUISE 8908 STATION 93 55

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	HET	CLOUD AMT	TYPE
32 1.0 N	119 14.0 W	07/08/89	1327 UTC	1581 M	300	13 KT	310 03	1	1015.4 MB	17.6 C	15.8 C	3/8	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
2	0	18.034	18.034	33.630	24.216	369.5	0.000	5.56	102.9	2.9	0.32	0.1	0.00	0.17	0 .06	0
2	10	17.555	17.553	33.604	24.312	360.6	0.037	5.62	103.0	2.9	0.32	0.1	0.00	0.14	0 06	10
2	26	14.324	14.320	33.429	24.907	304.4	0.090	5.89	101.2	4.1	0.48	1.3	0.06	0.46	0 .28	26
2	40	11.215	11.210	33.173	25.316	265.7	0.130	5.68	91.2	6.9	0.78	6.1	0.21	0.44	0 36	40
2	62	11.077	11.069	33.386	25.507	248.0	0.186	5.10	81.8	9.9	1.01	10.2	0.32	0.30	0 26	62
2	83	10.386	10.376	33.627	25.816	219.0	0.235	4.07	64.4	18.1	1.45	18.1	0.03	0.07	0 16	83
2	195	7.812	7.793	34.001	26.520	153.8	0.444	3.11	46.5	38.1	1.99	27.5	0.02	0.01	0 04	196
2	305	7.272	7.243	34.224	26.774	131.4	0.601	0.92	13.6	59.2	2. 80	35.4	0.01			307
2	404	6.791	6.753	34.323	26.919	118.9	0.725	0.36	5.3	70.0	3.05	37.9	0.00			407
2	503	6.045	6.001	34.328	27.022	109.9	0.83 8	0.30	4.3	82.1	3.16	40.1	0.00			S06
2	609	5.636	5.584	34.375	27.111	102.4	0.950	0.25	3.6	89.3	3.24	41.4	0.00			613
2	711	5.254	5.194	34.396	27.174	97.2	1.052	0.26	3.7	97.0	3.28	42.4	0.00			716
2	812	4.809	4.7 43	34.425	27.249	90.6	1.147	0.32	4.5	106.3	3.28	43.1	0.00			818
2	915	4.475	4.402	34.456	27.311	85.2	1.238	0.37	5.1	113.0	3.29	43.9	0.00			922
2	1016	4.240	4.160	34.471	27.349	82.1	1.322	0.62	8.5	117.3	3.29	44.2	0.00			1025
2	1268	3.503	3.408	34.522	27.465	71.5	1.516	0.74	10.0	135.4	3.24	44.2	0.00			1280
2	1525	2.798	2.689	34.573	27.572	61.0	1.686	1.18	15.7	153.9	3.13	43.3	0.00			1540
2	1558	2.748	2.637	34.575	27.578	60.5	1.706	1.20	15.9	156.3	3.14	43.3	0.00			1573

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 51.1 N	119 34.3 W	07/08/89	0925 UTC	2086 M	310	12 KT	3 20 03	2	1015.2 MB	16.7 C	L5.8 C	B/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
2	0	16.697	16.697	33.291	24.275	363.9	0.000	5.78	104.0	2.4	0.38	0.0	0.00	0 11	0.04	0
2	22	16.188	16.185	33.329	24.422	350.6	0.079	5.88	104.8	2.2	0.38	0.0	0.00	0 16	0.06	22
2	44	13.580	13.574	33.163	24.856	309.7	0.151	6.26	105.7	2.9	0.45	0.7	0.02	0 48	0.35	44
2	59	12.482	12.474	33.151	25.064	290.2	0.196	6.10	100.6	4.6	0.61	2.0	0.15	0 34	0.25	59
2	94	10.574	10.563	33.435	25.634	236.5	0.288	5.04	80.0	10.3	0.99	10.8	0.02	0 04	0.10	94
2	196	8.216	8.196	33.959	26.427	162.7	0.492	3.54	53.5	31.8	1.80	24.9	0.01	0 00	0.02	197
2	307	7.438	7.408	34.170	26.708	137.7	0.659	1.27	18.9	54.1	2.64	34.1	0.00			309
2	408	7.016	6.977	34.290	26.863	124.5	0.791	0.52	7.7	65.2	2.96	36.8	0.00			411
2	511	6.248	6.202	34.328	26.996	112.7	0.913	0.28	4.0	77.2	3.14	39.6	0.00			514
2	611	5.524	5.472	34.353	27.107	102.7	1.021	0.28	4.0	88.4	3.21	41.3	0.00			615
2	714	5.154	5.095	34.400	27.189	95.7	1.123	0.25	3.5	97.7	3.29	42.9	0.00			719
2	815	4.748	4.682	34.438	27.266	88.9	1.216	0.32	4.5	106.1	3.30	43.6	0.00			821
2	917	4.462	4.389	34.457	27.313	85.0	1.305	0.41	5.7	112.0	3.30	43.9	0.00			924
2	1015	4.152	4.073	34.477	27.363	80.6	1.386	0.49	6.7	119.0	3.30	44.1	0.00			1023
2	1266	3.425	3.331	34.530	27.479	69.9	1.575	0.81	10.9	137.3	3.26	44.0	0.00			1277
2	1522	2.792	2.683	34.564	27.565	61.6	1.743	1.14	15.1	154.0	3.20	43.4	0.01			1537
2	1779	2.250	2.127	34.605	27.645	53.4	1.891	1.63	21.4	167.4	3.04	42.3	0.00			1797
2	2056	1.996	1.853	34.628	27.685	49.9	2.034	1.98	25.8	172.3	2.97	41.3	0.00			2079

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 31.3 N	120 15.0 U	07/08/89	0244 UTC	3931 M	310	11 KT	3 20 03	1	1015.3 MB	18.5 C	16.3 C	6/8	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	CHI-A UG/L	PHAEO UG/L	PRESS D.BAR
2	0	17.295	17.295	33.352	24.181	372.8	0.000	5.74	104.5	2.8	0.37	0.0	0.00	0.13	0 03	0
2	28	16.367	16.363	33.337	24.387	354.0	0.102	5.84	104.4	2.8	0.37	0.0	0.00	0 18	0.08	28
2	55	13.566	13.558	33.214	24.898	306.0	0.191	6.14	103.7	3.3	0.42	0.1	0.01	0 33	0.31	55
2	71	12.669	12.660	33.237	25.095	287.6	0.238	5.96	98.8	4.3	0.53	1.5	0.19	0 27	0.31	71
2	98	11.475	11.463	33.307	25.374	261.5	0.312	5.40	87.3	7.2	0.81	7.4	0.03			98
2	180	8.735	8.716	33.831	26.248	179.7	0.493	3.81	58.2	26.1	1.66	22.6	0.01	0 00	0.03	181
2	306	7.644	7.614	34.162	26.672	141.2	0.695	1.61	24.0	52.4	2.58	33.3	0.00			308
2	409	6.628	6.590	34.214	26.855	124.8	0.833	0.77	11.2	67.7	2.92	37.5	0.00			412
2	511	5.986	5.941	34.285	26.995	112.4	0.954	0.41	5.9	80.8	3.11	39.9	0.00			514
2	611	5.415	5.364	34.339	27.109	102.3	1.061	0.33	4.7	93.0	3.25	42.0	0.00			615
2	710	4.999	4.941	34.399	27.206	93.8	1.158	0.29	4.1	102.0	3.29	43.0	0.00			715
2	808	4.579	4.515	34.427	27.276	87.6	1.247	0.38	5.3	111.2	3.30	43.8	0.00			814
2	910	4.300	4.229	34.454	27.328	83.1	1.334	0.57U		117.0	3.29	44.0	0.00			917
2	1012	3.993	3.916	34.478	27.380	78.6	1.416	0.58	7.9	124.7	3.28	44.1	0.00			1020
2	1264	3.302	3.210	34.527	27.488	68.7	1.602	0.89	12.0	140.7	3.21	43.8	0.00			1275
2	1516	2.802	2.694	34.563	27.564	61.7	1.766	1.18	15.7	155.0	3.15	43.4	0.00			1531
2	1770	2.335	2.211	34.597	27.632	55.0	1.914	1.55	20.4	168.2	3.06	42.5	0.00			1788
2	2025	2.062	1.920	34.622	27.675	51.0	2.050	1.97	25.7	173.5	2.96	41.5	0.00			2047
2	2532	1.777	1.595	34.650	27.722	47.3	2.299	2.42	31.3	176.1	2.82	40.0	0.00			2563
2	3040	1.639	1.411	34.664	27.747	46.1	2.536	2.76	35.5	178.9	2.75	39.4	0.00			3081
2	3546	1.561	1.283	34.673	27.763	45.9	2.769	2.97	38.1	180.9	2.69	38.7	0.00			3598
2	3753	1.547	1.247	34.675	27.767	46.1	2.864	3.02	38.7	180.1	2.68	38.5	0.00			3810
2	3905	1.545	1.228	34.677	27.770	46.4	2.934	3.14	40.2	179.2	2.68	38.4	0.00			3966

RV NEW HORIZON CALCOFI CRUISE 8908 STATION 93 80 1

LATITUDE	LONGITUDE	DAT/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TTFE
31 11.1 N	120 55.4 W	06/08/89	1953 UTC 3	862 M	330	05 KT	320 03	1	1017.3 MB	21.2 C	18.2 C	6/8	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
2	0	18.143	18.143	33.262	23.908	398.9	0.000	5.61	103.8	3.1	0.36	0.1	0.01	0 07	0 01	0
2	27	17.035	17.031	33.262	24.174	374.3	0.104	5.76	104.3	2.9	0.36	0.1	0.01	0 13	0 04	27
2	48	16.303	16.295	33.394	24.446	349.1	0.180	6.01	107.4	2.4	0.35	0.0	0.01	0.20	0.07	48
2	64	14.358	14.349	33.242	24.757	319.8	0.234	6.26	107.4	2.6	0.37	0.0	0.01	0 41	0.18	64
2	94	11.981	11.969	33.249	25.236	274.7	0.323	5.61	91.6	5.3	0.70	5.1	0.04	0 13	0.13	94
2	197	8.648	8.627	33.863	26.286	176.3	0.555	3.74	57.0	26.7	1.68	23.1	0.02	0 00	0.02	198
2	307	7.250	7.221	34.084	26.667	141.5	0.730	1.84	27.2	51.6	2.48	33.4	0.01			309
2	407	6.590	6.553	34.206	26.854	124.9	0.863	0.74	10.8	68.0	2.93	37.9	0.01			409
2	509	5.975	5.930	34.282	26.994	112.5	0.984	0.35	5.0	79.1	3.09	40.0	0.01			512
2	609	5.460	5.409	34.346	27.109	102.3	1.092	0.25	3.5	90.7	3.25	42.1	0.01			613
2	701	5.022	4.965	34.391	27.197	94.6	1.182	0.25	3.5	99.6	3.28	43.3	0.01			706
2	811	4.588	4.524	34.433	27.279	87.2	1.282	0.33	4.6	109.1	3.30	43.9	0.01			817
2	911	4.244	4.173	34.457	27.336	82.3	1.367	0.41	5.6	117.2	3.28	44.3	0.00			918
2	1011	4.005	3.928	34.482	27.382	78.4	1.447	0.52	7.1	121.8	3.28	44.4	0.00			1019
2	1267	3.333	3.240	34.521	27.481	69.5	1.637	0.82	11.0	138.0	3.23	44.3	0.00			127!
2	1521	2.780	2.672	34.576	27.576	60.5	1.802	1.15	15.3	153.0	3.13	43.6	0.00			1536
2	1777	2.361	2.236	34.598	27.631	55.3	1.950	1.52	20.0	162.8	3.04	42.7	0.00			1795
2	2032	2.059	1.917	34.625	27.678	50.8	2.085	1.93	25.2	169.7	2.94	41.5	0.00			2054
2	2539	1.789	1.606	34.650	27.722	-47.5	2.334	2.38	30.8	173.2	2.84	40.2	0.00			2570
2	3049	1.633	1.404	34.669	27.751	45.7	2.572	2.73	35.1	176.1	2.74	39.4	0.00			3090
2	3557	1.563	1.284	34.679	27.768	45.5	2.804	2.94	37.7	177.7	2.69	38.7	0.00			3609
2	3757	1.554	1.253	34.678	27.769	46.0	2.895	3.01	38.6	177.9	2.69	38.5	0.00			3814
2	3838	1.551	1.241	34.678	27.770	46.2	2.933	3.02	38.7	177.3	2.68	38.5	0.00			3897

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
30 51.1 N	121 3S.4 W	06/08/89	1225 DTC	4113 M	020	08 KT	340 03	2	1016 8 MB	17.8 C	16.4 C	8/8	SC

CAST	DEPTH M	TEMP DBG 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
2	0	17.411	17.411	33.239	24.067	383.7	0.000	5.64	102.9	3.1	0.38	0.0	0.01	0.09	0 03	0
2	27	17.089	17.085	33.220	24.130	378.6	0.103	5.69	103.1	2.9	0.37	0.0	0.00	0.12	0 05	27
2	47	16.270	16.263	33.245	24.339	359.2	0.177	5.94	105.9	2.7	0.37	0.0	0.00	0.19	0 07	47
2	80	13.893	13.882	33.276	24.880	308.4	0.2 87	6.08	103.4	3.6	0.48	0.7	0.05	0.26	0 24	80
2	123	11.334	11.318	33.397	25.471	253.0	0.413	5.10	82.2	9.3	0.96	9.9	0.02	0.08	0 12	126
2	197	8.860	8.839	33.942	26.315	173.6	0.567	2.72	41.7	31.8	2.01	26.8	0.01	0.00	0 08	198
2	309	7.568	7.538	34.153	26.676	140.9	0.743	1.47	21.9	51.7	2.58	33.3	0.01			311
2	410	6.732	6.694	34.220	26.846	125.8	0.877	0.71	10.4	66.2	2.92	37.4	0.01			412
2	514	6.182	6.136	34.290	26.974	114.7	1.003	0.39	5.6	77.4	3.11	39.7	0.01			517
2	614	5.649	5.596	34.344	27.085	105.0	1.112	0.28	4.0	87.8	3.23	41.5	0.00			618
2	716	5.012	4.953	34.371	27.182	96.1	1.215	0.26	3.6	99.6	3.27	43.0	0.00			721
2	818	4.598	4.533	34.417	27.266	88.6	1.309	0.35	4.9	108.7	3.29	43.9	0.00			824
2	920	4.232	4.161	34.458	27.338	82.1	1.396	0.48	6.6	117.5	3.29	44.1	0.00			927
2	1023	3.927	3.849	34.486	27.393	77.3	1.478	0.55	7.5	124.5	3.28	44.3	0.00			1031
2	1276	3.222	3.129	34.538	27.504	67.0	1.661	0.89	12.0	142.5		43.9	0.00			1287
2	1531	2.698	2.590	34.572	27.580	59.9	1.823	1.22	16.2	156.2	3.13	43.4	0.00			1546
2	1786	2.316	2.191	34.606	27.641	54.2	1.968	1.64	21.5	165.9	3.04	42.5	0.00			1804
2	2040	2.093	1.950	34.622	27.673	51.5	2.102	1.94	25.3	169.7	2.94	41.7	0.00			2062
2	2549	1.793	1.609	34.653	27.724	47.4	2.354	2.40	31.0	173.6	2.83	40.3	0.00			2580
2	2954	1.661	1.441	34.664	27.745	46.2	2.543	2.68	34.5	176.6	2.76	39.5	0.00			2993
2	3362	1.570	1.311	34.671	27.760	45.6	2.731	2.89	37.1	178.0	2.72	38.9	0.00			2410
2	3768	1.547	1.245	34.677	27.769	46.0	2.916	3.03	38.8	176.9	2.70	38.6	0.00			S M S
2	4098	1.558	1.219	34.679D	27.772	47.0	3.070	3.10	39.7	177.6	2.67	38.3	0.00			4143

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
30 31.6 N	122 15.6 W	06/08/89	0528 UTC	4127 M			340 03	2	1017.0 MB	17.8 C	15.8 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
2	0	18.687	18.687	33.332	23.827	406.6	0.000	5.47	102.3	3.3	0.36	0.4	0.01	0.05	0 01	0
2	27	18.623	18.618	33.328	23.840	406.2	0.110	5.48	102.4	3.3	0.34	0.4	0.00	0.06	0 01	27
2	53	17.287	17.278	33.306	24.151	377.4	0.212	5.79	105.4	3.2	0.34	0.3	0.01	0.12	0 03	53
2	94	13.280	13.267	33.249	24.984	298.8	0.350	6.14	103.1	3.6	0.41	0.3	0.01	0.23	0 16	94
2	145	10.906	10.888	33.490	25.620	239.2	0.487	4.89	78.2	10.9	1.00	11.3	0.02	0.08	0 09	146
2	195	8.956	8.935	33.829	26.212	183.4	0.593	3.54	54.3	26.3	1.70	23.4	0.01	0.00	0 02	196
2	304	7.260	7.231	34.044	26.634	144.5	0.772	2.33	34.4	48.4	2.31	32.0	0.01	0.00	0 02	306
2	403	6.310	6.274	34.130	26.830	126.7	0.906	1.06	15.3	67.7	2.83	38.4	0.01	0.00	0 01	405
2	502	5.535	5.493	34.180	26.967	114.4	1.025	0.62	8.8	83.1	3.07	41.5	0.01			505
2	604	5.078	5.029	34.264	27.089	103.6	1.137	0.38	5.3	95.3	3..20	43.2	0.01			608
2	704	4.722	4.666	34.362	27.207	93.1	1.235	0.31	4.3	105.1	3.28	44.2	0.00			709
2	805	4.433	4.370	34.406	27.275	87.3	1.326	0.34	4.7	112.0	3.29	44.6	0.00			811
2	906	4.090	4.021	34.447	27.344	81.1	1.411	0.49	6.7	120.9	3.28	44.7	0.00			913
2	1007	3.857	3.781	34.483	27.397	76.5	1.491	0.57	7.8	126.1	3.27	44.7	0.00			1013
2	1260	3.269	3.177	34.533	27.496	67.8	1.673	0.87	11.7	141.2	3.21	44.4	0.00			1271
2	1514	2.812	2.704	34.567	27.566	61.6	1.838	1.18	15.7	152.6	3.15	43.8	0.00			1328
2	1767	2.372	2.248	34.602	27.633	55.1	1.985	1.58	20.8	163.5	3.04	42.8	0.00			1713
2	2021	2.062	1.921	34.624	27.677	50.8	2.120	2.00	26.1	170.2	2.95	41.8	0.00			2043
2	2525	1.762	1.581	34.651	27.724	47.0	2.366	2.45	31.7	173.8	2.82	40.3	0.00			2336
2	2932	1.636	1.419	34.662	27.745	45.9	2.555	2.71	34.9	177.4	2.73	39.6	0.00			2970
2	3335	1.555	1.299	34.669	27.759	45.4	2.739	2.92	37.5	178.3	2.68	38.8	0.00			3382
2	3737	1.535	1.237	34.676	27.769	45.8	2.923	3.06	39.2	177.9	2.66	38.5	0.00			3793
2	4167	1.556	1.211	34.680	27.774	47.1	3.123	3.11	39.8	177.0	2.64	38.1	0.00			4234

FIGURES

Cruise 8911

1. CalCOFI Cruise 8911, track and station positions.

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

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

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

5. Sections along CalCOFI line 93 (vertical exaggeration 1000): A) potential density; B) temperature; C) salinity; D) silicate; E) phosphate; F) nitrate; G) chlorophyll-a; H) oxygen saturation; I) oxygen; J) nitrite; and K) phaeopigments.

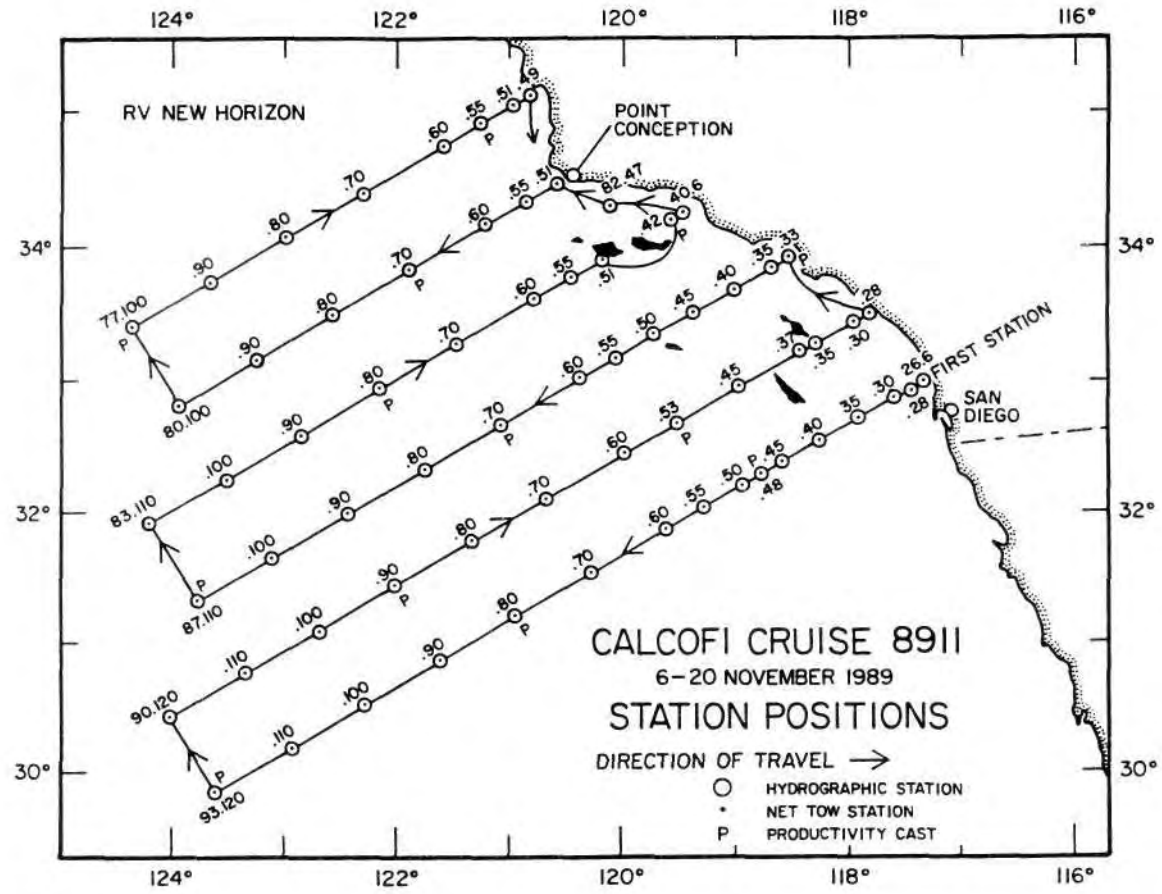

FIGURE 1

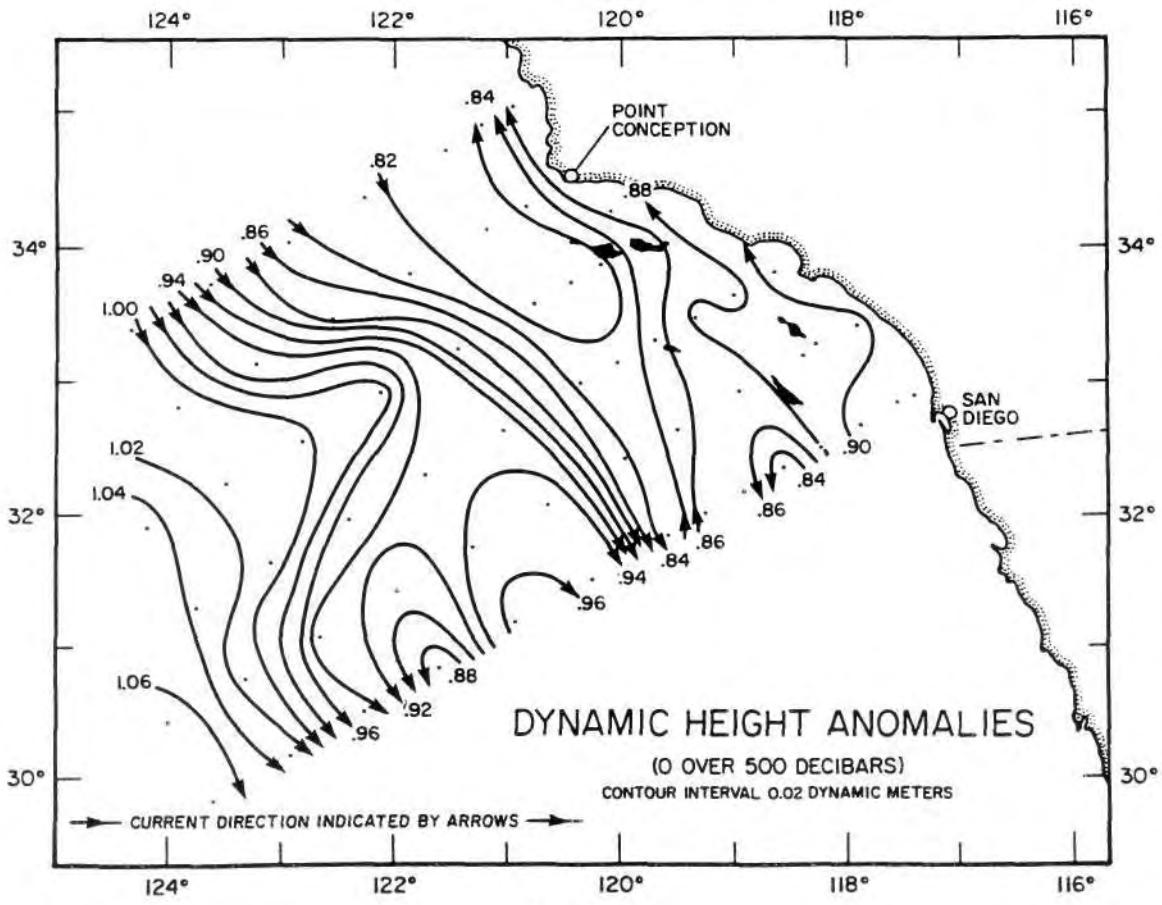

FIGURE 2

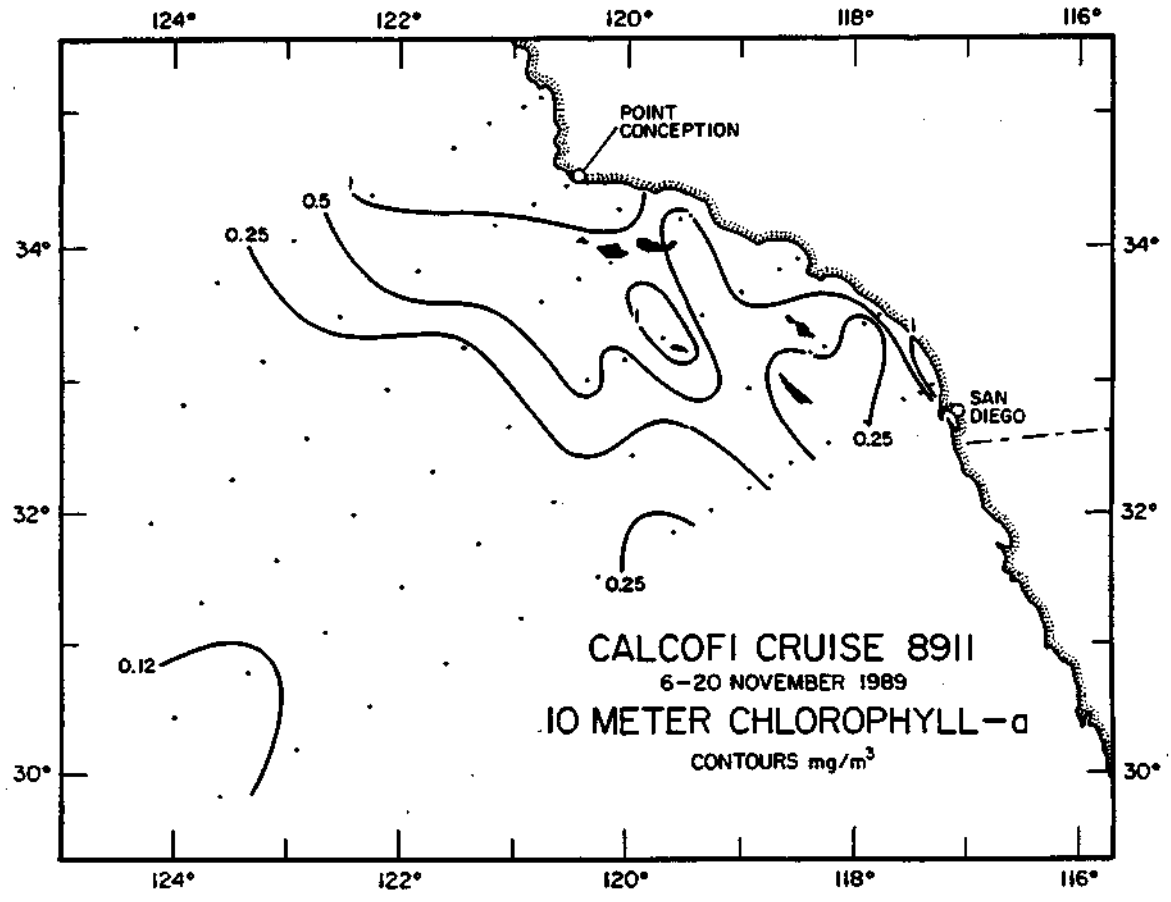

FIGURE 3A

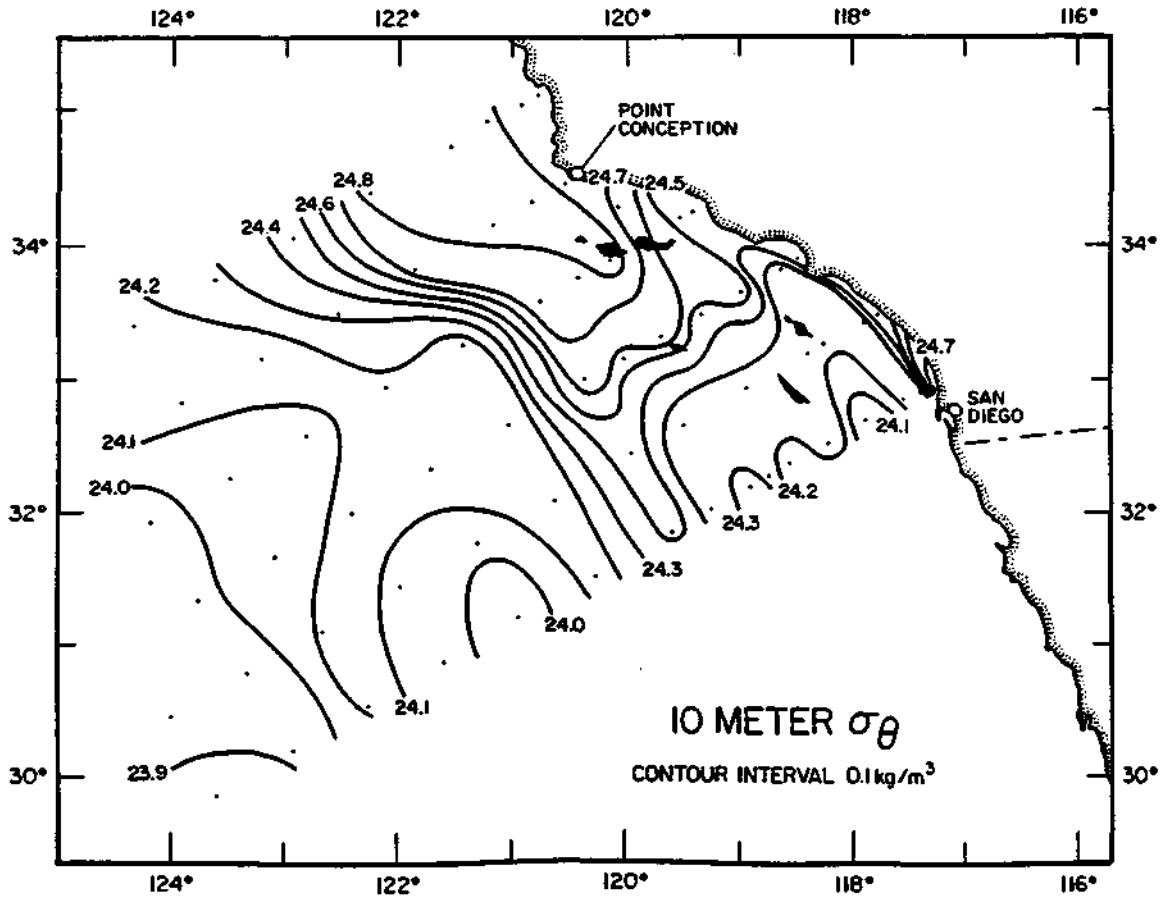

FIGURE 3B

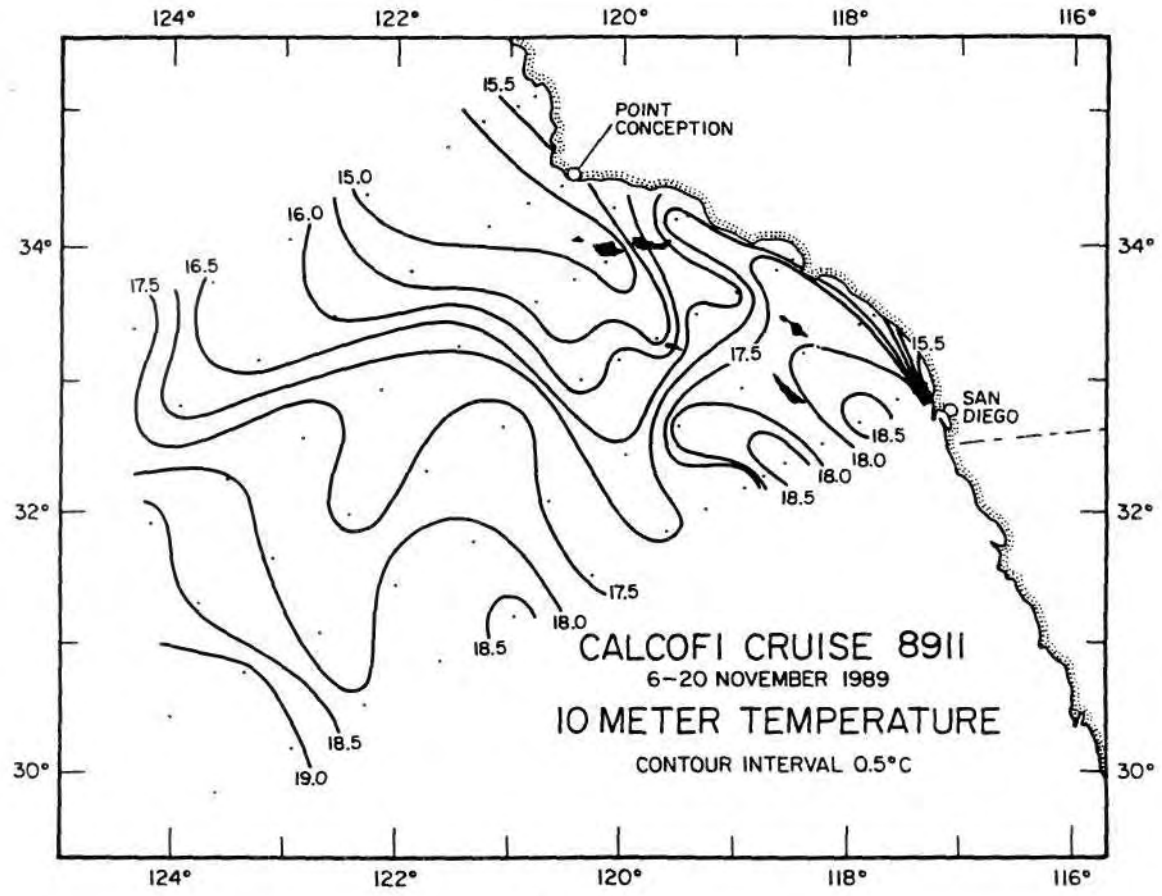

FIGURE 3C

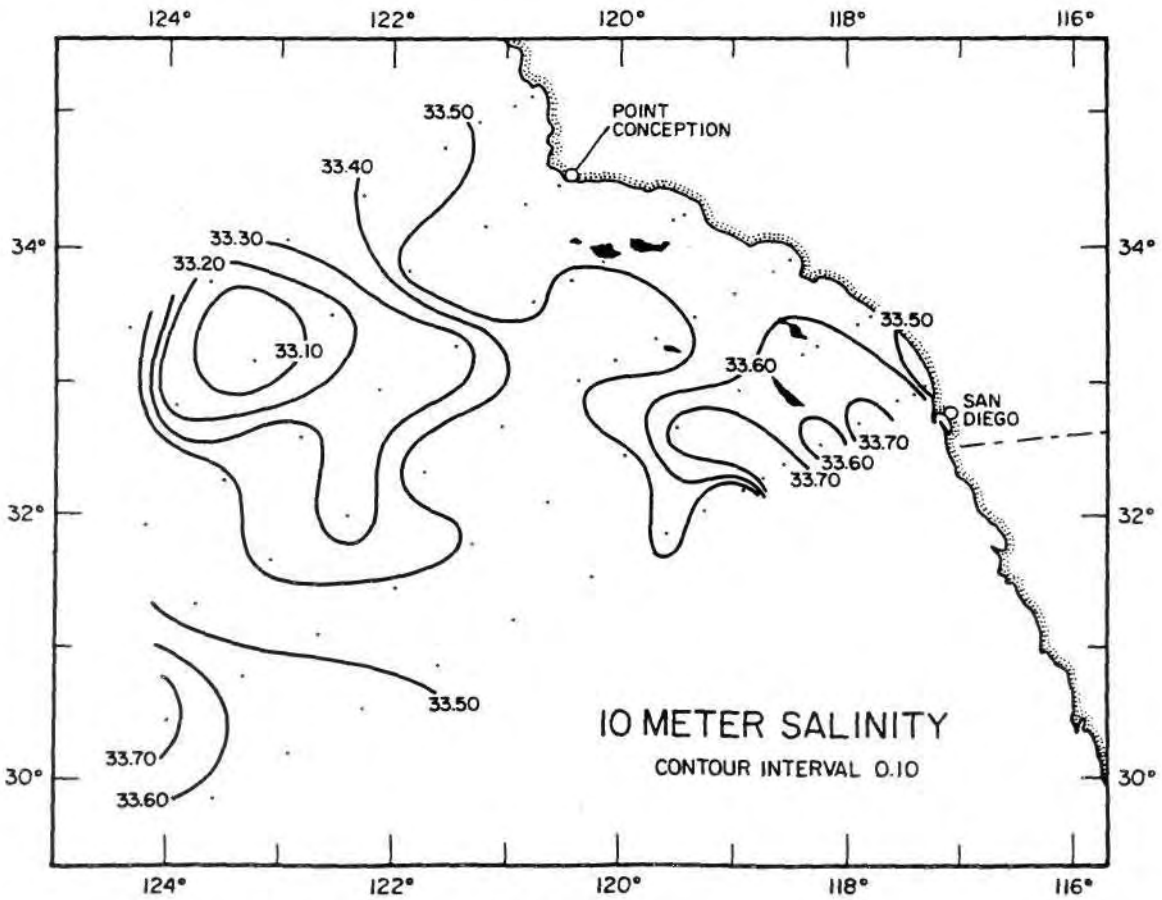

FIGURE 3D

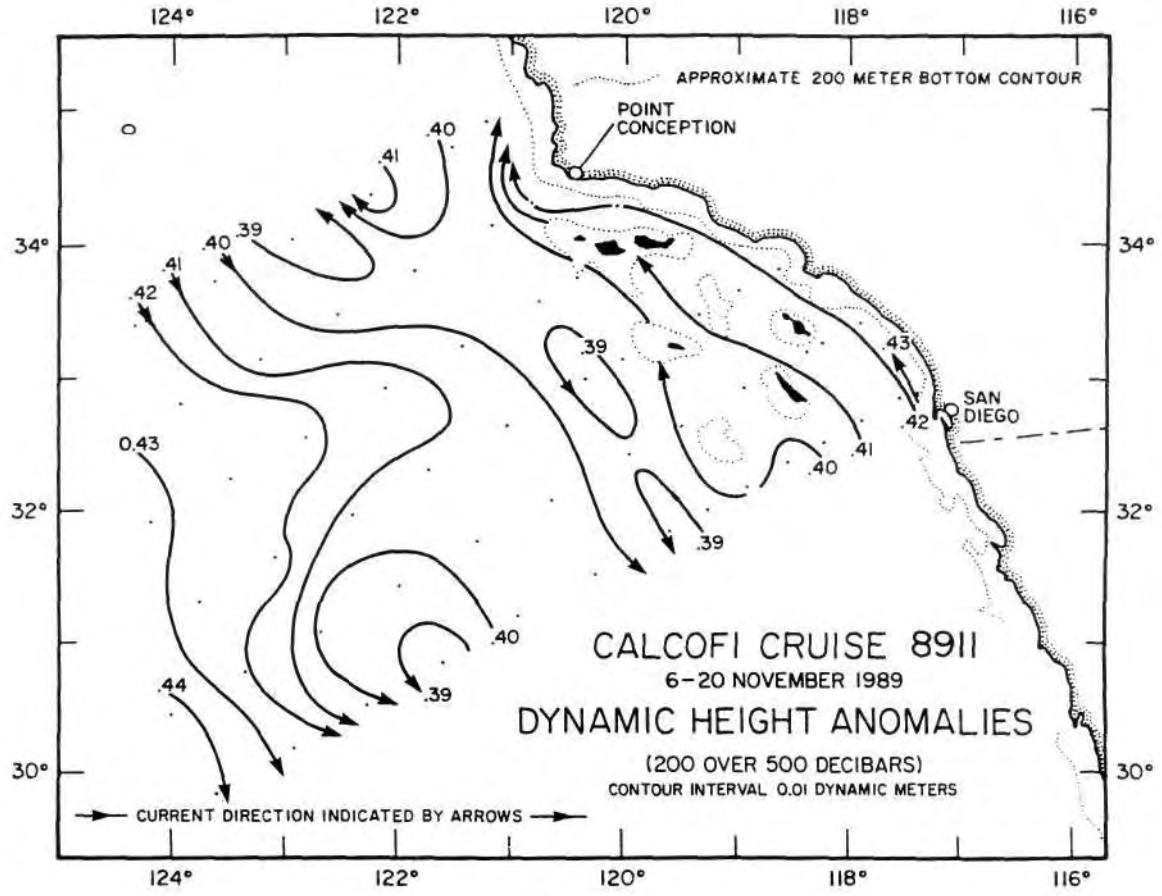

FIGURE 4A

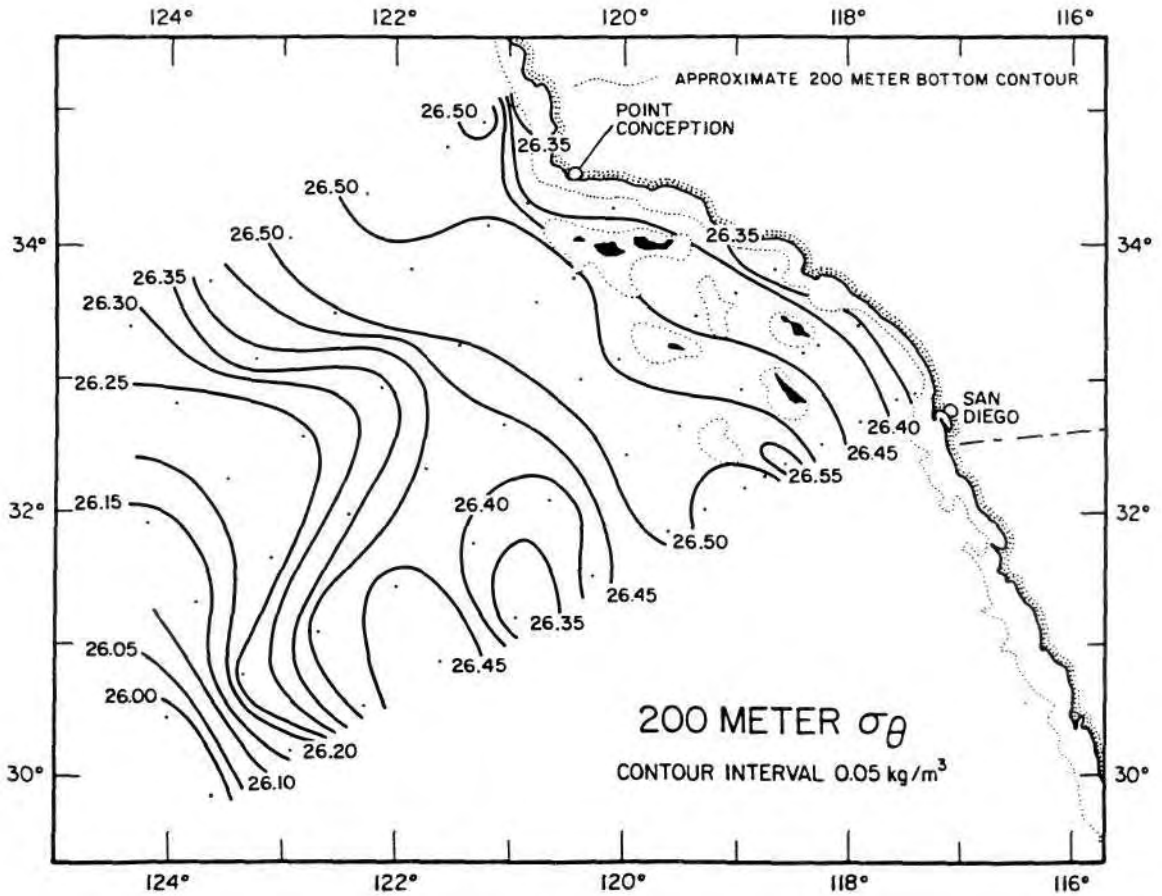

FIGURE 4B

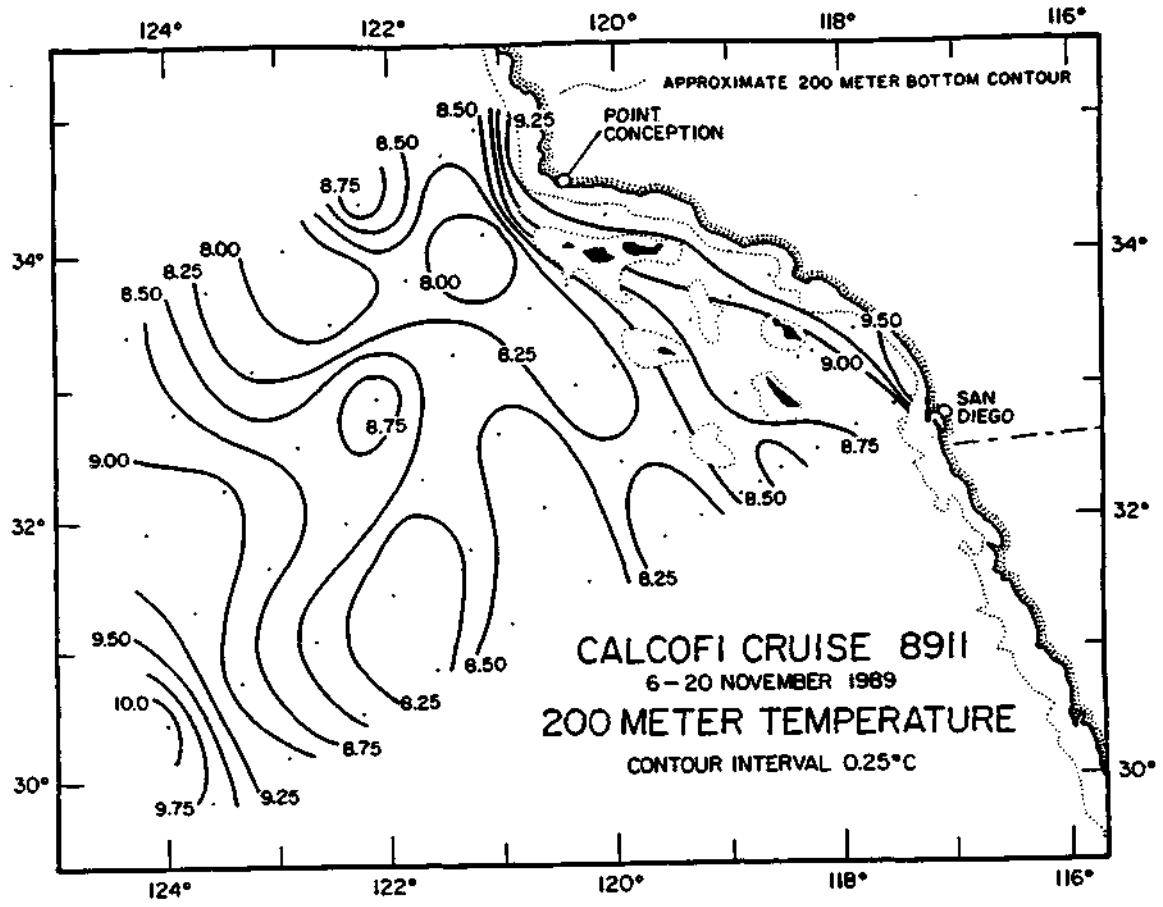

FIGURE 4C

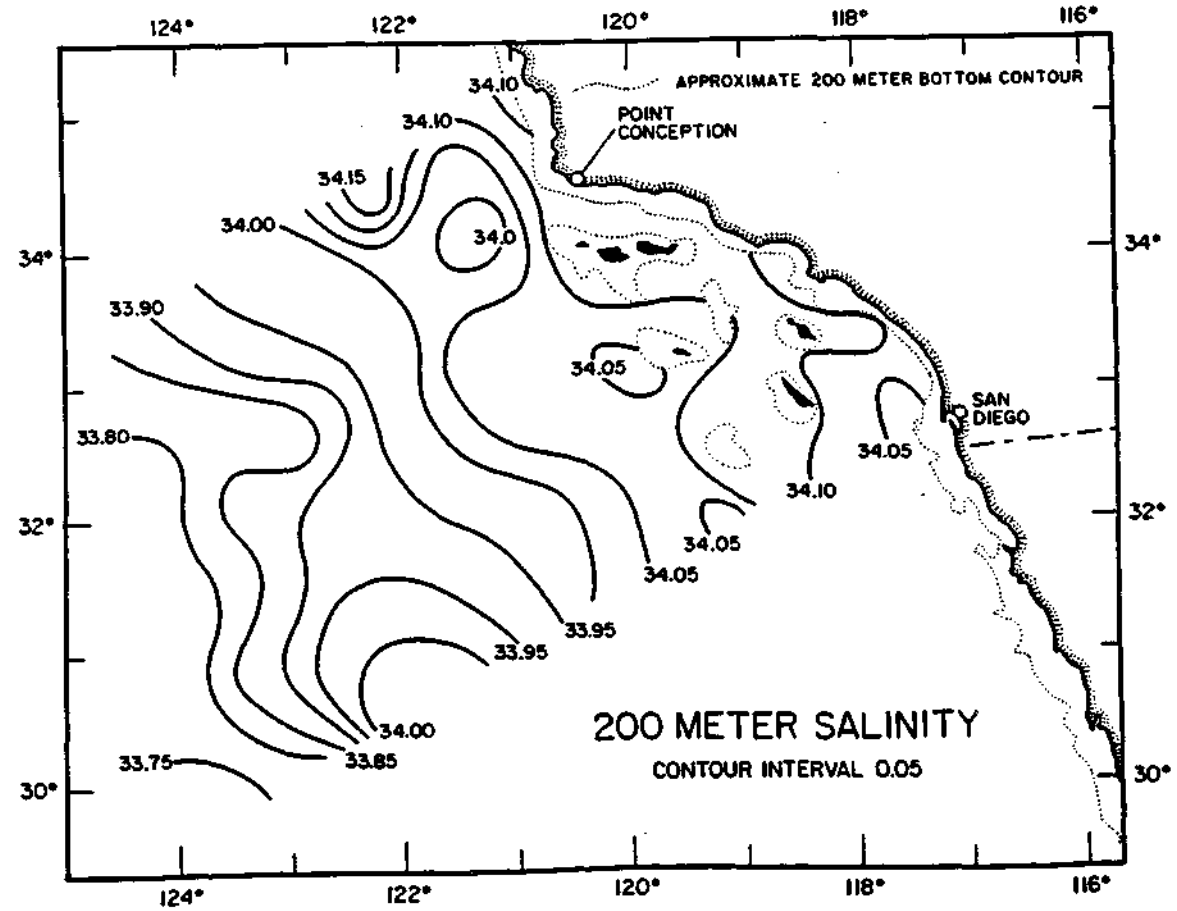

FIGURE 4D

CALCOFI CRUISE 8911

6-9 NOVEMBER 1989

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 93

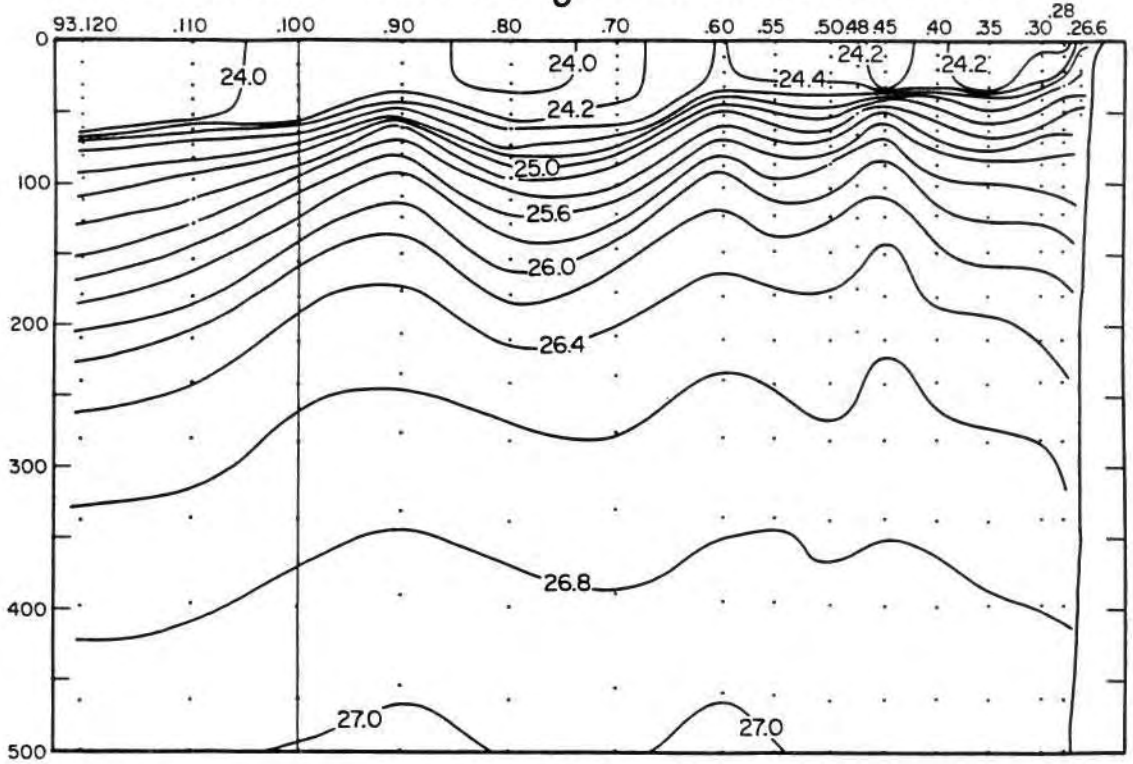

FIGURE 5A

TEMPERATURE (°C) ALONG CALCOFI LINE 93

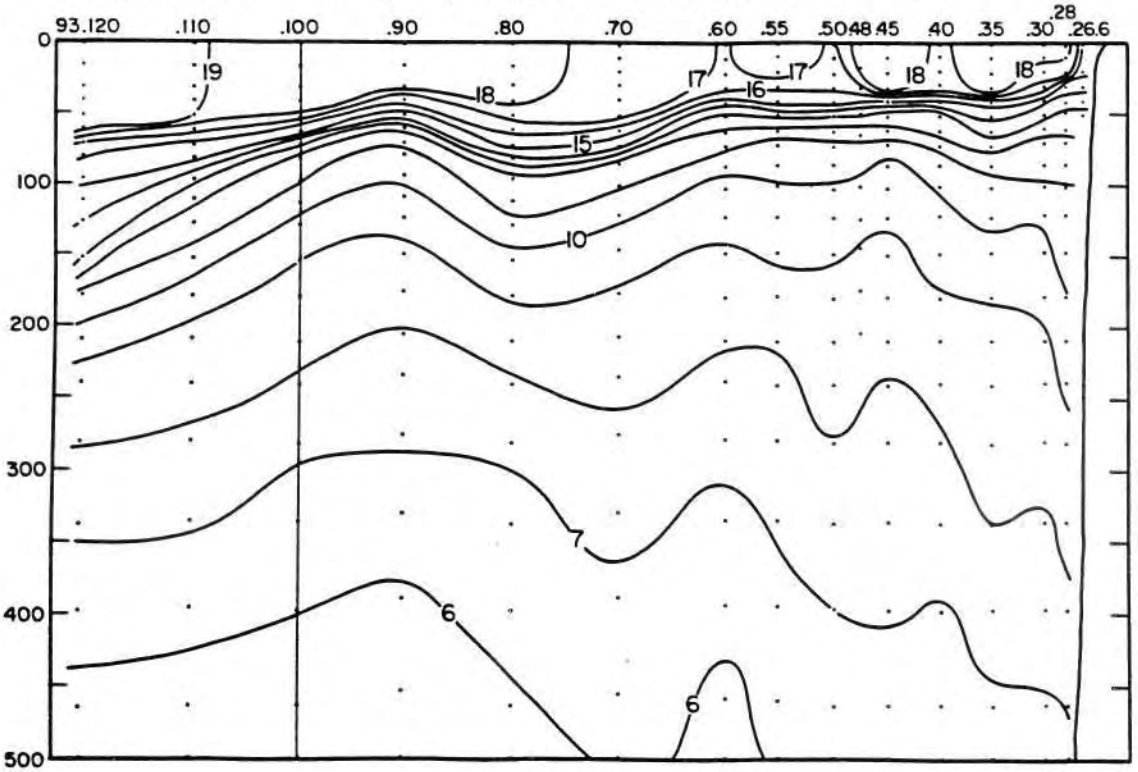

FIGURE 5B

CALCOFI CRUISE 8911

6-9 NOVEMBER 1989

SALINITY ALONG CALCOFI LINE 93

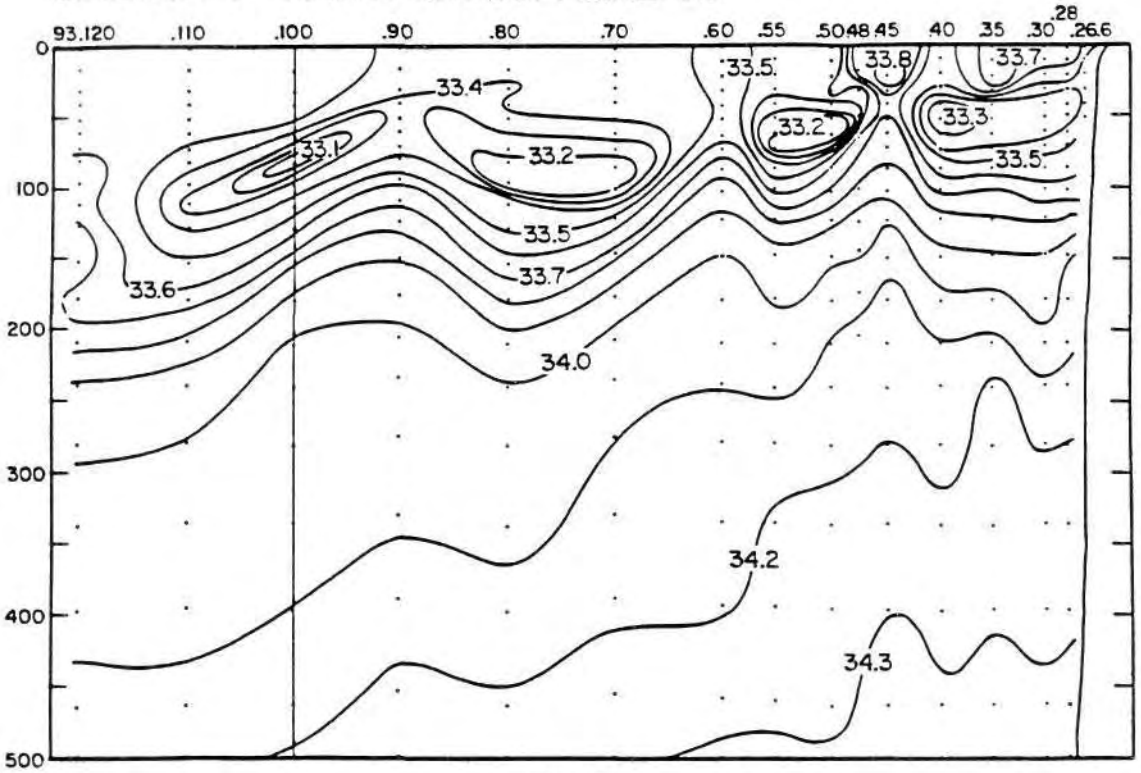

FIGURE 5C

SILICATE (μM/l) ALONG CALCOFI LINE 93

DEPTH (m)

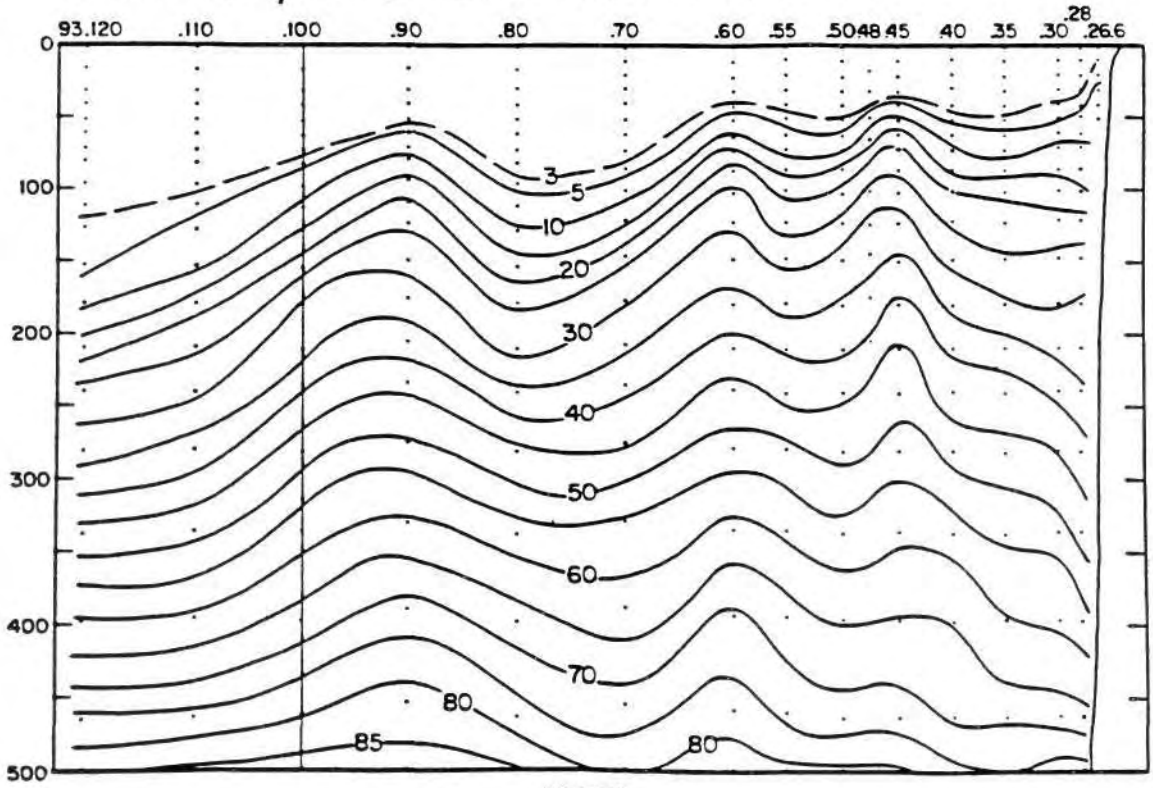

FIGURE 5D

CALCOFI CRUISE 8911

6-9 NOVEMBER 1989

PHOSPHATE (μM/l) ALONG CALCOFI LINE 93

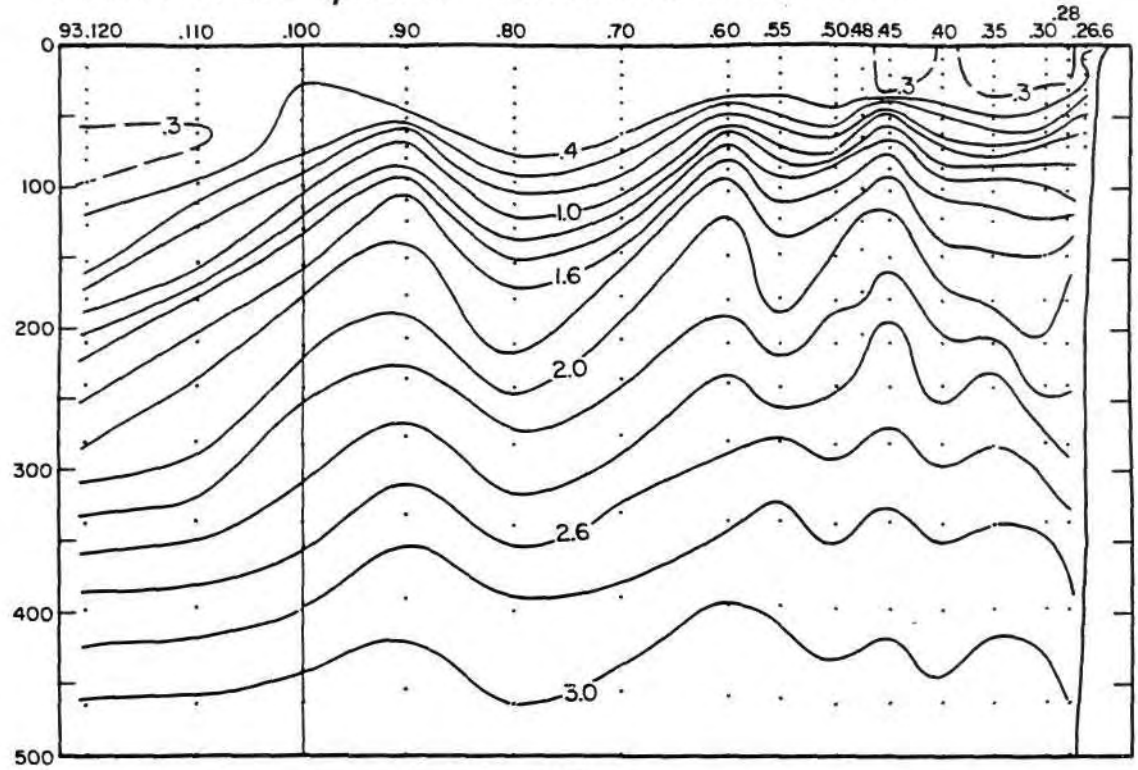

FIGURE 5E

NITRATE (μM/l) ALONG CALCOFI LINE 93

DEPTH (m)

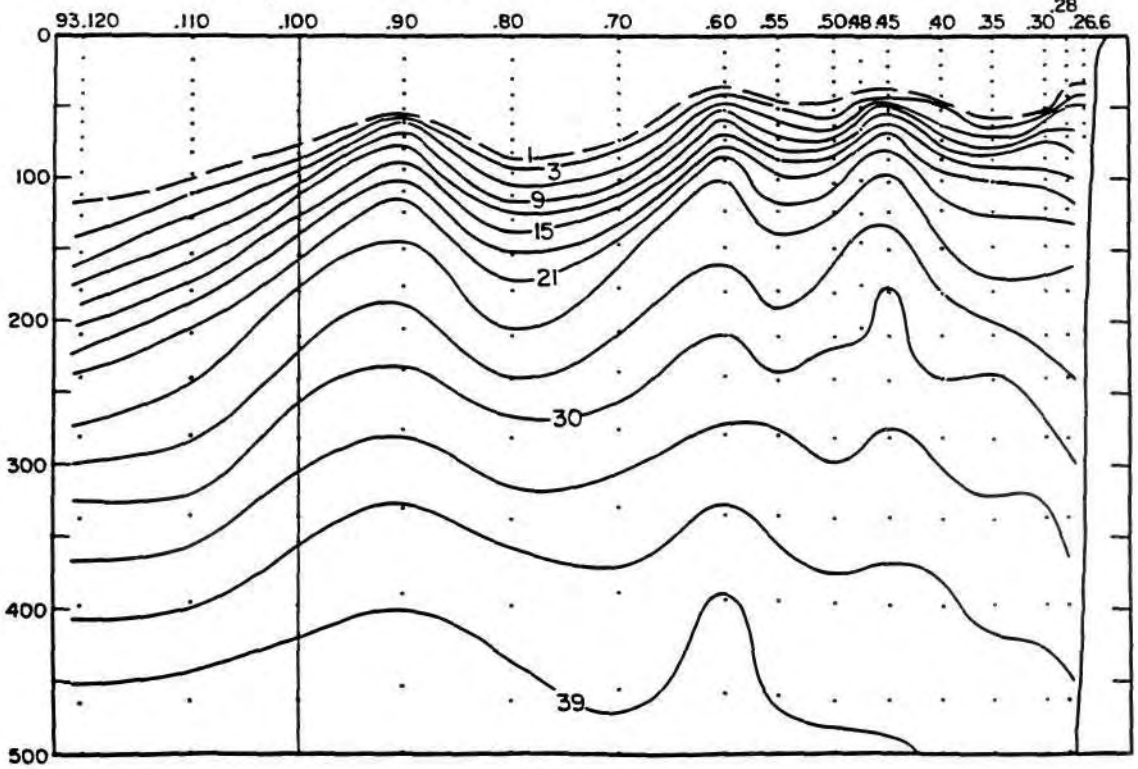

FIGURE 5F

CALCOFI CRUISE 8911

6-9 NOVEMBER 1989

CHLOROPHYLL-a (μg/l) ALONG CALCOFI LINE 93

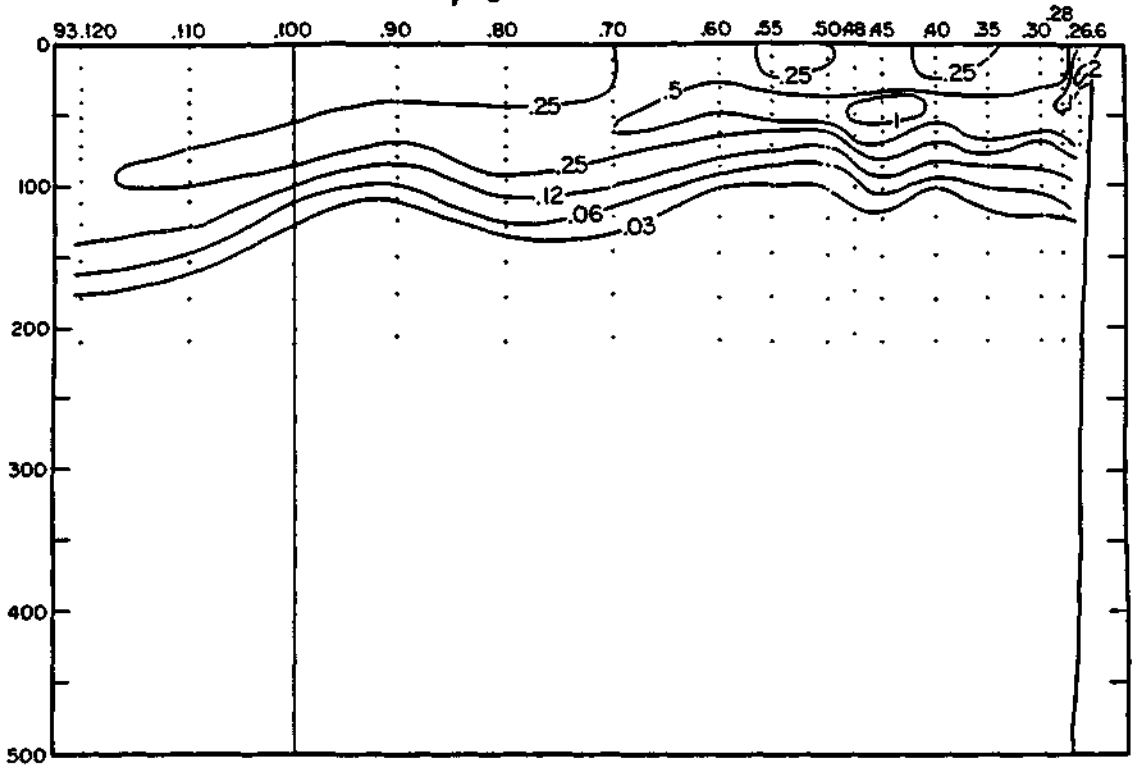

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 93

DEPTH (m)

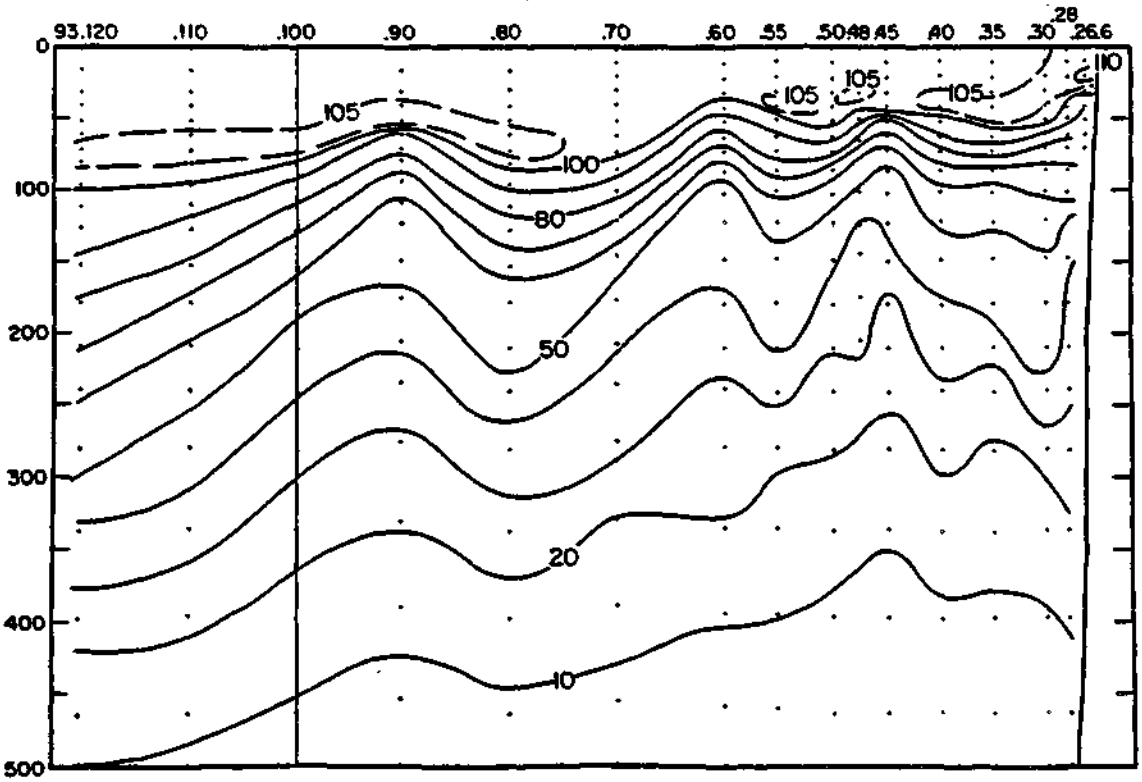

FIGURE 5H

CALCOFI CRUISE 8911

6-9 NOVEMBER 1989

OXYGEN (ml/l) ALONG CALCOFI LINE 93

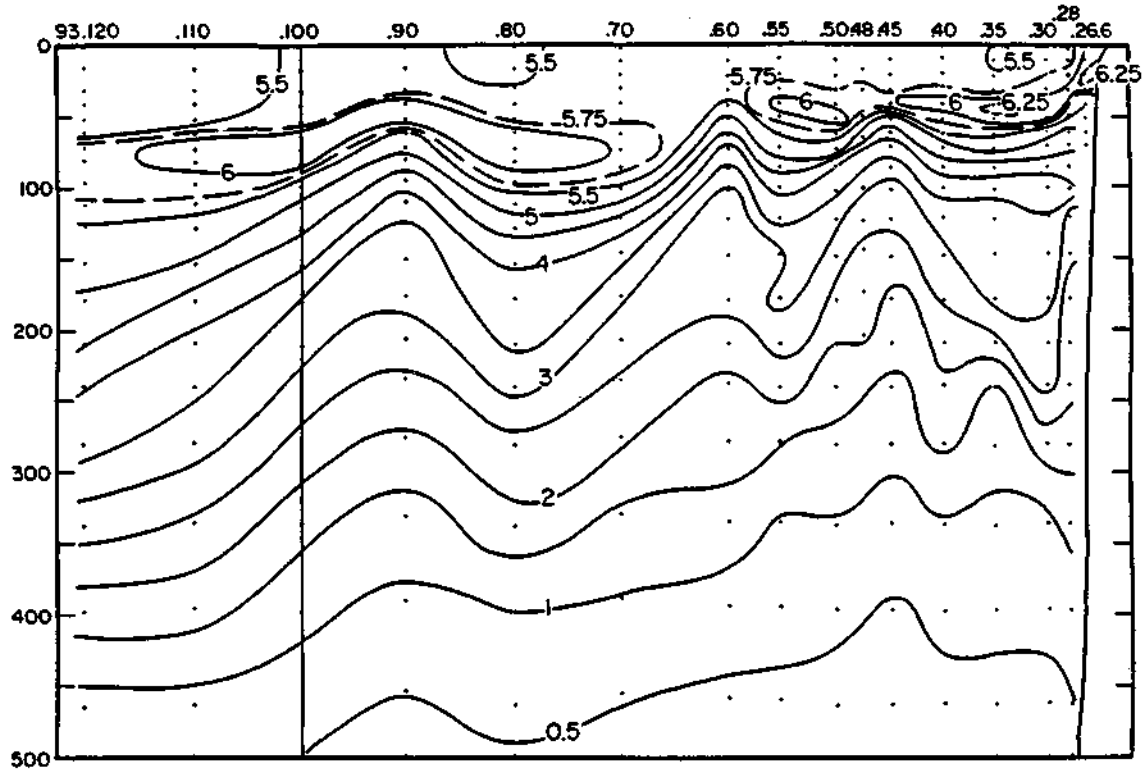

FIGURE 5I

DEPTH (m)

NITRITE (μM/l) ALONG CALCOFI LINE 93

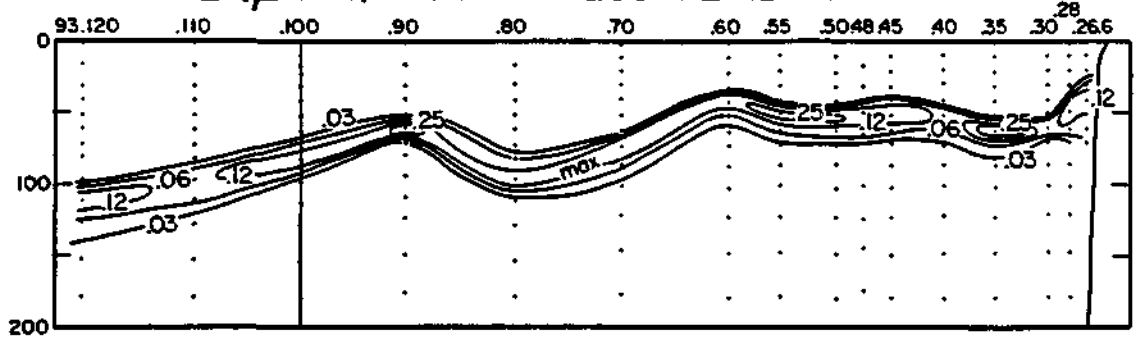

FIGURE 5J

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 93

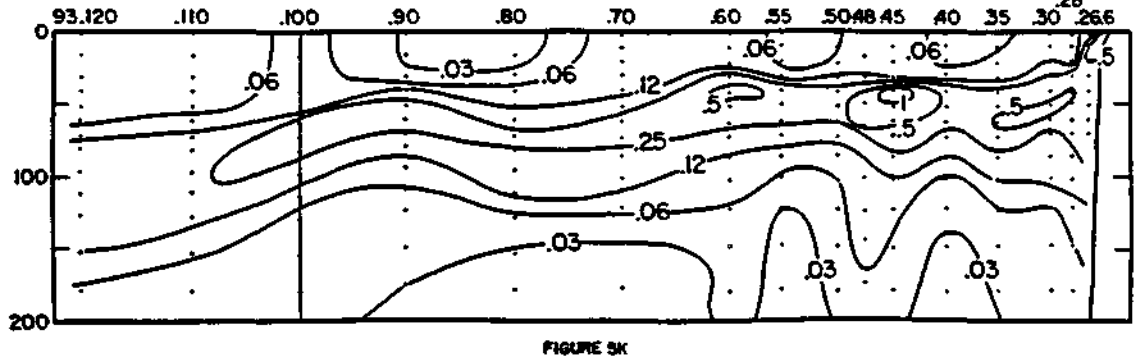

FIGURE 5K

PERSONNEL

CalCOFI Cruise 8911

SHIP'S CAPTAIN

Curtis D. Johnson, RV *New Horizon*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

Mullin, Michael M. (Chief Scientist)	Professor, Director of MLRG, SIO
Abramenkoff, Dimitry N.	Fishery Biologist, NMFS
Bos, David L.	Staff Research Associate, SIO
Blanc, Philippe	Staff Volunteer, SIO
Costello, James P.	Staff Research Associate, SIO
Cynar, Skip J.	Graduate Student, SIO
Gruber, Dennis W.	Marine Technician, SIO
Gruber, Nicolas	Staff Volunteer, SIO
Hemingway, George T.	Assistant To The Director MLRG, SIO
Lowell, William R.	Staff Research Associate, SIO
Miller, Susan M.	Fisheries Technician, NMFS
Pyle, Peter B.	Biologist, Pt Reyes Bird Observatory
Sibley, David	Tour Leader, WINGS, Inc.
Venrick, Elizabeth L.	Research Oceanographer, SIO
Williams, Oriane	Intern, Pt Reyes Bird Observatory

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
35 5.5 N	120 46.4 W	20/11/89	0022 UTC	66 M	350	07 KT	310 02 03	0	1014.4 MB	18.5 C	15.0 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	15.70	15.70	33.520	24.678	325.5	0.000	6.02	106.4	2.6	0.38	0.0	0.01	1.23	0.52	0
1	10	15.57	15.57	33.521	24.708	322.9	0.032	6.00	105.7	2.4	0.37	0.0	0.01	1.34	0.55	10
	20 ISL	14.93	14.93	33.503	24.835	311.1	0.064	5.81	101.1	3.2	0.47	1.3	0.10	1.17	0.54	20
1	21	14.85	14.85	33.501	24.850	309.7	0.067	5.78	100.4	3.4	0.49	1.5	0.11	1.14	0.54	21
	30 ISL	14.13	14.13	33.493	24.997	295.9	0.094	5.52	94.5	6.2	0.65	3.4	0.28	0.89	0.52	30
1	31	14.06	14.06	33.493	25.012	294.5	0.097	5.49	93.8	6.5	0.67	3.6	0.30	0.86	0.52	31
1	42	13.77	13.76	33.501	25.078	288.5	0.129	5.29	89.9	7.9	0.76	4.6	0.36	0.70	0.48	42
	50 ISL	13.22	13.21	33.512	25.198	277.3	0.152	4.86	81.6	10.9	0.95	7.2	0.44	0.44	0.42	50
1	52	13.08	13.07	33.515	25.229	274.4	0.158	4.75	79.5	11.7	1.00	7.8	0.46	0.38	0.41	52

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
35 1.7 N	120 54.6 W	19/11/89	2233 UTC	224 M	280	06 KT	2 80 03 06	0	1015.5 MB	19.8 C	15.9 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	15.86	15.86	33.540	24.657	327.4	0.000	6.15	109.0	2.0	0.38	0.0	0.03	1.57	0.35	0
1	1	15.86	15.86	33.540	24.657	327.4	0.003	6.15	109.0	2.0	0.38	0.0	0.03	1.57	0.35	1
	10 ISL	15.61	15.61	33.536	24.710	322.6	0.033	6.16	108.6	2.0	0.36	0.0	0.02	1.21	0.43	10
1	11	15.58	15.58	33.536	24.717	322.0	0.036	6.16	108.6	2.0	0.36	0.0	0.02	1.16	0.44	11
	20 ISL	15.54	15.54	33.536	24.726	321.4	0.065	6.14	108.1	2.0	0.36	0.0	0.02	1.26	0.50	20
1	22	15.53	15.53	33.536	24.729	321.3	0.071	6.14	108.1	2.0	0.36	0.0	0.02	1.30	0.52	22
	30 ISL	15.00	15.00	33.536	24.845	310.4	0.096	5.81	101.2	3.7	0.49	1.9	0.07	1.21	0.63	30
1	32	14.87	14.87	33.536	24.873	307.8	0.103	5.73	99.6	4.1	0.52	2.4	0.08	1.17	0.65	32
1	A3	14.77	14.76	33.534	24.894	306.2	0.136	5.67	98.3	4.3	0.53	2.6	0.09	1.04	0.58	43
	50 ISL	13.79	13.78	33.508	25.080	288.6	0.157	5.16	87.7	7.1	0.78	5.9	0.30	0.56	0.42	50
1	53	13.32	13.31	33.498	25.168	280.3	0.166	4.93	83.0	8.4	0.89	7.4	0.40	0.36	0.35	53
1	63	12.53	12.52	33.464	25.297	268.1	0.193	4.70	77.8	10.1	1.03	9.7	0.47	0.31	0.29	63
1	72	11.53	11.52	33.539	25.544	244.8	0.216	4.29	69.5	14.2	1.24	13.7	0.15	0.21	0.25	72
	75 ISL	11.36	11.35	33.553	25.586	240.8	0.223	4.22	68.2	15.0	1.28	14.4	0.14	0.20	0.26	75
1	86	11.01	11.00	33.593	25.680	232.1	0.249	4.02	64.4	17.0	1.38	16.2	0.09	0.17	0.30	86
	100 ISL	10.60	10.59	33.683	25.823	218.8	0.281	3.60	57.2	20.4	1.54	18.7	0.07	0.10	0.24	100
1	106	10.46	10.45	33.722	25.878	213.7	0.294	3.42	54.2	21.8	1.60	19.7	0.06	0.07	0.20	107
	125 ISL	10.20	10.19	33.797	25.982	204.2	0.334	3.06	48.3	25.1	1.73	21.6	0.04	0.07	0.20	126
1	126	10.19	10.18	33.800	25.986	203.8	0.336	3.05	48.1	25.2	1.74	21.7	0.04	0.07	0.20	127
1	146	9.90	9.88	33.862	26.083	194.9	0.376	2.85	44.7	27.1	1.84	23.3	0.03	0.06	0.15	147
	150 ISL	9.86	9.84	33.877	26.102	193.3	0.383	2.79	43.7	27.6	1.86	23.6	0.03	0.06	0.14	151
1	178	9.64	9.62	33.985	26.223	182.3	0.436	2.34	36.5	31.6	2.01	25.7	0.03	0.03	0.11	179
	200 ISL	9.35	9.33	34.053	26.324	173.1	0.475	2.09	32.4	35.1	2.13	27.2	0.04	0.03	0.12	201
1	211	9.21	9.19	34.088	26.375	168.5	0.494	1.97	30.4	36.9	2.19	27.9	0.04	0.03	0.13	212

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 54.8 N	121 12.5 W	19/11/89	1935 UTC	570 M	010	03 KT	290 02 05	0	1018.6 MB	17.5 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	15.58	15.58	33.545	24.724	321.1	0.000	5.94	104.7	3.1	0.43	0.9	0.04	1.19	0.40	0
1	1	15.58	15.58	33.545	24.724	321.1	0.003	5.94	104.7	3.1	0.43	0.9	0.04	1.19	0.40	1
	10 ISL	15.08	15.08	33.535	24.826	311.6	0.032	5.86	102.3	3.3	0.47	1.4	0.05	1.28	0.59	10
1	11	15.01	15.01	33.534	24.841	310.2	0.035	5.85	101.9	3.3	0.48	1.5	0.05	1.29	0.61	11
	20 ISL	14.81	14.81	33.538	24.887	306.1	0.063	5.73	99.5	4.1	0.55	2.6	0.07	1.12	0.58	20
1	22	14.75	14.75	33.541	24.903	304.7	0.069	5.69	98.6	4.4	0.57	2.9	0.08	1.07	0.57	22
	30 ISL	14.07	14.07	33.565	25.065	289.4	0.092	5.41	92.5	5.9	0.71	5.0	0.13	0.98	0.51	30
1	31	13.98	13.98	33.568	25.086	287.4	0.095	5.37	91.7	6.1	0.73	5.3	0.14	0.97	0.50	31
1	41	13.32	13.31	33.580	25.231	273.9	0.123	5.02	84.5	8.8	0.93	8.0	0.17	0.87	0.52	41
	50 ISL	12.40	12.39	33.582	25.414	256.7	0.147	4.61	76.1	11.5	1.14	11.5	0.21	0.69	0.44	50
1	52	12.19	12.18	33.584	25.455	252.8	0.152	4.52	74.3	12.1	1.19	12.3	0.22	0.64	0.41	52
1	62	11.49	11.48	33.617	25.612	238.1	0.177	4.13	66.9	15.8	1.38	15.1	0.23	0.46	0.31	62
1	72	10.71	10.70	33.679	25.800	220.3	0.200	3.68	58.6	19.7	1.60	18.6	0.13	0.28	0.28	72
	75 ISL	10.53	10.52	33.707	25.854	215.3	0.206	3.53	56.0	21.0	1.66	19.6	0.10	0.23	0.25	75
1	86	10.07	10.06	33.810	26.013	200.3	0.229	3.04	47.8	25.3	1.85	22.4	0.03	0.10	0.17	96
	100 ISL	9.89	9.88	33.883	26.101	192.3	0.257	2.80	43.9	27.6	1.95	23.8	0.03	0.10	0.18	101
1	101	9.88	9.87	33.886	26.105	191.9	0.259	2.79	43.7	27.7	1.95	23.8	0.03	0.10	0.18	101
1	122	9.42	9.41	33.934	26.218	181.5	0.298	2.70	41.9	30.1	2.03	25.3	0.02	0.06	0.17	123
	125 ISL	9.35	9.34	33.945	26.239	179.6	0.303	2.68	41.5	30.6	2.04	25.5	0.02	0.06	0.17	126
1	147	8.89	8.87	34.016	26.368	167.7	0.341	2.57	39.4	34.5	2.13	26.9	0.01	0.03	0.13	14!
	150 ISL	8.82	8.80	34.018	26.380	166.5	0.346	2.58	39.5	34.8	2.13	27.0	0.01	0.03	0.13	151
1	178	8.32	8.30	34.047	26.481	157.4	0.392	2.63	39.8	38.1	2.15	28.0	0.01	0.02	0.10	17)
	200 ISL	8.45	8.43	34.143	26.536	152.6	0.426	1.89	28.7	42.4	2.40	29.8	0.01	0.01	0.09	201
1	208	8.49	8.47	34.173	26.554	151.1	0.438	1.62	24.6	44.0	2.49	30.5	0.01	0.01	0.09	20!
1	237	7.88	7.86	34.141	26.621	145.0	0.481	1.70	25.5	48.0	2.51	31.7	0.01			231
	250 ISL	7.84	7.82	34.163	26.644	143.0	0.500	1.56	23.4	49.7	2.56	32.3	0.01			252
1	279	7.74	7.71	34.199	26.687	139.4	0.541	1.20	17.9	53.3	2.69	33.5	0.01			281
	300 ISL	7.58	7.55	34.195	26.708	137.8	0.570	1.17	17.4	55.4	2.73	34.1	0.01			302
1	335	7.25	7.22	34.181	26.744	134.7	0.617	1.12	16.6	59.0	2.77	35.0	0.01			33)
1	393	6.75	6.71	34.218	26.842	126.0	0.693	0.74	10.8	66.8	2.95	37.3	0.00			396
	400 ISL	6.67	6.63	34.214	26.850	125.3	0.702	0.72	10.5	67.8	2.96	37.5	0.00			403
1	456	6.08	6.04	34.191	26.909	119.9	0.770	0.63	9.1	75.9	3.06	39.2	0.02			45!
	500 ISL	5.85	5.81	34.234	26.972	114.3	0.822	0.49	7.0							504
1	520	5.75	5.71	34.254	27.000	111.8	0.845	0.42	6.0							52*

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	HEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 43.5 N	121 32.0 W	19/11/89	1505 DTC	937 M	040	06 KT	350 02 06	0	1018.4 MB	16.1 C	14.0 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		14.90	14.90	33.470	24.815	312.4	0.000	5.97	103.8	2.8	0.39	0.2	0.02	1.24	0.39	0
1	10		14.79	14.79	33.461	24.832	311.1	0.031	5.90	102.3	2.8	0.42	0.4	0.04	1.15	0.41	10
	20	ISL	13.79	13.79	33.427	25.016	293.8	0.061	5.45	92.6	4.9	0.68	4.3	0.19	0.58	0.33	20
1	21		13.63	13.63	33.423	25.046	291.0	0.064	5.39	91.3	5.3	0.72	4.9	0.20	0.52	0.32	21
	30	ISL	11.51	11.51	33.385	25.427	254.8	0.089	4.80	77.7	10.7	1.14	11.9	0.07	0.23	0.27	30
1	31		11.29	11.29	33.387	25.469	250.9	0.091	4.73	76.2	11.3	1.19	12.6	0.05	0.21	0.26	31
1	41		10.87	10.87	33.500	25.632	235.6	0.116	4.28	68.4	14.9	1.39	15.8	0.03	0.12	0.18	41
	50	ISL	10.47	10.46	33.531	25.726	226.8	0.137	4.09	64.8	17.0	1.50	17.5	0.02	0.08	0.13	50
1	51		10.43	10.42	33.534	25.735	225.9	0.139	4.07	64.4	17.2	1.51	17.7	0.02	0.08	0.13	51
1	62		10.31	10.30	33.644	25.842	216.0	0.163	3.67	58.0	19.9	1.62	19.7	0.01	0.05	0.11	62
1	72		9.98	9.97	33.738	25.972	203.9	0.184	3.38	53.0	22.6	1.76	21.5	0.01	0.03	0.09	72
	75	ISL	9.91	9.90	33.753	25.995	201.8	0.190	3.34	52.3	23.1	1.78	21.8	0.01	0.03	0.09	75
1	86		9.72	9.71	33.787	26.054	196.4	0.212	3.25	50.7	24.5	1.84	22.6	0.01	0.02	0.08	86
	100	ISL	9.55	9.54	33.821	26.108	191.5	0.239	3.13	48.7	26.1	1.89	23.6	0.01	0.02	0.07	101
1	102		9.52	9.51	33.826	26.117	190.7	0.243	3.11	48.3	26.4	1.90	23.7	0.01	0.02	0.07	103
1	122		9.03	9.02	33.897	26.252	178.2	0.280	2.96	45.5	30.1	2.00	25.5	0.01	0.01	0.07	123
	125	ISL	8.99	8.98	33.905	26.265	177.1	0.285	2.96	45.5	30.4	2.00	25.5	0.01	0.01	0.07	126
1	148		8.81	8.79	33.950	26.329	171.4	0.325	2.94	45.0	31.9	2.02	25.9	0.01	0.01	0.07	149
	150	ISL	8.79	8.77	33.952	26.333	171.0	0.329	2.95	45.1	32.0	2.02	25.9	0.01	0.01	0.07	151
1	179		8.50	8.48	33.984	26.404	164.8	0.377	3.07	46.7	33.8	2.02	26.2	0.01	0.01	0.06	180
	200	ISL	8.26	8.24	34.025	26.473	158.5	0.411	2.85	43.1	37.4	2.11	27.4	0.00	0.01	0.06	201
1	211		8.12	8.10	34.045	26.509	155.2	0.429	2.69	40.6	39.7	2.18	28.2	0.00	0.01	0.06	212
1	241		7.60	7.58	34.061	26.599	147.1	0.474	2.38	35.5	46.1	2.37	30.5	0.00			242
	250	ISL	7.56	7.54	34.079	26.618	145.3	0.487	2.23	33.2	47.6	2.42	31.1	0.00			252
1	282		7.44	7.41	34.127	26.674	140.5	0.533	1.67	24.8	52.1	2.61	32.9	0.00			284
	300	ISL	7.43	7.40	34.164	26.704	137.9	0.558	1.37	20.3	54.7	2.72	33.7	0.00			302
1	339		7.35	7.32	34.230	26.768	132.5	0.611	0.85	12.6	60.5	2.92	35.3	0.00			341
1	399		6.71	6.67	34.248	26.871	123.3	0.687	0.60	8.8	70.0	3.09	37.6	0.00			402
	400	ISL	6.70	6.66	34.248	26.872	123.1	0.689	0.60	8.8	70.1	3.09	37.6	0.00			403
1	463		6.21	6.17	34.247	26.936	117.6	0.765	0.47	6.8	77.0	3.14	39.3	0.00			466
	500	ISL	6.01	5.97	34.272	26.982	113.6	0.807	0.38	5.5	80.8	3.17	40.0	0.00			504
1	530		5.84	5.79	34.293	27.020	110.2	0.841	0.31	4.4	83.8	3.19	40.5	0.00			534

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 23.2 N	122 15.0 W	19/11/89	0948 DTC	4014 M	0 80	0 8 KT			1018.4 MB	16.3 C	14.3 C	

CAST	DEPTH M		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OXTGEN 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		14.83	14.83	33.426	24.796	314.2	0.000	6.09	105.7	2.5	0.38	0.0	0.02	0.93	0.29	0
1	10		14.59	14.59	33.410	24.836	310.7	0.031	6.09	105.1	2.3	0.38	0.0	0.02	1.13	0.30	10
	20	ISL	13.26	13.26	33.331	25.050	290.6	0.061	5.98	100.4	3.7	0.52	1.7	0.12	1.07	0.49	20
1	21		13.09	13.09	33.319	25.074	288.3	0.064	5.96	99.7	3.9	0.54	2.0	0.13	1.06	0.51	21
	30	ISL	11.50	11.50	33.158	25.253	271.4	0.089	5.72	92.4	5.8	0.79	5.7	0.19	0.71	0.45	30
1	31		11.35	11.35	33.146	25.270	269.8	0.092	5.68	91.5	6.1	0.82	6.2	0.19	0.67	0.44	31
1	42		10.95	10.94	33.262	25.432	254.6	0.121	5.14	82.1	9.5	1.06	10.4	0.08	0.47	0.39	42
	50	ISL	10.78	10.77	33.502	25.650	234.1	0.140	4.19	66.8	15.3	1.40	16.1	0.04	0.22	0.25	50
1	52		10.74	10.73	33.559	25.701	229.3	0.145	3.96	63.1	16.7	1.48	17.4	0.03	0.17	0.21	52
1	62		10.48	10.47	33.626	25.799	220.2	0.168	3.68	58.3	19.2	1.61	19.2	0.01	0.11	0.16	62
1	73		10.18	10.17	33.753	25.950	206.1	0.191	3.12	49.2	23.5	1.80	22.0	0.01	0.04	0.12	73
	75	ISL	10.13	10.12	33.772	25.973	203.9	0.195	3.05	48.0	24.1	1.82	22.4	0.01	0.04	0.12	75
1	87		9.86	9.85	33.862	26.089	193.1	0.219	2.72	42.6	27.1	1.94	24.1	0.01	0.02	0.11	87
	100	ISL	9.74	9.73	33.921	26.155	187.1	0.244	2.51	39.2	29.2	2.02	25.2	0.01	0.01	0.08	101
1	103		9.72	9.71	33.933	26.168	185.9	0.249	2.47	38.6	29.6	2.04	25.4	0.01	0.01	0.07	104
1	123		9.50	9.49	34.054	26.299	173.9	0.285	2.01	31.3	33.9	2.20	27.4	0.01	0.01	0.06	124
	125	ISL	9.48	9.47	34.060	26.307	173.2	0.289	1.99	30.9	34.1	2.21	27.5	0.01	0.01	0.06	126
1	149		9.31	9.29	34.096	26.363	168.3	0.330	1.87	29.0	36.1	2.28	28.4	0.00	0.00	0.05	150
	150	ISL	9.30	9.28	34.098	26.367	168.0	0.331	1.86	28.8	36.2	2.28	28.4	0.00	0.00	0.05	151
1	180		9.08	9.06	34.156	26.448	160.9	0.381	1.68	25.9	39.0	2.37	29.3	0.00	0.00	0.04	181
	200	ISL	8.99	8.97	34.191	26.490	157.2	0.413	1.54	23.7	41.0	2.43	29.8	0.01	0.01	0.03	201
1	211		8.94	8.92	34.207	26.511	155.5	0.430	1.47	22.6	42.1	2.45	30.1	0.01	0.01	0.03	212
1	241		8.76	8.73	34.225	26.553	151.9	0.476	1.32	20.2	44.1	2.48	30.8	0.00			242
	250	ISL	8.70	8.67	34.234	26.570	150.5	0.489	1.26	19.3	44.9	2.51	31.1	0.00			252
1	281		8.45	8.42	34.259	26.629	145.4	0.535	1.06	16.1	47.9	2.61	32.1	0.01			283
	300	ISL	8.29	8.26	34.259	26.653	143.4	0.563	1.00	15.2	49.6	2.64	32.6	0.01			302
1	338		7.89	7.86	34.244	26.702	139.2	0.616	0.93	14.0	53.4	2.68	33.8	0.00			340
1	398		7.00	6.96	34.204	26.797	130.5	0.697	0.86	12.6	61.7	2.79	36.3	0.00			401
	400	ISL	6.99	6.95	34.205	26.799	130.3	0.700	0.85	12.5	61.9	2.80	36.4	0.00			403
1	462		6.67	6.63	34.255	26.883	123.1	0.779	0.54	7.9	68.7	2.97	38.1	0.00			465
	500	ISL	6.20	6.16	34.253	26.943	117.5	0.824	0.47	6.8	75.0	3.04	39.4	0.00			504
1	533		5.79	5.74	34.253	26.995	112.6	0.862	0.41	5.9	80.4	3.11	40.5	0.00			537

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	HIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
34 3.4 N	122 56.2 W	19/11/89	0428 UTC	4227 M	070	10 KT			1017.9 MB	16.4 C	15.7 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	16.26	16.26	33.319	24.397	352.2	0.000	5.77	103.0	2.0	0.35	0.0	0.00	0.31	0.10	0
1	1	.16.26	16.26	33.319	24.397	352.3	0.004	5.77	103.0	2.0	0.35	0.0	0.00	0.31	0.10	1
	10 ISL	16.11	16.11	33.317	24.430	3 49.4	0.035	5.78	102.8	1.8	0.35	0.0	0.00	0.31	0.10	10
1	11	16.09	16.09	33.316	24.433	349.1	0.039	5.78	102.8	1.8	0.35	0.0	0.00	0.31	0.10	11
	20 ISL	16.02	16.02	33.306	24.442	348.5	0.070	5.80	103.0	1.7	0.34	0.0	0.00	0.41	0.13	20
1	22	16.01	16.01	33.3 03	24.442	348.6	0.077	5.80	103.0	1.7	0.34	0.0	0.00	0.43	0.14	22
	30 ISL	13.46	13.46	33.057	24.798	314.8	0.103	6.34	106.7	2.3	0.40	0.2	0.02	0.44	0.21	30
1	32	12.72	12.72	33.001	24.901	305.0	0.110	6.46	107 .0	2.5	0.43	0.3	0.03	0.44	0.23	32
1	42	10.51	10.51	32.862	25.198	276.9	0.139	6.23	98.4	4.2	0.62	2.3	0.20	0.34	0.21	42
	50 ISL	10.16	10.15	32.935	25.314	265.9	0.160	6.00	94.0	5.3	0.75	5.1	0.09	0.25	0.20	50
1	52	10.07	10.06	32.937	25.331	264.3	0.166	5.95	93.1	5.5	0.77	5.7	0.05	0.23	0.20	52
1	62	9.85	9.84	32.942	25.372	260.7	0.192	5.91	92.0	6.0	0.82	6.6	0.04	0.20	0.16	62
1	73	9.55	9.54	32.972	25.444	253.9	0.220	5.78	89.4	7.9	0.93	8.5	0.03	0.14	0.13	73
	75 ISL	9.49	9.48	33.009	25.483	250.3	0.225	5.71	88.2	8.6	0.97	9.2	0.03	0.12	0.12	75
1	87	9.24	9.23	33.282	25.737	226.4	0.254	5.13	78.9	14.0	1.25	14.3	0.02	0.04	0.05	87
	100 ISL	9.24	9.23	33.498	25.906	210.6	0.282	4.30	66.3	20.0	1.56	19.4	0.01	0.02	0.04	100
1	102	9.24	9.23	33.524	25.926	208.7	0.287	4.18	64.4	20.8	1.60	20.1	0.01	0.02	0.04	103
1	123	9.18	9.17	33.740	26.105	192.1	0.329	3.41	52.6	25.8	1.81	23.5	0.01	0.01	0.04	124
	125 ISL	9.14	9.13	33.753	26.122	190.6	0.333	3.41	52.5	26.1	1.81	23.7	0.01	0.01	0.04	126
1	149	8.54	8.52	33.860	26.300	174.0	0.376	3.35	50.9	29.6	1.86	24.9	0.00	0.01	0.03	150
	150 ISL	8.52	8.50	33.864	26.306	173.5	0.378	3.35	50.9	29.7	1.86	24.9	0.00	0.01	0.03	151
1	180	8.03	8.01	33.949	26.447	160.5	0.428	3.24	48.7	34.5	1.94	26.7	0.00	0.01	0.03	181
	200 ISL	7.82	7.80	33.997	26.516	154.3	0.460	2.79	41.8	39.2	2.11	28.8	0.00	0.01	0.03	201
1	211	7.71	7.69	34.016	26.547	151.5	0.476	2.54	37.9	41.8	2.20	30.0	0.00	0.01	0.03	212
1	240	7.33	7.31	34.026	26.609	145.9	0.520	2.35	34.8	46.7	2.31	31.5	0.00			241
	250 ISL	7.20	7.18	34.029	26.630	144.0	0.534	2.26	33.4	48.4	2.35	32.1	0.00			251
1	281	6.83	6.80	34.040	26.689	138.6	0.578	1.95	28.5	53.9	2.48	33.9	0.00			283
	300 ISL	6.61	6.58	34.049	26.7 26	135.3	0.604	1.74	25.3	57.6	2.57	35.1	0.00			302
1	337	6.22	6.19	34.069	26.793	129.3	0.653	1.36	19.6	64.6	2.74	37.3	0.00			339
1	397	5.82	5.79	34.098	26.867	122.8	0.728	1.04	14.9	72.8	2.90	39.2	0.00			400
	400 ISL	5.80	5.77	34.100	26.871	122.4	0.732	1.02	14.6	73.3	2.91	39.3	0.00			403
1	461	5.32	5.28	34.142	26.962	114.1	0.804	0.65	9.2	82.8	3.06	41.4	0.00			464
	500 ISL	5.10	5.06	34.172	27.012	109.6	0.848	0.53	7.4	88.3	3.12	42.2	0.00			5 03
1	528	4.94	4.90	34.194	27.048	106.3	0.878	0.45	6.3	92.3	3.16	42.7	0.00			532

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 77 90

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 44.2 N	123 36.8 W	18/11/89	2335 UTC	43 26 M	040	09 KT	330 04 06	0	1015.4 MB	18.1 C	17.0 C	0/8

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	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	16.94	16.94	33.146	24.107	379.9	0.000	5.68	102.6	2.0	0.35	0.0	0.00	0.14	0.04	0
	10 ISL	16.19	16.19	33.157	24.289	362.8	0.037	5.82	103.6	2.0	0.35	0.0	0.00	0.20	0.06	10
1	11	16.12	16.12	33.158	24.305	361.3	0.041	5.83	103.6	2.0	0.35	0.0	0.00	0.21	0.06	11
	20 ISL	15.60	15.60	33.173	24.434	349.3	0.073	5.93	104.3	2.0	0.35	0.0	0.00	0.24	0.09	20
1	21	15.53	15.53	33.173	24.449	3 47.9	0.076	5.95	104.5	2.0	0.35	0.0	0.00	0.25	0.09	21
	30 ISL	14.37	14.37	33.117	24.657	328.3	0.107	6.28	107.7	2.1	0.37	0.1	0.01	0.36	0.15	30
1	32	14.07	14.07	33.099	24.705	323.7	0.113	6.35	108.3	2.1	0.38	0.1	0.01	0.38	0.16	32
1	43	12.57	12.56	32.983	24.916	303.8	0.148	6.45	106.5	2.6	0.43	0.1	0.02	0.24	0.24	43
	50 ISL	12.25	12.24	33.016	25.003	295.7	0.169	6.39	104.8	2.6	0.41	0.1	0.01	0.18	0.16	50
1	53	12.14	12.13	33.030	25.035	292.8	0.177	6.35	103.9	2.6	0.40	0.1	0.01	0.17	0.12	53
1	63	11.13	11.12	32.961	25.167	280.4	0.206	6.29	100.7	3.2	0.50	0.7	0.09	0.18	0.12	63
1	74	10.36	10.35	32.928	25.275	270.2	0.236	6.09	95.9	4.5	0.68	3.9	0.16	0.18	0.15	7*
	75 ISL	10.30	10.29	32.924	25.282	269.5	0.239	6.08	95.6	4.6	0.69	4.1	0.15	0.18	0.15	75
1	88	9.72	9.71	32.930	25.384	260.0	0.274	5.98	92.8	5.8	0.80	6.4	0.04	0.13	0.12	88
	100 ISL	9.54	9.53	33.097	25.544	245.0	0.304	5.63	87.1	8.9	0.98	9.8	0.02	0.07	0.08	100
1	104	9.51	9.50	33.164	25.602	239.6	0.314	5.49	84.9	10.2	1.05	11.0	0.01	0.05	0.07	104
1	124	9.24	9.23	33.380	25.814	219.8	0.359	4.81	74.1	16.6	1.36	16.3	0.01	0.01	0.04	125
	125 ISL	9.23	9.22	33.395	25.828	218.5	0.362	4.76	73.3	17.0	1.38	16.6	0.01	0.01	0.04	126
1	150	8.89	8.87	33.730	26.144	188.9	0.413	3.56	54.5	26.8	1.80	23.6	0.00	0.01	0.03	151
1	181	8.49	8.47	33.889	26.331	171.7	0.469	3.32	50.4	30.9	1.87	25.2	0.00	0.00	0.02	182
	200 ISL	8.24	8.22	33.956	26.421	163.4	0.500	3.10	46.8	34.4	1.96	26.8	0.00	0.00	0.03	201
1	211	8.10	8.08	33.984	26.465	159.4	0.518	2.96	44.6	36.5	2.02	27.7	0.00	0.00	0.03	212
1	241	7.81	7.79	34.013	26.530	153.6	0.565	2.63	39.4	40.7	2.15	29.6	0.00			242
	250 ISL	7.72	7.70	34.016	26.546	152.2	0.579	2.58	38.5	41.7	2.18	30.0	0.00			251
1	282	7.36	7.33	34.026	26.605	146.9	0.627	2.39	35.4	46.0	2.28	31.3	0.00			284
	300 ISL	7.15	7.12	34.044	26.649	143.0	0.653	2.13	31.4	49.9	2.39	32.7	0.00			302
1	337	6.68	6.65	34.076	26.739	134.8	0.704	1.60	23.3	58.8	2.63	35.7	0.00			339
1	396	5.74	5.71	34.056	26.843	124.9	0.781	1.32	18.8	71.3	2.79	38.6	0.00			399
	400 ISL	5.70	5.67	34.057	26.849	124.4	0.786	1.30	18.5	72.1	2.80	38.8	0.00			403
1	461	5.29	5.25	34.102	26.934	116.7	0.85 9	0.90	12.7	81.8	2.98	40.9	0.00			464
	500 ISL	5.32	5.28	34.168	26.983	112.6	0.904	0.62	8.8	84.3	3.08	41.5	0.00			503
1	530	5.34	5.30	34.218	27.021	109.5	0.937	0.41	5.8	86.3	3.15	41.9	0.00			534

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 77 100

LATITDDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	HAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 23.6 N	124 20.2 W	18/11/89	1622 UTC	4484 M	150	11 KT	360 04 05	1	1014..9 MB	16.0 C	14.1 C	7/8	SC

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 7 8	SIGMA THETA	SVA	DTN HT	OXTGEN ML/L	OXT 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	17.81	17.81	33.468	24.146	376.1	0.000	5.55	102.2	1.9	0.33	0.2	0.00	0.13	0.04	0
1	1	17.81	17.81	33.468	24.146	376.1	0.004	5.55	102.2	1.9	0.33	0.2	0.00	0.13	0.04	1
	10 ISL	17.80	17.80	33.467	24.148	376.2	0.038	5.54	102.0	1.9	0.33	0.1	0.00	0.13	0.04	10
1	16	17.80	17.80	33.467	24.149	376.4	0.060	5.54	102.0	1.9	0.33	0.1	0.00	0.13	0.04	16
	20 ISL	17.80	17.80	33.468	24.150	376.5	0.075	5.54	102.0	1.9	0.33	0.1	0.00	0.13	0.04	20
	30 ISL	17.81	17.80	33.471	24.150	376.8	0.113	5.54	102.0	1.9	0.33	0.1	0.00	0.14	0.04	30
1	32	17.81	17 .80	33.472	24.151	376.8	0.120	5.54	102.0	1.9	0.33	0.1	0.00	0.14	0.04	32
1	42	17.82	17.81	33.466	24.144	377.8	0.158	5.55	102.2	1.9	0.33	0.1	0.00	0.14	0.05	42
	50 ISL	17.81	17.80	33.464	24.145	377.9	0.188	5.54	102.0	1.9	0.33	0.1	0.00	0.14	0.05	50
1	53	17.81	17.80	33.463	24.145	378.1	0.200	5.53	101.8	1.9	0.33	0.1	0.00	0.14	0.05	53
1	63	17.80	17.79	33.461	24.146	378.3	0.238	5.54	101.9	1.8	0.34	0.1	0.00	0.14	0.05	63
	75 ISL	14.62	14.61	33.262	24.717	323.9	0.280	6.18	106.6	2.2	0.39	0.1	0.00	0.21	0.18	75
1	77	14.02	14.01	33.238	24.825	313.7	0.2B6	6.28	107.0	2.3	0.40	0.1	0.00	0.22	0.20	77
1	92	12.85	12.84	33.203	25.033	294.0	0.332	6.10	101.5	2.7	0.45	0.2	0.06	0.22	0.24	92
	100 ISL	12.46	12.45	33.250	25.146	283.5	0.355	5.81	95.9	3.9	0.58	2.0	0.07	0.21	0.22	100
1	108	12.13	12.12	33.313	25.258	273.0	0.377	5.50	90.2	5.3	0.72	4.3	0.08	0.18	0.18	108
1	124	11.34	11.32	33.409	25.479	252.2	0.419	5.20	83.9	7.4	0.88	7 .7	0.02	0.09	0.12	125
	125 ISL	11.29	11.27	33.414	25.492	251.0	0.422	5.17	83.3	7.6	0.89	8.0	0.02	0.09	0.12	126
1	145	10.37	10.35	33.525	25.741	227.6	0.469	4.59	72.5	13.3	1.21	13.7	0.00	0.03	0.04	146
	150 ISL	10.16	10.14	33.563	25.806	221.4	0.481	4.42	69.5	15.0	1.30	15.3	0.00	0.02	0.03	151
1	164	9.62	9.60	33.674	25.983	204.7	0.510	3.98	61.9	19.5	1.51	19.2	0.00	0.01	0.02	165
1	190	8.97	8.95					3.67	56.3	25.2	1.71	22.8	0.00	0.00	0.02	191
	200 ISL	8.78	8.76	33.867	26.269	178.0	0.579	3.80	58.1	25.9	1.69	22.8	0.00	0.00	0.02	201
1	225	8.40	8.38	33.943	26.388	167.1	0.622	4.06	61.6	27.6	1.64	22.5	0.00	0.00	0.02	226
	250 ISL	8.14	8.11	33.985	26.460	160.6	0.663	3.47	52.3	33.0	1.85	25.8	0.00			251
1	261	8.02	7 .99	33.994	26.485	158.4	0.681	3.17	47.7	35.6	1.96	27.4	0.00			262
	300 ISL	7.39	7.36	34.002	26.583	149.4	0.741	3.03	44.9	42.2	2.09	29.5	0.00			302
1	302	7.35	7.32	34.002	26.588	148.9	0.744	3.03	44.9	42.5	2.10	29.6	0.00			304
1	358	6.52	6.49	34.020	26.716	137.1	0.824	2.13	30.9	56.3	2.48	35.5	0.00			360
	400 ISL	6.12	6.08	34.043	26.7 86	130.7	0.880	1.67	24.0	63.9	2.68	38.3	0.00			402
1	424	5.91	5.87	34.056	26.823	127.4	0.911	1.46	20.9	68.0	2.77	39.6	0.00			427
1	493	5.13	5.09	34.089	26.943	116.1	0.995	0.96	13.5	82.7	2.99	43.2	0.00			496
	500 ISL	5.10	5.06	34.097	26.953	115.2	1.003	0.92	12.9	83.6	3.01	43.4	0.00			503
1	572	4.81	4.76	34.182	27.053	106.1	1.083	0.48	6.7	93.4	3.17	45.2	0.00			576

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 80 51

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TYPE
34 27.0 N	120 32.1 W	17/11/89	0535 UTC	72 M	290	06 KT			1011.8 MB	20.7 C	13.1 C		

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OXYGEN ML/L	OXT 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	15.29	15.29	33.502	24.755	318.1	0.000	5.87	102.9	4.2	0.48	0.8	0.11	1.32	0.40	0
1	1	15.29	15.29	33.502	24.755	318.1	0.003	5.87	102.9	4.2	0.48	0.8	0.11	1.32	0.40	1
	10 ISL	15.26	15.26	33.502	24.761	317.8	0.032	5.89	103.1	4.0	0.48	0.7	0.11	1.24	0.40	10
1	11	15.26	15.26	33.502	24.762	317.8	0.035	5.89	103.1	4.0	0.48	0.7	0.11	1.23	0.40	11
	20 ISL	15.03	15.03	33.493	24.805	313.9	0.063	5.78	100.7	4.6	0.55	0.7	0.18	1.35	0.37	20
1	22	14.95	14.95	33.490	24.820	312.5	0.070	5.73	99.7	4.8	0.57	0.7	0.21	1.36	0.36	22
	30 ISL	14.46	14.46	33.469	24.909	304.3	0.094	5.44	93.7	5.8	0.67	2.3	0.35	0.98	0.33	30
1	32	14.34	14.34	33.464	24.931	302.3	0.100	5.37	92.3	6.1	0.69	2.7	0.39	0.87	0.32	32
1	43	14.01	14.00	33.450	24.989	297.0	0.133	5.26	89.8	6.7	0.76	3.4	0.51	0.60	0.29	43
	50 ISL	13.56	13.55	33.431	25.067	289.8	0.154	5.11	86.4	7.6	0.88	5.1	0.69	0.51	0.27	50
1	53	13.36	13.35	33.423	25.101	286.6	0.163	5.04	84.8	8.0	0.93	5.8	0.76	0.47	0.26	53

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 80 55

LATITDDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TYPE
34 19.0 N	120 49.2 W	17/11/89	0830 UTC	776 M	330	14 KT			1011.8 MB	16.8 C	14.8 C		

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OXYGEN ML/L	OXT PCT	SIO3 UM/L	FO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
	0 ISL	14.82	14.82	33.545	24.890	305.2	0.000	5.72	99.3	4.6	0.57	2.7	0.07	1.02	0.38	0
1	2	14.82	14.82	33.545	24.890	305.3	0.006	5.72	99.3	4.6	0.57	2.7	0.07	1.02	0.38	2
	10 ISL	14.80	14.80	33.546	24.895	305.0	0.031	5.71	99.1	4.5	0.57	2.8	0.07	1.01	0.35	10
1	12	14.80	14.80	33.546	24.896	305.1	0.037	5.71	99.1	4.5	0.57	2.8	0.07	1.01	0.34	12
	20 ISL	14.67	14.67	33.552	24.928	302.2	0.061	5.67	98.1	4.9	0.61	3.3	0.08	1.03	0.38	20
1	22	14.59	14.59	33.542	24.938	301.3	0.067	5.66	97.8	5.0	0.62	3.4	0.08	1.04	0.39	22
	30 ISL	14.01	14.01	33.600	25.105	285.6	0.090	5.33	91.0	7.7	0.78	5.9	0.12	0.94	0.32	30
1	32	13.74	13.74	33.613	25.171	279.4	0.096	5.20	88.3	8.7	0.85	6.9	0.13	0.89	0.30	32
1	41	11.49	11.48	33.614	25.609	237.8	0.119	4.26	69.0	15.3	1.33	14.8	0.13	0.42	0.25	41
	50 ISL	10.69	10.68	33.697	25.817	218.2	0.140	3.64	58.0	19.6	1.57	18.7	0.15	0.27	0.19	50
1	51	10.66	10.65	33.707	25.830	217.0	0.142	3.59	57.2	20.0	1.59	19.0	0.15	0.26	0.18	51
1	62	10.20	10.19	33.791	25.976	203.4	0.165	3.15	49.7	23.1	1.78	22.0	0.07	0.14	0.15	62
1	73	9.95	9.94	33.834	26.052	196.4	0.187	2.99	46.9	25.1	1.86	22.9	0.04	0.09	0.12	73
	75 ISL	9.89	9.88	33.848	26.073	194.4	0.191	2.94	46.1	25.6	1.88	23.2	0.04	0.08	0.12	75
1	87	9.58	9.57	33.934	26.192	183.4	0.214	2.63	41.0	29.0	2.01	25.1	0.02	0.04	0.11	87
	100 ISL	9.42	9.41	34.001	26.270	176.1	0.237	2.38	36.9	31.7	2.12	26.4	0.02	0.02	0.09	101
1	102	9.41	9.40	34.008	26.278	175.5	0.241	2.35	36.5	32.0	2.13	26.5	0.02	0.02	0.09	103
1	123	9.38	9.37	34.022	26.294	174.4	0.277	2.30	35.7	32.7	2.15	26.8	0.02	0.02	0.10	124
	125 ISL	9.38	9.37	34.024	26.295	174.2	0.281	2.29	35.5	32.8	2.15	26.9	0.02	0.02	0.10	126
1	148	9.33	9.31	34.054	26.327	171.7	0.321	2.18	33.8	34.0	2.20	27.4	0.02	0.01	0.08	149
	150 ISL	9.33	9.31	34.057	26.330	171.5	0.324	2.17	33.6	34.1	2.20	27.4	0.02	0.01	0.08	151
1	179	9.25	9.23	34.087	26.367	168.6	0.373	2.08	32.2	35.5	2.25	27.6	0.02	0.02	0.07	180
	200 ISL	9.07	9.05	34.096	26.403	165.5	0.408	2.09	32.2	36.4	2.26	27.9	0.01	0.01	0.07	201
1	211	8.96	8.94	34.105	26.428	163.3	0.427	2.10	32.3	37.3	2.26	28.3	0.01	0.01	0.07	212
1	241	8.78	8.75	34.176	26.512	155.9	0.474	1.45	22.2	43.1	2.49	30.7	0.01			242
	250 ISL	8.70	8.67	34.187	26.533	154.0	0.488	1.43	21.9	44.0	2.52	31.0	0.01			252
1	282	8.40	8.37	34.206	26.595	148.6	0.537	1.35	20.5	46.4	2.58	31.7	0.01			284
	300 ISL	8.28	8.25	34.209	26.616	146.9	0.563	1.29	19.5	48.0	2.61	32.1	0.01			302
1	340	8.02	7.99	34.215	26.660	143.3	0.621	1.13	17.0	51.9	2.70	33.0	0.00			342
1	400	7.46	7.42	34.263	26.7 80	132.6	0.704	0.76	11.3	59.5	2.89	35.5	0.00			403
1	464	6.70	6.66	34.264	26.886	122.9	0.786	0.56	6.2	69.3	3.03	38.1	0.00			467
	500 ISL	6.28	6.24	34.270	26.946	117.3	0.829	0.46	6.7	75.2	3.10	39.5	0.00			504
1	531	5.92	5.87	34.278	26.998	112.4	0.865	0.37	5.3	80.3	3.16	40.7	0.00			535

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
34 8.7 N	121 9.6 W	17/11/89	1217 UTC	2257 M	320	20 KT			1011.4 MB	15.2 C	14.5 C		

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ML/L	OXY PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
1	0	15.00	15.00	33.549	24.854	308.6	0.000	5.92	103.2	1.8	0.39	0.2	0.03	0.98	0.41	0
1	10	14.97	14.97	33.551	24.863	308.2	0.031	5.94	103.4	1.7	0.39	0.2	0.03	0.99	0.42	10
1	20	14.98	14.98	33.547	24.858	308.9	0.062	5.94	103.5	1.7	0.39	0.2	0.03	0.98	0.41	20
	30 ISL	14.82	14.82	33.523	24.874	307.6	0.093	5.86	101.7	1.9	0.44	0.7	0.07	0.80	0.38	30
1	31	14.80	14.80	33.521	24.877	307.4	0.096	5.85	101.5	1.9	0.44	0.7	0.07	0.77	0.38	31
1	41	12.97	12.96	33.534	25.265	270.7	0.125	4.87	81.4	8.3	0.96	8.0	0.29	0.27	0.32	41
	50 ISL	11.85	11.84	33.577	25.514	247.1	0.148	4.28	69.9	13.1	1.25	13.2	0.31	0.24	0.30	50
1	31	11.74	11.73	33.581	25.537	244.9	0.150	4.23	68.9	13.6	1.28	13.7	0.31	0.24	0.30	51
1	61	10.50	10.49	33.591	25.768	223.1	0.174	3.89	61.7	17.8	1.51	18.1	0.06	0.20	0.33	61
1	71	9.87	9.86	33.624	25.901	210.6	0.195	3.74	58.5	20.8	1.64	20.5	0.02	0.07	0.17	71
	75 ISL	9.73	9.72	33.635	25.933	207.6	0.204	3.71	57.9	21.5	1.66	20.9	0.02	0.06	0.14	75
1	85	9.45	9.44	33.670	26.006	200.8	0.224	3.64	56.4	22.9	1.69	21.6	0.02	0.03	0.11	85
1	100	8.94	8.93	33.781	26.175	185.0	0.253	3.41	52.3	26.7	1.82	23.8	0.01	0.02	0.09	101
1	120	8.59	8.58	33.870	26.300	173.5	0.2 89	3.39	51.6	29.5	1.85	24.7	0.01	0.02	0.14	121
	125 ISL	8.53	8.52	33.887	26.322	171.5	0.298	3.40	51.7	29.9	1.85	24.7	0.01	0.02	0.13	126
1	145	8.33	8.32	33.939	26.394	165.0	0.331	3.47	52.5	31.1	1.84	24.9	0.01	0.01	0.05	146
	150 ISL	8.28	8.26	33.948	26.408	163.7	0.339	3.50	52.9	31.4	1.84	25.0	0.01	0.01	0.05	151
1	175	8.03	8.01	33.975	26.467	158.5	0.380	3.57	53.7	33.4	1.84	25.2	0.01	0.01	0.05	176
	200 ISL	7.76	7.74	33.992	26.521	153.8	0.419	3.41	51.0	36.7	1.94	26.5	0.01	0.01	0.04	201
1	205	7.70	7.68	33.994	26.531	152.9	0.426	3.36	50.2	37.4	1.96	26.8	0.01	0.01	0.04	206
1	235	7.36	7.34	34.001	26.5 85	148.1	0.472	3.08	45.6	41.7	2.09	28.5	0.01			236
	250 ISL	7.21	7.19	34.010	26.613	145.6	0.494	2.79	41.2	44.7	2.20	29.9	0.01			252
1	275	6.97	6.94	34.026	26.659	141.5	0.529	2.29	33.6	50.0	2.38	32.4	0.01			277
	300 ISL	6.67	6.64	34.032	26.705	137.4	0.564	1.98	28.9	55.0	2.50	34.2	0.01			302
1	330	6.37	6.34	34.049	26.758	132.6	0.605	1.67	24.2	60.5	2.63	36.0	0.00			332
1	3 89	6.24	6.21	34.160	26.863	123.4	0.680	0.91	13.1	69.3	2.93	38.4	0.00			392
	400 ISL	6.19	6.15	34.174	26.880	121.9	0.694	0.82	11.8	70.9	2.96	38.8	0.00			403
1	454	5.88	5.84	34.226	26.961	114.7	0.758	0.54	7.7	78.2	3.07	40.2	0.00			457
	500 ISL	5.61	5.57	34.253	27.016	109.8	0.809	0.42	6.0	83.1	3.14	41.1	0.00			504
1	524	5.47	5.43	34.268	27.045	107.3	0.835	0.36	5.1	85.7	3.18	41.6	0.00			526

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 80 70

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 49.2 N	121 51.1 W	17/11/89	1740 UTC	3626 M	330	20 KT	330 06 06	1	1012.4 MB	16.2 C	15.3 C	7/8	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	15.33	15.33	33.530	24.767	316.9	0.000	5.87	103.0	2.0	0.37	0.1	0.00	0.77	0.31	0
1	10	15.28	15.28	33.527	24.776	316.3	0.032	5.89	103.2	1.8	0.37	0.1	0.00	0.61	0.32	10
	20 ISL	15.27	15.27	33.525	24.777	316.6	0.063	5.88	103.0	1.8	0.37	0.1	0.00	0.81	0.32	20
1	21	15.27	15.27	33.525	24.777	316.6	0.066	5.88	103.0	1.8	0.37	0.1	0.00	0.81	0.32	21
	30 ISL	15.25	15.25	33.521	24.779	316.7	0.095	5.88	102.9	1.7	0.37	0.1	0.01	0.65	0.34	30
1	31	15.25	15.25	33.521	24.779	316.7	0.098	5.88	102.9	1.7	0.37	0.1	0.01	0.85	0.34	31
1	42	12.43	12.42	33.276	25.170	279.6	0.131	5.50	90.7	6.1	0.81	6.1	0.16	0.46	0.38	42
	50 ISL	11.74	11.73	33.309	25.326	265.0	0.153	5.17	84.1	8.4	1.00	9.1	0.09	0.31	0.34	50
1	52	11.66	11.65	33.326	25.354	262.3	0.158	5.10	82.8	8.9	1.03	9.7	0.06	0.29	0.33	52
1	62	11.15	11.14	33.350	25.466	251.9	0.184	4.92	79.0	10.6	1.16	11.9	0.04	0.23	0.28	62
1	73	10.49	10.48	33.526	25.719	228.0	0.210	4.09	64.8	16.8	1.49	17.5	0.02	0.11	0.16	73
	75 ISL	10.40	10.39	33.555	25.757	224.4	0.215	3.98	63.0	17.7	1.53	18.2	0.02	0.10	0.15	75
1	87	9.97	9.96	33.694	25.939	207.3	0.241	3.48	54.6	22.3	1.72	21.3	0.02	0.05	0.10	87
	100 ISL	9.60	9.59	33.765	26.056	196.4	0.267	3.27	50.9	25.1	1.80	22.9	0.01	0.05	0.10	101
1	103	9.53	9.52	33.776	26.077	194.6	0.273	3.24	50.3	25.6	1.81	23.1	0.01	0.05	0.10	104
1	123	9.17	9.16	33.871	26.209	182.3	0.310	2.98	46.0	28.8	1.92	25.1	0.01	0.01	0.08	124
	125 ISL	9.12	9.11	33.879	26.224	180.9	0.314	2.98	45.9	29.1	1.92	25.2	0.01	0.01	0.08	126
1	149	8.59	8.57	33.960	26.371	167.4	0.356	3.01	45.8	32.4	1.96	26.2	0.01	0.01	0.05	150
	150 ISL	8.58	8.56	33.962	26.374	167.1	0.357	3.01	45.8	32.5	1.96	26.2	0.01	0.01	0.05	151
1	179	8.25	8.23	33.999	26.453	160.0	0.405	2.95	44.6	35.4	2.02	27.1	0.01	0.00	0.04	IS0
	200 ISL	8.03	8.01	34.027	26.509	155.0	0.438	2.79	42.0	38.3	2.09	27.9	0.01	0.01	0.05	201
1	209	7.95	7.93	34.038	26.529	153.2	0.452	2.72	40.8	39.6	2.12	28.3	0.01	0.01	0.05	210
1	240	7.76	7.74	34.058	26.573	149.5	0.499	2.55	38.1	43.3	2.22	29.7	0.01			241
	250 ISL	7.72	7.70	34.080	26.596	147.5	0.514	2.32	34.7	45.1	2.30	30.5	0.01			252
1	279	7.55	7.52	34.139	26.667	141.2	0.555	1.65	24.6	50.8	2.54	32.9	0.01			281
	300 ISL	7.21	7.18	34.129	26.708	137.5	0.585	1.61	23.8	54.5	2.61	34.0	0.01			302
1	336	6.57	6.54	34.093	26.766	132.0	0.633	1.54	22.4	60.8	2.68	35.5	0.00			338
1	396	5.92	5.89	34.110	26.864	123.1	0.710	1.12	16.0	71.4	2.90	38.6	0.00			399
	400 ISL	5.88	5.85	34.112	26.870	122.5	0.715	1.09	15.6	72.1	2.91	38.8	0.00			403
1	462	5.41	5.37	34.147	26.956	114.8	0.788	0.72	10.2	81.7	3.05	40.9	0.00			465
	500 ISL	5.28	5.24	34.186	27.002	110.7	0.831	0.58	8.2	86.2	3.11	41.6	0.00			503
1	533	5.16	5.12	34.220	27.044	107.1	0.867	0.46	6.5	90.1	3.17	42.3	0.00			537

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 29.3 N	122 32.2 V	18/11/89	0000 UTC	3999 M	330	17 KT	330 08 07	1	1011.1 MB	16.7 C	15.6 C	2/8	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	16.07	16.07	33.159	24.317	359.8	0.000	5.81	103.2	2.3	0.37	0.0	0.00	0.27	0.08	0
1	1	16.07	16.07	33.159	24.317	359.8	0.004	5.81	103.2	2.3	0.37	0.0	0.00	0.27	0.08	1
	10 ISL	15.98	15.98	33.163	24.341	357.9	0.036	5.82	103.2	2.2	0.36	0.0	0.00	0.29	0.08	10
1	16	15.92	15.92	33.165	24.356	356.6	0.057	5.82	103.1	2.1	0.36	0.0	0.00	0.30	0.08	16
	20 ISL	15.84	15.84	33.214	24.412	351.4	0.071	5.84	103.3	2.1	0.37	0.0	0.00	0.41	0.14	20
	30 ISL	15.11	15.11	33.257	24.606	333.1	0.106	5.97	104.1	2.1	0.39	0.0	0.01	0.63	0.29	30
1	32	14.88	14.88	33.253	24.653	328.8	0.112	6.01	104.3	2.1	0.39	0.0	0.01	0.67	0.32	32
1	42	12.78	12.77	33.013	24.899	305.5	0.144	6.33	105.0	3.0	0.47	0.5	0.04	0.57	0.36	42
	SO ISL	11.41	11.40	32.911	25.077	288.6	0.168	6.31	101.6	3.7	0.57	1.2	0.13	0.43	0.32	50
1	52	11.14	11.13	32.897	25.115	285.0	0.174	6.30	100.9	3.9	0.59	1.5	0.16	0.40	0.30	52
1	62	10.40	10.39	3 2.87 9	25.230	274.2	0.202	6.11	96.2	4.8	0.69	3.4	0.26	0.29	0.24	62
	75 ISL	10.00	9.99	32.979	25.376	260.6	0.236	5.75	89.8	7.6	0.93	8.0	0.06	0.16	0.16	75
1	76	9.99	9.98	32.991	25.387	259.5	0.239	5.72	89.3	7 .8	0.95	8.4	0.04	0.15	0.15	76
1	91	10.10	10.09	33.217	25.545	2 44.8	0.277	5.16	80.9	11.0	1.17	12.3	0.01	0.10	0.10	91
	100 ISL	9.85	9.84	33.380	25.714	228.9	0.298	4.63	72.3	15.4	1.40	16.3	0.01	0.06	0.07	100
1	105	9.66	9.65	33.466	25.813	219.6	0.309	4.33	67.3	18.0	1.53	18.5	0.01	0.04	0.05	105
1	118	9.14	9.13	33.620	26.018	200.3	0.337	3.82	58.8	22.8	1.68	21.4	0.01	0.01	0.03	119
	125 ISL	8.90	8.89	33.672	26.096	193.0	0.350	3.79	58.0	24.3	1.70	22.0	0.01	0.01	0.03	126
2	137	8.59	8.58	33.750	26.206	182.8	0.373	3.74	56.9	26.6	1.74	23.0	0.01	0.00	0.02	138
	150 ISL	8.54	8.52	33.872	26.309	173.2	0.396	3.16	48.0	30.9	1.93	25.8	0.00	0.00	0.03	151
2	157	8.52	8.50	33.924	26.353	169.1	0.408	2.86	43.5	33.1	2.03	27.2	0.00	0.00	0.04	158
2	163	8.12	8.10	33.966	26.447	160.6	0.451	3.09	46.6	35.2	1.99	27.0	0.01	0.01	0.03	184
	200 ISL	7.89	7.87	33.986	26.497	156.1	0.478	3.03	45.4	37.4	2.03	27.7	0.01			201
2	217	7.67	7.65													218
	250 ISL	7.27	7.25	34.014	26.608	146.1	0.553	2.61	38.6	45.5	2.23	30.7	0.00			251
2	253	7.23	7.21	34.014	26.614	145.6	0.558	2.57	37.9	46.1	2.25	30.9	0.00			254
2	294	6.59	6.56	34.001	26.691	138.6	0.616	2.38	34.6	53.7	2.39	32.8	0.00			296
	300 ISL	6.52	6.49	34.003	26.702	137.6	0.624	2.31	33.5	54.9	2.42	33.2	0.00			302
2	350	6.06	6.03	34.036	26.787	129.8	0.691	1.68	24.1	64.5	2.68	36.6	0.00			352
	400 ISL	5.70	5.67	34.073	26.862	123.2	0.754	1.20	17.1	72.7	2.87	39.0	0.00			403
2	418	5.60	5.56	34.088	26.886	121.0	0.776	1.06	15.1	75.3	2.92	39.7	0.00			421
2	490	5.36	5.32	34.163	26.974	113.3	0.860	0.59	8.3	84.6	3.09	41.6	0.00			493
	500 ISL	5.32	5.28	34.170	26.985	112.4	0.87 2	0.56	7.9	85.7	3.10	41.8	0.00			503
2	573	5.02	4.97	34.225	27.064	105.5	0.951	0.37	5.2	93.6	3.21	42.9	0.00			577

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 80 90

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
33 9.4 N	123 12.6 V	18/11/89	0528 UTC	4221 M	340	18 KT			1012.8 MB	16.5 C	14.6 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
i	0 ISL	16.32	16.32	33.026	24.158	375.0	0.000	5.73	102.2	2.0	0.41	0.0	0.00	0.16	0.06	0
' 1	1	16.32	16.32	33.026	24.158	375.0	0.004	5.73	102.2	2.0	0.41	0.0	0.00	0.16	0.06	1
	10 ISL	16.31	16.31	33.025	24.160	375.1	0.038	5.74	102.3	1.9	0.41	0.0	0.00	0.16	0.06	10
1	16	16.31	16.31	33.024	24.159	375.4	0.060	5.74	102.3	1.8	0.41	0.0	0.00	0.16	0.06	16
	20 ISL	16.31	16.31	33.024	24.159	375.5	0.075	5.74	102.3	1.8	0.41	0.0	0.00	0.16	0.06	20
	30 ISL	16.31	16.31	33.024	24.160	375.7	0.113	5.74	102.3	1.8	0.40	0.0	0.00	0.16	0.06	30
1	32	16.31	16.30	33.024	24.160	375.8	0.120	5.74	102.3	1.8	0.40	0.0	0.00	0.16	0.06	32
1	42	16.21	16.20	33.019	24.179	374.3	0.158	5.76	102.5	1.8	0.40	0.0	0.00	0.16	0.06	42
	50 ISL	14.46	14.45	32.976	24.530	341.0	0.186	6.30	108.2	2.0	0.41	0.0	0.00	0.26	0.15	50
1	52	13.97	13.96	32.971	24.628	331.6	0.193	6.44	109.5	2.0	0.41	0.0	0.00	0.29	0.17	52
1	62	12.77	12.76	32.985	24.880	307.9	0.225	6.49	107.6	2.1	0.42	0.0	0.00	0.28	0.19	62
	7 5 ISL	10.93	10.92	32.937	25.184	279.0	0.263	6.10	97.2	4.2	0.70	3.3	0.09	0.30	0.27	75
1	76	10.81	10.80	32.934	25.203	277.2	0.266	6.06	96.3	4.4	0.72	3.6	0.10	0.30	0.27	76
1	92	10.22	10.21	32.976	25.337	264.7	0.309	5.80	91.0	6.5	0.91	6.9	0.02	0.18	0.18	92
	100 ISL	10.00	9.99	33.003	25.395	259.3	0.330	5.70	89.1	7.6	0.99	8.4	0.01	0.15	0.15	100
1	107	9.88	9.87	33.053	25.454	253.8	0.348	5.57	86.8	9.0	1.07	9.9	0.01	0.12	0.13	107
1	122	9.92	9.91	33.317	25.654	235.1	0.385	4.92	76.9	14.2	1.36	15.0	0.01	0.05	0.05	123
	125 ISL	9.89	9.88	33.363	25.695	231.3	0.392	4.78	74.7	15.2	1.41	15.8	0.01	0.04	0.05	126
1	143	9.54	9.52	33.596	25.935	208.8	0.431	3.96	61.5	21.0	1.67	20.2	0.00	0.02	0.05	144
	150 ISL	9.36	9.34	33.668	26.021	200.8	0.446	3.68	56.9	23.4	1.77	21.9	0.00	0.02	0.05	151
1	164	8.99	8.97	33.782	26.169	186.9	0.473	3.26	50.0	27.7	1.92	24.6	0.00	0.01	0.05	165
1	190	8.37	8.35	33.884	26.345	170.5	0.519	3.29	49.8	31.3	1.94	25.3	0.00	0.01	0.04	191
	200 ISL	8.24	8.22	33.922	26.395	165.9	0.536	3.20	48.3	33.0	1.99	25.9	0.00	0.01	0.04	201
1	225	8.01	7.99	33.997	26.488	157.4	0.577	2.89	43.4	37.2	2.14	27.8	0.00	0.01	0.03	226
	250 ISL	7.78	7.76	34.023	26.543	152.6	0.615	2.63	39.3	41.0	2.26	29.4	0.00			251
1	261	7.66	7.63	34.024	26.561	151.0	0.632	2.54	37.9	42.7	2.30	30.1	0.00			262
	300 ISL	6.94	6.91	34.007	26.649	142.8	0.689	2.48	36.4	49.7	2.38	32.0	0.00			302
1	303	6.89	6.86	34.007	26.656	142.2	0.694	2.47	36.2	50.2	2.39	32.2	0.00			305
1	359	6.84	6.81	34.124	26.755	133.7	0.771	1.27	18.6	59.7	2.80	36.3	0.00			361
	400 ISL	6.19	6.15	34.097	26.820	127.6	0.824	1.19	17.2	67.8	2.87	38.6	0.00			403
1	425	5.75	5.71	34.075	26.857	123.9	0.856	1.14	16.3	72.7	2.88	39.8	0.00			428
1	494	5.32	5.28	34.150	26.969	113.8	0.938	0.63	8.9	83.7	3.09	42.3	0.00			497
	500 ISL	5.29	5.25	34.156	26.977	113.1	0.945	0.61	8.6	84.5	3.10	42.4	0.00			503
1	572	4.95	4.90	34.230	27.076	104.3	1.023	0.34	4.8	94.3	3.23	43.9	0.00			576

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 80 100

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT TYPE
32 49.1 N	123 54.7 W	18/11/89	1047 UTC	4341 M	360	17 KT			1013.5 MB	16.4 C	14.6 C	

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OZTGEN ML/L	OXT 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.	16.74	16.74	33.107	24.123	378.3	0.000	5.70	102.5	1.6	0.37	0.0	0.00	0.18	0.06	0
1	2	16.74	16.74	33.107	24.124	378.3	0.008	5.70	102.5	1.6	0.37	0.0	0.00	0.18	0.06	2
	10 ISL	16.72	16.72	33.106	24.128	378.2	0.038	5.70	102.5	1.6	0.36	0.0	0.00	0.19	0.06	10
1	13	16.71	16.71	33.105	24.129	378.1	0.049	5.70	102.5	1.6	0.36	0.0	0.00	0.19	0.06	13
	20 ISL	16.72	16.72	33.102	24.125	378.8	0.076	5.70	102.5	1.6	0.36	0.0	0.00	0.19	0.06	20
1	23	16.72	16.72	33.102	24.125	378.9	0.087	5.70	102.5	1.6	0.36	0.0	0.00	0.19	0.06	23
	30 ISL	16.74	16.74	33.115	24.131	378.6	0.114	5.71	102.7	1.4	0.36	0.0	0.00	0.19	0.06	30
1	32	16.74	16.73	33.119	24.134	378.3	0.121	5.71	102.7	1.4	0.36	0.0	0.00	0.19	0.06	32
1	43	16.73	16.72	33.106	24.127	379.4	0.163	5.71	102.7	1.3	0.36	0.0	0.00	0.18	0.06	43
	50 ISL	16.74	16.73	33.105	24.124	379.9	0.189	5.70	102.5	1.3	0.36	0.1	0.00	0.19	0.06	50
1	54	16.75	16.74	33.106	24.122	380.1	0.205	5.70	102.5	1.3	0.36	0.1	0.00	0.19	0.06	54
1	65	16.73	16.72	33.108	24.129	379.9	0.246	5.70	102.5	1.3	0.36	0.1	0.00	0.19	0.06	65
	75 ISL	15.46	15.45	33.203	24.490	345.7	0.283	6.18	108.4	1.7	0.37	0.1	0.00	0.25	0.17	75
1	79	14.82	14.81	33.246	24.662	329.3	0.296	6.36	110.2	2.0	0.37	0.1	0.00	0.27	0.22	79
1	94	13.06	13.05	33.250	25.029	294.6	0.343	6.07	101.4	3.0	0.49	0.2	0.08	0.28	0.25	94
	100 ISL	12.59	12.58	33.272	25.138	284.2	0.360	5.86	97.0	3.8	0.58	1.3	0.07	0.25	0.23	100
1	115	11.74	11.73	33.345	25.356	263.8	0.401	5.31	86.3	6.5	0.85	4.9	0.02	0.14	0.16	115
	125 ISL	11.27	11.25	33.397	25.482	251.9	0.427	5.01	80.7	8.8	1.00	7.4	0.02	0.09	0.12	126
1	135	10.86	10.84	33.451	25.598	241.0	0.452	4.76	76.0	11.1	1.13	9.7	0.01	0.06	0.09	136
	150 ISL	10.29	10.27	33.536	25.763	225.5	0.487	4.51	71.1	13.8	1.25	12.1	0.00	0.03	0.05	151
1	161	9.92	9.90	33.601	25.877	214.9	0.511	4.35	68.1	15.9	1.33	13.8	0.00	0.02	0.03	162
1	192	9.05	9.03	33.805	26.178	186.6	0.573	3.63	55.8	24.5	1.69	20.3	0.00	0.00	0.02	193
	200 ISL	8.90	8.88	33.843	26.232	181.6	0.588	3.51	53.8	26.2	1.75	21.3	0.00	0.00	0.02	201
1	227	8.50	8.48	33.936	26.367	169.2	0.635	3.29	50.0	30.7	1.86	23.5	0.00	0.00	0.02	226
	250 ISL	8.15	8.12	33.976	26.451	161.4	0.673	3.41	51.4	32.9	1.87	23.8	0.00			251
1	262	7.96	7.93	33.987	26.488	158.0	0.693	3.46	51.9	34.2	1.87	23.9	0.00			263
	300 ISL	7.36	7.33	34.008	26.592	148.5	0.751	2.90	42.9	43.3	2.12	27.7	0.00			302
1	304	7.29	7.26	34.009	26.602	147.6	0.757	2.82	41.7	44.4	2.15	28.2	0.00			306
1	358	6.32	6.29	34.002	26.728	135.8	0.833	2.24	32.4	56.5	2.46	33.0	0.00			360
	400 ISL	5.99	5.96	34.032	26.794	129.8	0.889	1.69	24.2	64.4	2.68	36.2	0.00			402
1	424	5.86	5.82	34.054	26.827	126.9	0.920	1.39	19.9	68.6	2.78	37.7	0.00			427
1	493	5.28	5.24	34.101	26.935	117.0	1.004	0.88	12.4	81.0	2.96	40.6	0.00			496
	500 ISL	5.26	5.22	34.109	26.944	116.2	1.012	0.84	11.8	81.9	2.98	40.7	0.00			503
1	574	5.01	4.96	34.193	27.040	107.7	1.095	0.44	6.2	91.1	3.15	42.2	0.00			578

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 82 47

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT TYPE
34 17.3 N	120 3.8 W	17/11/89	0118 UTC	572 M	320	03 KT	250 02 04	0	1011.4 MB	17.3 C	15.7 C	0/8

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OZTGEN ML/L	OXT 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	16.08	16.08	33.511	24.585	334.3	- 0.000	5.99	106.6	2.9	0.37	0.2	0.02	1.24	0.34	0
	10 ISL	15.67	15.67	33.503	24.672	326.3	0.033	6.02	106.3	2.8	0.39	0.3	0.03	1.76	0.43	10
1	11	15.63	15.63	33.502	24.680	325.6	0.036	6.02	106.2	2.8	0.39	0.3	0.03	1.81	0.44	11
	20 ISL	15.28	15.28	33.499	24.755	318.7	0.065	5.90	103.4	3.3	0.45	1.1	0.05	2.36	0.61	20
1	22	15.20	15.20	33.498	24.772	317.1	0.072	5.86	102.5	3.5	0.47	1.4	0.05	2.46	0.64	22
	30 ISL	14.78	14.78	33.495	24.861	308.9	0.097	5.69	98.7	4.3	0.55	2.5	0.07	2.55	0.64	30
1	32	14.66	14.66	33.494	24.886	306.6	0.103	5.64	97.6	4.6	0.57	2.8	0.07	2.57	0.64	32
1	42	14.00	13.99	33.486	25.019	294.1	0.133	5.35	91.3	6.5	0.71	5.0	0.10	1.41	0.60	42
	50 ISL	12.88	12.87	33.475	25:237	273.5	0.156	5.00	83.4	9.1	0.92	8.0	0.11	0.68	0.42	50
1	53	12.46	12.45	33.476	25.320	265.7	0.164	4.87	80.5	10.0	1.00	9.2	0.11	0.48	0.35	53
1	63	11.79	11.78	33.504	25.469	251.8	0.190	4.58	74.6	11.8	1.13	11.5	0.06	0.27	0.29	63
1	73	11.38	11.37	33.531	25.565	242.7	0.214	4.42	71.4	12.6	1.21	13.1	0.02	0.18	0.22	73
	75 ISL	11.23	11.22	33.555	25.611	238.4	0.219	4.29	69.1	13.7	1.27	14.0	0.02	0.17	0.21	75
1	88	10.32	10.31	33.733	25.910	210.2	0.248	3.38	53.4	21.5	1.66	20.0	0.02	0.11	0.19	88
	100 ISL	10.16	10.15	33.821	26.007	201.3	0.273	3.06	48.2	24.2	1.81	22.0	0.01	0.04	0.13	101
1	103	10.12	10.11	33.826	26.017	200.3	0.279	3.02	47.6	24.5	1.83	22.2	0.01	0.03	0.11	104
1	123	9.92	9.91	33.901	26.110	191.9	0.318	2.72	42.7	27.6	1.95	23.9	0.01	0.03	0.11	124
	125 ISL	9.91	9.90	33.911	26.120	191.1	0.322	2.67	41.9	27.9	1.97	24.1	0.01	0.03	0.11	126
1	144	9.81	9.79	34.004	26.209	182.9	0.358	2.21	34.6	30.8	2.12	25.9	0.01	0.02	0.08	145
	150 ISL	9.77	9.75	34.027	26.234	180.7	0.368	2.10	32.9	31.7	2.16	26.4	0.01	0.02	0.08	151
1	175	9.58	9.56	34.101	26.324	172.7	0.413	1.73	27.0	35.2	2.29	28.1	0.01	0.02	0.08	176
	200 ISL	9.38	9.36	34.145	26.391	166.7	0.455	1.51	23.4	38.1	2.39	29.0	0.01	0.04	0.07	201
1	206	9.33	9.31	34.152	26.405	165.6	0.465	1.47	22.8	38.8	2.41	29.2	0.01	0.04	0.07	207
1	235	9.02	8.99	34.180	26.477	159.2	0.512	1.24	19.1	42.2	2.52	30.6	0.01			236
	250 ISL	8.86	8.83	34.186	26.508	156.5	0.536	1.17	17.9	43.7	2.56	31.2	0.01			251
1	277	8.55	8.52	34.189	26.558	152.1	0.577	1.07	16.3	46.9	2.63	32.2	0.01			279
	300 ISL	8.23	8.20	34.191	26.609	147.5	0.612	0.95	14.4	50.8	2.72	33.1	0.01			302
1	328	7.83	7.80	34.197	26.673	141.7	0.652	0.78	11.7	56.3	2.84	34.0	0.01			330
1	388	7.18	7.14	34.232	26.794	130.8	0.734	0.42	6.2	69.7	3.12	34.7	0.01			391
	400 ISL	7.06	7.02	34.238	26.816	128.8	0.750	0.36	5.3	72.6	3.17	34.6	0.01			403
1	450	6.64	6.60	34.254	26.886	122.6	0.813	0.16	2.3	84.8	3.38	32.8	0.01			453
	500 ISL	6.49	6.44	34.258	26.909	121.0	0.873	0.09	1.3	94.2	3.59	29.1	0.01			503
1	521	6.45	6.40	34.255	26.912	120.9	0.899	0.08	1.2	100.0	3.73	26.2	0.01			525
1	531	6.41	6.36	34.252	26.915	120.8	0.911	0.07	1.0	104.4	3.83	24.2	0.06			535
1	541	6.38	6.33	34.252	26.919	120.5	0.923	0.03	0.4	109.1	3.97	21.6	0.05			545
1	552	6.37	6.32	34.256	26.924	120.2	0.936	0.03	0.4	114.4	4.22	18.5	0.01			556
1	562	6.36	6.31	34.254	26.924	120.4	0.948	0.03	0.4	116.7	4.38	17.0	0.01			566
1	567	6.36	6.31	34.252	26.922	120.6	0.954	0.04	0.6	116.7	4.36	16.8	0.01			571
1	572	6.36	6.31	34.252	26.922	120.7	0.960	0.03	0.4	117.2	4.36	16.7	0.01			576

A) SANTA BARBARA BASIN STATION.

RV NEU HORIZON CALCOFI CRUISE 8911 STATION 83 40.6

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	HET	CLOUD AMT TYPE
3A 13.9 N	119 25.0 N	16/11/89	2112 UTC	33 M	310	07 KT	310 02 0S	0	1012.6 MB	19.8 C	17.8 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	17.14	17.14	33.558	24.376	354.2	0.000	5.99	108.9	2.7	0.32	0.0	0.00	0.59	0.19	0
1	5	17.00	17.00	33.559	24.410	351.2	0.018	6.01	109.0	2.6	0.32	0.0	0.00	0.63	0.20	5
1	10	16.78	16.78	33.554	24.458	346.8	0.035	6.07	109.6	2.7	0.32	0.0	0.01	0.77	0.25	10
1	16	16.71	16.71	33.546	24.468	346.0	0.056	6.07	109.4	2.6	0.33	0.0	0.01	0.85	0.33	16
	20 ISL	16.63	16.63	33.544	24.485	344.5	0.070	6.11	110.0	2.7	0.33	0.1	0.02	1.00	0.38	20
1	21	16.61	16.61	33.543	24.489	344.1	0.073	6.11	109.9	2.7	0.33	0.2	0.02	1.04	0.39	21
	30 ISL	15.18	15.18	33.460	24.747	319.7	0.103	5.80	101.4	4.5	0.56	1.6	0.15	0.94	0.37	30
1	31	15.02	15.02	33.453	24.777	316.9	0.106	5.77	100.5	4.7	0.59	1.7	0.16	0.93	0.37	31

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 83 42

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	HET	CLOUD AMT TYPE
3* 11.5 »	119 31.0 W	16/11/89	1748 UTC	102 M	280	06 KT	260 02 03	0	1015.5 MB	18.2 C	L7.1 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
1	0	17 .09	17 .09	33.570	24.397	352.2	0.000	5.88	106.8	2.1	0.28	0.0	0.00	0.38	0.14	0
1	10	17.00	17.00	33.571	24.419	350.4	0.035	5.87	106.4	2.2	0.28	0.0	0.00	0.38	0.13	10
	20 ISL	14.69	14.69	33.387	24.797	314.7	0.068	6.18	106.9	3.1	0.37	0.0	0.00	0.57	0.30	20
1	21	14.43	14.43	33.372	24.840	310.5	0.072	6.20	106.7	3.2	0.39	0.0	0.00	0.60	0.32	21
	30 ISL	13.53	13.53	33.361	25.019	293.8	0.099	5.85	98.8	4.9	0.60	1.6	0.25	1.04	0.52	30
1	32	13.39	13.39	33.367	25.052	290.7	0.105	5.73	96.5	5.4	0.65	2.2	0.30	1.09	0.54	32
1	41	12.43	12.42	33.393	25.261	271.0	0.130	5.21	86.0	7 .4	0.88	6.3	0.26	0.53	0.39	41
	50 ISL	12.42	12.41	33.478	25.329	264.8	0.154	4.99	82.4	8.9	1.02	7.3	0.44	0.42	0.32	50
1	51	12.42	12.41	33.308 U				4.97	82.1	9.1	1.03	7.4	0.46	0.42	0.32	51
1	60	11.84	11.83	33.485	25.445	254.0	0.180	4.57	74.5	11.5	1.19	10.8	0.28	0.23	0.26	60
1	71	11.73	11.72	33.497	25.475	251.4	0.208	4.50	73.2	11.8	1.19	11.4	0.22	0.21	0.24	71
	75 ISL	11.50	11.49	33.535	25.547	244.6	0.218	4.31	69.8	13.2	1.27	12.8	0.14	0.17	0.21	75
1	81	11.15	11.14	33.596	25.658	23 4.1	0.232	4.02	64.6	15.3	1.39	14.9	0.03	0.10	0.16	81
1	90	10.99	10.98	33.626	25.710	229.4	0.253	3.91	62.7	16.1	1.40	15.7	0.03	0.08	0.14	90

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	HET	CLOUD AMT TYPE
33 53.0 N	120 8.3 W	16/11/89	1231 UTC	76 M	270	10 KT			1015.7 MB	16.0 C	14.9 C	

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT 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	15.18	15.18	33.506	24.782	315.5	0.000	5.79	101.2	2.5	0.44	0.9	0.04	0.86	0.33	0
1	10	14.87	14.87	33.501	24.846	309.7	0.031	5.69	98.9	3.3	0.50	1.8	0.05	0.79	0.34	10
	20 ISL	14.08	14.08	33.477	24.995	295.8	0.062	5.45	93.2	5.1	0.66	4.0	0.08	0.62	0.35	20
1	21	13.99	13.99	33.473	25.011	294.3	0.064	5.43	92.6	5.3	0.68	4.2	0.08	0.60	0.35	21
	30 ISL	13.21	13.21	33.423	25.131	283.1	0.090	5.32	89.3	6.5	0.81	6.0	0.11	0.52	0.36	30
1	31	13.12	13.12	33.418	25.145	281.8	0.093	5.31	88.9	6.7	0.82	6.2	0.11	0.51	0.36	31
1	41	12.39	12.38	33.414	25.2 85	268.7	0.121	5.03	83.0	9.5	1.00	9.0	0.10	0.37	0.32	41
	50 ISL	11.73	11.72	33.480	25.461	252.2	0.144	4.63	75.3	12.9	1.16	11.9	0.08	0.27	0.35	50
1	51	11.65	11.64	33.488	25.482	250.2	0.147	4.59	74.6	13.3	1.20	12.2	0.08	0.26	0.35	51
1	61	10.87	10.86	33.527	25.653	234.0	0.171	4.32	69.0	15.8	1.35	14.8	0.07	0.15	0.23	61
1	70	10.59	10.58	33.587	25.750	225.1	0.192	4.04	64.2	18.2	1.46	16.6	0.06	0.13	0.20	70

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 45.0 N	120 24.6 W	16/11/89	0916 UTC	973 M	330 08 KT			1016 8 MB	L6.2 C	14.5 C	

CAST	DEPTH M		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ML/L	OXY PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
1	0		15.32	15.32	33.513	24.757	317.9	0.000	5.91	103.6	1.2	0.36	0.0	0.01	0.56	0.21	0
1	10		15.20	15.20	33.498	24.772	316.8	0.032	5 .90	103.2	1.3	0.38	0.2	0.03	0.60	0.26	10
	20	ISL	14.86	14.86	33.490	24.840	310.6	0.063	5.85	101.6	1.7	0.42	0.6	0.06	0.68	0.34	20
1	21		14.83	14.83	33.489	24.845	310.1	0.066	5.85	101.5	1.7	0.42	0.6	0.06	0.69	0.35	21
	30	ISL	12.84	12.84	33.402	25.188	277 .7	0.093	5.27	87 .8	6.3	0.84	6.5	0.15	0.65	0.51	30
1	31		12.60	12.60	33.396	25.230	273.7	0.095	5.20	86.1	6.9	0.89	7 .3	0.16	0.64	0.52	31
1	41		11.54	11.53	33.422	25.451	252.9	0.122	4.72	76.5	11.2	1. 16	11.9	0.06	0.38	0.40	41
	50	ISL	11.28	11.27	33.469	25.535	245 .1	0. 144	4.53	73.0	12.9	1.25	13 .5	0.04	0.30	0.37	50
1	52		11.25	11.24	33.482	25.550	243.7	0.149	4.49	72.3	13.2	1.27	13 .8	0.04	0.29	0.36	52
1	62		10.62	10.61	33.567	25.729	226.9	0.173	4.11	65.3	16.7	1.44	16.9	0.02	0.15	0.24	62
1	72		10.49	10.48	33.593	25.771	223 .0	0.195	3 .98	63.1	17.8	1.49	17 .8	0.02	0. 13	0.22	72
	75	ISL	10.33	10.32	33.621	25.821	218.3	0.202	3.87	61.1	19.0	1.54	18.6	0.02	0.11	0.20	75
1	87		9.67	9.66	33.750	26.033	198.4	0.227	3.38	52.7	23.9	1.76	22.2	0.01	0.04	0.11	87
	100	ISL	9.44	9.43	33.817	26.123	190.1	0.252	3.11	48.2	26.1	1.84	23.6	0.01	0.02	0.12	101
1	102		9.42	9.41	33.825	26.133	189.2	0.256	3.08	47 .8	26.4	1.85	23.7	0.01	0.02	0.12	103
1	123		8.91	8.90	33.970	26.328	171.0	0.294	2.77	42.5	32.2	2.01	26.4	0.01	0.01	0.06	124
	125	ISL	8.87	8.86	33.977	26.340	169.9	0.297	2.76	42.3	32.5	2.02	26.5	0.01	0.01	0.06	126
1	149		8.50	8.48	34.028	26.438	161.0	0.337	2.65	40.3	35.8	2.10	27 .6	0.00	0.00	0.04	150
	150	ISL	8.49	8.47	34.031	26.442	160.6	0.338	2.63	40.0	36.0	2.11	27 .7	0.00	0.00	0.04	151
1	180		8.36	8.34	34.102	26.518	153.9	0.3 85	2.11	32.0	40.9	2.30	29.6	0.01	0.00	0.04	181
	200	ISL	8.29	8.27	34.128	26.549	151.3	0.416	1.91	28.9	43.1	2.38	30.3	0.01	0.00	0.03	201
1	211		8.24	8.22	34.138	26.565	150.1	0.433	1.83	27 .7	44. 1	2.41	30.6	0.01	0.00	0.03	212
1	241		8.06	8.04	34.172	26.619	145 .4	0.477	1.56	23 .5	47 .5	2.53	32.0	0.02			242
	250	ISL	8.06	8.03	34.193	26.635	144.0	0.490	1.41	21.2	48.5	2.58	32.4	0.02			252
1	2 82		8.06	8.03	34.263	26.691	139.4	0.535	0.92	13.9	52.2	2.76	33.5	0.01			284
	300	ISL	7 .92	7.89	34.271	26.718	137.0	0.560	0.87	13.1	54.2	2.80	34.1	0.01			302
1	338		7.52	7 .49	34.266	26.772	132.3	0.611	0.77	11.5	58.6	2.86	35.4	0.01			3 40
1	398		6.94	6.90	34.268	26.856	124.9	0.688	0.62	9.1	66.2	2.98	37 .3	0.00			401
	400	ISL	6.92	6.88	34.269	26.859	124.6	0.691	0.61	9.0	66.5	2.98	37 .4	0.00			403
1	462		6.33	6.29	34.305	26.967	114.8	0.765	0.40	5.8	75.0	3.09	39.4	0.00			465
	500	ISL	6.09	6.05	34.3 23	27.012	110.8	0.808	0.33	4.8	79.7	3.15	40.3	0.00			504
1	529		5.90	5.85	34.338	27.048	107.6	0.840	0.27	3.9	83.2	3.19	40.9	0.00			533

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 34.9 N	120 45.2 W	16/11/89	0539 UTC	1443 M	330 11 KT			1018.7 MB	15.8 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	15.32	15.32	33.508	24.753	318.3	0.000	5.96	104.5	1.0	0.32	0.0	0.00	0.75	0.25	0
1	1		15.32	15.32	33.508	24.753	318.3	0.003	5.96	104.5	1.0	0.32	0.0	0.00	0.75	0.25	1
	10	ISL	15.32	15.32	33.505	24.751	318.8	0.03 2	5.97	104.7	1.0	0.33	0.0	0.01	0.77	0.25	10
1	11		15.32	15.32	33.505	24.751	318.8	0.035	5.97	104.7	1.0	0.33	0.0	0.01	0.77	0.25	11
	20	ISL	14.88	14.88	33.515	24.855	309.2	0.063	5.98	103.9	1.2	0.38	0.1	0.03	0.89	0.45	20
1	21		14.79	14.79	33.512	24.872	307.6	0.066	5.98	103.7	1.2	0.39	0.1	0.03	0.90	0.47	21
	30	ISL	13.22	13.22	33.372	25.089	287.1	0.093	5.65	94.8	4.2	0.65	3.9	0.10	0.69	0.49	30
1	31		13.01	13.01	33.354	25.117	284.4	0.096	5.60	93.6	4.6	0.69	4.5	0.10	0.65	0.49	31
1	41		10.87	10.87	33.220	25.414	256.3	0.123	5 .24	83.6	8.8	1.01	9.7	0.03	0.19	0.27	41
	50	ISL	10.47	10.46	33.301	-25.547	243.8	0.146	4.94	78.1	11.5	1.17	12.4	0.02	0.15	0.26	50
1	51		10.43	10.42	33.305	25.557	242.9	0.148	4.90	77.4	11.8	1.19	12.7	0.02	0.14	0.26	51
1	61		10.39	10.38	33.483	25.7 03	229.3	0.172	4.26	67.3	16.0	1.43	16.5	0.02	0.10	0.23	61
1	72		10.22	10.21	33.570	25.800	220.3	0.196	3.95	62.2	18.7	1.55	18.5	0.01	0.08	0.17	72
	75	ISL	10.09	10.08	33.589	25.837	216.8	0.203	3.89	61.1	19.5	1.58	19.0	0.01	0.08	0.17	75
1	85		9.68	9.67	33.651	25.954	205.9	0.224	3.67	57.2	22.2	1.67	20.7	0.01	0.07	0.17	85
	100	ISL	9.67	9.66	33.775	26.053	196.8	0.254	3.21	50.0	25.0	1.81	22.8	0.01	0.06	0.15	101
1	101		9.67	9.66	33.781	26.058	196.4	0.256	3.18	49.6	25.2	1.82	22.9	0.01	0.06	0.15	102
1	121		9.34	9.33	33.833	26.152	187.7	0.295	3.07	47.5	27.6	1.89	24.2	0.00	0.03	0.09	122
	125	ISL	9.25	9.24	33.855	26.184	184.8	0.302	3.02	46.7	28.4	1.91	24.6	0.00	0.03	0.09	126
1	147		8.79	8.77	33.980	26.355	168.8	0.341	2.73	41.8	33.0	2.04	26.6	0.01	0.03	0.12	148
	150	ISL	8.74	8.72	33.989	26.370	167.5	0.346	2.70	41.3	33.5	2.05	26.6	0.01	0.03	0.12	151
1	178		8.37	8.35	34.043	26.470	158.5	0.392	2.48	37.6	37.8	2.16	28.4	0.00	0.01	0.06	179
	200	ISL	8.10	8.08	34.072	26.533	152.7	0.426	2.29	34.5	41.2	2.25	29.6	0.01	0.01	0.06	201
1	209		7.98	7.96	34.079	26.557	150.6	0.439	2.23	33.5	42.6	2.29	30.1	0.01	0.01	0.06	210
1	23 9		7.54	7.52	34.074	26.617	145.2	0.484	2.13	31.7	46.8	2.36	31.4	0.00			240
	250	ISL	7.46	7.44	34.083	26.636	143.6	0.500	2.01	29.9	48.4	2.41	32.0	0.00			252
1	280		7.31	7.28	34.110	26.679	140.0	0.542	1.67	24.7	52.6	2.55	33.5	0.00			282
	300	ISL	7.12	7.09	34.113	26.708	137.4	0.570	1.55	22.8	55 .2	2.61	34.3	0.00			302
1	337		6.74	6.71	34.118	26.764	132.4	0.620	1.37	20.0	60.1	2.72	35.6	0.00			339
1	398		6.28	6.24	34.163	26.860	123.8	0.698	0.91	13.2	69.2	2.93	38.4	0.00			401
	400	ISL	6.27	6.23	34.165	26.863	123.6	0.701	0.89	12.9	69.5	2.94	38.5	0.00			403
1	463		6.05	6.01	34.253	26.961	115.0	0.776	0.46	6.6	77.1	3.10	39.9	0.00			466
	500	ISL	5.89	5.85	34.296	27.016	110.2	0.817	0.37	5.3	81.1	3.17	40.4	0.00			503
1	531		5.76	5.71	34.333	27.061	106.2	0.851	0.29	4.1	84.4	3.22	40.9	0.00			535

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TTPE
33 14.9 N	121 25.8 W	16/11/89	0021 UTC	3 896 M	340 06 KT	300 05 06	1	1018.6 MB	15.1 C	14.9 C	5/8	CI

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OXTGEN ML/L	OXT 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	17.08	17.08	33.261	24.162	374.6	0.000	5.65	102.4	2.1	0.41	0.2	0.00	0.20	0.05	0
	10 ISL	16.98	16.98	33.268	24.191	372.1	0.037	5.66	102.4	2.0	0.41	0.2	0.00	0.22	0.06	10
1	15	16.93	16.93	33.271	24.206	370.9	0.056	5.67	102.5	1.9	0.41	0.2	0.00	0.23	0.07	15
	20 ISL	16.90	16.90	33.267	24.210	370.7	0.074	5.68	102.6	1.9	0.41	0.2	0.00	0.24	0.08	20
	30 ISL	16.84	16.84	33.260	24.219	370.2	0.111	5.71	103.0	1.9	0.41	0.2	0.00	0.30	0.11	30
1	31	16.83	16.82	33.259	24.220	370.1	0.115	5.71	103.0	1.9	0.41	0.2	0.00	0.31	0.11	31
1	41	14.62	14.61	33.127	24.612	332.9	0.L50	6.36	109.7	2.0	0.43	0.1	0.00	0.46	0.29	41
	50 ISL	12.81	12.80	33.059	24.929	302.8	0.179	6.32	104.9	2.6	0.49	0.2	0.03	0.48	0.39	50
1	51	12.64	12.63	33.054	24.958	300.1	0.182	6.32	104.6	2.7	0.50	0.2	0.03	0.48	0.39	51
1	61	11.55	11.54	33.010	25.129	2 83.9	0.211	6.19	100.0	3.3	0.58	1.0	0.20	0.34	0.31	61
1	71	10.59	10.58	32.980	25.277	270.0	0.239	5.96	94.3	4.9	0.76	4.1	0.05	0.17	0.17	71
	75 ISL	10.35	10.34	32.989	25.325	265.5	0.250	5.86	92.3	5.8	0.85	5.6	0.03	0.15	0.14	75
1	80	10.17	10.16	33.022	25.381	260.2	0.263	5.72	89.7	7.1	0.96	7.5	0.02	0.14	0.12	80
1	96	10.32	10.31	33.336	25.601	239.7	0.303	5.04	79.5	11.6	1.20	12.1	0.01	0.08	0.10	96
	100 ISL	10.18	10.17	33.394	25.670	233.2	0.312	4.79	75.3	13.7	1.32	14.1	0.01	0.06	0.08	100
1	111	9.71	9.70	33.541	25.864	215.0	0.337	4.07	63.4	19.7	1.67	19.5	0.01	0.02	0.04	112
	125 ISL	9.44	9.43	33.737	26.061	196.5	0.366	3.31	51.3	25.4	1.93	23.6	0.01	0.01	0.03	126
1	127	9.42	9.41	33.762	26.0 84	194.3	0.370	3.22	49.9	26.0	1.95	24.0	0.01	0.01	0.03	128
	150 ISL	9.08	9.06	33.897	26.245	179.5	0.413	2.83	43.6	30.2	2.09	26.1	0.00	0.00	0.02	151
1	153	9.04	9.02	33.906	26.258	178.2	0.418	2.82	43.4	30.6	2.09	26.2	0.00	0.00	0.02	154
1	178	8.56	8.54	34.020	26.423	163.0	0.461	2.69	41.0	35.4	2.17	27.7	0.00	0.00	0.03	179
	200 ISL	8.40	8.38	34.088	26.501	155.9	0.496	2.25	34.1	39.4	2.33	29.4	0.00	0.00	0.02	201
1	209	8.36	8.34	34.103	26.519	154.4	0.510	2.10	31.8	40.8	2.39	30.0	0.00	0.00	0.02	210
1	240	7.99	7.97	34.083	26.559	151.0	0.557	2.31	34.7	42.9	2.35	30.0	0.00			241
	250 ISL	7.85	7.83	34.079	26.577	149.4	0.572	2.29	34.3	44.2	2.36	30.4	0.00			251
1	281	7.44	7.41	34.078	26.635	144.2	0.617	2.07	30.7	48.8	2.45	32.1	0.00			283
	3 00 ISL	7.27	7.24	3 4.0 89	26.668	141.3	0.645	1.89	27.9	51.5	2.52	33.1	0.00			302
1	337	7.01	6.98	34.122	26.730	135.8	0.696	1.49	21.9	56.9	2.68	34.9	0.00			339
1	397	6.52	6.48	3 4 . 185	26.846	125.4	0.774	0.88	12.8	66.8	2.95	37.9	0.00			400
	400 ISL	6.50	6.46	34.187	26.851	125.0	0.778	0.86	12.5	67.3	2.96	38.0	0.00			403
1	462	6.07	6.03	34.231	26.942	116.9	0.853	0.51	7.3	75.9	3.12	39.9	0.00			465
	500 ISL	5.90	5.86	34.283	27.004	111.3	0.896	0.39	5.6	80.3	3.17	40.7	0.00			503
1	528	5.77	5.72	34.321	27.051	107.2	0.927	0.30	4.3	83.5	3.21	41.3	0.00			532

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TTPE
32 56.1 N	122 7.1 V	15/11/89	1821 UTC	4170 M	020 12 KT	330 06 09	1	1019.1 MB	17.7 C	16.3 C	3/8	AS

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OXTGEN ML/L	OXT 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	17.18	17.18	33.273	24.148	375.9	0.000	5.62	102.1	2.1	0.35	0.1	0.00	0.20	0.06	0
1	1	17.18	17.18	33.273	24.148	376.0	0.004	5.62	102.1	2.1	0.35	0.1	0.00	0.20	0.06	1
	10 ISL	17.13	17.13	33.271	24.158	375.3	0.03 8	5.63	102.2	2.1	0.36	0.1	0.00	0.21	0.06	10
1	17	17.07	17.07	33.267	24.170	374.4	0.064	5.64	102.2	2.1	0.36	0.1	0.00	0.21	0.06	17
	20 ISL	17.06	17.06	33.266	24.171	374.4	0.075	5.64	102.2	2.1	0.36	0.1	0.00	0.22	0.06	20
	30 ISL	17.01	17.01	33.264	24.182	373.7	0.112	5.66	102.4	1.9	0.36	0.1	0.00	0.24	0.08	30
1	32	17.00	16.99	33.263	24.184	373.6	0.120	5.66	102.4	1.9	0.36	0.1	0.00	0.24	0.08	32
1	42	16.72	16.71	33.269	24.254	367.2	0.157	5.73	103.1	1.9	0.36	0.1	0.00	0.36	0.12	42
	50 ISL	16.57	16.56	33.295	24.309	362.2	0.186	5.72	102.7	1.8	0.36	0.1	0.00	0.40	0.14	50
1	53	16.52	16.51	33.305	24.328	360.5	0.197	5.72	102.6	1.8	0.36	0.1	0.00	0.41	0.15	53
1	63	14.30	14.29	33.100	24.659	329.0	0.231	6.39	109.5	1.9	0.41	0.1	0.00	0.41	0.31	63
1	73	12.63	12.62	33.078	24.979	298.6	0.263	6.26	103.6	2.6	0.43	0.2	0.05	0.32	0.34	73
	75 ISL	12.50	12.49	33.071	24.999	296.8	0.269	6.26	103.3	2.6	0.43	0.2	0.05	0.32	0.33	75
1	82	12.20	12.19	33.042	25.034	293.6	0.289	6.29	103.1	2.7	0.46	0.3	0.07	0.31	0.28	82
1	97	11.13	11.12	32.980	25.182	279.6	0.332	6.14	98.3	3.7	0.60	2.1	0.20	0.20	0.20	97
	100 ISL	10.94	10.93	32.968	25.207	277.4	0.341	6.10	97.3	4.0	0.64	2.8	0.17	0.18	0.19	100
1	114	10.32	10.31	32.974	25.319	266.9	0.379	5.85	92.0	5.8	0.83	6.5	0.02	0.13	0.14	114
	125 ISL	10.33	10.32	33.111	25.424	257.1	0.408	5.55	87.4	7.6	0.96	8.8	0.01	0.10	0.12	126
1	129	10.34	10.32	33.168	25.467	253.1	0.418	5.41	85.2	8.5	1.01	9.7	0.01	0.09	0.12	130
	150 ISL	9.82	9.80	33.479	25.798	222.1	0.468	4.32	67.4	17.1	1.47	17.6	0.00	0.03	0.05	151
1	156	9.64	9.62	33.570	25.898	212.6	0.481	3.97	61.7	19.9	1.61	19.9	0.00	0.02	0.03	157
1	181	9.30	9.28	33.906	26.217	182.8	0.530	2.79	43.2	29.4	2.00	25.7	0.01	0.01	0.05	182
	200 ISL	8.96	8.94	33.977	26.327	172.6	0.564	2.77	42.5	32.3	2.04	26.6	0.01	0.00	0.05	201
1	212	8.77	8.75	33.986	26.364	169.3	0.585	2.75	42.1	33.4	2.06	27.1	0.01	0.00	0.05	213
1	243	8.58	8.55	34.074	26.463	160.4	0.636	2.28	34.7	38.0	2.23	29.0	0.00			244
	250 ISL	8.36	8.33	34.063	26.488	158.1	0.647	2.40	36.4	38.9	2.21	29.0	0.00			251
1	284	7.19	7.16	33.986	26.598	147.6	0.699	3.14	46.3	43.3	2.09	28.8	0.00			286
	300 ISL	6.95	6.92	33.978	26.625	145.1	0.722	3.01	44.1	45.4	2.12	29.4	0.00			302
1	341	6.62	6.59	33.987	26.676	140.6	0.781	2.66	38.7	51.8	2.31	32.0	0.00			343
1	400	6.03	6.00	34.035	26.791	130.1	0.861	1.64	23.5	65.0	2.71	37.0	0.00			402
1	465	5.46	5.42	34.095	26.909	119.3	0.942	0.92	13.0	78.4	2.99	40.5	0.00			468
	500 ISL	5.35	5.31	34.151	26.966	114.2	0.983	0.68	9.6	83.3	3.08	41.4	0.00			503
1	533	5.24	5.20	34.204	27.022	109.3	1.019	0.45	6.3	87.9	3.17	42.3	0.00			537

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 34.0 N	122 49.1 W	15/11/89	1159 UTC	4264 M	360	11 KT			1018.6 MB	16.2 C	14.9 C	

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	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	17.79	17.79	33.368	24.074	382.9	0.000	5.54	101.9	1.7	0.38	0.0	0.00	0.19	0.06	0
	10 ISL	17.79	17.79	33.363	24.071	383.6	0.038	5.55	102.1	1.6	0.36	0.0	0.00	0.19	0.06	10
1	16	17.79	17.79	33.360	24.069	384.0	0.061	5.56	102.2	1.6	0.34	0.0	0.00	0.19	0.06	16
	20 ISL	17.79	17.79	33.360	24.069	384.1	0.077	5.56	102.2	1.6	0.34	0.0	0.00	0.19	0.06	20
	30 ISL	17.78	17.77	33.360	24.072	384.2	0.115	5.55	102.0	1.6	0.34	0.0	0.00	0.19	0.06	30
1	31	17.78	17.77	33.360	24.072	384.2	0.119	5.55	102.0	1.6	0.34	0.0	0.00	0.19	0.06	31
1	41	17.81	17.80	33.362	24.067	385.1	0.157	5.54	101.9	1.6	0.34	0.0	0.00	0.19	0.06	41
	50 ISX	17.79	17.78	33.357	24.068	385.3	0.192	5.55	102.0	1.5	0.36	0.0	0.00	0.19	0.06	50
1	51	17.79	17.78	33.357	24.068	385.3	0.196	5.55	102.0	1.5	0.36	0.0	0.00	0.19	0.06	51
1	62	16.74	16.73	33.346	24.309	362.6	0.237	5.64	101.6	1.5	0.36	0.0	0.00	0.22	0.08	62
1	72	13.89	13.88	33.129	24.767	319.0	0.271	6.36	108.0	1.8	0.38	0.0	0.00	0.36	0.30	72
	75 ISL	13.33	13.32	33.090	24.851	311.0	0.281	6.35	106.6	1.9	0.39	0.0	0.00	0.35	0.30	75
1	81	12.46	12.45	33.034	24.978	298.9	0.299	6.32	104.1	2.3	0.43	0.0	0.01	0.33	0.30	81
1	97	11.10	11.09	32.998	25.202	277.8	0.345	6.08	97.3	5.7 U	0.80 U	6.1 U	0.02 U	0.21	0.22	97
	100 ISL	10.98	10.97	33.005	25.228	275.3	0.353	6.01	95.9	4.1	0.64	3.3	0.02	0.19	0.20	100
1	112	10.69	10.68	33.066	25.327	266.2	0.386	5.71	90.6	5.7	0.80	6.1	0.02	0.12	0.14	112
	125 ISL	10.51	10.50	33.185	25.451	254.6	0.420	5.45	86.2	7.7	0.92	8.2	0.01	0.09	0.11	126
1	128	10.47	10.45	33.216	25.482	251.7	0.427	5.39	85.2	8.2	0.95	8.7	0.01	0.08	0.11	129
	150 ISL	10.02	10.00	33.444	25.737	227.9	0.480	4.69	73.5	14.2	1.28	14.3	0.01	0.03	0.04	151
1	154	9.91	9.89	33.484	25.787	223.2	0.489	4.54	71.0	15.5	1.35	15.5	0.01	0.02	0.03	155
1	179	8.98	8.96	33.688	26.097	194.0	0.541	3.61	55.4	24.9	1.77	22.5	0.00	0.01	0.02	180
	200 ISL	8.66	8.64	33.806	26.240	180.7	0.581	3.63	55.3	28.2	1.83	23.8	0.00	0.00	0.02	201
1	210	8.56	8.54	33.848	26.288	176.3	0.598	3.64	55.4	29.2	1.86	24.4	0.00	0.00	0.02	211
1	240	8.04	8.02	33.943	26.442	162.1	0.649	3.34	50.2	34.0	1.92	25.8	0.00			241
	250 ISL	7.91	7.88	33.959	26.474	159.2	0.665	3.29	49.3	35.4	1.95	26.3	0.00			251
1	282	7.53	7.50	33.991	26.554	151.9	0.715	3.09	45.9	40.5	2.07	28.1	0.00			284
	300 ISL	7.32	7.29	34.012	26.600	147.7	0.742	2.74	40.5	44.7	2.21	29.9	0.00			302
1	338	6.89	6.86	34.046	26.687	139.8	0.797	1.96	28.7	53.6	2.50	33.8	0.00			340
1	398	6.30	6.26	34.063	26.779	131.5	0.878	1.49	21.5	63.1	2.73	36.6	0.00			400
	400 ISL	6.27	6.23	34.063	26.782	131.2	0.881	1.48	21.4	63.5	2.74	36.9	0.00			402
1	462	5.46	5.42	34.085	26.901	120.0	0.959	1.04	14.7	77.4	2.94	40.2	0.00			465
	500 ISL	5.27	5.23	34.131	26.960	114.7	1.003	0.76	10.7	83.1	3.05	41.4	0.00			503
1	529	5.13	5.09	34.167	27.005	110.7	1.036	0.55	7.7	87.4	3.13	42.4	0.00			533

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 83 100

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 15.2 N	123 28.8 W	15/11/89	0640 UTC	4164 M	360	14 KT			1020.1 MB	16.8 C	15.5 C	

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OZTGEN ML/L	OXT 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	18.01	18.01	33.407	24.051	385.2	0.000	5.52	102.0	2.4	0.34	0.0	0.00	0.17	0.06	0
1	1	18.01	18.01	33.407	24.051	385.2	0.004	5.52	102.0	2.4	0.34	0.0	0.00	0.17	0.06	1
	10 ISL	18.00	18.00	33.407	24.054	385.2	0.039	5.51	101.8	2.3	0.34	0.0	0.00	0.18	0.05	10
1	17	18.00	18.00	33.407	24.054	385.5	0.065	5.51	101.8	2.3	0.34	0.0	0.00	0.18	0.05	17
	20 ISL	18.00	18.00	33.407	24.054	385.5	0.077	5.51	101.8	2.3	0.34	0.0	0.00	0.18	0.05	20
	30 ISL	18.01	18.00	33.407	24.052	386.1	0.116	5.52	102.0	2.3	0.34	0.0	0.00	0.18	0.05	30
1	32	18.01	18.00	33.407	24.052	386.2	0.123	5.52	101.9	2.3	0.34	0.0	0.00	0.18	0.05	32
1	42	18.02	18.01	33.410	24.052	386.5	0.162	5.52	102.0	2.1	0.34	0.0	0.00	0.16	0.05	42
	50 ISL	18.00	17.99	33.406	24.055	386.6	0.193	5.54	102.3	1.9	0.34	0.0	0.00	0.17	0.05	50
1	52	17.99	17.98	33.405	24.057	386.5	0.201	5.54	102.3	1.9	0.34	0.0	0.00	0.17	0.05	52
1	62	15.87	15.86	33.288	24.463	347.8	0.237	6.13	108.5	1.9	0.35	0.0	0.00	0.30	0.20	62
1	73	14.71	14.70	33.282	24.713	324.2	0.274	6.19	107.0	2.3	0.36	0.0	0.00	0.27	0.26	73
	75 ISL	14.49	14.48	33.277	24.756	320.2	0.281	6.17	106.2	2.4	0.37	0.0	0.02	0.27	0.26	75
1	83	13.64	13.63	33.262	24.921	304.6	0.306	6.04	102.2	2.8	0.43	0.1	0.11	0.27	0.24	83
1	97	12.62	12.61	33.295	25.150	283.0	0.347	5.75	95.2	3.7	0.54	1.9	0.19	0.20	0.19	97
	100 ISL	12.49	12.48	33.301	25.180	280.3	0.355	5.69	94.0	4.0	0.58	2.6	0.16	0.18	0.18	100
1	112	12.07	12.06	33.328	25.281	270.8	0.388	5.47	89.6	5.6	0.74	5.4	0.03	0.12	0.15	112
	125 ISL	11.59	11.57	33.370	25.403	259.5	0.423	5.22	84.6	7.6	0.87	7.9	0.01	0.09	0.11	126
1	128	11.47	11.45	33.382	25.434	256.6	0.431	5.16	83.4	8.1	0.90	8.5	0.01	0.08	0.10	129
	150 ISL	10.49	10.47	33.527	25.722	229.5	0.484	4.55	72.1	13.5	1.23	13.6	0.00	0.03	0.05	151
1	154	10.32	10.30	33.558	25.775	224.5	0.493	4.43	69.9	14.7	1.29	14.6	0.00	0.02	0.04	155
1	180	9.45	9.43	33.743	26.065	197.2	0.548	3.73	57.8	22.4	1.63	20.8	0.00	0.00	0.02	181
	200 ISL	9.03	9.01	33.858	26.223	182.5	0.586	3.43	52.7	26.6	1.76	23.3	0.00	0.00	0.02	201
1	210	8.86	8.84	33.903	26.285	176.8	0.604	3.34	51.2	28.3	1.80	24.0	0.00	0.00	0.02	211
1	241	8.33	8.31	33.973	26.422	164.1	0.657	3.25	49.2	33.1	1.91	25.7	0.00			242
	250 ISL	8.20	8.17	33.987	26.453	161.3	0.671	3.18	48.0	34.7	1.95	26.3	0.00			251
1	283	7.75	7.72	34.026	26.550	152.5	0.723	2.81	42.0	41.1	2.12	28.7	0.00			285
	300 ISL	7.53	7.50	34.038	26.591	148.7	0.749	2.60	38.7	44.5	2.21	30.0	0.00			302
1	338	7.09	7.06	34.059	26.670	141.6	0.804	2.09	30.8	51.9	2.43	32.8	0.00			340
1	399	6.55	6.51	34.115	26.787	131.0	0.887	1.30	18.9	63.0	2.76	36.8	0.00			401
	400 ISL	6.54	6.50	34.116	26.789	130.8	0.888	1.29	18.8	63.2	2.76	36.9	0.00			402
1 .	463	5.92	5.88	34.147	26.894	121.2	0.968	0.84	12.0	73.9	2.97	39.6	0.00			466
	500 ISL	5.67	5.63	34.177	26.949	116.3	1.012	0.67	9.5	79.5	3.06	40.8	0.00			503
1	530	5.46	5.42	34.201	26.993	112.2	1.046	0.53	7.5	84.1	3.14	41.8	0.00			533

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	HEATHER	BAROMETER	DRT	HET	CLOUD AMT	TTPE
31 55.2 N	124 11.1 W	15/11/89	0113 UTC	3944 M	350	16 KT	360 06 07	1	1018.8 MB	16.9 C	14.7 C	7/8	SC

CAST	DEPTH M	TEMP DEC C	POT TEMP DEC 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	18.59	18.59	33.484	23.967	393.2	0.000	5.46	102.0	2.3	0.33	0.0	0.00	0.14	0.04	0
1	1	18.59	18.59	33.484	23.967	393.2	0.004	5.46	102.0	2.3	0.33	0.0	0.00	0.14	0.04	1
	10 I SL	18.60	18.60	33.485	23.966	393.7	0.039	5.47	102.2	2.2	0.33	0.0	0.00	0.13	0.03	10
1	17	18.60	18.60	33.485	23.966	393.9	0.067	5.47	102.2	2.1	0.33	0.0	0.00	0.13	0.03	17
	20 ISL	18.60	18.60	33.485	23.966	394.0	0.079	5.47	102.2	2.1	0.33	0.0	0.00	0.13	0.03	20
	30 ISL	18.59	18.58	33.485	23.969	394.1	0.118	5.47	102.2	2.1	0.34	0.0	0.00	0.14	0.04	30
1	31	18.59	18.58	33.485	23.969	394.1	0.122	5.47	102.2	2.1	0.34	0.0	0.00	0.14	0.04	31
1	42	18.61	18.60	33.485	23.964	394.9	0.165	5.49	102.6	2.2	0.34	0.0	0.00	0.13	0.03	42
	50 ISL	18.59	18.58	33.485	23.970	394.7	0.197	5.47	102.2	2.0	0.33	0.0	0.00	0.14	0.04	50
1	52	18.59	18.58	33.486	23.971	394.7	0.205	5.47	102.2	2.0	0.33	0.0	0.00	0.14	0.04	52
1	62	18.51	18.50	33.483	23.989	393.3	0.244	5.48	102.2	2.0	0.33	0.0	0.00	0.13	0.03	62
1	73	15.73	15.72	33.335	24.531	341.7	0.285	6.22	109.8	2.2	0.35	0.0	0.00	0.26	0.15	73
	75 ISL	15.41	15.40	33.324	24.594	335.8	0.292	6.24	109.5	2.2	0.36	0.0	0.00	0.26	0.16	75
1	82	14.51	14.50	33.297	24.768	319.3	0.314	6.29	108.3	2.4	0.38	0.0	0.00	0.27	0.19	82
1	97	13.05	13.04	33.258	25.037	293.8	0.360	6.00	100.2	3.1	0.48	0.4	0.10	0.26	0.22	97
	100 ISL	12.87	12.86	33.261	25.075	290.3	0.369	5.93	98.7	3.3	0.51	0.8	0.11	0.25	0.22	100
1	112	12.30	12.29	33.298	25.214	277.3	0.403	5.61	92.3	4.6	0.65	3.4	0.13	0.21	0.24	112
	125 ISL	11.65	11.63	33.374	25.395	260.2	0.438	5.20	84.4	7.5	0.89	7.8	0.04	0.14	0.15	126
1	128	11.51	11.49	33.393	25.436	256.4	0.446	5.11	82.7	8.2	0.95	8.9	0.01	0.12	0.13	129
	ISO ISL	10.72	10.70	33.484	25.648	236.5	0.500	4.65	74.0	12.3	1.21	13.3	0.00	0.06	0.07	151
1	155	10.57	10.55	33.503	25.689	232.7	0.512	4.56	72.4	13.2	1.25	14.0	0.00	0.05	0.07	156
1	181	9.71	9.69	33.641	25.943	208.9	0.569	4.09	63.7	18.9	1.50	18.6	0.00	0.01	0.04	182
	200 ISL	9.14	9.12	33.787	26.150	189.5	0.607	3.70	57.0	24.4	1.70	22.0	0.00	0.00	0.03	201
1	212	8.84	8.82	33.872	26.264	178.8	0.629	3.48	53.3	27.7	1.82	23.9	0.00	0.00	0.02	213
1	243	8.35	8.32	33.963	26.411	165.2	0.683	3.24	49.1	32.9	1.97	26.1	0.00			244
	250 ISL	8.26	8.23	33.975	26.434	163.1	0.694	3.21	48.5	33.9	1.99	26.4	0.00			251
1	2 84	7.86	7.83	34.011	26.522	155.2	0.748	3.05	45.7	39.0	2.10	28.0	0.00			286
	300 ISL	7.66	7.63	34.022	26.560	151.8	0.773	2.88	42.9	41.9	2.17	29.1	0.00			302
1	341	7.15	7.12	34.038	26.645	144.0	0.833	2.37	34.9	49.9	2.38	32.0	0.00			343
	400 ISL	6.43	6.39	34.050	26.752	134.2	0.915	1.81	26.2	61.8	2.65	35.6	0.00			402
1	401	6.42	6.38	34.050	26.753	134.1	0.917	1.80	26.1	62.0	2.65	35.7	0.00			403
1	465	5.85	5.81	34.107	26.871	123.3	0.999	1.19	17.0	72.9	2.90	39.3	0.00			468
	500 ISL	5.72	5.68	34.150	26.921	118.9	1.042	0.87	12.4	77.4	3.02	40.4	- 0.00			503
1	531	5.61	5.56	34.189	26.966	115.0	1.078	0.58	8.2	81.3	3.12	41.3	0.00			534

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRT	HET	CLOUD AMT	TTPE
33 53.8 N	118 29.4 W	12/11/89	1857 UTC	48 M	220	07 KT	27 0 03 05	4	1015.5 MB	17.0 C	15.2 C		

CAST	DEPTH M	TEMP DEC 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	17.01	17.01	33.534	24.388	353.1	0.000	6.17	111.9	3.1	0.34	0.1	0.01	0.99	0.19	0
	10 ISL	16.61	16.61	33.514	24.466	345.9	0.035	6.13	110.3	2.6	0.33	0.1	0.00	0.83	0.17	10
1	11	16.57	16.57	33.512	24.474	345.2	0.038	6.13	110.2	2.6	0.33	0.1	0.00	0.81	0.17	11
	20 ISL	14.99	14.99	33.437	24.771	317.2	0.068	5.49	95.6	5.4	0.71	1.5	0.14	0.81	0.19	20
1	22	14.60	14.60	33.422	24.843	310.4	0.074	5.35	92.4	6.1	0.80	1.9	0.18	0.81	0.19	22
	30 ISL	13.47	13.47	33.377	25.043	291.5	0.099	5.40	91.1	7.1	0.87	3.2	0.37	0.54	0.26	30
1	34	13.08	13.08	33.364	25.111	285.1	0.110	5.43	90.9	7.3	0.91	3.8	0.45	0.40	0.29	34
1	**44**	12.88	12.87	33.369	25.155	281.2	0.138	5.32	88.6	7.9	0.97	4.7	0.48	0.33	0.29	44

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRT	HET	CLOUD AMT	TTPE
33 49.4 N	118 38.4 W	12/11/89	2129 UTC	688 M	240	07 KT	2 80 03 05	2	1014.6 MB	17.1 C	15.1 C	8/8	ST

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	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	18.27	18.27	33.679	24.195	371.4	0.000	5.64	104.9	2.0	0.29	0.1	0.00	0.30	0.07	0
1	1	18.27	18.27	33.679	24.195	371.4	0.004	5.64	104.9	2.0	0.29	0.1	0.00	0.30	0.07	1
	10 ISL	17.64	17.64	33.584	24.277	364.0	0.037	5.95	109.2	2.2	0.30	0.0	0.00	0.66	0.16	10
1	11	17.57	17.57	33.574	24.286	363.2	0.040	5.98	109.6	2.2	0.30	0.0	0.00	0.74	0.17	11
	20 ISL	15.22	15.22	33.390	24.684	325.4	0.071	5.59	97.7	5.1	0.75	1.3	0.18	2.08	0.12	20
1	22	14.67	14.67	33.363	24.783	316.1	0.078	5.52	95.4	5.7	0.83	1.5	0.21	2.28	0.11	22
	30 ISL	13.64	13.64	33.367	25.001	295.5	0.102	5.93	100.4	4.9	0.55	0.8	0.11	1.33	0.51	30
2	31	13.55	13.55	33.372	25.023	293.4	0.105	5.97	100.9	4.8	0.51	0.8	0.10	1.17	0.56	31
2	42	12.68	12.67	33.413	25.228	274.2	0.136	5.16	85.6	7.9	0.85	5.8	0.44	0.63	0.42	42
	50 ISL	12.53	12.52	33.427	25.268	270.5	0.158	5.01	82.9	8.9	0.91	6.8	0.44	0.46	0.35	50
2	51	12.52	12.51	33.428	25.271	270.3	0.161	5.00	82.7	9.0	0.91	6.9	0.44	0.45	0.34	51
2	62	12.23	12.22	33.467	25.357	262.4	0.190	4.71	77.5	10.3	1.01	8.9	0.23	0.33	0.30	62
2	71	12.03	12.02	33.485	25.409	257.6	0.214	4.56	74.7	11.3	1.08	10.1	0.20	0.26	0.25	71
	75 ISL	11.80	11.79	33.506	25.469	252.1	0.224	4.47	72.9	12.0	1.14	11.2	0.15	0.22	0.23	75
2	85	11.21	11.20	33.569	25.626	237.3	0.248	4.22	67.9	14.0	1.28	14.2	0.03	0.12	0.20	85
	100 ISL	10.96	10.95	33.628	25.717	228.9	0.283	3.90	62.5	16.3	1.39	16.0	0.02	0.08	0.14	100
2	101	10.96	10.95	33.631	25.719	228.7	0.286	3.88	62.1	16.4	1.40	16.1	0.02	0.08	0.14	101
2	120	10.74	10.73	33.684	25.800	221.5	0.328	3.67	58.5	18.3	1.50	17.6	0.02	0.05	0.12	121
	125 ISL	10.67	10.66	33.700	25.825	219.2	0.339	3.61	57.5	18.8	1.53	18.0	0.02	0.04	0.11	126
2	146	10.34	10.32	33.787	25.950	207.7	0.384	3.28	51.9	21.9	1.67	20.3	0.01	0.02	0.07	147
	ISO ISL	10.26	10.24	33.815	25.986	204.4	0.392	3.16	49.9	23.1	1.72	21.0	0.01	0.02	0.07	151
2	176	9.74	9.72	34.000	26.218	182.7	0.443	"2.38	37.2	30.7	2.06	25.6	0.02	0.01	0.08	177
	200 :ISL	9.45	9.43	34.089	26.336	172.0	0.485	2.06	32.0	34.2	2.19	27.3	0.01	0.01	0.07	201
2	208	9.38	9.36	34.108	26.362	169.6	0.499	2.00	31.0	35.0	2.22	27.6	0.01	0.01	0.06	209
2	237	9.11	9.08	34.164	26.451	161.8	0.547	1.74	26.8	38.9	2.35	29.0	0.01			238
	250 :ISL	8.99	8.96	34.192	26.492	158.1	0.568	1.59	24.5	40.6	2.41	29.6	0.01			251
2	279	8.74	8.71	34.244	26.572	150.9	0.613	1.28	19.6	44.3	2.54	30.9	0.01			281
	300 ISL	8.57	8.54	34.257	26.609	147.7	0.644	1.15	17.5	46.5	2.60	31.5	0.02			302
2	335	8.28	8.25	34.265	26.660	143.4	0.695	0.99	15.0	50.4	2.69	32.4	0.03			337
2	395	7.62	7.58	34.295	26.782	132.5	0.778	0.62	9.3	59.2	2.88	34.9	0.01			398
	400 ISL	7.56	7.52	34.296	26.791	131.6	0.784	0.60	8.9	60.0	2.89	35.1	0.01			403
2	460	6.82	6.78	34.308	26.904	121.2	0.860	0.42	6.2	69.6	3.05	37.5	0.00			463
	500 :ISL	6.37	6.32	34.327	26.979	114.2	0.907	0.33	4.8	77.1	3.13	38.6	0.00			503
2	527	6.07	6.02	34.342	27.030	109.5	0.937	0.27	3.9	82.1	3.19	39.3	0.00			S31

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 39.1 N	118 58.7 W	13/11/89	0112 UTC	648 M	290 08 KT	2 80 01 07	2	1014 1 MB	15.1 C	13.9 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	16.55	16.55	33.519	24.484	343.9	0.000	5.96	107.1	1.9	0.33	0.1	0.01	0.44	0.15	0
1	1	16.55	16.55	33.519	24.484	343.9	0.003	5.96	107 .1	1.9	0.33	0.1	0.01	0.44	0.15	1
	10 ISL	16.36	16.36	33.503	24.516	341.2	0.034	5.95	106.5	1.9	0.34	0.1	0.01	0.67	0.26	10
1	11	16.32	16.32	33.500	24.522	340.6	0.038	5.95	106.4	1.9	0.34	0.1	0.01	0.71	0.28	11
	20 ISL	15.87	15.87	33.472	24.603	333.2	0.068	5.93	105.1	2.1	0.39	0.4	0.03	1.13	0.37	20
1	22	15.73	15.73	33.465	24.629	330.7	0.075	5.92	104.6	2.1	0.41	0.6	0.04	1.19	0.39	22
	30 ISL	14.94	14.94	33.438	24.783	316.4	0.101	5.83	101.4	2.9	0.50	1.6	0.09	1.00	0.41	30
1	32	14.71	14.71	33.430	24.826	312.3	0.107	5.80	100.4	3.2	0.53	2.0	0.11	0.93	0.41	32
1	43	13.37	13.36	33.356	25.047	291.4	0.140	5.59	94.1	5.5	0.71	4.6	0.21	0.83	0.44	43
	50 ISL	12.37	12.36	33.339	25.231	274.1	0.160	5.27	86.9	7.8	0.91	7.6	0.20	0.59	0.36	50
1	53	11.99	11.98	33.342	25.305	267.1	0.168	5.13	83.9	8.8	0.99	8.9	0.20	0.48	0.32	53
1	64	11.40	11.39	33.399	25.459	252.6	0.197	4.83	78.0	10.9	1.08	11.3	0.07	0.22	0.18	64
1	74	10.83	10.82	33.526	25.660	233.7	0.221	4.28	68.3	15.4	1.38	15.5	0.04	0.13	0.13	74
	75 ISL	10.77	10.76	33.541	25.682	231.6	0.223	4.22	67.3	15.9	1.40	15.9	0.04	0.12	0.13	75
1	89	10.12	10.11	33.739	25.949	206.5	0.254	3.40	53.5	21.9	1.69	20.7	0.02	0.05	0.14	89
	100 ISL	9.87	9.86	33.852	26.080	194.3	0.276	2.94	46.0	25.7	1.89	23.3	0.01	0.05	0.10	100
1	104	9.82	9.81	33.884	26.113	191.2	0.284	2.82	44.1	26.8	1.95	24.0	0.01	0.05	0.09	105
1	125	9.60	9.59	33.962	26.211	182.3	0.323	2.58	40.2	29.8	2.09	25.4	0.01	0.02	0.08	126
	150 ISL	9.46	9.44	34.062	26.313	173.2	0.367	2.21	34.3	33.1	2.18	26.9	0.01	0.01	0.07	151
1	152	9.45	9.43	34.069	26.320	172.5	0.371	2.18	33.9	33.3	2.19	27.0	0.01	0.01	0.07	153
1	182	9.29	9.27	34.122	26.388	166.7	0.422	1.94	30.0	35.9	2.29	28.0	0.01	0.01	0.06	183
	200 ISL	9.09	9.07	34.135	26.430	162.9	0.451	1.90	29.3	37.4	2.33	28.6	0.01	0.01	0.05	201
1	212	8.95	8.93	34.144	26.460	160.3	0.471	1.87	28.7	38.5	2.35	29.0	0.01	0.01	0.05	213
1	242	8.80	8.77	34.190	26.520	155.2	0.518	1.62	24.8	41.3	2.45	30.0	0.01			243
	250 ISL	8.77	8.74	34.204	26.536	153.8	0.530	1.54	23.6	42.2	2.48	30.3	0.01			251
1	2 83	8.60	8.57	34.253	26.601	148.2	0.580	1.21	18.5	46.1	2.63	31.4	0.01			285
	300 ISL	8.44	8.41	34.265	26.635	145.2	0.605	1.09	16.6	48.2	2.69	32.0	0.01			302
1	338	8.02	7.99	34.279	26.710	138.5	0.659	0.87	13.1	53.1	2.81	33.4	0.01			3 40
1	398	7.47	7.43	34.298	26.806	130.1	0.740	0.61	9.1	60.5	2.95	35.4	0.01			401
	400 ISL	7 .44	7.40	34.299	26.811	129.7	0.742	0.60	8.9	60.8	2.96	35.5	0.01			403
1	462	6.67	6.63	34.314	26.929	118.7	0.819	0.39	5.7	71.4	3.12	38.0	0.01			465
	500 ISL	6.42	6.37	34.322	26.969	115.3	0.864	0.34	4.9	75.6	3.16	38.6	0.01			503
1	531	6.21	6.16	34.329	27.002	112.4	0.899	0.30	4.3	79.1	3.19	39.1	0.01			535

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 29.2 N	119 19.9 W	13/11/89	0439 UTC	1636 M	260 08 KT			1015.2 MB	14.8 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	16.81	16.81	33.547	24.445	347.6	0.000	5.83	105.3	2.5	0.34	0.1	0.00	0.36	0.10	0
1	1	16.81	16.81	33.547	24.445	347.7	0.003	5.83	105.3	2.5	0.34	0.1	0.00	0.36	0.10	1
	10 ISL	16.80	16.80	33.542	24.444	348.1	0.035	5.78	104.4	2.3	0.33	0.1	0.00	0.35	0.11	10
1	11	16.80	16.80	33.541	24.443	348.2	0.038	5.77	104.2	2.3	0.33	0.1	0.00	0.35	0.11	11
	20 ISL	16.50	16.50	33.500	24.481	344.8	0.069	5.85	105.0	2.4	0.35	0.1	0.00	0.40	0.15	20
1	23	16.33	16.33	33.485	24.509	342.3	0.080	5.89	105.3	2.4	0.36	0.1	0.00	0.42	0.16	23
	30 ISL	15.83	15.83	33.471	24.612	332.7	0.103	5.96	105.5	2.6	0.38	0.2	0.01	0.75	0.34	30
1	33	15.54	15.53	33.462	24.670	327.2	0.113	5.97	105.1	2.7	0.40	0.2	0.01	0.88	0.41	33
1	42	14.33	14.32	33.396	24.881	307.4	0.142	5.88	101.0	4.0	0.53	1.6	0.10	0.87	0.47	42
	50 ISL	13.32	13.31	33.358	25.059	290.5	0.166	5.75	96.7	4.9	0.64	2.9	0.19	0.72	0.39	50
1	53	12.98	12.97	33.355	25.125	284.3	0.174	5.66	94.5	5.4	0.69	3.7	0.21	0.64	0.35	53
1	64	12.03	12.02	33.433	25.369	261.3	0.204	4.87	79.7	9.8	1.05	10.3	0.08	0.35	0.33	64
1	74	11.36	11.35	33.460	25.514	247.7	0.230	4.64	74.9	11.9	1.20	12.6	0.03	0.22	0.19	74
	75 ISL	11.29	11.28	33.462	25.528	246.3	0.232	4.62	74.5	12.1	1.21	12.8	0.03	0.21	0.18	75
1	87	10.60	10.59	33.490	25.672	232.8	0.261	4.40	69.9	14.8	1.35	15.3	0.02	0.10	0.14	87
	100 ISL	10.47	10.46	33.549	25.741	226.5	0.291	4.17	66.1	16.3	1.43	16.6	0.01	0.06	0.12	100
1	102	10.45	10.44	33.556	25.750	225.7	0.295	4.13	65.4	16.5	1.44	16.8	0.01	0.06 A	0.12 A	102
1	124	9.98	9.97	33.7 40	25.974	204.8	0.343	3.46	54.3	22.5	1.70	20.8	0.01	0.02	0.07	125
	125 ISL	9.96	9.95	33.745	25.982	204.2	0.345	3.44	53.9	22.7	1.71	20.9	0.01	0.02	0.07	126
1	149	9.59	9.57	33.848	26.124	191.1	0.392	3.05	47.5	26.2	1.86	23.3	0.01	0.02	0.06	150
	150 ISL	9.57	9.55	33.854	26.132	190.3	0.394	3.03	47.1	26.4	1.87	23.4	0.01	0.02	0.06	151
1	180	9.07	9.05	34.025	26.347	170.4	0.448	2.60	40.0	32.0	2.06	26.3	0.01	0.01	0.04	181
	200 ISL	8.79	8.77	34.074	26.430	162.8	0.482	2.47	37.8	34.8	2.14	27.3	0.01	0.01	0.04	201
1	210	8.69	8.67	34.092	26.460	160.2	0.498	2.38	36.4	36.1	2.18	27.8	0.01	0.01	0.04	211
1	240	8.59	8.56	34.178	26.543	152.8	0.545	1.68	25.6	41.3	2.42	30.2	0.01			241
	250 ISL	8.51	8.48	34.193	26.567	150.7	0.560	1.54	23.4	42.8	2.47	30.8	0.01			251
1	280	8.23	8.20	34.221	26.632	145.0	0.604	1.27	19.2	46.6	2.58	32.0	0.01			282
	300 ISL	8.13	8.10	34.238	26.661	142.5	0.633	1.15	17.4	48.5	2.64	32.5	0.01			302
1	336	7.94	7.91	34.262	26.708	138.6	0.684	0.98	14.7	51.8	2.72	33.3	0.01			338
1	396	7.36	7.32	34.284	26.810	129.6	0.764	0.64	9.5	59.3	2.88	35.6	0.01			399
	400 ISL	7.33	7.29	34.286	26.816	129.1	0.769	0.62	9.2	59.7	2.89	35.7	0.01			403
1	462	6.90	6.86	34.314	26.898	121.9	0.847	0.42	6.2	65.7	3.01	37.3	0.00			465
	500 ISL	6.65	6.60	34.320	26.937	118.6	0.893	0.36	5.3	69.6	3.08	38.2	0.00			503
1	530	6.45	6.40	34.325	26.968	115.9	0.928	0.32	4.6	72.7	3.14	38.9	0.00			534

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

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 87 50

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 19.2 N	119 40.6 W	13/11/89	07 45 UTC	73 M	290	12 KT			1016.2 MB	14.5 C	L3.3 C	

CAST	DEPTH M	TEMP DEC 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	15.42	15.42	33.415	24.659	327.2	0.000	5.91	103.8	2.3	0.40	0.4	0.03	1.63	0.48	0
1	10	15.39	15.39	33.404	24.657	327.7	0.033	5.91	103.7	2.2	0.40	0.4	0.03	1.70	0.58	10
	20 ISL	15.16	15.16	33.396	24.702	323.7	0.065	5.89	102.9	2.6	0.43	0.7	0.05	1.49	0.56	20
1	21	15.12	15.12	33.395	24.710	323.0	0.069	5.89	102.8	2.6	0.43	0.7	0.05	1.47	0.56	21
	30 ISL	14.38	14.38	33.381	24.858	309.1	0.097	5.68	97.6	4.3	0.57	2.6	0.11	0.78	0.43	30
1	31	14.28	14.28	33.379	24.878	307.3	0.100	5.65	96.9	4.5	0.59	2.9	0.12	0.71	0.41	31
1	41	13.15	13.14	33.362	25.096	286.7	0.130	5.45	91.3	6.2	0.75	5.0	0.17	0.52	0.34	41
	50 ISL	12.21	12.20	33.344	25.265	270.8	0.155	5.23	85.9	8.2	0.92	7.7	0.17	0.36	0.26	50
1	52	12.01	12.00	33.345	25.304	267.2	0.160	5.17	84.6	8.8	0.96	8.4	0.17	0.32	0.24	52
1	62	11.12	11.11	33.434	25.536	245.2	0.186	4.67	75.0	12.7	1.16	12.2	0.11	0.15	0.16	62

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 87 55

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 9.2 N	120 0.9 W	13/11/89	1045 UTC	1200 M	320	14 KT			1016.1MB	14.2 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	16.11	16.11	33.474	24.550	337.6	0.000	5.79	103.1	1.8	0.36	0.1	0.00	0.43	0.16	0
1	1	16.11	16.11	33.474	24.550	337.6	0.003	5.79	103.1	1.8	0.36	0.1	0.00	0.43	0.16	1
	10 ISL	16.09	16.09	33.474	24.555	337.5	0.034	5.80	103.2	1.8	0.35	0.1	0.00	0.44	0.15	10
1	11	16.09	16.09	33.474	24.555	337.5	0.037	5.80	103.2	1.8	0.35	0.1	0.00	0.44	0.15	11
	20 ISL	16.11	16.11	33.472	24.549	338.3	0.068	5.81	103.5	1.6	0.35	0.0	0.00	0.45	0.16	20
1	21	16.11	16.11	33.472	24.549	338.4	0.071	5.81	103.5	1.6	0.35	0.0	0.00	0.45	0.16	21
	30 ISL	14.78	14.78	33.347	24.747	319.7	0.101	5.96	103.3	2.3	0.43	0.5	0.10	0.65	0.43	30
1	31	14.59	14.59	33.332	24.776	317.0	0.104	5.97	103.0	2.4	0.45	0.6	0.11	0.67	0.46	31
1	42	12.69	12.68	33.267	25.113	285.1	0.137	5.49	91.1	5.7	0.80	6.1	0.05	0.38	0.30	42
	50 ISL	12.03	12.02	33.307	25.271	270.3	0.159	5.19	84.9	7.5	0.96	8.7	0.03	0.26	0.24	50
1	52	11.89	11.88	33.326	25.312	266.4	0.164	5.10	83.2	8.1	1.00	9.4	0.03	0.24	0.23	52
1	62	10.80	10.79	33.483	25.631	236.1	0.190	4.36	69.5	14.7	1.37	15.9	0.01	0.08	0.10	62
1	71	10.40	10.39	33.531	25.739	226.1	0.210	4.17	65.9	16.6	1.45	17.4	0.02	0.05	0.07	71
	75 ISL	10.23	10.22	33.551	25.783	221.9	0.219	4.09	64.5	17.6	1.49	18.1	0.02	0.04	0.06	75
1	86	9.85	9.84	33.618	25.900	211.0	0.243	3.82	59.7	20.6	1.61	20.0	0.01	0.03	0.05	86
	100 ISL	9.61	9.60	33.761	26.052	196.9	0.272	3.24	50.4	25.2	1.81	23.2	0.01	0.01	0.04	100
1	102	9.58	9.57	33.781	26.072	195.0	0.276	3.16	49.2	25.8	1.83	23.6	0.01	0.01	0.04	103
1	122	9.17	9.16	33.589	26.223	180.9	0.313	3.04	46.9	28.7	1.89	24.8	0.01	0.01	0.03	123
	125 ISL	9.11	9.10	33.902	26.243	179.1	0.319	3.04	46.8	29.1	1.89	24.9	0.01	0.01	0.03	126
1	148	8.76	8.74	33.980	26.360	168.4	0.359	3.02	46.2	31.8	1.93	25.6	0.01	0.00	0.02	149
	150 ISL	8.74	8.72	33.985	26.367	167.8	0.362	3.00	45.9	32.0	1.94	25.7	0.01	0.00	0.02	151
1	181	8.48	8.46	34.029	26.442	161.2	0.413	2.74	41.6	35.8	2.06	27.1	0.00	0.00	0.03	182
	200 ISL	8.23	8.21	34.040	26.489	157.0	0.443	2.69	40.7	38.1	2.10	27.8	0.00	0.00	0.03	201
1	211	8.09	8.07	34.048	26.516	154.6	0.460	2.63	39.6	39.6	2.14	28.4	0.00	0.00	0.03	212
1	241	7.86	7.84	34.099	26.591	147.9	0.506	1.96	29.4	45.7	2.38	31.3	0.00			242
	250 ISL	7.79	7.77	34.109	26.609	146.3	0.519	1.84	27.5	47.1	2.43	31.8	0.00			251
1	284	7.47	7.44	34.134	26.675	140.5	0.568	1.54	22.9	52.3	2.58	33.4	0.00			286
	300 ISL	7.24	7.21	34.138	26.711	137.2	0.590	1.41	20.8	55.4	2.65	34.4	0.00			302
1	340	6.72	6.69	34.158	26.798	129.2	0.643	1.09	15.9	62.8	2.80	36.5	0.00			342
	400 ISL	6.65	6.61	34.259	26.888	121.7	0.718	0.56	8.2	68.6	3.01	37.9	0.00			403
1	401	6.65	6.61	34.260	26.889	121.6	0.720	0.55	8.0	68.7	3.01	37.9	0.00			404
1	465	6.23	6.19	34.299	26.975	114.0	0.795	0.36	5.2	76.6	3.11	39.4	0.00			468
	500 ISL	6.01	5.97	34.322	27.021	109.9	0.834	0.31	4.5	80.7	3.16	40.0	0.00			503
1	532	5.80	5.75	34.344	27.065	105.9	0.869	0.26	3.7	84.4	3.20	40.6	0.00			536

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 87 60

LATITUDE	LONCITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 59.6 N	120 21.4 W	13/11/89	1430 UTC	725 M	310	13 KT	3 20 04 05	2	1018.0MB	14.6 C	13.2 C	8/8	ST

CAST	DEPTH M	TEMP DEC 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	15.78	15.78	33.497	24.642	328.8	0.000	5.67	100.3	1.9	0.36	0.0	0.00	0.58	0.19	0
1	10	15.76	15.76	33.497	24.647	328.7	0.033	5.84	103.3	1.9	0.35	0.0	0.00	0.56	0.20	10
	20 ISL	15.61	15.61	33.475	24.664	327.4	0.066	5.86	103.3	1.9	0.37	0.0	0.00	0.58	0.21	20
1	21	15.59	15.59	33.473	24.667	327.2	0.069	5.86	103.3	1.9	0.37	0.0	0.00	0.58	0.21	21
	30 ISL	15.54	15.54	33.468	24.674	326.7	0.098	5.87	103.3	1.8	0.36	0.0	0.01	0.63	0.25	30
1	31	15.53	15.53	33.467	24.676	326.6	0.102	5.87	103.3	1.8	0.36	0.0	0.01	0.64	0.25	31
1	41	13.71	13.70	33.309	24.942	301.4	0.133	5.89	99.8	2.7	0.51	1.3	0.14	1.13	0.72	41
	50 ISL	12.73	12.72	33.413	25.219	275.3	0.159	5.08	84.4	7.3	0.93	8.1	0.06	0.48	0.42	50
1	52	12.57	12.56	33.447	25.276	269.9	0.164	4.87	80.7	8.5	1.03	9.8	0.04	0.30	0.32	52
1	62	11.75	11.74	33.526	25.493	249.4	0.190	4.35	70.8	12.9	1.30	14.1	0.02	0.17	0.17	62
1	72	11.21	11.20	33.549	25.610	238.4	0.215	4.16	67.0	14.6	1.39	15.8	0.02	0.13	0.14	72
	75 ISL	10.98	10.97	33.573	25.670	232.8	0.222	4.03	64.6	15.9	1.45	16.8	0.02	0.11	0.12	75
1	86	10.15	10.14	33.680	25.898	211.3	0.246	3.52	55.4	21.3	1.69	20.8	0.01	0.04	0.07	86
	100 ISL	9.45	9.44	33.793	26.103	192.0	0.275	3.12	48.4	26.4	1.87	23.9	0.01	0.01	0.06	100
1	102	9.38	9.37	33.807	26.125	189.9	0.278	3.08	47.7	27.0	1.89	24.2	0.01	0.01	0.06	103
1	122	9.05	9.04	33.928	26.273	176.2	0.315	2.76	42.5	31.1	2.03	26.1	0.01	0.01	0.05	123
	125 ISL	9.02	9.01	33.939	26.287	175.0	0.320	2.75	42.3	31.5	2.04	26.3	0.01	0.01	0.05	126
1	148	8.75	8.73	33.991	26.370	167.4	0.360	2.65	40.5	33.9	2.09	27.1	0.00	0.00	0.05	149
	150 ISL	8.71	8.69	33.994	26.379	166.7	0.363	2.65	40.5	34.1	2.09	27.1	0.00	0.00	0.05	151
1	178	8.21	8.19	34.025	26.480	157.4	0.408	2.66	40.2	36.8	2.11	27.9	0.00	0.00	0.03	179
	200 ISL	8.05	8.03	34.062	26.533	152.7	0.442	2.43	36.6	40.6	2.22	29.1	0.00	0.00	0.03	201
1	209	8.01	7.99	34.075	26.549	151.3	0.456	2.32	34.9	42.2	2.27	29.6	0.00	0.00	0.03	210
1	23 8	7.78	7.76	34.091	26.596	147.3	0.499	2.11	31.6	45.0	2.36	30.8	0.00			239
	250 ISL	7.58	7.56	34.079	26.616	145.6	0.517	2.11	31.4	46.6	2.38	31.2	0.00			251
1	279	7.09	7.06	34.056	26.667	140.9	0.559	2.10	30.9	51.3	2.44	32.5	0.00			281
	300 ISL	6.88	6.85	34.083	26.717	136.4	0.588	1.76	25.8	55.9	2.58	34.0	0.00			302
1	335	6.67	6.64	34.149	26.797	129.2	0.634	1.10	16.0	63.2	2.82	36.5	0.00			337
1	3 95	6.46	6.42	34.221	26.883	121.9	0.709	0.65	9.4	70.0	3.02	38.2	0.00			398
	400 ISL	6.44	6.40	34.225	26.888	121.4	0.716	0.62	9.0	70.5	3.03	38.3	0.00			403
1	463	6.15	6.11	34.270	26.962	115.1	0.790	0.39	5.6	76.8	3.12	39.6	0.00			466
	500 ISL	5.95	5.91	34.291	27.004	111.4	0.832	0.33	4.7	80.3	3.17	40.2	0.00			503
1	535	5.76	5.71	34.311	27.044	107.9	0.870	0.28	4.0	83.7	3.22	40.8	0.00			539

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 87 70

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 39.4 N	121 1.5 W	13/11/89	2128 UTC	3987 M	330	13 KT	3 20 05 07	1	1018.1 MB	16.9 C	15.9 C	4/8	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	17.71	17.71	33.492	24.189	372.0	0.000	5.59	102.7	1.8	0.36	0.1	0.00	0.18	0.06	0
1	1	17.71	17.71	33.492	24.189	372.0	0.004	5.59	102.7	1.8	0.36	0.1	0.00	0.18	0.06	1
	10 ISL	17.70	17.70	33.492	24.192	372.1	0.037	5.52	101.4	1.8	0.38	0.1	0.00	0.18	0.05	10
1	11	17.70	17.70	33.492	24.192	372.1	0.041	5.51	101.2	1.8	0.38	0.1	0.00	0.18	0.05	11
	20 ISL	17.68	17.68	33.488	24.194	372.2	0.074	5.56	102.1	1.7	0.37	0.1	0.00	0.19	0.06	20
1	22	17.67	17.67	33.487	24.196	372.2	0.082	5.58	102.4	1.7	0.37	0.1	0.00	0.19	0.06	22
	30 ISL	17.65	17.64	33.486	24.200	372.0	0.112	5.58	102.4	1.7	0.39	0.1	0.00	0.19	0.06	30
1	32	17.64	17.63	33.487	24.203	371.8	0.119	5.58	102.4	1.7	0.39	0.1	0.00	0.19	0.06	32
1	42	17.37	17.36	33.442	24.234	369.2	0.156	5.64	102.9	1.5	0.36	0.0	0.00	0.26	0.12	42
	50 ISL	15.32	15.31	33.303	24.597	334.7	0.184	6.01	105.2	1.7	0.42	0.2	0.03	0.36	0.25	50
1	52	14.76	14.75	33.275	24.696	325.2	0.191	6.10	105.6	1.7	0.44	0.2	0.04	0.38	0.28	52
1	62	13.51	13.50	33.223	24.917	304.4	0.222	6.00	101.2	2.7	0.51	1.0	0.23	0.35	0.36	62
1	72	12.62	12.61	33.178	25.058	291.1	0.252	5.92	98.0	3.2	0.57	1.5	0.32	0.29	0.32	72
	75 ISL	12.38	12.37	33.187	25.112	286.1	0.261	5.83	96.0	3.8	0.63	2.5	0.27	0.27	0.30	75
1	87	11.57	11.56	33.261	25.321	266.3	0.294	5.44	88.1	6.5	0.87	7.1	0.03	0.18	0.21	87
	100 ISL	10.97	10.96	33.339	25.490	250.4	0.328	5.18	82.8	8.7	1.00	9.6	0.02	0.12	0.16	100
1	101	10.93	10.92	33.346	25.503	249.3	0.330	5.16	82.4	8.9	1.01	9.8	0.02	0.12	0.16	101
1	123	10.14	10.13	33.570	25.815	220.0	0.382	4.17	65.6	17.4	1.49	17.7	0.00	0.03	0.05	124
	125 ISL	10.07	10.06	33.590	25.842	217.4	0.386	4.11	64.5	18.0	1.52	18.2	0.00	0.03	0.05	126
1	148	9.35	9.33	33.799	26.125	190.9	0.433	3.51	54.3	24.6	1.77	22.4	0.00	0.01	0.03	149
	150 ISL	9.32	9.30	33.815	26.142	189.3	0.437	3.45	53.4	25.2	1.79	22.7	0.00	0.01	0.03	151
1	179	9.02	9.00	33.996	26.332	171.8	0.489	2.67	41.1	32.5	2.10	26.6	0.00	0.00	0.02	180
	200 ISL	8.67	8.65	34.068	26.444	161.4	0.524	2.43	37.1	36.7	2.22	28.1	0.00	0.00	0.02	201
1	210	8.50	8.48	34.086	26.484	157.8	0.540	2.39	36.4	38.3	2.25	28.5	0.00	0.00	0.02	211
1	241	8.12	8.10	34.078	26.536	153.3	0.588	2.45	36.9	41.1	2.27	29.1	0.00			242
	250 ISL	8.05	8.02	34.088	26.554	151.7	0.602	2.34	35.2	42.4	2.32	29.6	0.00			251
1	2 82	7.82	7.79	34.132	26.623	145.6	0.650	1.81	27.1	47.9	2.52	31.8	0.00			284
	300 ISL	7.58	7.55	34.138	26.663	142.0	0.675	1.62	24.1	51.3	2.61	33.0	0.00			302
1	3 40	7.08	7.05	34.149	26.742	134.8	0.731	1.28	18.8	58.3	2.77	35.2	0.00			342
1	400	6.81	6.77	34.213	26.830	127.2	0.809	0.76	11.1	65.5	2.98	37.1	0.00			403
1	464	6.29	6.25	34.243	26.923	118.9	0.888	0.51	7.4	73.8	3.12	39.2	0.00			467
	500 ISL	6.14	6.10	34.279	26.971	114.8	0.930	0.40	5.8	77.5	3.19	39.8	0.00			503
1	532	6.00	5.95	34.311	27.014	111.0	0.966	0.31	4.5	80.8	3.25	40.4	0.00			536

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RV NEt HORIZON | CALCOFI CRUISE 8911 | STATION 87 80

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 19.0 N	121 43.2 V	14/11/89	0223 UTC	4060 M	330	16 KT			1017 3 MB	17.0 C	16.0 C		

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	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	17.73	17.73	33.492	24.184	372.5	0.000	5.56	102.2	2.0	0.34	0.0	0.00	0.18	0.06	0
1	1	.17.73	17.73	33.492	24.184	372.5	0.00*	5.56	102.2	2.0	0.3*	0.0	0.00	0.18	0.06	1
	10 ISL	17.72	17.72	33.493	2*.188	372.5	0.037	5.58	102.5	2.0	0.34	0.0	0.00	0.20	0.08	10
1	11	17.72	17.72	33.493	2*.188	372.5	0.041	5.58	102.5	2.0	0.3*	0.0	0.00	0.20	0.08	11
	20 ISL	17.73	17.73	33.493	24.186	373.0	0.075	5.59	102.7	1.9	0.3*	0.0	0.00	0.18	0.06	20
1	21	17.73	17.73	33.493	24.186	373.1	0.078	5.59	102.7	1.9	0.34	0.0	0.00	0.18	0.06	21
	30 ISL	17.72	17.71	33.494	24.189	373.0	0.112	5.58	102.5	1.8	0.34	0.0	0.00	0.20	0.08	30
I	31	17.72	17.71	33.495	24.190	373.0	0.116	5.58	102.5	1.8	0.34	0.0	0.00	0.20	0.08	31
1	Al	17.68	17.67	33.492	24.198	372.6	0.153	5.58	102.5	1.7	0.34	0.0	0.00	0.21	0.07	41
1	50	15.85	15.84	33.362	24.524	3*1.6	0.185	5.99	106.0	1.8	0.36	0.0	0.00	0.38	0.28	50
1	60	14.40	14.39	33.261	24.762	319.1	0.218	6.10	104.8	2.0	0.42	0.2	0.03	0.46	0.38	60
1	70	12.66	12.65	33.209	25.075	2 89.5	0.248	5.92	98.1	3.4	0.53	1.5	0.29	0.32	0.36	70
	75 ISL	12.32	12.31	33.226	25.153	282.1	0.263	5.80	95.4	3.9	0.59	2.5	0.23	0.27	0.32	75
1	84	12.06	12.05	33.277	25.242	273.8	0.2 88	5.58	91.3	4.9	0.69	4.6	0.04	0.20	0.25	84
1	100	11.42	11.41	33.364	25.429	256.4	0.330	5.29	85.4	7.3	0.85	7.8	0.02	0.12	0.17	100
1	120	10.48	10.47	33.473	25.681	232.7	0.379	4.73	74.9	12.7	1.18	13.4	0.01	0.04	0.07	121
	125 ISL	10.26	10.25	33.507	25.745	226.6	0.391	4.58	72.2	14.2	1.26	14.8	0.01	0.03	0.06	126
1	146	9.48	9.46	33.663	25.997	203.0	0.436	3.98	61.7	20.7	1.55	19.8	0.00	0.01	0.03	147
	150 ISL	9.37	9.35	33.698	26.042	198.7	0.444	3.88	60.0	21.9	1.60	20.5	0.00	0.01	0.03	151
1	177	8.80	8.78	33.898	26.290	175.6	0.494	3.38	51.7	28.8	1.82	24.1	0.00	0.00	0.03	17 8
	200 ISL	8.34	8.32	33.968	26.416	163.9	0.533	3.35	50.7	32.7	1.88	25.4	0.00	0.01	0.03	201
1	20B	8.20	8.18	33.979	26.446	161.2	0.546	3.34	50.4	33.9	1.90	25.7	0.00	0.01	0.03	209
1	23 8	7.83	7.81	34.009	26.524	154.1	0.594	3.03	45.4	39.1	2.05	27.8	0.00			239
	250 ISL	7.71	7.69	34.024	26.554	151.5	0.612	2.82	42.1	41.5	2.13	28.8	0.00			251
1	280	7.44	7.41	34.064	26.624	145.2	0.656	2.27	33.7	47.6	2.34	31.2	0.00			2 82
	3 00 ISL	7.28	7.25	3 4.0 85	26.663	141.7	0.6 85	1.98	29.3	51.0	2.45	32.5	0.00			302
1	338	7.00	6.97	34.125	26.734	135.4	0.738	1.49	21.9	57.3	2.65	34.7	0.00			340
1	398	6.55	6.51	34.209	26.862	12*.0	0.816	0.74	10.8	68.4	2.94	37.7	0.00			400
	400 ISL	6.53	6.49	34.210	26.865	123.7	0.818	0.73	10.6	68.7	2.95	37.8	0.00			402
1	463	5.84	5.80	34.218	26.960	11*.9	0.893	0.57	8.2	78.4	3.08	40.2	0.00			466
	500 ISL	5.64	5.60	34.250	27.010	110.5	0.935	0.43	6.1	83.4	3.15	40.9	0.00			503
1	530	5.47	5.43	34.277	27.052	106.7	0.968	0.31	4.4	87.4	3.21	41.5	0.00			534

RV NEW HORIZON | CALCOFI CRUISE 8911 | STATION 87 90

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 59.3 «	122 24.4 W	14/11/89	0735 UTC	40 87 M	340	12 KT			1018.8 MB	15.9 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
	0 ISL	17.14	17.14	33.247	24.137	376.9	0.000	5.69	103.3	2.2	0.37	0.1	0.00	0.22	0.08	0
1	2	17.14	17.14	33.247	24.137	377.0	0.008	5.69	103.2	2.2	0.37	0.1	0.00	0.22	0.08	2
	10 ISL	17.11	17.11	33.260	2*.155	375.6	0.038	5.65	102.5	2.2	0.36	0.1	0.00	0.23	0.07	10
1	11	17.10	17.10	33.262	2*.158	375.3	0.041	5.64	102.3	2.2	0.36	0.1	0.00	0.23	0.07	11
	20 ISL	17.10	17.10	33.274	2*.168	374.7	0.075	5.65	102.5	2.1	0.36	0.1	0.00	0.24	0.06	20
1	21	17.10	17.10	33.274	2*.168	374.7	0.079	5.65	102.5	2.1	0.36	0.1	0.00	0.24	0.06	21
	30 ISL	17.10	17.10	33.274	2*.169	375.0	0.113	5.65	102.5	2.0	0.36	0.0	0.00	0.23	0.07	30
1	31	17.10	17.09	33.274	2*.169	375.0	0.116	5.65	102.5	2.0	0.36	0.0	0.00	0.23	0.07	31
1	41	16.57	16.56	33.244	2*.269	365.7	0.153	5.84	104.8	2.0	0.36	0.0	0.00	0.34	0.16	41
	50 ISL	15.47	15.46	33.175	2*.465	3*7.3	0.185	6.17	108.3	2.1	0.37	0.0	0.00	0.39	0.24	50
1	52	15.16	15.15	33.158	2*.520	3*2.1	0.192	6.24	108.8	2.1	0.38	0.0	0.00	0.39	0.26	52
1	62	13.31	13.30	33.079	2*.8*6	311.1	0.225	6.33	106.2	2.6	0.42	0.2	0.01	0.37	0.34	62
1	72	12.16	12.15	33.032	25.033	293.*	0.255	6.27	102.7	2.9	0.46	0.3	0.06	0.27	0.24	72
	75 ISL	11.92	11.91	33.028	25.075	289.5	0.264	6.21	101.2	3.1	0.49	0.7	0.09	0.24	0.22	75
1	86	11.29	11.28	33.037	2s.198	278.0	0.295	5.97	96.0	4.0	0.61	2.6	0.16	0.16	0.18	86
	100 ISL	10.87	10.86	33.09*	25.317	266.9	0.333	5.73	91.3	5.7	0.75	5.5	0.03	0.12	0.15	100
1	101	10.85	10.84	33.099	25.32*	266.2	0.336	5.71	90.9	5.9	0.76	5.7	0.02	0.12	0.15	101
1	121	10.25	10.24	33.207	25.513	248.6	0.388	5.27	82.9	10.2	1.07	11.0	0.01	0.07	0.09	122
	125 ISL	10.11	10.10	33.232	25.556	244. 6	0.397	5.19	81.*	11.0	1.11	11.8	0.01	0.06	0.08	126
1	147	9.44	9.42	33.414	25.809	220.8	0.449	4.63	71.6	16.*	1.36	16.4	0.00	0.02	0.04	148
	150 ISL	9.41	9.39	33.454	25.845	217.*	0.455	4.46	69.0	17.6	1.42	17.3	0.00	0.02	0.04	151
1	177	9.23	9.21	33.793	26.1*0	190.0	0.510	3.17	48.9	27.0	1.87	24.3	0.00	0.00	0.03	178
	200 ISL	8.66	8.64	33.925	26.333	171.9	0.552	3.46	52.8	29.5	1.79	23.9	0.00	0.00	0.02	201
1	207	8.46	8.44	33.9*6	26.3 80	167.5	0.56*	3.63	55.1	29.9	1.77	23.8	0.00	0.00	0.02	208
1	236	7.86	7.84	33.982	26.499	156.5	0.611	3.62	54.2	3*.8	1.85	25.3	0.00			237
	250 ISL	7.60	7.58	33.98*	26.538	152.9	0.632	3.51	52.3	37.5	1.92	26.3	0.00			251
1	275	7.19	7.16	33.982	26.59*	1*7.7	0.670	3.19	47.0	42.9	2.07	28.5	0.00			277
	300 ISL	6.84	6.81	33.995	26.653	1*2.4	0.706	2.73	39.9	*9.2	2.26	31.0	0.00			90S
1	331	6.44	6.41	34*.015	26.722	136.1	0.7*9	2.15	31.2	57.1	2.49	34.0	0.00			333
1	3 89	5.73	5.70	34.0*3	26.834	125.6	0.825	1.49	21.2	69.6	2.78	38.0	0.00			3tl
	400 ISL	5.62	5.59	34.0*8	26.852	124.0	0.839	1.40	19.9	71.7	2.82	38.5	0.00			402
1	451	5.25	5.21	34.08*	26.92*	117.*	0.900	1.00	l*.l	80.*	2.97	40.3	0.00			454
	500 ISL	5.08	S.04	34.158	27.003	110.*	0.956	0.61	8.6	87.6	3.12	41.8	0.00			503
1	515	5.03	4.99	34.181	27.027	108.3	0.973	0.*9	6.9	89.8	3.16	42.2	0.00			518

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 39.0 N	123 4.6 W	14/11/89	1248 UTC	4105 M	340	15 KT			1018.7 MB	16.0 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	17.98	17.98	33.384	24.041	386.2	0.000	5.52	101.9	2.0	0.35	0.0	0.00	0.16	0.05	0
1	1		17.98	17.98	33.384	24.041	386.2	0.004	5.52	101.9	2.0	0.35	0.0	0.00	0.16	0.05	1
	10	ISL	17.98	17.98	33.382	24.039	386.6	0.039	5.53	102.1	2.0	0.34	0.0	0.00	0.16	0.04	10
1	11		17.98	17.98	33.381	24.039	386.7	0.043	5.53	102.1	2.0	0.34	0.0	0.00	0.16	0.04	11
	20	ISL	17.99	17.99	33.380	24.036	387.3	0.077	5.54	102.3	1.8	0.35	0.0	0.00	0.16	0.04	20
1	22		17.99	17.99	33.380	24.036	387.4	0.085	5.54	102.3	1.8	0.35	0.0	0.00	0.16	0.04	22
	30	ISL	18.01	18.00	33.378	24.030	388.2	0.116	5.53	102.1	1.8	0.35	0.0	0.00	0.16	0.05	30
1	32		18.01	18.00	33.377	24.029	388.4	0.124	5.53	102.1	1.8	0.35	0.0	0.00	0.16	0.05	32
1	A2		18.00	17.99	33.377	24.032	388.4	0.163	5.52	101.9	1.8	0.34	0.0	0.00	0.16	0.04	42
	50	ISL	18.00	17.99	33.377	24.033	388.7	0.194	5.52	101.9	1.8	0.34	0.0	0.00	0.16	0.05	50
1	52		18.00	17.99	33.377	24.033	388.7	0.202	5.52	101.9	1.8	0.34	0.0	0.00	0.16	0.05	52
1	62		17.98	17.97	33.376	24.037	388.7	0.240	5.52	101.9	1.7	0.34	0.0	0.00	0.16	0.05	62
1	72		14.98	14.97	33.251	24.631	332.0	0.276	6.23	108.3	2.0	0.37	0.0	0.00	0.31	0.23	72
	75	ISL	14.58	14.57	33.244	24.712	324.4	0.286	6.20	106.9	2.1	0.38	0.0	0.01	0.30	0.24	75
1	86		13.83	13.82	33.245	24.869	309.6	0.321	6.09	103.4	2.5	0.42	0.1	0.04	0.26	0.26	86
	100	ISL	12.70	12.69	33.281	25.123	285.6	0.363	5.75	95.4	3.8	0.60	2.6	0.09	0.20	0.20	100
1	101		12.63	12.62	33.285	25.140	284.1	0.366	5.72	94.7	3.9	0.61	2.8	0.09	0.20	0.19	101
1	121		11.61	11.59	33.400	25.422	257.5	0.420	5.18	84.0	7.4	0.87	8.3	0.01	0.09	0.10	121
	125	ISL	11.43	11.41	33.420	25.471	252.9	0.430	5.10	82.4	8.1	0.91	9.1	0.01	0.08	0.09	126
1	146		10.57	10.55	33.531	25.711	230.4	0.481	4.67	74.1	12.6	1.15	13.3	0.01	0.03	0.05	147
	150	ISL	10.39	10.37	33.559	25.764	225.5	0.490	4.54	71.8	13.9	1.22	14.4	0.01	0.03	0.04	151
1	176		9.38	9.36	33.743	26.076	196.1	0.545	3.75	58.0	22.3	1.62	21.0	0.00	0.01	0.02	177
	200	ISL	8.90	8.88	33.855	26.241	180.8	0.590	3.44	52.7	26.9	1.79	23.6	0.00	0.00	0.02	201
1	206		8.81	8.79	33.877	26.272	177.9	0.601	3.40	52.0	27.8	1.81	24.0	0.00	0.00	0.02	207
1	236		8.32	8.30	33.972	26.423	164.0	0.652	3.28	49.6	33.0	1.91	25.8	0.00			237
	250	ISL	8.13	8.10	33.992	26.467	159.9	0.675	3.20	48.2	35.1	1.96	26.4	0.00			251
1	276		7.81	7.78	34.011	26.529	154.3	0.716	3.01	45.0	39.2	2.07	27.7	0.00			277
	300	ISL	7.51	7.48	34.026	26.584	149.3	0.752	2.73	40.6	43.6	2.19	29.4	0.00			302
1	330		7.16	7.13	34.045	26.649	143.5	0.796	2.31	34.1	49.5	2.36	31.8	0.00			332
1	389		6.61	6.57	34.100	26.767	132.8	0.877	1.42	20.7	61.2	2.71	36.1	0.00			391
	400	ISL	6.51	6.47	34.110	26.789	130.9	0.892	1.30	18.9	63.1	2.76	36.7	0.00			402
1	454		6.05	6.01	34.154	26.883	122.3	0.960	0.84	12.1	71.7	2.96	39.2	0.00			457
	500	ISL	5.73	5.69	34.189	26.951	116.2	1.015	0.62	8.8	78.5	3.07	40.4	0.00			503
1	522		5.57	5.53	34.206	26.984	113.1	1.040	0.52	7.4	81.8	3.12	41.0	0.00			525

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 19.4 N	123 45.1 W	14/11/89	1813 UTC	4064 M	350	17 KT	020 05 05	1	1020.4 MB	17.0 C	14.5 C	7/8	ST

CAST	DEPTH M		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	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	18.42	18.42	33.454	23.986	391.4	0.000	5.49	102.2	2.2	0.35	0.0	0.00	0.15	0.04	0
1	1		18.42	18.42	33.454	23.986	391.4	0.004	5.49	102.2	2.2	0.35	0.0	0.00	0.15	0.04	1
	10	ISL	18.41	18.41	33.454	23.989	391.4	0.039	5.48	102.0	2.1	0.35	0.0	0.00	0.14	0.04	10
1	16		18.41	18.41	33.454	23.989	391.6	0.063	5.48	102.0	2.0	0.35	0.0	0.00	0.14	0.04	16
	20	ISL	18.41	18.41	33.454	23.989	391.7	0.078	5.50	102.4	2.0	0.35	0.0	0.00	0.14	0.04	20
	30	ISL	18.41	18.40	33.454	23.990	392.0	0.117	5.55	103.3	1.9	0.34	0.0	0.00	0.14	0.04	30
1	31		18.41	18.40													31
1	42		18.43	18.42	33.454	23.986	392.9	0.165	5.57	103.7	1.9	0.34	0.0	0.00	0.15	0.04	42
	50	ISL	18.42	18.41	33.453	23.988	393.0	0.196	5.50	102.4	2.1	0.34	0.0	0.00	0.15	0.04	50
1	53		18.42	18.41	33.453	23.988	393.1	0.208	5.47	101.8	2.1	0.47 U	0.0	0.00	0.15	0.04	53
1	63		18.44	18.43	33.453	23.983	393.9	0.247	5.49	102.3	1.9	0.35	0.0	0.00	0.15	0.04	63
1	73		16.50	16.49	33.441	24.438	350.7	0.284	6.09	109.2	1.8	0.29	0.0	0.00	0.26	0.10	73
	75	ISL	16.22	16.21	33.459	24.516	343.3	0.291	6.08	108.5	1.8	0.29	0.0	0.00	0.26	0.12	75
1	82		15.41	15.40	33.517	24.743	321.8	0.315	6.03	105.9	2.0	0.29	0.0	0.00	0.27	0.17	82
1	98		13.85	13.84	33.399	24.985	299.0	0.364	5.97	101.5	2.7	0.41	0.0	0.03	0.25	0.20	98
	100	ISL	13.67	13.66	33.386	25.011	296.5	0.370	5.94	100.6	2.9	0.44	0.2	0.06	0.25	0.20	100
1	113		12.63	12.61	33.329	25.175	281.1	0.408	5.69	94.3	4.2	0.62	2.2	0.19	0.22	0.19	113
	125	ISL	12.05	12.03	33.339	25.293	270.0	0.441	5.48	89.7	5.6	0.76	4.8	0.07	0.16	0.16	126
1	128		11.93	11.91	33.347	25.322	267.3	0.449	5.43	88.6	6.0	0.79	5.5	0.03	0.14	0.15	129
	150	ISL	10.91	10.89	33.415	25.561	244.9	0.505	4.93	78.8	10.3	1.06	10.4	0.01	0.07	0.10	151
1	154		10.74	10.72	33.434	25.606	240.7	0.515	4.84	77.0	11.2	1.11	11.3	0.01	0.06	0.09	155
1	179		9.92	9.90	33.624	25.895	213.5	0.572	4.37	68.4	16.8	1.38	16.1	0.00	0.02	0.03	180
	200	ISL	9.22	9.20	33.777	26.129	191.5	0.614	3.95	60.9	22.5	1.60	20.3	0.00	0.01	0.02	201
1	210		8.92	8.90	33.842	26.228	182.2	0.633	3.77	57.8	25.2	1.69	22.0	0.00	0.00	0.01	211
1	240		8.38	8.36	33.969	26.411	165.2	0.685	3.39	51.4	32.0	1.87	25.0	0.00			241
	250	ISL	8.22	8.19	33.987	26.450	161.6	0.701	3.32	50.1	33.7	1.91	25.7	0.00			251
1	280		7.76	7.73	34.008	26.534	153.9	0.749	3.12	46.6	38.8	2.03	27.5	0.00			281
	300	ISL	7.42	7.39	34.015	26.589	148.9	0.779	2.89	42.9	43.3	2.14	29.2	0.00			302
1	336		6.83	6.80	34.022	26.676	140.8	0.831	2.42	35.4	51.9	2.36	32.4	0.00			338
1	396		6.06	6.03	34.052	26.800	129.2	0.912	1.63	23.4	65.6	2.70	37.3	0.00			398
	400	ISL	6.04	6.01	34.057	26.807	128.6	0.917	1.57	22.5	66.3	2.72	37.6	0.00			402
1	461		5.80	5.76	34.142	26.905	120.0	0.993	0.84	12.0	75.5	2.98	40.5	0.00			464
	500	ISL	5.63	5.59	34.188	26.962	115.0	1.039	0.63	9.0	80.6	3.07	41.4	0.00			503
1	531		5.49	5.45	34.224	27.008	110.9	1.074	0.47	6.7	84.6	3.14	42.1	0.00			534

RV NEH HORIZON CALCOFI CRUISE 8911 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	MIND	SPEED	HAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 28.9 N	117 46.4 W	12/11/89	1332 UTC	62 M	010	04 KT			1014.4 MB	L5.8 C	14.8 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	17.00	17.00	33.558	24.409	351.1	0.000	5.86	106.2	3.3	0.32	0.0	0.02	0.52	0.20	0
1	10	16.59	16.59	33.228	24.482	344.4	0.035	5.99	107.7	3.6	0.35	0.0	0.03	0.55	0.23	10
	20 ISL	15.83	15.83	33.488	24.625	331.1	0.069	5.97	105.7	4.1	0.39	0.1	0.02	0.70	0.30	20
1	21	15.75	15.75	33.484	24.639	329.7	0.072	5.97	105.6	4.2	0.40	0.1	0.02	0.71	0.31	21
	30 ISL	15.30	15.30	33.453	24.716	322.7	0.101	5.93	103.9	4.8	0.46	0.3	0.05	0.67	0.30	30
1	31	15.24	15.24	33.450	24.727	321.8	0.104	5.93	103.8	4.9	0.47	0.3	0.06	0.66	0.30	31
1	41	14.12	14.11	33.424	24.946	301.0	0.136	5.56	95.1	6.7	0.62	1.6	0.16	0.45	0.32	41
	50 ISL	13.51	13.50	33.394	25.049	291.5	0.162	5.66	95.6	6.2	0.60	1.6	0.19	0.62	0.37	50
1	52	13.37	13.36	33.387	25.072	289.4	0.168	5.68	95.6	6.1	0.60	1.6	0.20	0.66	0.38	52

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 25.4 N	17 54.1 W	12/11/89	1107 UTC	611 M	0 80	03 KT			1014.3 MB	17.1 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	18.35	18.35	33.657	24.159	374.9	0.000	5.62	104.6	2.0	0.31	0.1	0.00	0.27	0.06	0
1	1	18.35	18.35	33.657	24.159	374.9	0.004	5.62	104.6	2.0	0.31	0.1	0.00	0.27	0.06	1
	10 ISL	17.64	17.64	33.583	24.276	364.1	0.037	5.80	106.5	2.3	0.32	0.1	0.00	0.24	0.06	10
1	11	17.51	17.51	33.571	24.298	362.0	0.041	5.83	106.8	2.3	0.32	0.1	0.00	0.24	0.06	11
	20 ISL	16.51	16.51	33.491	24.472	345.7	0.072	5.98	107.3	2.6	0.35	0.1	0.00	0.29	0.12	20
1	22	16.24	16.24	33.471	24.519	341.3	0.079	6.01	107.3	2.7	0.36	0.1	0.00	0.31	0.14	22
	30 ISL	14.80	14.80	33.375	24.764	318.1	0.106	6.19	107.3	3.0	0.40	0.1	0.00	0.40	0.19	30
1	32	14.44	14.44	33.357	24.827	312.2	0.112	6.21	106.9	3.1	0.42	0.1	0.00	0.42	0.20	32
1	42	13.13	13.12	33.360	25.099	286.5	0.142	5.87	98.3	4.4	0.55	0.8	0.09	1.11	0.55	42
	50 ISL	12.48	12.47	33.392	25.251	272.2	0.164	5.37	88.7	6.4	0.78	5.2	0.08	0.63	0.44	50
1	52	12.35	12.34	33.402	25.284	269.1	0.170	5.24	86.4	7.0	0.84	6.5	0.08	0.46	0.39	52
1	62	11.75	11.74	33.462	25.443	254.1	0.196	4.81	78.3	9.8	1.05	10.3	0.02	0.24	0.29	62
1	73	11.30	11.29	33.541	25.588	240.6	0.223	4.34	70.0	12.9	1.26	13.7	0.02	0.14	0.23	73
	75 ISL	11.25	11.24	33.554	25.607	238.8	0.228	4.27	68.8	13.4	1.29	14.1	0.02	0.13	0.22	75
1	87	11.03	11.02	33.629	25.705	229.8	0.256	3.88	62.2	16.2	1.43	16.2	0.01	0.07	0.16	87
	100 ISL	10.78	10.77	33.703	25.807	220.3	0.285	3.53	56.3	19.1	1.56	18.1	0.01	0.04	0.11	100
1	103	10.72	10.71	33.719	25.830	218.2	0.292	3.47	55.3	19.7	1.58	18.5	0.01	0.04	0.10	103
1	123	10.13	10.12	33.805	26.000	202.4	0.334	3.38	53.2	22.2	1.68	20.7	0.01	0.02	0.06	124
	125 ISL	10.09	10.08	33.816	26.015	201.0	0.338	3.35	52.7	22.6	1.69	20.9	0.01	0.02	0.06	126
1	149	9.77	9.75	33.938	26.165	187.3	0.385	2.93	45.8	27.0	1.88	23.4	0.01	0.01	0.05	150
	150 ISL	9.76	9.74	33.942	26.169	186.8	0.386	2.92	45.6	27.2	1.89	23.5	0.01	0.01	0.05	151
1	180	9.39	9.37	34.040	26.307	174.3	0.441	2.57	39.9	31.6	2.07	25.6	0.02	0.00	0.04	181
	200 ISL	9.30	9.28	34.102	26.371	168.7	0.475	2.28	35.3	34.5	2.18	26.9	0.01	0.01	0.04	201
1	211	9.25	9.23	34.131	26.402	166.0	0.493	2.12	32.8	36.0	2.24	27.6	0.01	0.01	0.04	212
1	241	8.94	8.91	34.174	26.485	158.5	0.542	1.83	28.1	39.4	2.35	29.1	0.01			242
	250 ISL	8.86	8.83	34.190	26.511	156.2	0.556	1.71	26.2	40.7	2.40	29.5	0.01			251
1	283	8.58	8.55	34.243	26.596	148.6	0.606	1.30	19.8	45.6	2.58	31.0	0.02			285
	300 ISL	8.46	8.43	34.257	26.626	146.1	0.631	1.17	17.8	47.5	2.64	31.6	0.02			302
1	339	8.17	8.14	34.275	26.685	141.1	0.687	0.95	14.4	51.5	2.75	32.9	0.01			341
1	399	7.63	7.59	34.303	26.787	132.1	0.769	0.62	9.3	59.1	2.92	34.8	0.01			402
	400 ISL	7.62	7.58	34.303	26.788	131.9	0.771	0.62	9.3	59.3	2.92	34.8	0.01			403
1	464	6.89	6.85	34.308	26.895	122.2	0.852	0.39	5.7	69.4	3.10	37.1	0.01			467
	500 ISL	6.54	6.49	34.317	26.949	117.3	0.895	0.31	4.5	74.7	3.14	38.1	0.01			503
1	530	6.24	6.19	34.326	26.996	113.0	0.930	0.24	3.5	79.1	3.18	39.0	0.01			534

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENCER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 15.1 M	118 14.5 W	12/11/89	07 00 UTC	372 M	160	04 KT			1014.4 MB	16.0 C	15.3 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	18.15	18.15	33.671	24.219	369.2	0.000	5.61	104.1	2.2	0.28	0.0	0.00	0.24	0.06	0
1	9	17.80	17.80	33.626	24.270	364.6	0.033	5.69	104.8	2.1	0.28	0.0	0.00	0.25	0.07	9
	10 ISL	17.75	17.75	33.620	24.278	363.9	0.037	5.70	104.9	2.1	0.28	0.0	0.00	0.26	0.08	10
	20 ISL	16.98	16.98	33.552	24.410	351.7	0.072	5.83	105.6	2.2	0.31	0.0	0.00	0.33	0.13	20
1	21	16.88	16.88	33.544	24.427	350.0	0.076	5.84	105.6	2.2	0.31	0.0	0.00	0.34	0.14	21
	30 ISL	15.73	15.73	33.472	24.635	330.4	0.107	5.87	103.7	2.9	0.38	0.0	0.03	1.04	0.41	30
1	31	15.57	15.57	33.464	24.665	327.7	0.110	5.87	103.4	3.0	0.39	0.0	0.03	1.10	0.44	31
1	41	13.68	13.67	33.384	25.006	295.3	0.141	5.63	95.4	4.8	0.61	3.3	0.22	0.65	0.33	41
	50 ISL	13.01	13.00	33.380	25.138	283.0	0.167	5.48	91.6	6.1	0.74	4.9	0.25	0.47	0.31	50
1	51	12.96	12.95	33.380	25.148	282.0	0.170	5.46	91.1	6.2	0.75	5.1	0.25	0.46	0.31	51
1	62	11.75	11.74	33.367	25.370	261.1	0.200	5.14	83.6	8.4	0.94	8.6	0.05	0.34	0.28	62
1	72	11.16	11.15	33.397	25.501	248.8	0.225	4.86	78.1	10.7	1.11	11.6	0.02	0.20	0.23	72
	75 ISL	11.14	11.13	33.444	25.541	245.1	0.233	4.70	75.5	11.5	1.16	12.4	0.02	0.18	0.21	75
1	86	11.05	11.04	33.606	25.683	231.8	0.259	4.10	65.8	14.7	1.34	15.1	0.01	0.12	0.16	86
	100 ISL	10.67	10.66	33.699	25.823	218.8	0.290	3.72	59.2	18.2	1.51	17.8	0.01	0.07	0.11	100
1	102	10.60	10.59	33.708	25.843	217.0	0.295	3.68	58.5	18.7	1.53	18.2	0.01	0.07	0.10	102
1	122	10.06	10.05	33.833	26.033	199.2	0.336	3.27	51.4	23.3	1.73	21.5	0.01	0.02	0.05	123
	125 ISL	10.03	10.02	33.860	26.060	196.8	0.342	3.12	49.0	24.4	1.79	22.1	0.01	0.02	0.05	126
1	148	9.86	9.84	34.042	26.231	181.0	0.386	2.15	33.7	32.0	2.16	26.0	0.01	0.01	0.03	149
	150 ISL	9.81	9.79	34.047	26.243	179.9	0.389	2.16	33.8	32.1	2.16	26.0	0.01	0.01	0.03	151
1	179	9.15	9.13	34.082	26.379	167.4	0.440	2.52	38.9	33.3	2.09	26.5	0.00	0.01	0.03	180
	200 ISL	8.99	8.97	34.135	26.446	161.4	0.474	2.20	33.8	36.4	2.23	27.9	0.00	0.01	0.02	201
1	209	8.95	8.93	34.157	26.470	159.3	0.489	2.01	30.9	37.9	2.30	28.6	0.00	0.01	0.02	210
1	244	8.56	8.53	34.194	26.560	151.3	0.543	1.70	25.9	42.5	2.46	30.3	0.00			245
	250 ISL	8.53	8.50	34.199	26.569	150.5	0.552	1.65	25.1	43.0	2.48	30.5	0.00			251
1	280	8.42	8.39	34.224	26.606	147.5	0.597	1.43	21.7	45.3	2.55	31.3	0.00			282
	300 ISL	8.38	8.35	34.245	26.629	145.8	0.626	1.27	19.3	46.9	2.61	31.8	0.00			302
1	317	8.34	8.31	34.262	26.648	144.2	0.651	1.13	17.1	48.3	2.67	32.3	0.00			319

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 90 37

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
33 12.0 N	118 22.9 V	12/11/89	0409 UTC	1171 M	270	08 KT			1012 5 MB	15.6 C	14.9 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
1	0		18.31	18.31	33.680	24.186	372.3	0.000	5.60	104.2	1.9	0.33	0.1	0.01	0.22	0.07	0
1	10		18.19	18.19	33.665	24.205	370.9	0.037	5.63	104.5	2.0	0.31	0.1	0.01	0.25	0.07	10
	20	ISL	17.59	17.59	33.594	24.297	362.4	0.074	5.72	104.9	2.0	0.33	0.0	0.01	0.28	0.10	20
1	21		17.51	17.51	33.586	24.310	361.2	0.077	5.73	104.9	2.0	0.33	0.0	0.01	0.28	0.10	21
	30	ISL	16.74	16.74	33.537	24.455	347.7	0.109	5.86	105.7	2.2	0.36	0.0	0.00	0.48	0.26	30
1	31		16.61	16.61	33.527	24.477	345.6	0.113	5.88	105.8	2.2	0.36	0.0	0.00	0.51	0.28	31
1	Al		14.18	14.17	33.2 89	24.830	312.2	0.146	6.25	106.9	3.3	0.46	0.0	0.01	0.78	0.33	41
	50	ISL	12.79	12.78	33.300	25.119	2 84.7	0.173	5.71	94.9	5.3	0.68	3.6	0.14	0.77	0.51	50
1	51		12.68	12.67	33.308	25.147	282.1	0.175	5.63	93.4	5.5	0.71	4.1	0.15	0.77	0.53	51
1	62		12.21	12.20	33.369	25.285	269.2	0.206	5.26	86.4	7.2	0.87	7.0	0.06	0.56	0.48	62
1	72		11.32	11.31	33.512	25.561	243.1	0.231	4.46	71.9	12.1	1.21	12.8	0.02	0.18	0.21	72
	75	ISL	11.17	11.16	33.540	25.610	238.5	0.239	4.32	69.5	13.1	1.27	13.8	0.02	0.16	0.19	75
1	86		10.81	10.80	33.622	25.739	226.5	0.264	3.96	63.2	16.2	1.43	16.4	0.01	0.10	0.13	86
	100	ISL	10.41	10.40	33.752	25.910	210.5	0.295	3.42	54.2	20.8	1.65	19.9	0.01	0.05	0.09	100
1	102		10.36	10.35	33.770	25.933	208.4	0.299	3.34	52.9	21.4	1.68	20.3	0.01	0.04	0.09	102
1	122		10.06	10.05	33.908	26.092	193.6	0.339	2.75	43.3	26.5	1.91	23.3	0.01	0.02	0.06	123
	125	ISL	10.02	10.01	33.926	26.113	191.7	0.345	2.68	42.1	27.1	1.94	23.6	0.01	0.02	0.06	126
1	148		9.74	9.72	34.029	26.240	180.0	0.388	2.36	36.9	30.9	2.08	25.5	0.00	0.02	0.05	149
	150	ISL	9.70	9.68	34.034	26.251	179.1	0.391	2.36	36.9	31.1	2.08	25.6	0.00	0.02	0.05	151
1	179		9.18	9.16	34.077	26.370	168.2	0.442	2.43	37.5	33.3	2.12	26.4	0.00	0.03	0.05	180
	200	ISL	8.85	8.83	34.099	26.440	161.9	0.47 6	2.25	34.5	36.5	2.22	28.0	0.00			201
1	210		8.74	8.72	34.112	26.468	159.4	0.492	2.12	32.4	38.1	2.28	28.7	0.00			211
1	240		8.79	8.76	34.190	26.521	155.0	0.539	1.74	26.7	40.9	2.41	29.5	0.00			241
	250	ISL	8.77	8.74	34.206	26.537	153.7	0.555	1.63	25.0	41.9	2.45	29.8	0.00			251
1	2 82		8.61	8.58	34.240	26.589	149.3	0.603	1.32	20.1	45.3	2.56	30.9	0.00			2 84
	300	ISL	8.46	8.43	34.253	26.623	146.4	0.630	1.19	18.1	47.4	2.62	31.6	0.00			302
1	338		8.08	8.05	34.273	26.696	139.9	0.684	0.95	14.3	52.1	2.75	33.0	0.00			3 40
1	398		7.49	7.45	34.294	26.800	130.7	0.766	0.63	9.4	59.8	2.93	35.1	0.00			401
	400	ISL	7.48	7.44	34.295	26.802	130.5	0.768	0.62	9.2	60.0	2.93	35.2	0.00			403
1	463		7.04	7.00	34.306	26.873	124.4	0.849	0.45	6.6	66.0	3.03	36.9	0.00			466
	500	ISL	6.69	6.64	34.312	26.926	119.7	0.894	0.40	5.8	71.1	3.10	38.0	0.00			503
1	532		6.39	6.34	34.319	26.971	115.5	0.931	0.35	5.1	75.5	3.16	38.9	0.00			536

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 55.5 N	118 56.0 W	11/11/89	23 26 UTC	1695 M	280	10 KT	2 80 03 04	1	1011.9 MB	17.8 C	16.7 C	7/8 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	17.93	17.93	33.633	24.243	366.8	0.000	5.64	104.2	2.2	0.31	0.0	0.00	0.28	0.06	0
1	1		17.93	17.93	33.633	24.244	366.9	0.004	5.64	104.2	2.2	0.31	0.0	0.00	0.28	0.06	1
1	10		17.76	17.76	33.627	24.281	363.6	0.037	5.67	104.4	2.2	0.30	0.0	0.00	0.29	0.08	10
1	20		15.95	15.95	33.473	24.586	334.8	0.071	5.98	106.1	2.8	0.36	0.0	0.00	0.57	0.22	20
	30	ISL	14.73	14.73	33.385	24.787	315.9	0.104	5.94	102.8	3.5	0.46	0.8	0.07	1.16	0.50	30
1	31		14.62	14.62	33.378	24.805	314.2	0.107	5.94	102.6	3.6	0.47	1.0	0.08	1.20	0.52	31
1	41		13.08	13.07	33.323	25.080	288.3	0.137	5.68	95.0	5.2	0.67	3.8	0.28	0.64	0.39	41
	50	ISL	12.31	12.30	33.355	25.255	271.8	0.162	5.36	88.2	7.1	0.82	6.5	0.12	0.41	0.32	50
1	51		12.25	12.24	33.361	25.271	270.3	0.165	5.32	87.5	7.3	0.84	6.8	0.10	0.39	0.31	51
1	61		11.59	11.58	33.446	25.460	252.4	0.191	4.79	77.7	10.3	1.06	10.7	0.03	0.23	0.25	61
1	71		11.33	11.32	33.489	25.542	244.9	0.216	4.56	73.6	11.9	1.18	12.4	0.02	0.16	0.24	71
	75	ISL	11.19	11.18	33.521	25.592	240.2	0.226	4.42	71.1	13.0	1.24	13.4	0.02	0.14	0.21	75
1	85		10.83	10.82	33.608	25.724	227.9	0.249	4.05	64.7	15.9	1.38	15.9	0.01	0.09	0.14	85
1	100		10.36	10.35	33.693	25.873	214.0	0.2 82	3.70	58.5	19.4	1.54	18.7	0.01	0.04	0.11	100
1	120		9.84	9.83	33.849	26.083	194.4	0.323	3.14	49.1	25.1	1.79	22.4	0.01	0.01	0.07	121
	125	ISL	9.73	9.72	33.888	26.132	189.9	0.333	3.03	47.3	26.4	1.84	23.1	0.01	0.01	0.07	126
1	146		9.37	9.35	34.024	26.297	174.5	0.371	2.65	41.1	31.0	2.01	25.5	0.01	0.01	0.06	147
	150	ISL	9.32	9.30	34.038	26.317	172.8	0.378	2.61	40.4	31.6	2.03	25.8	0.01	0.01	0.06	151
1	177		9.05	9.03	34.095	26.405	164.8	0.424	2.36	36.3	35.3	2.15	27.0	0.01	0.01	0.06	178
	200	ISL	8.86	8.84	34.138	26.469	159.2	0.461	2.08	31.9	38.3	2.26	28.3	0.01	0.01	0.05	201
1	208		8.79	8.77	34.150	26.490	157.3	0.47 4	1.98	30.3	39.4	2.30	28.7	0.01	0.01	0.05	209
1	23 8		8.41	8.39	34.179	26.571	150.0	0.520	1.75	26.6	43.8	2.42	30.2	0.01			23 9
	250	ISL	8.31	8.28	34.186	26.592	148.2	0.538	1.66	25.2	45.1	2.46	30.7	0.01			251
1	279		8.11	8.08	34.203	26.636	144.5	0.580	1.43	21.6	47.9	2.55	31.8	0.01			281
	300	ISL	7.99	7.96	34.228	26.674	141.3	0.610	1.21	18.2	50.6	2.64	32.6	0.01			302
1	336		7.79	7.76	34.273	26.739	135.6	0.660	0.84	12.6	55.4	2.79	33.9	0.00			338
1	396		7.32	7.28	34.310	26.836	127.1	0.739	0.52	7.7	62.5	2.96	35.8	0.00			399
	400	ISL	7.29	7.25	34.311	26.841	126.6	0.7 44	0.51	7.6	62.9	2.97	35.9	0.00			403
1	461		6.83	6.79	34.317	26.910	120.7	0.819	0.39	5.7	69.2	3.05	37.5	0.00			464
	500	ISL	6.50	6.45	34.323	26.959	116.3	0.86 5	0.34	4.9	73.9	3.11	38.5	0.00			503
1	529		6.26	6.21	34.329	26.995	113.0	0.899	0.30	4.3	77.4	3.16	39.3	0.00			533

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 39.4 N	119 28.8 W	11/11/89	1615 UTC	1312 M	330	09 KT	290 04 06	1	1013.6 MB	15.5 C	14.9 C	7/8 CU

CAST	DEPTH M		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	SVA	DTN HT	OXYGEN ML/L	OXT 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	18.35	18.35	33.738	24.221	369.0	0.000	5.57	103.8	2.1	0.31	0.1	0.00	0.26	0.07	0
1	1		18.35	18.35	33.738	24.221	369.0	0.004	5.57	103.8	2.1	0.31	0.1	0.00	0.26	0.07	1
	10	ISL	18.34	18.34	33.737	24.223	369.1	0.037	5.56	103.6	1.9	0.30	0.1	0.00	0.25	0.07	10
1	11		18.34	18.34	33.737	24.223	369.2	0.041	5.56	103.6	1.9	0.30	0.1	0.00	0.25	0.07	11
	20	ISL	18.31	18.31	33.735	24.229	368.9	0.074	5.57	103.7	1.9	0.30	0.1	0.00	0.26	0.07	20
1	22		18.30	18.30	33.734	24.231	368.8	0.081	5.57	103.7	1.9	0.30	0.1	0.00	0.26	0.07	22
	30	ISL	17.40	17.39	33.649	24.385	354.4	0.110	5.94	108.6	2.3	0.34	0.1	0.00	0.41	0.14	30
1	33		16.81	16.80	33.602	24.488	344.6	0.121	6.07	109.7	2.5	0.36	0.1	0.00	0.47	0.17	33
1	42		13.84	13.83	33.453	25.027	293.4	0.149	6.01	102.2	4.8	0.56	1.4	0.05	1.53	0.72	42
	50	ISL	12.19	12.18	33.380	25.297	267.8	0.172	5.55	91.1	7.2	0.84	6.1	0.08	0.97	0.55	50
1	52		11.93	11.92	33.375	25.342	263.5	0.177	5.40	88.2	7.9	0.91	7.5	0.08	0.75	0.47	52
1	62		11.50	11.49	33.518	25.533	245.6	0.203	4.72	76.4	11.8	1.17	12.0	0.04	0.43	0.34	62
1	72		10.98	10.97	33.658	25.736	226.5	0.226	3.94	63.2	17.3	1.48	17.0	0.04	0.24	0.28	72
	75	ISL	10.86	10.85	33.677	25.772	223.1	0.233	3.84	61.4	18.2	1.52	17.7	0.04	0.21	0.27	75
1	87		10.44	10.43	33.710	25.872	213.8	0.259	3.65	57.8	20.4	1.60	19.2	0.04	0.12	0.20	87
	100	ISL	9.89	9.88	33.735	25.985	203.3	0.286	3.46	54.2	22.7	1.71	21.1	0.04	0.04	0.09	100
1	102		9.81	9.80	33.74	26.002	201.7	0.290	3.43	53.6	23.1	1.73	21.4	0.04	0.03	0.07	102
1	122		9.33	9.32	33.887	26.196	183.6	0.329	3.02	46.7	27.9	1.91	24.5	0.01	0.01	0.05	123
	125	ISL	9.28	9.27	33.905	26.218	181.5	0.334	2.96	45.8	28.6	1.93	24.8	0.01	0.01	0.05	126
1	148		8.99	8.97	34.011	26.348	169.6	0.375	2.61	40.1	32.9	2.07	26.7	0.01	0.00	0.03	149
	150	ISL	8.96	8.94	34.016	26.357	168.8	0.378	2.60	39.9	33.2	2.08	26.8	0.01	0.00	0.03	151
1	17 8		8.65	8.63	34.064	26.443	161.1	0.424	2.44	37.2	36.8	2.17	28.0	0.00	0.00	0.03	179
	200	ISL	8.47	8.45	34.120	26.515	154.6	0.459	2.07	31.5	40.4	2.32	29.6	0.00	0.00	0.04	201
1	209		8.41	8.39	34.141	26.541	152.3	0.473	1.91	29.0	41.8	2.38	30.2	0.00	0.00	0.05	210
1	23 8		8.25	8.23	34.174	26.592	148.0	0.516	1.64	24.8	45.0	2.48	31.2	0.00			239
	250	ISL	8.18	8.15	34.184	26.610	146.4	0.534	1.55	23.4	46.3	2.52	31.6	0.00			251
1	279		8.00	7.97	34.205	26.654	142.7	0.576	1.33	20.0	49.5	2.62	32.5	0.00			281
	300	ISL	7.82	7.79	34.222	26.694	139.2	0.605	1.16	17.4	52.3	2.69	33.3	0.00			302
1	334		7.54	7.51	34.249	26.756	133.7	0.652	0.91	13.6	56.7	2.80	34.5	0.00			336
1	393		7.28	7.24	34.292	26.828	127.8	0.729	0.60	8.9	62.7	2.94	35.9	0.00			396
	400	ISL	7.21	7.17	34.289	26.835	127.1	0.738	0.59	8.7	63.5	2.95	36.2	0.00			403
1	457		6.58	6.54	34.268	26.905	120.8	0.809	0.53	7.7	70.1	3.03	38.3	0.00			460
	500	ISL	6.25	6.21	34.295	26.970	115.0	0.859	0.40	5.8	75.7	3.11	39.5	0.00			563
1	524		6.06	6.01	34.311	27.007	111.6	0.887	0.32	4.6	78.9	3.16	40.1	0.00			528

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 25.6 N	119 57.3 W	11/11/89	1129 UTC	898 M	290	15 KT			1013.2 MB	15.5 C	15.1 C	

CAST	DEPTH M		TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OXYGEN ML/L	OXT 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		16.52	16.52	33.434	24.425	349.5	0.000	5.77	103.6	2.1	0.35	0.0	0.00	0.22	0.06	0
	10	ISL	16.51	16.51	33.428	24.423	350.0	0.035	5.75	103.2	2.0	0.33	0.0	0.00	0.22	0.06	10
1	11		16.51	16.51	33.427	24.423	350.1	0.038	5.75	103.2	2.0	0.33	0.0	0.00	0.22	0.06	11
	20	ISL	16.26	16.26	33.428	24.481	344.8	0.070	5.83	104.1	2.0	0.33	0.0	0.00	0.27	0.10	20
1	22		16.20	16.20	33.428	24.495	343.6	0.077	5.85	104.3	2.0	0.33	0.0	0.00	0.28	0.11	22
	30	ISL	15.17	15.17	33.430	24.727	321.7	0.103	5.87	102.5	2.5	0.42	0.6	0.10	0.68	0.38	30
1	32		14.67	14.87	33.422	24.785	316.1	0.110	5.87	101.9	2.6	0.44	0.7	0.13	0.77	0.44	32
1	42		13.73	13.72	33.231	24.878	307.6	0.141	6.04	102.3	2.8	0.47	0.8	0.15	0.66	0.45	42
	50	ISL	12.03	12.02	33.146	25.145	282.2	0.164	5.78	94.5	4.9	0.71	4.6	0.08	0.35	0.29	50
1	52		11.63	11.62	33.142	25.217	275.4	0.170	5.69	92.2	5.6	0.78	5.8	0.06	0.27	0.25	52
1	63		10.96	10.95	33.228	25.405	257.7	0.199	5.24	83.7	8.9	1.02	10.0	0.02	0.16	0.20	63
1	73		10.59	10.58	33.323	25.544	244.7	0.224	4.98	79.0	11.5	1.17	12.6	0.02	0.13	0.16	73
	75	XSL	10.55	10.54	33.367	25.585	240.8	0.229	4.81	76.2	12.6	1.23	13.6	0.02	0.12	0.15	75
1	88		10.29	10.28	33.644	25.846	216.3	0.259	3.68	58.1	19.7	1.62	19.8	0.01	0.05	0.08	88
	100	ISL	9.83	9.82	33.716	25.980	203.7	0.284	3.46	54.1	23.0	1.75	22.1	0.01	0.02	0.05	100
1	103		9.71	9.70	33.723	26.006	201.3	0.290	3.40	53.0	23.6	1.76	22.4	0.01	0.02	0.05	103
1	124		9.27	9.26	33.849	26.176	185.5	0.331	3.23	49.9	26.8	1.82	23.6	0.01	0.01	0.04	125
	125	ISL	9.25	9.24	33.855	26.184	184.8	0.333	3.22	49.7	27.0	1.82	23.7	0.01	0.01	0.04	126
1	150		8.87	8.85	33.966	26.332	171.2	0.377	2.94	45.1	31.2	1.94	25.6	0.00	0.01	0.04	151
1	181		8.48	8.46	34.029	26.442	161.2	0.429	2.77	42.1	35.3	2.06	27.1	0.00	0.01	0.04	182
	200	ISL	8.27	8.25	34.066	26.503	155.7	0.459	2.52	38.1	38.5	2.16	28.3	0.00	0.01	0.04	201
1	212		8.14	8.12	34.084	26.537	152.6	0.477	2.35	35.5	40.7	2.22	29.1	0.00	0.01	0.04	213
1	242		7.74	7.72	34.099	26.608	146.2	0.522	2.08	31.1	46.1	2.36	30.9	0.00			243
	250	ISL	7.67	7.65	34.103	26.621	145.1	0.534	2.00	29.8	47.2	2.39	31.3	0.00			251
1	283		7.45	7.42	34.124	26.670	140.9	0.581	1.65	24.5	51.4	2.53	33.0	0.00			285
	300	ISL	7.31	7.28	34.141	26.703	138.0	0.605	1.46	21.6	54.3	2.61	33.9	0.00			302
1	339		7.01	6.98	34.184	26.779	131.2	0.657	1.06	15.6	60.8	2.78	35.7	0.00			341
1	398		6.74	6.70	34.243	26.863	124.0	0.732	0.67	9.8	67.1	2.94	37.1	0.00			401
	400	ISL	6.72	6.68	34.244	26.866	123.7	0.735	0.66	9.6	67.4	2.95	37.2	0.00			403
1	462		6.09	6.05	34.260	26.962	115.0	0.809	0.42	6.0	76.5	3.11	39.6	0.00			465
	500	ISL	5.92	5.88	34.295	27.011	110.7	0.852	0.34	4.9	80.5	3.16	40.3	0.00			503
1	528		5.80	5.75	34.321	27.047	107.6	0.882	0.28	4.0	83.5	3.20	40.8	0.00			532

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 90 70

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT TTPE
32 5.2 N	120 38.1 W	11/11/89	0552 UTC	3813 M	300	11 KT			1013.4 MB	17.0 C	16.4 C	

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OXTGEN ML/L	OXT 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	17.45	17.45	33.417	24.194	371.5	0.000	5.59	102.2	1.9	0.36	0.0	0.00	0.19	0.06	0
	10 ISL	17.47	17.47	33.417	24.189	372.3	0.037	5.60	102.4	1.9	0.35	0.0	0.00	0.18	0.05	10
1	11	17.47	17.47	33.417	24.190	372.3	0.041	5.60	102.4	1.9	0.35	0.0	0.00	0.18	0.05	11
	20 ISL	17.45	17.45	33.414	24.192	372.4	0.074	5.60	102.3	1.8	0.35	0.0	0.00	0.18	0.07	20
1	21	17.45	17.45	33.414	24.192	372.4	0.078	5.60	102.3	1.8	0.35	0.0	0.00	0.18	0.07	21
1	30	17.48	17.47	33.420	24.190	372.9	0.112	5.60	102.4	1.7	0.36	0.0	0.00	0.20	0.08	30
1	41	17.45	17.44	33.422	24.199	372.4	0.153	5.60	102.3	1.6	0.34	0.0	0.00	0.21	0.07	41
	50 ISL	16.11	16.10	33.356	24.461	347.7	0.185	5.93	105.5	1.6	0.37	0.0	0.00	0.31	0.18	50
1	51	15.92	15.91	33.347	24.497	344.3	0.189	5.97	105.8	1.6	0.38	0.0	0.00	0.32	0.20	51
1	61	14.08	14.07	33.232	24.807	314.9	0.222	6.11	104.3	2.1	0.43	0.1	0.03	0.44	0.34	61
1	71	12.41	12.40	33.176	25.097	287.3	0.252	5.85	96.4	3.6	0.58	2.1	0.24	0.31	0.28	71
	75 ISL	12.05	12.04	33.173	25.163	281.1	0.263	5.76	94.2	4.2	0.64	3.2	0.21	0.27	0.27	75
1	86	11.47	11.46	33.202	25.293	268.9	0.293	5.49	88.7	6.2	0.81	6.5	0.04	0.19	0.23	86
	100 ISL	10.98	10.97	33.318	25.472	252.2	0.330	5.10	81.6	9.2	1.02	10.1	0.02	0.10	0.15	100
1	101	10.95	10.94	33.328	25.485	251.0	0.332	5.07	81.0	9.4	1.03	10.3	0.02	0.10	0.14	101
1	120	10.40	10.39	33.478	25.698	231.0	0.378	4.52	71.5	14.1	1.28	14.7	0.01	0.05	0.08	121
	125 ISL	10.26	10.25	33.518	25.754	225.8	0.389	4.37	68.9	15.4	1.34	15.8	0.01	0.04	0.07	126
1	147	9.67	9.65	33.687	25.985	204.2	0.437	3.80	59.2	20.9	1.59	20.0	0.01	0.02	0.04	148
	150 ISL	9.60	9.58	33.707	26.012	201.7	0.443	3.76	58.5	21.5	1.61	20.4	0.01	0.02	0.04	151
1	178	9.05	9.03	33.868	26.227	181.7	0.496	3.40	52.3	27.0	1.79	23.3	0.01	0.01	0.02	179
	200 ISL	8.73	8.71	33.982	26.367	168.8	0.535	3.00	45.8	32.1	1.96	25.7	0.00	0.00	0.02	201
1	209	8.61	8.59	34.019	26.415	164.3	0.550	2.83	43.1	34.2	2.03	26.6	0.00	0.00	0.02	210
1	23 9	8.17	8.15	34.076	26.527	154.1	0.598	2.35	35.5	40.8	2.23	29.2	0.00			240
	250 ISL	8.18	8.15	34.118	26.558	151.3	0.615	2.05	31.0	42.7	2.33	30.0	0.00			251
1	2 80	8.21	8.18	34.215	26.630	145.1	0.659	1.32	20.0	47.5	2.58	31.8	0.00			2 82
	300 ISL	7.92	7.89	34.209	26.669	141.6	0.688	1.32	19.8	50.5	2.64	32.8	0.00			302
1	336	7.22	7.19	34.158	26.730	136.0	0.738	1.32	19.5	56.1	2.69	34.4	0.00			338
1	394	6.26	6.23	34.116	26.826	127.0	0.814	1.16	16.8	66.6	2.83	37.3	0.00			396
	400 ISL	6.20	6.16	34.117	26.834	126.2	0.822	1.12	16.2	67.6	2.85	37.6	0.00			402
1	457	5.86	5.82	34.168	26.918	118.8	0.891	0.72	10.3	75.6	3.02	39.6	0.00			460
	500 ISL	5.90	5.86	34.247	26.976	114.0	0.941	0.48	6.9	78.6	3.12	40.0	0.00			503
1	522	5.92	5.87	34.287	27.005	111.6	0.966	0.36	5.2	80.2	3.17	40.2	0.00			525

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 90 80

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TTPE
31 45.6 N	121 18.4 W	11/11/89	0035 UTC	4048 M	340	13 KT	330 05 05	1	1013.2 MB	18.4 C	17.3 C	2/8	ST

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN HT	OXTGEN ML/L	OXT 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	18.23	18.23	33.405	23.995	390.5	0.000	5.53	102.6	2.7	0.37	0.0	0.00	0.14	0.04	0
	10 ISL	18.14	18.14	33.404	24.017	388.7	0.039	5.54	102.6	2.6	0.36	0.0	0.00	0.14	0.04	10
1	15	18.10	18.10	33.403	24.027	388.0	0.058	5.55	102.7	2.6	0.36	0.0	0.00	0.14	0.04	15
	20 ISL	18.10	18.10	33.403	24.027	388.2	0.078	5.55	102.7	2.6	0.36	0.0	0.00	0.14	0.05	20
	30 ISL	18.09	18.08	33.403	24.030	388.3	0.117	5.55	102.7	2.5	0.35	0.0	0.00	0.18	0.06	30
1	31	18.09	18.08	33.403	24.030	388.3	0.120	5.55	102.7	2.5	0.35	0.0	0.00	0.18	0.06	31
1	41	17.23	17.22	33.373	24.214	371.0	0.158	5.88	107.0	2.2	0.35	0.0	0.00	0.26	0.12	41
	50 ISL	15.17	15.16	33.226	24.570	337.2	0.190	6.25	109.0	2.5	0.37	0.0	0.00	0.31	0.20	50
1	51	14.92	14.91	33.209	24.611	333.3	0.194	6.29	109.2	2.5	0.37	0.0	0.00	0.32	0.21	51
1	61	13.35	13.34	33.077	24.836	312.0	0.226	6.39	107.3	2.7	0.43	0.0	0.00	0.45	0.30	61
1	71	12.02	12.01	33.048	25.072	289.7	0.256	6.15	100.4	3.9	0.58	1.8	0.23	0.43	0.36	71
	75 ISL	11.83	11.82	33.123	25.166	280.8	0.267	5.88	95.7	5.0	0.69	3.7	0.17	0.38	0.33	75
1	81	11.70	11.69	33.252	25.290	269.2	0.284	5.46	88.7	6.9	0.85	6.8	0.03	0.29	0.27	81
1	96	11.24	11.23	33.351	25.451	254.1	0.323	5.06	81.4	9.6	1.04	10.4	0.02	0.16	0.22	96
	100 ISL	11.11	11.10	33.369	25.489	250.6	0.333	5.03	80.7	9.7	1.05	10.5	0.02	0.14	0.20	100
1	112	10.69	10.68	33.444	25.622	238.2	0.363	4.92	78.3	11.1	1.09	11.7	0.01	0.09	0.13	112
	125 ISL	10.18	10.17	33.615	25.843	217.3	0.392	3.98	62.7	17.9	1.50	18.1	0.01	0.05	0.09	126
1	127	10.10	10.09	33.642	25.878	214.1	0.397	3.83	60.2	19.0	1.57	19.2	0.01	0.05	0.08	128
	150 ISL	9.57	9.55	33.782	26.076	195.7	0.444	3.44	53.5	24.3	1.74	22.0	0.00	0.01	0.05	151
1	153	9.51	9.49	33.791	26.093	194.1	0.450	3.39	52.6	24.6	1.76	22.4	0.00	0.01	0.05	154
1	179	8.79	8.77	33.878	26.276	177.0	0.498	3.67	56.1	27.0	1.73	22.9	0.00	0.01	0.04	180
	200 ISL	8.40	8.38	33.946	26.390	166.5	0.534	3.61	54.7	30.1	1.78	23.9	0.00	0.00	0.03	201
1	210	8.24	8.22	33.973	26.435	162.3	0.550	3.58	54.1	32.0	1.83	24.6	0.00	0.00	0.03	211
1	241	7.70	7.68	34.007	26.542	152.5	0.599	3.09	46.1	39.5	2.04	27.8	0.00			242
	250 ISL	7.59	7.57	34.017	26.565	150.3	0.613	2.90	43.2	41.6	2.12	28.7	0.00			251
1	2 82	7.30	7.27	34.051	26.634	144.3	0.660	2.26	33.4	48.4	2.37	31.6	0.00			284
	300 ISL	7.19	7.16	34.069	26.663	141.7	0.686	2.01	29.7	51.2	2.46	32.7	0.00			302
1	339	6.97	6.94	34.104	26.722	136.6	0.740	1.59	23.3	56.5	2.62	34.6	0.00			341
1	399	6.55	6.51	34.155	26.819	128.0	0.819	1.02	14.8	65.3	2.87	37.1	0.00			401
	400 ISL	6.54	6.50	34.155	26.820	127.9	0.820	1.01	14.7	65.5	2.87	37.1	0.00			402
1	464	5.88	5.84	34.186	26.930	117.8	0.899	0.69	9.9	76.4	3.05	39.7	0.00			467
	500 ISL	5.72	5.68	34.226	26.981	113.3	0.941	0.53	7.6	80.6	3.13	40.5	0.00			503
1	531	5.58	5.53	34.261	27.026	109.3	0.975	0.39	5.5	84.3	3.19	41.1	0.00			535

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	HET	CLOUD AMT TYPE
31 25.6 N	121 59.2 V	10/11/89	1800 UTC	4628 M	340	09 KT 3 40 04 05		0	1016.7 MB	19.8 C	18.8 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	18.13	18.13	33.484	24.081	3 82.4	0.000	5.52	102.2	2.1	0.41	0.1	0.00	0.13	0.04	0
	10 ISL	18.11	18.11	33.485	24.087	3 82.1	0.038	5.52	102.2	2.1	0.38	0.1	0.00	0.14	0.04	10
1	16	18.09	18.09	33.485	24.092	381.9	0.061	5.52	102.2	2.1	0.36	0.1	0.00	0.14	0.04	16
	20 ISL	18.09	18.09	33.485	24.092	382.0	0.076	5.52	102.2	2.1	0.36	0.1	0.00	0.14	0.04	20
	30 ISL	18.07	18.06	33.486	24.098	381.7	0.115	5.53	102.3	2.1	0.36	0.1	0.00	0.14	0.05	30
1	32	18.07	18.06	33.486	24.098	381.8	0.122	5.53	102.3	2.1	0.36	0.1	0.00	0.14	0.05	32
1	42	17.94	17.93	33.479	24.125	379.6	0.160	5.57	102.8	2.0	0.36	0.1	0.00	0.18	0.07	42
	50 ISL.	16.60	16.59	33.414	24. 3,93	354.2	0.190	5.95	106.9	3.2	0.53	1.3	0.09	0.26	0.14	50
1	52	16.16	16.15	33.394	24.479	3 46.1	0.197	6.04	107 .6	3.5	0.57	1.6	0.11	0.29	0.17	52
1	62	13.83	13.82	3 3.2 82	24.897	306.3	0.229	6.07	103.1	3.7	0.55	1.6	0.12	0.42	0.33	62
1	72	12.12	12.11	33.298	25.247	273.1	0.258	5.54	90.8	6.4	0.83	6.3	0.25	0.37	0.30	72
	75 ISL	11.82	11.81	33.304	25.308	267.3	0.266	5.42	88.3	7 .1	0.89	7.4	0.19	0.33	0.28	75
1	82	11.34	11.33	33.325	25.413	257.5	0.2 85	5.18	83.5	8.8	1.02	9.7	0.03	0.23	0.23	82
1	97	10.81	10.80	33.458	25.611	238.9	0.322	4.61	73.5	12.6	1.26	14.0	0.01	0.12	0.16	97
	100 ISL	10.64	10.63	33.489	25.665	233.8	0.329	4.47	71.0	13.8	1.32	15.1	0.01	0.10	0.14	100
1	112	9.96	9.95	33.608	25.874	214.0	0.356	3.99	62.5	18.6	1.54	18.9	0.01	0.04	0.06	112
	125 ISL	9.57	9.56	33.682	25.997	202.6	0.383	3.81	59.2	21.6	1.64	20.8	0.01	0.01	0.04	126
1	128	9.50	9.49	33.696	26.019	200.5	0.3 89	3.79	58.8	22.2	1.66	21.1	0.01	0.01	0.04	129
	150 ISL	8.93	8.91	33.843	26.226	181.2	0.431	3.49	53.5	26.9	1.81	23.6	0.00	0.01	0.04	151
1	155	8.82	8.80	33.874	26.268	177.3	0.440	3.42	52.3	27.8	1.84	24.1	0.00	0.01	0.04	156
1	180	8.50	8.48	33.956	26.382	166.9	0.483	3.09	47 .0	31.0	1.97	26.1	0.00	0.01	0.04	181
	200 ISL	8.08	8.06	33.988	26.470	158.7	0.516	3.11	46.8	35.1	2.01	26.9	0.00	0.01	0.03	201
1	211	7.86	7.84	33.999	26.512	154.9	0.533	3.11	46.6	37.6	2.04	27 .3	0.00	0.01	0.03	212
1	241	7.54	7.52	34.025	26.579	148.9	0.578	2.63	39.1	43.5	2.23	29.9	0.00			242
	250 ISL	7.44	7.42	34.032	26.599	147.1	0.592	2.49	36.9	45.3	2.29	30.6	0.00			251
1	2 83	7.10	7.07	34.059	26.668	140.9	0.639	2.03	29.9	51.6	2.49	32.8	0.00			2 85
	300 ISL	6.92	6.89	34.069	26.7 00	138.0	0.663	1.82	26.7	54.8	2.57	33.9	0.00			302
1	3 40	6.56	6.53	34.099	26.773	131.5	0.717	1.38	20.1	61.7	2.75	36.2	0.00			342
1	400	6.36	6.32	34.191	26.87 2	122.8	0.793	0.73	10.6	69.9	3.00	38.3	0.00			402
1	465	5.74	5.70	34.204	26.961	114.7	0.87 0	0.53	7.6	79.7	3.12	40.4	0.00			**468**
	500 ISL	5.49	5.45	34.238	27.019	109.5	0.910	0.42	6.0	85.1	3.19	41.3	0.00			503
1	532	5.26	5.22	34.270	27.071	104.6	0.944	0.32	4.5	90.1	3.25	42.1	0.00			**536**

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 90 100

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	HET	CLOUD AMT TYPE
31 5.0 N	122 39.8 W	10/11/89	1221 UTC	3951 M	340	12 KT			1016.3 MB	17.4 C	16.6 C	

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT 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	17.94	17.94	33.496	24.136	377.1	0.000	5.55	102.4	2.1	0.35	0.0	0.00	0.16	0.06	0
	10 ISL	17.94	17.94	33.495	24.136	377.4	0.038	5.54	102.2	2.0	0.36	0.0	0.00	0.16	0.06	10
1	15	17.94	17.94	33.494	24.135	377.7	0.057	5.54	102.2	2.0	0.36	0.0	0.00	0.16	0.06	15
	20 ISL	17.94	17.94	33.494	24.135	377.8	0.075	5.54	102.2	2.0	0.36	0.0	0.00	0.16	0.06	20
	30 ISL	17.94	17.93	33.493	24.135	378.2	0.113	5.54	102.2	2.0	0.35	0.0	0.00	0.16	0.06	30
1	31	17.94	17.93	33.493	24.135	378.2	0.117	5.54	102.2	2.0	0.35	0.0	0.00	0.16	0.06	31
1	41	17.94	17.93	33.505	24.145	377.7	0.155	5.55	102.4	2.0	0.36	0.0	0.00	0.17	0.06	41
	50 ISL	16.32	16.31	33.368	24.422	351.4	0.188	5.99	107.0	1.9	0.37	0.0	0.00	0.30	0.18	50
1	51	16.07	16.06	33.346	24.462	347.6	0.191	6.05	107.5	1.9	0.37	0.0	0.00	0.32	0.20	51
1	61	13.40	13.39	33.076	24.825	313.0	0.224	6.34	106.6	2.4	0.43	0.2	0.03	0.50	0.36	61
1	71	12.20	12.19	33.023	25.018	294.8	0.255	6.27	102.8	3.0	0.49	0.6	0.13	0.44	0.39	71
	75 ISL	11.73	11.72	33.033	25.114	285.7	0.266	6.09	98.8	3.8	0.60	2.3	0.12	0.35	0.34	75
1	80	11.23	11.22	33.068	25.232	274.5	0.280	5.83	93.6	5.1	0.75	4.8	0.10	0.23	0.26	80
1	95	10.90	10.89	33.282	25.458	253.4	0.320	5.24	83.6	9.1	1.03	10.2	0.02	0.13	0.19	95
	100 ISL	10.79	10.78	33.341	25.524	247.3	0.332	5.04	80.3	10.5	1.13	11.8	0.02	0.12	0.17	100
1	111	10.50	10.49	33.455	25.663	234.2	0.359	4.60	72.9	13.9	1.33	15.1	0.01	0.10	0.14	111
	125 ISL	9.90	9.89	33.583	25.865	215.2	0.390	4.09	64.0	18.6	1.54	18.8	0.01	0.05	0.07	126
1	126	9.85	9.84	33.592	25.880	213.7	0.392	4.05	63.3	19.0	1.55	19.0	0.01	0.05	0.07	127
	150 ISL	9.08	9.06	33.819	26.184	185.3	0.440	3.22	49.5	27.6	1.89	24.5	0.00	0.01	0.05	151
1	151	9.06	9.04	33.827	26.193	184.4	0.442	3.19	49.1	27.9	1.90	24.7	0.00	0.01	0.05	152
1	176	8.63	8.61	33.923	26.336	171.2	0.487	3.05	46.5	31.4	1.97	26.0	0.00	0.01	0.05	177
	200 ISL	8.35	8.33	33.984	26.427	162.9	0.527	2.69	40.7	35.7	2.11	28.0	0.00	0.01	0.05	201
1	206	8.29	8.27	33.997	26.446	161.2	0.536	2.61	39.5	36.8	2.15	28.4	0.00	0.01	0.05	207
1	235	8.02	8.00	34.065	26.540	152.7	0.582	2.55	38.4	40.8	2.22	28.7	0.00			236
	250 ISL	7.85	7.83	34.081	26.578	149.3	0.605	2.37	35.5	43.6	2.30	29.7	0.00			**251**
1	276	7.52	7.49	34.092	26.635	144.2	0.643	1.99	29.6	48.9	2.45	31.8	0.00			**27 6**
	300 ISL	7.20	7.17	34.094	26.682	139.9	0.677	1.78	26.3	53.3	2.55	33.2	0.00			**302**
1	331	6.80	6.77	34.098	26.7 40	134.6	0.719	1.55	22.7	58.8	2.67	34.8	0.00			**333**
1	390	6.25	6.22	34.142	26.847	124.9	0.796	1.00	14.4	68.7	2.90	37.8	0.00			**392**
	400 ISL	6.16	6.12	34.149	26.865	123.4	0.808	0.92	13.3	70.4	2.93	38.2	0.00			**402**
1	454	5.81	5.77	34.198	26.948	115.9	0.873	0.56	8.3	78.5	3.09	40.0	0.00			**457**
	500 ISL	5.76	5.72	34.273	27.014	110.3	0.925	0.39	5.6	83.0	3.18	40.5	0.00			**503**
1	523	5.73	5.69	34.311	27.048	107.4	0.950	0.29	4.1	85.3	3.22	40.7	0.00			**526**

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 90 110

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT TTPE
30 45.7 N	123 19.6 W	10/11/89	0609 UTC	4006 M	020	11 KT			1017.1 MB	17.8 C	16.6 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	19.00	19.00	33.568	23.926	397.1	0.000	5.41	101.9	2.6	0.31	0.0	0.00	0.10	0.04	0
1 1			19.00	19.00	33.568	23.927	397.1	0.004	5.41	101.9	2.6	0.31	0.0	0.00	0.10	0.04	1
	10	ISL	19.00	19.00	33.565	23.926	397.5	0.040	5.42	102.1	2.2	0.35	0.1	0.00	0.11	0.04	10
2	15		19.00	19.00	33.564	23.926	397.7	0.060	5.43	102.3	2.0	0.38	0.1	0.00	0.11	0.04	15
	20	ISL	19.00	19.00	33.564	23.926	397.8	0.079	5.43	102.3	2.1	0.36	0.1	0.00	0.11	0.04	20
	30	ISL	19.02	19.01	33.566	23.923	398.5	0.119	5.42	102.1	2.4	0.31	0.0	0.00	0.11	0.04	30
1	32		19.01	19.01	33.567	23.924	398.5	0.127	5.42	102.1	2.5	0.30	0.0	0.00	0.11	0.04	32
1	42		19.02	19.02	33.573	23.926	398.6	0.167	5.42	102.2	2.5	0.30	0.0	0.00	0.11	0.05	42
	50	ISL	19.01	19.00	33.574	23.931	398.5	0.199	5.43	102.3	2.3	0.30	0.0	0.00	0.12	0.04	50
1	52		19.01	19.00	33.574	23.932	398.4	0.207	5.43	102.3	2.3	0.30	0.0	0.00	0.12	0.04	52
1	62		16.74	16.73	33.554	24.468	347.5	0.244	6.03	108.8	2.2	0.27	0.0	0.00	0.21	0.08	62
1	72		15.91	15.90	33.596	24.691	326.5	0.278	5.97	106.0	2.3	0.28	0.0	0.00	0.24	0.12	72
	75	ISL	15.69	15.68	33.588	24.734	322.5	0.288	5.96	105.3	2.3	0.29	0.0	0.00	0.25	0.14	75
1	81		15.25	15.23	33.554	24.806	315.7	0.307	5.95	104.2	2.3	0.31	0.0	0.00	0.26	0.17	81
1	96		13.93	13.92	33.437	24.996	297.9	0.353	5.89	100.3	2.6	0.36	0.0	0.01	0.26	0.22	96
	100	ISL	13.33	13.32	33.392	25.0 84	2 89.6	0.365	5.84	98.2	3.1	0.43	0.7	0.05	0.26	0.22	100
1	109	P	12.03	12.02	33.317	25.279	271.0	0.390	5.68	92.9	4.4	0.60	2.9	0.12	0.24	0.21	109
	125	ISL	11.21	11.20	33.325	25.435	256.3	0.432	5.36	86.2	6.6	0.82	6.7	0.05	0.16	0.16	126
1	131	P	11.11	11.09	33.355	25.478	252.3	0.447	5.24	84.1	7.5	0.89	8.1	0.01	0.12	0.14	132
	150	ISL	10.32	10.31	33.524	25.747	227.0	0.493	4.90	77.4	11.1	1.05	11.5	0.00	0.04	0.07	151
1	154	P	10.17	10.15	33.565	25.806	221.5	0.502	4.82	75.8	12.0	1.09	12.3	0.00	0.03	0.06	155
1	182	P	9.22	9.20	33.750	26.108	193.1	0.560	3.93	60.6	21.6	1.59	20.0	0.00	0.01	0.03	183
	200	ISL	8.80	8.78	33.860	26.259	179.0	0.593	3.72	56.9	25.6	1.74	22.3	0.00			201
1	210	P	8.61	8.59	33.910	26.328	172.6	0.611	3.66	55.8	27.5	1.79	23.1	0.00			211
1	246	P	7.99	7.96	33.981	26.479	158.7	0.671	3.32	49.9	34.4	1.95	25.9	0.00			247
	250	ISL	7.93	7.90	33.986	26.491	157.5	0.677	3.28	49.2	35.2	1.97	26.2	0.00			251
1	297	P	7.31	7.28	34.014	26.602	147.5	0.749	2.81	41.6	43.9	2.20	29.4	0.00			299
	300	ISL	7.27	7.24	34.014	26.608	147.0	0.753	2.79	41.2	44.4	2.21	29.6	0.00			302
1	353	P	6.64	6.61	34.025	26.703	138.3	0.829	2.32	33.8	52.9	2.45	32.6	0.00			355
	400	ISL	6.29	6.25	34.082	26.795	130.1	0.892	1.41	20.4	63.9	2.78	36.7	0.00			402
1	410	P	6.23	6.20	34.098	26.815	128.3	0.905	1.21	17.5	66.2	2.85	37.5	0.00			412
1	469	P	6.02	5.98	34.207	26.928	118.2	0.977	0.59	8.5	74.0	3.10	39.3	0.00			47 2

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 90 120

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT TTPE
30 25.6 N	124 0.1 W	10/11/89	0044 UTC	4220 M	350	11 KT	3 50 06 06	1	1016.5 MB	17.6 C	16.7 C	7/8 ST

CAST	DEPTH M		TEMP DEG C	POT TEMP DEG C	SAL INITY PSS 78	SIGMA THETA	SVA	DTN HT	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	19.43	19.43	33.711	23.928	396.9	0.000	5.39	102.5	2.4	0.29	0.0	0.00	0.09	0.03	0
1	1		19.43	19.43	33.711	23.928	397.0	0.004	5.39	102.5	2.4	0.29	0.0	0.00	0.09	0.03	1
	10	ISL	19.44	19.44	33.711	23.926	397.5	0.040	5.39	102.5	2.4	0.30	0.0	0.00	0.10	0.03	10
1	17		19.45	19.45	33.712	23.924	397.9	0.068	5.40	102.7	2.3	0.30	0.0	0.00	0.10	0.03	17
	20	ISL	19.45	19.45	33.712	23.924	398.0	0.079	5.41	102.9	2.3	0.30	0.0	0.00	0.10	0.03	20
	30	ISL	19.44	19.43	33.712	23.927	398.1	0.119	5.42	103.0	2.2	0.29	0.0	0.00	0.09	0.03	30
1	32		19.44	19.43	33.712	23.927	398.1	0.127	5.42	103.0	2.2	0.29	0.0	0.00	0.09	0.03	32
1	42		19.42	19.41	33.718	23.938	397.6	0.167	5.39	102.4	2.1	0.30	0.0	0.00	0.10	0.03	42
	50	ISL	19.41	19.40	33.716	23.939	397.7	0.199	5.40	102.6	2.0	0.29	0.0	0.00	0.11	0.03	50
1	52		19.41	19.40	33.716	23.939	397.8	0.207	5.40	102.6	2.0	0.28	0.0	0.00	0.11	0.03	52
1	62		18.48	18.47	33.883	24.302	363.5	0.245	5.83	108.9	2.0	0.25	0.0	0.00	0.18	0.07	62
1	73		17.47	17.46	33.939	24.592	336.1	0.2 83	5.85	107.3	2.1	0.23	0.0	0.00	0.22	0.09	73
	75	ISL	17.30	17.29	33.938	24.632	332.4	0.290	5.84	106.7	2.1	0.23	0.0	0.00	0.22	0.09	75
1	82		16.81	16.60	33.939	24.749	321.4	0.313	5.79	104.8	2.2	0.25	0.1	0.00	0.21	0.12	82
1	97		16.45	16.43	34.054	24.921	305.5	0.360	5.64	101.4	2.3	0.25	0.1	0.00	0.23	0.23	97
	100	ISL	16.44	16.42	34.081	24.945	3 03.4	0.369	5.61	100.9	2.3	0.25	0.1	0.01	0.23	0.23	100
1	112		16.42	16.40	34.184	25.029	295.8	0.405	5.48	98.6	2.4	0.27	0.1	0.07	0.24	0.24	112
	125	ISL	15.59	15.57	34.099	25.152	284.3	0.443	5.37	95.0	2.8	0.33	1.0	0.06	0.19	0.22	125
1	128		15.34	15.32	34.068	25.184	281.3	0.451	5.35	94.1	2.9	0.35	1.3	0.06	0.18	0.21	129
	150	ISL	13.73	13.71	33.908	25.404	260.6	0.511	5.25	89.3	4.2	0.50	3.6	0.02	0.09	0.13	151
1	153		13.51	13.49	33.889	25.434	257.8	0.519	5.24	88.7	4.5	0.52	4.0	0.01	0.08	0.12	154
1	179		11.76	11.74	33.7 80	25.691	233.5	0.582	5.05	82.4	7.8	0.77	8.1	0.01	0.03	0.05	180
	200	ISL	10.14	10.12	33.788	25.986	205.4	0.629	4.70	74.0	14.6	1.14	14.2	0.00	0.02	0.04	201
1	210		9.48	9.46	33.817	26.119	192.8	0.648	4.52	70.2	18.0	1.32	17.0	0.00	0.01	0.03	211
1	240		8.86	8.83	33.923	26.301	175.8	0.7 04	4.25	65.1	24.0	1.55	20.3	0.00			241
	250	ISL	8.66	8.63	33.945	26.350	171.3	0.721	4.17	63.6	26.2	1.58	21.0	0.00			251
1	281		8.06	8.03	33.984	26.472	160.0	0.772	3.87	58.2	32.9	1.67	23.2	0.00			282
	300	ISL	7.72	7.69	33.986	26.523	155.3	0.802	3.65	54.5	36.4	1.80	25.0	0.00			302
1	337		7.13	7.10	33.987	26.608	147.5	0.85 8	3.08	45.4	43.6	2.11	29.0	0.00			339
1	397		6.48	6.44	34.060	26.753	134.1	0.943	1.71	24.8	59.5	2.63	35.2	0.00			399
	400	ISL	6.45	6.41	34.062	26.759	133.6	0.947	1.67	24.2	60.2	2.65	35.4	0.00			402
1	462		5.81	5.77	34.110	26.878	122.5	1.026	1.02	14.6	73.3	2.93	39.0	0.00			465
	500	ISL	5.55	5.51	34.146	26.939	117.1	1.072	0.79	11.2	79.7	3.03	40.3	0.00			503
1	531		5.33	5.29	34.177	26.990	112.4	1.107	0.60	8.5	84.9	3.12	41.3	0.00			53*

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 93 26.6

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 57.6 N	117 18.0 W	06/11/89	2140 UTC	45 M	250	07 KT	310 03 07	1	1015.9 MB	19.6 C	17.5 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	16.87	16.87	33.543	24.428	349.3	0.000	6.00	108.5	2.0	0.34	0.0	0.00	0.99	0.18	0
1	10	15.25	15.25	33.465	24.735	320.3	0.033	6.16	107.8	3.0	0.44 U	0.0	0.01	1.82	0.66	10
	20 ISL	15.04	15.04	33.457	24.775	316.8	0.065	6.31	110.0	4.6	0.39	0.0	0.01	2.74	0.50	20
1	21	15.02	15.02	33.456	24.779	316.4	0.068	6.32	110.1	4.7	0.39	0.0	0.01	2.76	0.48	21
	30 ISL	14.49	14.49	33.428	24.871	307.9	0.097	5.96	102.7	5.2	0.48	0.7	0.06	1.08	0.30	30
1	31	14.41	14.41	33.425	24.886	306.5	0.100	5.90	101.5	5.3	0.49	0.8	0.07	0.87	0.29	31
1	42	13.41	13.40	33.409	25.080	288.3	0.132	5.32	89.6	7.8	0.76	3.2	0.23	0.60	0.42	42

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 54.3 N	117 24.4 W	07/11/89	0011 UTC	524 M	2 80	05 KT	2 80 04 08	1	1015.4 KB	18.3 C	16.0 C	4/8	CU

CAST	DEPTH M	TEMP DEC 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	18.35	18.35	33.628	24.137	377.0	0.000	5.67	105.6	1.6	0.27	0.0	0.00	0.26	0.07	0
1	10	18.03	18.03	33.616	24.207	370.7	0.037	5.72	105.8	1.5	0.27	0.0	0.00	0.27	0.07	10
	20 ISL	17.49	17.49	33.560	24.295	362.6	0.074	5.80	106.2	1.6	0.29	0.0	0.00	0.33	0.11	20
1	21	17.44	17.44	33.555	24.303	361.9	0.078	5.82	106.4	1.6	0.29	0.0	0.00	0.34	0.11	21
	30 ISL	15.11	15.11	33.408	24.723	322.1	0.108	6.13	107.0	2.6	0.35	0.0	0.00	0.76	0.38	30
1	31	14.83	14.83	33.396	24.774	317.2	0.112	6.15	106.7	2.7	0.36	0.0	0.00	0.81	0.41	31
1	41	13.43	13.42	33.347	25.028	293.2	0.142	5.75	96.9	4.1	0.55	2.6	0.24	1.10	0.51	41
	50 ISL	12.48	12.47	33.373	25.236	273.6	0.168	5.49	90.7	6.0	0.76	5.9	0.16	0.62	0.44	50
1	51	12.40	12.39	33.379	25.256	271.7	0.170	5.46	90.1	6.2	0.78	6.3	0.14	0.56	0.43	51
1	62	12.04	12.03	33.449	25.379	260.3	0.200	4.91	80.4	8.7	0.95	8.9	0.08	0.61	0.46	62
1	72	11.66	11.65	33.509	25.497	249.3	0.225	4.57	74.3	10.7	1.09	11.3	0.03	0.31	0.37	72
	75 ISL	11.55	11.54	33.524	25.529	246.3	0.233	4.49	72.8	11.2	1.12	11.9	0.03	0.26	0.34	75
1	86	11.22	11.21	33.572	25.626	237.2	0.259	4.26	68.6	13.1	1.23	13.8	0.02	0.15	0.23	86
	100 ISL	11.00	10.99	33.625	25.708	229.8	0.292	4.01	64.3	15.0	1.32	15.4	0.02	0.09	0.17	100
1	102	10.98	10.97	33.635	25.719	228.8	0.296	3.96	63.5	15.4	1.34	15.6	0.02	0.09	0.16	102
1	122	10.85	10.84	33.817	25.884	213.6	0.341	2.90	46.4	22.5	1.71	20.1	0.00	0.03	0.09	123
	125 ISL	10.80	10.78	33.842	25.912	210.9	0.347	2.83	45.2	23.2	1.74	20.6	0.00	0.03	0.08	126
1	148	10.38	10.36	33.991	26.102	193.3	0.394	2.55	40.4	27.2	1.92	23.1	0.00	0.02	0.06	149
	150 ISL	10.35	10.33	33.998	26.113	192.4	0.397	2.53	40.1	27.5	1.93	23.3	0.00	0.02	0.06	151
1	179	9.89	9.87	34.055	26.236	181.2	0.452	2.30	36.1	30.8	2.07	25.3	0.00	0.01	0.04	180
	200 ISL	9.63	9.61	34.081	26.300	175.5	0.489	2.32	36.2	31.9	2.09	25.8	0.00	0.01	0.04	201
1	210	9.51	9.49	34.092	26.329	172.9	0.506	2.33	36.2	32.4	2.09	26.0	0.00	0.01	0.04	211
1	240	9.12	9.09	34.134	26.425	164.2	0.557	2.17	33.5	35.8	2.18	27.2	0.01			241
	250 ISL	9.03	9.00	34.151	26.453	161.8	0.573	2.06	31.7	37.2	2.23	27.8	0.01			251
1	281	8.78	8.75	34.202	26.533	154.7	0.622	1.67	25.6	41.8	2.39	29.6	0.01			283
	300 ISL	8.63	8.60	34.228	26.577	150.8	0.651	1.47	22.4	44.2	2.48	30.4	0.01			302
1	337	8.33	8.29	34.267	26.654	144.0	0.706	1.13	17.1	48.9	2.65	31.9	0.00			339
1	397	7.72	7.68	34.294	26.767	134.0	0.789	0.71	10.6	57.1	2.84	34.4	0.00			400
	400 ISL	7.69	7.65	34.295	26.772	133.6	0.793	0.70	10.5	57.5	2.85	34.5	0.00			403
1	462	7.06	7.02	34.311	26.874	124.3	0.873	0.48	7.1	66.4	3.00	36.6	0.00			465
	500 ISL	6.64	6.59	34.319	26.938	118.5	0.919	0.39	5.7	72.3	3.08	38.0	0.00			S03
1	531	6.29	6.24	34.327	26.990	113.6	0.955	0.31	4.5	77.1	3.15	39.1	0.00			535

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
32 50.7 N	117 32.9 V	07/11/89	0307 UTC	87 3 M	310	07 KT			1016.3 MB	17.8 C	15.3 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	18.07	18.07	33.616	24.196	371.3	0.000	5.67	105.0	2.3	0.29	0.0	0.00	0.32	0.09	0
1	10	18.03	18.03	33.616	24.207	370.7	0.037	5.66	104.7	2.2	0.28	0.0	0.00	0.34	0.10	10
	20 ISL	17.75	17.75	33.590	24.255	366.4	0.074	5.75	105.8	2.1	0.28	0.0	0.00	0.41	0.13	20
1	21	17.69	17.69	33.578	24.260	365.9	0.078	5.76	105.8	2.1	0.28	0.0	0.00	0.42	0.14	21
	30 ISL	16.72	16.72	33.500	24.431	350.0	0.110	5.91	106.5	2.4	0.31	0.0	0.00	0.50	0.25	30
1	31	16.56	16.56	33.488	24.459	347.3	0.113	5.93	106.5	2.5	0.32	0.0	0.00	0.51	0.26	31
1	41	14.03	14.02	33.357	24.913	304.2	0.146	6.13	104.6	3.2	0.40	0.0	0.01	0.57	0.39	41
	50 ISL	13.28	13.27	33.312	25.032	293.1	0.173	6.01	100.9	3.7	0.46	0.4	0.03	0.81	0.63	50
1	51	13.24	13.23	33.311	25.039	292.4	0.176	6.00	100.7	3.7	0.47	0.4	0.03	0.83	0.65	51
1	61	12.34	12.33	33.389	25.276	270.1	0.204	5.32	87.6	6.9	0.78	6.4	0.10	0.50	0.38	61
1	71	11.44	11.43	33.452	25.493	249.6	0.230	4.70	76.0	11.2	1.10	11.9	0.02	0.21	0.20	71
	75 ISL	11.39	11.38	33.494	25.535	245.7	0.240	4.57	73.8	12.1	1.15	12.8	0.02	0.19	0.20	75
1	86	11.24	11.23	33.551	25.606	239.1	0.266	4.33	69.7	13.8	1.24	14.0	0.02	0.14	0.19	86
	100 ISL	10.93	10.92	33.626	25.721	228.6	0.299	3.89	62.3	16.8	1.42	16.7	0.01	0.07	0.14	100
1	101	10.90	10.89	33.631	25.730	227.7	0.301	3.86	61.7	17.0	1.43	16.9	0.01	0.07	0.14	101
1	121	10.18	10.17	33.774	25.967	205.5	0.345	3.49	55.0	21.5	1.60	20.1	0.01	0.03	0.06	122
	125 ISL	10.07	10.06	33.796	26.003	202.1	0.353	3.43	53.9	22.3	1.64	20.7	0.01	0.03	0.06	126
1	147	9.60	9.58	33.892	26.157	187.9	0.396	3.17	49.4	26.3	1.80	23.2	0.01	0.01	0.05	148
	150 ISL	9.55	9.53	33.901	26.172	186.5	0.401	3.16	49.2	26.6	1.81	23.4	0.01	0.01	0.05	151
1	178	9.21	9.19	33.966	26.278	176.9	0.452	3.12	48.2	29.2	1.87	24.5	0.01	0.01	0.03	179
	200 ISL	8.95	8.93	34.019	26.362	169.4	0.490	2.87	44.1	32.2	1.97	25.8	0.01	0.01	0.04	201
1	209	8.85	8.83	34.040	26.394	166.4	0.505	2.76	42.3	33.6	2.02	26.4	0.01	0.01	0.05	210
1	239	8.52	8.49	34.108	26.499	156.9	0.554	2.54	38.7	38.3	2.14	27.8	0.01			240
	250 ISL	8.45	8.42	34.131	26.528	154.4	0.571	2.34	35.6	40.1	2.22	28.5	0.01			251
1	2 80	8.29	8.26	34.189	26.598	148.2	0.617	1.71	25.9	45.1	2.46	30.6	0.01			282
	300 ISL	8.17	8.14	34.223	26.643	144.2	0.646	1.37	20.7	48.5	2.59	31.8	0.01			302
1	336	7.93	7.90	34.270	26.716	137.8	0.697	0.91	13.7	53.9	2.78	33.6	0.01			338
1	396	7.52	7.48	34.291	26.793	131.3	0.777	0.66	9.8	59.4	2.92	35.3	0.01			399
	400 ISL	7.49	7.45	34.292	26.798	130.9	0.783	0.64	9.5	59.9	2.93	35.4	0.01			403
1	462	6.92	6.88	34.307	26.890	122.7	0.861	0.44	6.5	67.5	3.07	37.4	0.00			465
	S00 ISL	6.58	6.53	34.312	26.940	118.2	0.907	0.37	5.4	72.5	3.12	38.4	0.00			503
1	S30	6.31	6.26	34.316	26.979	114.7	0.942	0.31	4.5	76.5	3.16	39.2	0.00			534

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 41.0 N	117 52.5 W	07/11/89	0706 UTC	525 M	290 08 KT			1016.7 MB	17.4 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	18.90	18.90	33.706	24.059	384.4	0.000	5.50	103.5	2.2	0.28	0.0	0.00	0.24	0.05	0
1	1		18.90	18.90	33.706	24.059	384.5	0.004	5.50	103.5	2.2	0.28	0.0	0.00	0.24	0.05	1
	10	ISL	18.90	18.90	33.708	24.061	384.6	0.038	5.49	103.3	2.0	0.28	0.0	0.00	0.25	0.06	10
1	11		18.90	18.90	33.708	24.061	384.6	0.042	5.49	103.3	2.0	0.28	0.0	0.00	0.25	0.06	11
	20	ISL	18.90	18.90	33.708	24.061	384.9	0.077	5.51	103.7	1.9	0.27	0.0	0.00	0.26	0.07	20
1	22		18.90	18.90	33.708	24.061	385.0	0.085	5.51	103.7	1.9	0.27	0.0	0.00	0.26	0.07	22
	30	ISL	18.82	18.81	33.700	24.076	383.9	0.115	5.53	103.9	1.7	0.28	0.1	0.00	0.28	0.06	30
1	32		18.80	18.79	33.698	24.079	383.7	0.123	5.53	103.9	1.7	0.28	0.1	0.00	0.28	0.06	32
1	42		15.08	15.07	33.357	24.690	325.5	0.159	6.29	109.6	2.4	0.36	0.0	0.00	0.63	0.28	42
	50	ISL	14.26	14.25	33.337	24.850	310.5	0.184	6.23	106.8	3.1	0.40	0.0	0.00	0.72	0.39	50
1	52		14.19	14.18	33.345	24.871	308.5	0.190	6.21	106.3	3.3	0.41	0.0	0.00	0.73	0.41	52
1	63		13.06	13.05	33.368	25.119	285.1	0.223	5.65	94.5	5.5	0.64	2.7	0.39	0.78	0.52	63
1	73		12.17	12.16	33.424	25.335	264.7	0.250	5.11	83.9	7.5	0.88	7.5	0.06	0.31	0.34	73
	75	ISL	12.01	12.00	33.445	25.382	260.3	0.256	4.97	81.3	8.4	0.94	8.6	0.05	0.26	0.31	75
1	87		11.20	11.19	33.584	25.639	236.0	0.285	4.17	67.1	14.3	1.29	14.5	0.01	0.12	0.19	87
	100	ISL	10.75	10.74	33.689	25.802	220.9	0.315	3.64	58.1	18.4	1.51	17.7	0.01	0.06	0.13	100
1	102		10.71	10.70	33.702	25.819	219.3	0.319	3.58	57.1	18.9	1.53	18.0	0.01	0.06	0.12	102
1	123		10.31	10.30	33.815	25.977	204.7	0.364	3.20	50.6	22.9	1.71	20.7	0.01	0.02	0.06	124
	125	ISL	10.27	10.26	33.823	25.990	203.5	0.368	3.18	50.2	23.2	1.72	20.9	0.01	0.02	0.06	126
1	146		9.80	9.78	33.903	26.132	190.3	0.413	3.04	47.6	25.8	1.82	22.7	0.00	0.01	0.04	149
	150	ISL	9.74	9.72	33.910	26.148	188.9	0.417	3.04	47.5	26.1	1.83	22.8	0.00	0.01	0.04	151
1	179		9.02	9.00	34.012	26.345	170.6	0.469	3.05	46.9	30.6	1.95	24.6	0.01	0.01	0.03	180
	200	ISL	8.80	8.78	34.084	26.436	162.2	0.504	2.55	39.0	35.2	2.13	26.9	0.00	0.01	0.03	201
1	210		8.76	8.74	34.118	26.469	159.3	0.520	2.25	34.4	37.4	2.23	28.0	0.00	0.01	0.03	211
1	240		8.81	8.78	34.220	26.542	153.1	0.567	1.50	23.0	42.5	2.51	30.1	0.00			241
	250	ISL	8.73	8.70	34.230	26.562	151.3	0.582	1.40	21.4	43.6	2.55	30.5	0.00			251
1	2 82		8.40	8.37	34.236	26.618	146.4	0.630	1.26	19.1	46.8	2.60	31.5	0.00			284
	300	ISL	8.27	8.24	34.250	26.649	143.8	0.656	1.12	17.0	48.9	2.66	32.2	0.00			302
1	338		7.99	7.96	34.280	26.715	138.0	0.710	0.84	12.6	53.5	2.80	33.5	0.00			340
1	397		7.44	7.40	34.297	26.809	129.8	0.789	0.59	8.8	60.1	2.96	35.3	0.00			400
	400	ISL	7.41	7.37	34.297	26.813	129.4	0.792	0.58	8.6	60.5	2.97	35.4	0.00			403
1	463		6.85	6.81	34.308	26.900	121.7	0.872	0.40	5.9	68.3	3.06	37.3	0.00			466
	500	ISL	6.62	6.57	34.315	26.937	118.5	0.916	0.35	5.1	71.8	3.12	38.1	0.00			503
1	532		6.43	6.38	34.322	26.968	115.9	0.953	0.31	4.5	74.9	3.18	38.7	0.00			536

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT TYPE
32 31.0 N	118 12.7 W	07/11/89	1105 UTC	524 M	290 05 KT			1015.9 MB	15.4 C	12.6 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		17.73	17.73	33.557	24.234	367.7	0.000	5.71	105.0	1.7	0.31	0.1	0.00	0.18	0.04	0
1	10		17.71	17.71	33.557	24.239	367.6	0.037	5.63	103.5	1.6	0.31	0.1	0.00	0.18	0.04	10
	20	ISL	17.64	17.64	33.547	24.249	367.0	0.073	5.65	103.7	1.6	0.32	0.1	0.00	0.21	0.05	20
1	21		17.63	17.63	33.546	24.250	366.9	0.077	5.65	103.7	1.6	0.32	0.1	0.00	0.21	0.05	21
	30	ISL	17.14	17.14	33.503	24.335	359.1	0.110	5.77	104.9	1.6	0.31	0.1	0.00	0.28	0.10	30
1	31		17.08	17.07	33.498	24.345	358.2	0.113	5.79	105.1	1.6	0.31	0.1	0.00	0.29	0.10	31
1	42		14.18	14.17	33.268	24.813	313.7	0.150	6.20	106.1	2.4	0.41	0.2	0.02	0.79	0.48	42
	50	ISL	12.61	12.60	33.233	25.102	286.3	0.174	5.87	97.2	4.4	0.60	3.3	0.09	0.61	0.47	50
1	52		12.33	12.32	33.237	25.159	280.9	0.180	5.76	94.8	4.9	0.65	4.2	0.10	0.54	0.47	52
1	62		12.07	12.06	33.300	25.258	271.8	0.208	5.50	90.0	6.3	0.79	6.1	0.06	0.40	0.38	62
1	73		11.08	11.07	33.398	25.516	247.4	0.236	4.83	77.5	10.6	1.09	11.8	0.02	0.18	0.18	73
	75	ISL	11.00	10.99	33.418	25.546	244.6	0.241	4.74	75.9	11.2	1.12	12.4	0.02	0.16	0.16	75
1	87		10.70	10.69	33.539	25.693	230.8	0.270	4.26	67.8	14.7	1.30	15.4	0.01	0.11	0.12	87
	100	ISL	10.15	10.14	33.674	25.894	212.0	0.298	3.72	58.6	19.4	1.54	19.3	0.01	0.04	0.06	100
1	102		10.07	10.06	33.693	25.922	209.3	0.303	3.65	57.4	20.1	1.57	19.8	0.01	0.03	0.05	102
1	123		9.78	9.77	33.813	26.065	196.2	0.345	3.29	51.4	23.8	1.70	22.0	0.00	0.02	0.04	124
	125	ISL	9.75	9.74	33.823	26.078	195.0	0.349	3.27	51.1	24.1	1.71	22.2	0.00	0.02	0.04	126
1	149		9.34	9.32	33.929	26.228	181.1	0.394	2.99	46.3	28.1	1.86	24.3	0.00	0.01	0.02	150
	150	ISL	9.32	9.30	33.933	26.234	180.5	0.396	2.98	46.1	28.3	1.87	24.4	0.00	0.01	0.02	151
1	180		8.90	8.88	34.037	26.383	166.9	0.448	2.54	39.0	34.0	2.06	27.0	0.00	0.01	0.02	181
	200	ISL	8.66	8.64	34.085	26.459	160.0	0.481	2.29	35.0	37.3	2.16	28.3	0.00	0.00	0.02	201
1	210		8.55	8.53	34.103	26.490	157.2	0.497	2.18	33.2	38.8	2.21	28.8	0.00	0.00	0.02	211
1	240		8.30	8.28	34.142	26.559	151.2	0.543	1.91	28.9	42.6	2.34	30.0	0.00			241
	250	ISL	8.21	8.18	34.150	26.579	149.4	0.558	1.62	27.5	43.9	2.38	30.4	0.00			251
1	281		7.92	7.89	34.172	26.640	144.0	0.604	1.55	23.3	48.4	2.50	31.9	0.00			283
	300	ISL	7.75	7.72	34.191	26.680	140.5	0.631	1.35	20.2	51.6	2.59	32.8	0.00			302
1	337		7.42	7.39	34.226	26.755	133.8	0.681	0.97	14.4	57.6	2.75	34.5	0.00			339
1	397		6.93	6.89	34.256	26.848	125.7	0.759	0.62	9.1	64.9	2.92	36.7	0.00			400
	400	ISL	6.92	6.88	34.259	26.851	125.3	0.763	0.61	9.0	65.1	2.93	36.8	0.00			403
1	462		6.76	6.72	34.309	26.913	120.3	0.839	0.39	5.7	69.4	3.03	37.7	0.00			465
	500	ISL	6.46	6.41	34.319	26.961	116.0	0.884	0.32	4.6	73.9	3.10	38.7	0.00			503
1	532		6.21	6.16	34.328	27.001	112.5	0.921	0.27	3.9	77.7	3.15	39.6	0.00			536

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 93 45

LATITUDE	LONGITUDE	DAT/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT TTPE
32 21.5 N	118 33.2 W	07/11/89	1534 UTC	1279 M	310 07 KT	310 02 07	1	1015 5 MB	16.5 C	L4.6 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	18.71	18.71	33.795	24.175	373.4	0.000	5.52	103.6	2.2	0.28	0.1	0.00	0.37	0.09	0
1	10	18.70	18.70	33.797	24.179	373.3	0.037	5.53	103.7	2.1	0.27	0.1	0.00	0.36	0.09	10
	20 ISL	18.70	18.70	33.795	24.178	373.8	0.075	5.53	103.7	1.9	0.28	0.1	0.00	0.36	0.08	20
1	21	18.70	18.70	33.815 D				5.53	103.7	1.9	0.28	0.1	0.00	0.36	0.08	21
	30 ISL	18.69	18.68	33.792	24.179	374.1	0.112	5.54	103.9	1.9	0.27	0.1	0.00	0.37	0.09	30
1	31	18.69	18.68	33.792	24.179	374.1	0.116	5.54	103.9	1.9	0.27	0.1	0.00	0.37	0.09	31
1	Al	14.20	14.19	33.631	25.089	2 87.4	0.149	6.00	102.9	5.7	0.60	2.4	0.08	1.94	1.04	41
	50 ISL	12.67	12.66	33.692	25.447	253.6	0.173	5.08	84.4	II.6	1.02	9.6	0.19	1.26	0.79	50
1	52	12.51	12.50	33.707	25.489	249.6	0.178	4.82	79.9	13.0	1.11	11.3	0.20	1.01	0.73	52
1	62	11.52	11.51	33.727	25.692	230.5	0.202	4.13	67 .0	17.5	1.39	16.1	0.07	0.65	0.51	62
1	72	10.72	10.71	33.757	25.859	214.7	0.225	3.59	57.3	21.0	1.59	19.6	0.02	0.42	0.38	72
	75 ISL	10.52	10.51	33.766	25.901	210.8	0.231	3.48	55.3	21.8	1.63	20.4	0.02	0.36	0.34	75
1	87	9.92	9.91	33.806	26.035	198.2	0.255	3.14	49.2	24.7	1.77	22.8	0.01	0.16	0.22	87
	100 ISL	9.60	9.59	33.849	26.122	190.2	0.281	2.86	44.5	27.3	1.90	24.7	0.01	0.08	0.13	100
1	102	9.57	9.56	33.857	26.133	189.2	0.285	2.83	44.0	27.7	1.92	24.9	0.01	0.08	0.12	102
1	123	9.07	9.06	33.999	26.326	171.3	0.322	2.63	40.5	32.2	2.03	26.4	0.01	0.02	0.07	124
	125 ISL	9.05	9.04	34.008	26.336	170.3	0.326	2.60	40.0	32.5	2.04	26.5	0.01	0.02	0.07	126
1	150	8.84	8.82	34.086	26.431	161.8	0.367	2.22	34.0	36.3	2.17	28.1	0.01	0.01	0.05	151
1	179	8.43	8.41	34.114	26.516	154.1	0.413	1.90	28.9	41.2	2.36	30.1	0.01	0.01	0.04	180
	200 ISL	8.25	8.23	3 4.143	26.567	149.6	0.445	1.73	26.2	43.9	2.44	30.9	0.01	0.01	0.03	201
1	210	8.18	8.16	34.156	26.588	147.B	0.460	1.66	25.1	45.1	2.47	31.2	0.01	0.01	0.03	211
1	240	7.95	7.93	34.177	26.639	143.4	0.504	1.41	21.2	48.8	2.55	32.5	0.01			241
	250 ISL	7.91	7.88	3 4.182	26.649	142.6	0.518	1.36	20.4	49.5	2.57	32.7	0.01			251
1	280	7.79	7.76	34.201	26.682	140.0	0.560	1.20	18.0	51.4	2.63	33.2	0.01			282
	300 ISL	7.68	7.65	34.223	26.715	137.1	0.588	1.04	15.5	54.0	2.70	33.8	0.01			302
1	336	7.46	7.43	34.263	26.779	131.6	0.636	0.74	11.0	59.0	2.84	35.1	0.01			338
1	3 97	7.07	7.03	34.300	26.863	124.3	0.714	0.46	6.8	65.2	2.94	36.6	0.00			400
	400 ISL	7.05	7.01	34.301	26.867	124.0	0.718	0.45	6.6	65.5	2.95	36.7	0.00			403
1	462	6.54	6.50	34.319	26.950	116.6	0.793	0.31	4.5	72.7	3.11	38.4	0.00			465
	500 ISL	6.25	6.21	34.325	26.993	112.8	0.836	0.28	4.0	77.2	3.15	39.3	0.00			503
1	531	6.01	5.96	34.330	27.028	109.7	0.87 1	0.26	3.7	80.9	3.18	40.1	0.00			535

RV MEW HORIZON CALCOFI CRUISE 8911 STATION 93 50

LATITUDE	LONGITUDE	DAT/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT TTPE
32 10.8 N	118 53.5 W	07/11/89	2108 UTC	1474 M	290 10 KT	2 80 03 07	1	1015.3 MB	17.8 C	13.3 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
	0 ISL	16.99	16.99	33.458	24.334	358.2	0.000	5.69	103.1	1.9	0.33	0.0	0.00	0.25	0.06	0
1	1	16.99	16.99	33.458	24.334	358.2	0.004	5.69	103.1	1.9	0.33	0.0	0.00	0.25	0.06	1
	10 ISL	16.93	16.93	33.461	24.351	356.9	0.036	5.68	102.8	1.7	0.33	0.0	0.00	0.24	0.06	10
1	11	16.92	16.92	33.461	24.354	356.7	0.039	5.68	102.8	1.7	0.33	0.0	0.00	0.24	0.06	11
	20 ISL	16.82	16.82	33.454	24.372	355.3	0.071	5.70	102.9	1.7	0.33	0.0	0.00	0.26	0.07	20
1	22	16.80	16.80	33.455	24.377	354.8	0.078	5.71	103.1	1.7	0.33	0.0	0.00	0.26	0.07	22
	30 ISL	16.78	16.78	33.493	24.411	351.8	0.107	5.74	103.6	1.5	0.33	0.0	0.01	0.34	0.13	30
1	32	16.77	16.76	33.502	24.421	351.0	0.114	5.75	103.7	1.5	0.33	0.0	0.01	0.37	0.14	32
1	42	15.32	15.31	33.349	24.632	331.1	0.148	5.98	104.7	1.9	0.38	0.1	0.02	0.62	0.45	42
	50 ISL	13.61	13.60	33.204	24.882	307.4	0.173	6.02	101.7	2.7	0.49	1.2	0.20	0.55	0.47	50
1	53	12.96	12.95	33.161	24.978	298.2	0.182	6.04	100.7	3.2	0.54	1.9	0.26	0.52	0.48	53
1	63	11.42	11.41	33.107	25.228	274.6	0.211	5.71	92.1	5.6	0.76	5.7	0.11	0.25	0.25	63
1	73	10.90	10.89	33.271	25.449	253.7	0.23 8	5.24	83.6	8.7	0.96	9.7	0.02	0.12	0.14	73
	75 ISL	10.79	10.78	33.322	25.508	248.1	0.243	5.06	80.6	10.0	1.03	10.9	0.02	0.10	0.13	75
1	87	10.23	10.22	33.604	25.825	218.2	0.271	3.98	62.7	18.0	1.44	17.7	0.01	0.05	0.07	87
	100 ISL	9.93	9.92	33.702	25.953	206 .4	0.298	3.59	56.2	21.4	1.62	20.5	0.01	0.03	0.06	100
1	103	9.88	9.87	33.713	25.969	204.8	0.304	3.55	55.6	21.9	1.64	20.8	0.01	0.03	0.06	103
1	123	9.48	9.47	33.893	26.177	185.5	0.343	3.01	46.7	26.7	1.85	24.0	0.01	0.01	0.03	124
	125 ISL	9.45	9.44	33.904	26.190	184.2	0.347	2.97	46.1	27.1	1.87	24.2	0.01	0.01	0.03	126
1	149	9.09	9.07	33.992	26.317	172.6	0.390	2.62	40.4	31.7	2.01	26.4	0.01	0.01	0.04	150
	150 ISL	9.08	9.06	33.994	26.321	172.3	0.392	2.61	40.2	31.8	2.02	26.5	0.01	0.01	0.04	151
1	180	8.79	8.77	34.055	26.415	163.9	0.442	2.30	35.2	35.7	2.16	28.2	0.01	0.01	0.05	181
	200 ISL	8.60	8.58	34.101	26.481	158.0	0.474	2.09	31.9	38.6	2.24	29.2	0.00	0.01	0.04	201
1	210	8.51	8.49	34.121	26.510	155.3	0.490	2.00	30.4	39.9	2.28	29.6	0.00	0.01	0.03	211
1	240	8.32	8.30	34.141	26.555	151.5	0.536	1.79	27.1	42.7	2.37	30.5	0.01			241
	250 ISL	8.24	8.21	3 4.142	26.568	150.4	0.551	1.69	25.6	44.2	2.42	30.9	0.01			251
1	281	7.96	7.93	34.153	26.619	146.0	0.597	1.36	20.4	49.1	2.57	32.4	0.01			283
	300 ISL	7.82	7.79	34.185	26.665	141.9	0.624	1.21	18.1	51.6	2.64	33.1	0.01			302
1	337	7.55	7.52	34.249	26.755	133.9	0.675	0.96	14.3	56.4	2.76	34.5	0.00			339
1	396	7.00	6.96	34.271	26.850	125.5	0.752	0.58	8.5	64.6	2.93	36.8	0.00			399
	400 ISL	6.97	6.93	34.272	26.855	125.1	0.757	0.57	8.4	65.0	2.94	36.9	0.00			403
1	463	6.53	6.49	34.290	26.929	118.6	0.83 4	0.41	6.0	71.2	3.06	38.3	0.00			466
	500 ISL	6.18	6.14	34.306	26.987	113.3	0.877	0.34	4.9	76.6	3.12	39.5	0.00			S03
1	533	5.87	5.82	34.321	27.038	108.5	0.913	0.28	4.0	81.4	3.17	40.5	0.00			537

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RV NEW HORIZON CALCOFI CRUISI 8911 STATION 93 35

LATITUDE	LONGITUDE	DAT/MO/YR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TYPE
32 1.2 N	119 14.6 W	08/11/89	0057 UTC	1607 M	310 11 ET 3 20 04 06		1	1014.4 MB	16.8 C	15.0 C	7/8	ST

CAST	DEPTH M	TEMP DEC C	POT TEMP DEG C	SAL INITY 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	FHAEO UG/L	PRESS D.BAR
1	0	17.33	17.33	33.430	24.232	367.9	0.000	5.65	103.0	2.1	0.40	0.0	0.00	0.20	0.04	0
1	10	17.34	17.34	33.424	24.226	368.8	0.037	5.64	102.8	2.0	0.39	0.0	0.00	0.21	0.05	10
	20 ISL	17.34	17.34	33.423	24.225	369.2	0.074	5.65	103.0	1.8	0.37	0.0	0.00	0.21	0.05	20
1	21	17.34	17.34	33.423	24.225	369.3	0.077	5.65	103.0	1.8	0.37	0.0	0.00	0.21	0.05	21
	30 ISL	16.70	16.70	33.437	24.387	354.1	0.110	5.80	104.5	1.7	0.37	0.0	0.00	0.30	0.10	30
1	31	16.59	16.59	33.435	24.411	351.9	0.114	5.82	104.6	1.7	0.37	0.0	0.00	0.32	0.11	31
1	Al	15.03	15.02	33.307	24.663	328.1	0.148	6.09	106.0	2.1	0.45	0.1	0.02	0.65	0.39	41
	50 ISL	13.40	13.39	33.267	24.973	298.7	0.176	5.81	97.8	3.9	0.62	2.7	0.28	0.64	0.44	50
1	51	13.22	13.21	33.265	25.007	295.4	0.179	5.77	96.8	4.1	0.64	3.1	0.30	0.64	0.44	51
1	62	11.66	11.65	33.209	25.263	271.2	0.210	5.53	89.7	6.5	0.85	6.8	0.10	0.25	0.27	62
1	72	10.71	10.70	33.190	25.419	256.5	0.236	5.35	85.0	9.0	1.02	9.8	0.02	0.17	0.19	72
	75 ISL	10.56	10.55	33.227	25.474	251.3	0.244	5.22	82.7	10.1	1.08	10.9	0.02	0.14	0.17	75
1	86	10.24	10.23	33.409	25.671	232.8	0.270	4.68	73.7	14.2	1.31	15.0	0.01	0.06	0.09	86
	100 ISL	9.98	9.97	33.572	25.843	216.8	0.302	4.10	64.3	18.1	1.51	18.2	0.01	0.03	0.05	100
1	101	9.96	9.95	33.582	25.854	215.7	0.304	4.06	63.6	18.4	1.52	18.4	0.01	0.03	0.05	101
1	122	9.23	9.22	33.783	26.131	189.7	0.347	3.67	56.6	23.9	1.69	21.7	0.01	0.01	0.03	123
	125 ISL	9.22	9.21	33.809	26.153	187.7	0.352	3.58	55.3	24.6	1.72	22.2	0.01	0.01	0.03	126
1	148	9.12	9.10	33.936	26.269	177.2	0.394	2.98	45.9	29.1	1.93	25.0	0.00	0.01	0.02	149
	150 ISL	9.08	9.06	33.942	26.280	176.1	0.398	2.98	45.9	29.4	1.93	25.1	0.00	0.01	0.02	151
I	17 8	8.50	8.48	33.992	26.410	164.2	0.445	3.13	47.6	33.0	1.95	25.7	0.00	0.00	0.02	179
	200 ISL	8.19	8.17	34.034	26.490	156.9	0.481	2.86	43.2	37.6	2.08	27.5	0.00	0.00	0.02	201
1	210	8.08	8.06	34.051	26.520	154.2	0.496	2.68	40.4	39.6	2.15	28.4	0.00	0.00	0.02	211
1	240	7.84	7.82	34.089	26.586	148.4	0.542	2.20	33.0	42.8	2.33	30.4	0.00			241
	250 ISL	7.75	7.73	34.107	26.613	145.9	0.556	2.01	30.1	44.9	2.41	31.2	0.00			251
1	279	7.49	7.46	34.159	26.692	138.8	0.598	1.50	22.3	51.5	2.62	33.2	0.00			281
	300 ISL	7.36	7.33	34.187	26.732	135.2	0.627	1.24	18.4	54.8	2.73	34.1	0.00			302
1	335	7.16	7.13	34.218	26.785	130.7	0.673	0.95	14.0	59.4	2.85	35.3	0.00			337
1	3 94	6.64	6.60	34.224	26.861	124.0	0.748	0.70	10.2	67.4	2.98	37.7	0.00			397
	400 ISL	6.62	6.58	34.229	26.868	123.5	0.756	0.67	9.8	67.9	3.00	37.8	0.00			403
1	459	6.40	6.36	34.283	26.940	117.3	0.827	0.42	6.1	72.9	3.14	38.8	0.00			462
	500 ISL	6.10	6.06	34.315	27.004	111.6	0.874	0.34	4.9	78.0	3.19	39.8	0.00			503
1	527	5.90	5.85	34.336	27.047	107.7	0.903	0.28	4.0	81.3	3.23	40.4	0.00			531

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 93 60

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT	TTPE
31 50.5 H	119 34.8 W	08/11/89	0502 UTC	1919 M	310 16 K.T			1016.2 MB	16.8 C	15.2 C		

CAST	DEPTH M	TEMP DEG C	POT TEMP DEG C	SALINITT PSS 78	SIGMA THETA	SVA	DTN BT	OXTGEN ML/L	OXT 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	16.98	16.98	33.543	24.402	351.7	0.000	5.68	102.9	1.3	0.33	0.0	0.00	0.37	0.10	0
1	1	16.98	16.98	33.543	24.402	351.7	0.004	5.68	102.9	1.3	0.33	0.0	0.00	0.37	0.10	1
	10 ISL	16.97	16.97	33.545	24.406	351.6	0.035	5.69	103.1	1.3	0.34	0.0	0.00	0.37	0.10	10
1	11	16.97	16.97	33.545	24.406	351.7	0.039	5.69	103.1	1.3	0.34	0.0	0.00	0.37	0.10	11
	20 ISL	16.96	16.96	33.542	24.406	351.9	0.070	5.69	103.1	1.2	0.35	0.0	0.00	0.38	0.10	20
1	22	16.96	16.96	33.542	24.407	352.0	0.077	5.69	103.1	1.2	0.35	0.0	0.00	0.38	0.10	22
	30 ISL	16.76	16.76	33.534	24.448	348.4	0.105	5.72	103.2	1.3	0.35	0.0	0.00	0.56	0.23	30
1	32	16.71	16.70	33.532	24.458	347.5	0.112	5.73	103.3	1.3	0.35	0.0	0.00	0.62	0.28	32
1	42	14.61	14.60	33.520	24.917	303.9	0.145	5.39	93.2	4.1	0.61	3.4	0.23	0.95	0.55	42
	50 ISL	13.21	13.20	33.519	25.206	276.5	0.168	5.01	84.1	7.7	0.92	8.3	0.09	0.60	0.45	50
1	52	12.92	12.91	33.520	25.264	271.0	0.174	4.91	82.0	8.6	0.99	9.5	0.04	0.48	0.40	52
1	63	11.93	11.92	33.537	25.468	251.8	0.202	4.49	73.4	11.9	1.21	13.0	0.02	0.27	0.26	63
1	73	11.33	11.32	33.658	25.673	232.5	0.227	3.93	63.5	16.8	1.47	17.2	0.02	0.16	0.17	73
	75 ISL	11.17	11.16	33.677	25.717	228.4	0.231	3.83	61.6	17.8	1.52	18.0	0.02	0.14	0.16	75
1	87	10.25	10.24	33.769	25.950	206.3	0.257	3.33	52.6	23.0	1.75	21.7	0.01	0.08	0.11	87
	100 ISL	9.69	9.68	33.840	26.100	192.3	0.283	3.01	47.0	26.2	1.89	24.0	0.01	0.03	0.07	100
1	102	9.63	9.62	33.849	26.117	190.7	0.287	2.98	46.4	26.6	1.91	24.2	0.01	0.03	0.07	102
1	122	9.39	9.38	33.918	26.211	182.2	0.324	2.70	41.9	29.3	2.02	25.7	0.01	0.02	0.06	123
	125 ISL	9.34	9.33	33.929	26.228	180.6	0.330	2.70	41.8	29.6	2.02	25.8	0.01	0.02	0.06	126
1	148	8.93	8.91	34.000	26.349	169.5	0.370	2.73	41.9	31.9	2.04	26.4	0.01	0.01	0.03	149
	150 ISL	8.90	8.88	34.004	26.357	168.8	0.373	2.73	41.9	32.2	2.05	26.5	0.01	0.01	0.03	151
1	179	8.43	8.41	34.040	26.458	159.6	0.421	2.58	39.2	36.4	2.15	28.0	0.01	0.01	0.04	180
	200 ISL	8.14	8.12	34.069	26.525	153.5	0.454	2.38	35.9	39.8	2.23	29.4	0.01	0.01	0.03	201
1	209	8.03	8.01	34.080	26.550	151.3	0.468	2.28	34.3	41.3	2.27	30.0	0.01	0.01	0.03	210
1	23 8	7.74	7.72	34.098	26.607	146.2	0.511	1.89	28.3	46.2	2.44	31.9	0.01			239
	250 ISL	7.61	7.59	34.104	26.631	144.2	0.528	1.80	26.8	48.0	2.48	32.4	0.01			251
1	27 8	7.30	7.27	34.114	26.683	139.5	0.568	1.67	24.7	52.1	2.56	33.5	0.01			280
	300 ISL	7.01	6.98	34.108	26.719	136.3	0.598	1.56	22.9	55.8	2.63	34.5	0.01			302
1	334	6.58	6.55	34.107	26.776	131.1	0.644	1.36	19.8	61.6	2.74	36.2	0.01			336
1	3 93	6.15	6.12	34.186	26.895	120.4	0.718	.0.75	10.8	71.4	3.01	39.1	0.01			396
	400 ISL	6.11	6.07	34.193	26.906	119.4	0.726	0.71	10.2	72.3	3.03	39.3	0.01			403
1	457	5.86	5.82	34.253	26.985	112.5	0.792	0.45	6.4	77.9	3.13	40.2	0.00			460
	500 ISL	5.88	5.84	34.329	27.043	107.7	0.840	0.32	4.6	80.6	3.20	40.5	0.00			503
1	527	5.89	5.84	34.376	27.079	104.6	0.868	0.24	3.4	82.3	3.24	40.7	0.00			531

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 30.7 N	120 14.7 W	08/11/89	1032 UTC	3733 M	320	19 KT			1016.2 MB	16.5 C	15.1 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	17.51	17.51	33.409	24.173	373.5	0.000	5.63	103.0	1.8	0.37	0.0	0.00	0.25	0.07	0
1	2		17.51	17.51	33.409	24.173	373.6	0.007	5.63	103.0	1.8	0.37	0.0	0.00	0.25	0.07	2
	10	ISL	17.49	17.49	33.408	24.178	373.4	0.037	5.59	102.2	1.5	0.37	0.0	0.00	0.24	0.07	10
1	11		17.49	17.49	33.408	24.178	373.4	0.041	5.59	102.2	1.5	0.37	0.0	0.00	0.24	0.07	11
	20	ISL	17.50	17.50	33.407	24.175	374.0	0.075	5.67	103.7	1.5	0.37	0.0	0.00	0.24	0.07	20
1	21		17.50	17 .50	33.407	24.175	374.1	0.078	5.68	103 .9	1.5	0.37	0.0	0.00	0.24	0.07	21
	30	ISL	17.50	17 .49	33.405	24.174	374.5	0.112	5.60	102.4	1.3	0.37	0.0	0.00	0.25	0.07	30
1	32		17.50	17 .49	33.405	24.174	374.5	0.120	5.58	102.1	1.3	0.37	0.0	0.00	0.25	0.07	32
1	41		17.49	17.48	33.407	24.178	374.4	0.153	5.61	102.6	1.2	0.38	0.0	0.00	0.26	0.08	41
	50	ISL	17.21	17.20	33.417	24.253	367.6	0.187	5.70	103 .7	1.1	0.39	0.0	0.00	0.40	0.18	50
1	52		17.08	17 .07	33.417	24.284	364.7	0.194	5.72	103.8	1.1	0.39	0.0	0.00	0.44	0.21	52
1	62		15.81	15.80	33.379	24.547	339.9	0.229	5.85	103.5	1.2	0.40	0.0	0.01	0.50	0.43	62
1	73		14.12	14.11	33.230	24.797	316.2	0.265	5.98	102.1	1.9	0.53	1.0	0.21	0.35	0.36	73
	75	ISL	13.71	13.70	33.200	24.859	310.3	0.272	5.97	101.1	2.2	0.56	1.5	0.20	0.32	0.33	75
1	86		11.75	11.74	33.111	25.171	280.5	0.304	5.79	94.0	4.2	0.72	4.5	0.10	0.18	0.19	86
	100	ISL	11.07	11.06	33.195	25.360	262.8	0.342	5.44	87.1	6.5	0.89	7.7	0.02	0.12	0.16	100
1	101		11.06	11.05	33.206	25.371	261.8	0.345	5.41	86.6	6.7	0.90	7.9	0.02	0.12	0.16	101
1	121		10.29	10.28	33.502	25.736	227.4	0.394	4.40	69.4	14.2	1.35	15.8	0.01	0.05	0.07	122
	125	ISL	10.16	10.15	33.553	25.798	221.6	0.403	4.24	66.7	15.7	1.42	17.0	0.01	0.04	0.06	126
1	146		9.56	9.54	33.772	26.069	196.1	0.447	3.56	55.3	22.9	1.71	21.7	0.01	0.01	0.03	147
	150	ISL	9.47	9.45	33.803	26.108	192.5	0.454	3.47	53.8	24.0	1.75	22.3	0.01	0.01	0.03	151
1	176		8.95	8.93	33.950	26.307	174.0	0.502	3.05	46.8	29.6	1.93	25.0	0.01	0.00	0.02	177
	200	ISL	8.59	8.57	34.015	26.414	164.2	0.543	2.83	43.1	33.6	2.03	26.5	0.01	0.00	0.02	201
1	207		8.51	8.49	34.026	26.436	162.3	0.554	2.78	42.3	34.7	2.05	26.9	0.01	0.00	0.02	208
1	235		8.24	8.22	34.072	26.513	155.4	0.598	2.44	36.9	39.0	2.18	28.7	0.01			236
	250	ISL	8.09	8.06	34.084	26.545	152.5	0.622	2.32	35.0	41.0	2.24	29.5	0.01			251
1	275		7.83	7.80	34.098	26.595	148.1	0.659	2.11	31.6	44.5	2.35	30.7	0.00			277
	300	ISL	7.58	7.55	34.128	26.655	142.7	0.696	1.74	25.9	49.4	2.50	32.4	0.00			302
1	329		7.30	7.27	34.161	26.721	136.8	0.736	1.31	19.4	55.1	2.67	34.3	0.00			331
1	388		6.79	6.75	34.178	26.805	129.4	0.815	0.98	14.3	62.6	2.83	36.5	0.01			390
	400	ISL	6.71	6.67	3 4.189	26.824	127.7	0.830	0.89	13.0	64.3	2.87	36.9	0.01			402
1	454		6.39	6.35	34.247	26.913	119.8	0.897	0.53	7.7	71.8	3.05	38.5	0.00			457
	500	ISL	6.17	6.13	34.287	26.974	114.5	0.951	0.39	5.6	76.5	3.13	39.4	0.00			503
1	522		6.06	6.01	34.306	27.003	112.0	0.976	0.32	4.6	78.8	3.17	39.9	0.00			525

RV NEW HORIZON CALCOFI CRUISE 8911 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
31 12.2 N	120 55.5 W	08/11/89	1612 UTC	3733 M	320	15 KT	330 05 08	1	1018.4 MB	17.5 C	16.2 C	6/8	ST

CAST	DEPTH M		TEMP DEG C	POT TEMP DEG C	SALINITY PSS 78	SIGMA THETA	ST A	DYN HT	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	18.59	18.59	33.414	23.913	398.3	0.000	5.47	102.2	2.5	0.36	0.0	0.00	0.13	0.02	0
1	1		18.59	18.59	33.414	23.913	398.3	0.004	5.47	102.2	2.5	0.36	0.0	0.00	0.13	0.02	1
	10	ISL	18.58	18.58	33.414	23.916	398.4	0.040	5.46	102.0	2.4	0.37	0.0	0.00	0.13	0.02	10
1	17		18.58	18.58	33.414	23.917	398.6	0.068	5.46	102.0	2.2	0.37	0.0	0.00	0.13	0.02	17
	20	ISL	18.53	18.53	33.403	23.921	398.3	0.080	5.47	102.0	2.2	0.37	0.0	0.00	0.13	0.02	20
	30	ISL	18.30	18.29	33.375	23.957	3 95.2	0.119	5.50	102.1	1.9	0.36	0.0	0.00	0.16	0.04	30
1	32		18.25	18.24	33.372	23.967	394.3	0.127	5.51	102.2	1.9	0.36	0.0	0.00	0.17	0.04	32
1	41		18.06	18.05	33.402	24.037	388.0	0.162	5.57	103.0	1.6	0.36	0.0	0.00	0.22	0.06	41
	50	ISL	17.51	17.50	33.369	24.145	378.0	0.197	5.69	104.1	1.4	0.36	0.0	0.00	0.31	0.11	50
1	52		17.34	17.33	33.356	24.175	375.1	0.204	5.73	104.4	1.4	0.36	0.0	0.00	0.33	0.12	52
1	62		16.19	16.18	33.300	24.400	353.9	0.241	6.06	107.9	1.4	0.35	0.0	0.01	0.36	0.17	62
1	73		15.22	15.21	33.277	24.599	335.2	0.279	6.11	106.7	1.3	0.38	0.0	0.01	0.39	0.25	73
	75	ISL	14.81	14.80	33.248	24.666	328.8	0.285	6.14	106.4	1.4	0.39	0.1	0.02	0.38	0.25	75
1	82		13.33	13.32	33.156	24.902	306.3	0.308	6.21	104.3	1.9	0.45	0.3	0.06	0.32	0.24	82
1	96		11.82	11.81	33.135	25.177	280.2	0.3 49	5.83	94.8	3.7	0.65	3.5	0.13	0.20	0.21	96
	100	ISL	11.68	11.67	33.222	25.271	271.4	0.360	5.68	92.2	4.3	0.71	4.7	0.11	0.17	0.19	100
1	112		11.44	11.43	33.489	25.523	247.8	0.391	5.21	84.2	6.7	0.89	8.4	0.02	0.10	0.13	112
	125	ISL	10.81	10.79	33.500	25.644	236.3	0.422	4.83	77.0	10.1	1.07	11.9	0.01	0.05	0.06	126
1	128		10.65	10.63	33.490	25.665	234.5	0.429	4.75	75.5	11.0	1.11	12.7	0.01	0.04	0.05	129
	150	ISL	9.75	9.73	33.604	25.907	211.7	0.479	4.20	65.5	16.8	1.40	17.6	0.00	0.01	0.02	151
1	153		9.65	9.63	33.626	25.941	208.5	0.485	4.13	64.3	17.6	1.43	18.2	0.00	0.01	0.02	154
1	178		9.10	9.08	33.799	26.165	187.6	0.534	3.70	56.9	23.5	1.64	21.9	0.00	0.01	0.02	179
	200	ISL	8.64	8.62	33.914	26.328	172.4	0.574	3.62	55.2	27.4	1.72	23.5	0.00	0.00	0.01	201
1	210		8.44	8.42	33.952	26.388	166.8	0.591	3.59	54.5	29.2	1.75	24.1	0.00	0.00	0.01	211
1	240		7.92	7.90	34.007	26.510	155.6	0.639	3.13	47.0	36.5	1.96	27.1	0.00			241
	250	ISL	7.78	7.76	34.021	26.541	152.7	0.655	2.93	43.8	39.0	2.04	28.1	0.00			251
1	281		7.36	7.33	34.052	26.626	145.0	0.701	2.35	34.8	46.6	2.27	31.1	0.00			283
	300	ISL	7.06	7.03	34.054	26.669	141.0	0.728	2.17	31.9	50.8	2.36	32.5	0.00			302
1	338		6.55	6.52	34.061	26.744	134.2	0.780	1.86	27.0	58.2	2.51	34.7	0.00			340
1	398		6.29	6.25	34.151	26.849	124.9	0.85 8	1.00	14.5	67.8	2.82	37.7	0.00			400
	400	ISL	6.28	6.24	34.153	26.852	124.6	0.860	0.98	14.2	68.1	2.83	37.8	0.00			402
1	463		5.90	5.86	34.211	26.947	116.2	0.936	0.61	8.7	77.2	3.00	39.8	0.00			466
	500	ISL	5.70	5.66	34.241	26.996	111.9	0.979	0.48	6.8	81.6	3.07	40.6	0.00			503
1	530		5.54	5.50	34.266	27.035	108.4	1.012	0.37	5.3	85.2	3.12	41.2	0.00			533

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	WET	CLOUD AMT	TYPE
30 50.6 N	121 35.8 V	09/11/89	0018 UTC	4177 M	330	16 KT	330 07 08	1	1016.5 MB	17.8 C	16.0 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 DM/L	CHL-A UG/L	PHAEO UG/L	PRESS D.BAR
	0 ISL	18.14	18.14	33.484	24.078	382.6	0.000	5.52	102.3	2.3	0.37	0.0	0.00	0.16	0.03	0
1	1	18.14	18.14	33.484	24.078	382.6	0.004	5.52	102.3	2.3	0.37	0.0	0.00	0.16	0.03	1
	10 ISL	18.13	18.13	33.482	24.079	382.8	0.038	5.52	102.2	2.1	0.37	0.0	0.00	0.16	0.03	10
1	16	18.12	18.12	33.481	24.081	382.8	0.061	5.53	102.4	1.9	0.37	0.0	0.00	0.16	0.03	16
	20 ISL	18.12	18.12	33.481	24.082	383.0	0.077	5.53	102.4	1.8	0.37	0.0	0.00	0.16	0.03	20
	30 ISL	18.11	18.10	33.481	24.084	383.0	0.115	5.54	102.6	1.7	0.36	0.0	0.00	0.17	0.03	30
1	31	18.11	18.10	33.481	24.084	383.0	0.119	5.54	102.6	1.7	0.36	0.0	0.00	0.17	0.03	31
1	41	16.37	16.36	33.310	24.366	356.5	0.156	6.10	109.1	1.6	0.37-	0.0	0.00	0.26	0.14	41
	50 ISL	14.79	14.78	33.336	24.737	321.3	0.186	6.19	107.2	1.8	0.45	0.3	0.02	0.55	0.33	50
1	51	14.60	14.59	33.343	24.783	316.9	0.189	6.20	107.0	1.8	0.46	0.3	0.02	0.57	0.35	51
1	61	12.07	12.06	33.337	25.286	269.0	0.219	5.44	89.1	6.1	0.94	8.0	0.26	0.38	0.29	61
1	71	11.09	11.08	33.351	25.477	251.0	0.245	5.06	81.1	8.8	1.05	10.6	0.02	0.22	0.20	71
	75 ISL	10.88	10.87	33.383	25.540	245.1	0.255	4.92	78.6	10.0	1.11	11.7	0.02	0.18	0.18	75
1	79	10.73	10.72	33.422	25.597	239.8	0.264	4.78	76.1	11.2	1.18	12.9	0.01	0.15	0.16	79
1	94	10.14	10.13	33.561	25.807	220.1	0.299	4.17	65.6	16.4	1.46	17.7	0.01	0.07	0.08	94
	100 ISL	9.97	9.96	33.612	25.875	213.7	0.312	3.97	62.2	18.2	1.55	19.1	0.01	0.05	0.07	100
1	109	9.73	9.72	33.681	25.969	204.9	0.331	3.72	58.0	20.6	1.65	20.8	0.00	0.03	0.05	109
1	124	9.23	9.22	33.777	26.126	190.2	0.360	3.46	53.4	24.4	1.75	22.9	0.00	0.01	0.02	125
	125 ISL	9.21	9.20	33.783	26.134	189.5	0.362	3.45	53.2	24.6	1.75	23.0	0.00	0.01	0.02	126
1	149	8.82	8.80	33.899	26.287	175.3	0.406	3.31	50.7	28.2	1.84	24.4	0.00	0.01	0.03	150
	150 ISL	8.80	8.78	33.903	26.293	174.8	0.408	3.31	50.6	28.3	1.84	24.4	0.00	0.01	0.03	151
1	175	8.29	8.27	33.971	26.425	162.6	0.450	3.27	49.5	32.3	1.91	25.6	0.00	0.00	0.03	176
	200 ISL	8.03	8.01	34.014	26.498	156.0	0.490	2.81	42.3	37.4	2.08	28.2	0.00	0.01	0.03	201
1	205	7.99	7.97	34.019	26.508	155.2	0.497	2.71	40.7	38.4	2.12	28.7	0.00	0.01	0.03	206
1	234	7.59	7.57	34.033	26.578	148.9	0.542	2.45	36.5	43.3	2.25	30.5	0.00			235
	250 ISL	7.41	7.39	34.043	26.611	145.9	0.565	2.27	33.7	46.2	2.33	31.4	0.00			251
1	275	7.15	7.12	34.060	26.661	141.4	0.601	1.97	29.0	50.8	2.46	32.9	0.00			277
	300 ISL	6.85	6.82	34.073	26.713	136.7	0.636	1.71	25.0	55.6	2.57	34.5	0.00			302
1	330	6.50	6.47	34.089	26.772	131.3	0.676	1.41	20.5	61.4	2.70	36.2	0.00			332
1	3 89	5.92	5.89	34.133	26.882	121.3	0.751	0.88	12.6	72.6	2.94	38.7	0.00			391
	400 ISL	5.84	5.81	34.145	26.901	119.6	0.764	0.80	11.4	74.4	2.97	39.1	0.00			403
1	453	5.56	5.52	34.209	26.987	111.9	0.825	0.51	7.2	81.9	3.09	40.8	0.00			456
	500 ISL	5.44	5.40	34.263	27.044	107.0	0.877	0.36	5.1	86.4	3.17	41.4	0.00			503
1	521	5.38	5.34	34.287	27.071	104.7	0.899	0.30	4.2	88.4	3.20	41.7	0.00			525

LATITUDE	LONGITUDE	DAY/MO/TR	MESSENGER	BOTTOM	HIND	SPEED	HAVES	HEATHER	BAROMETER	DRY	UET	CLOUD AMT	TYPE
30 31.0 N	122 15.5 V	09/11/89	0557 UTC	4143 M	350	15 KT			1018.7 MB	17.0 C	14.6 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	18.12	18.12	33.535	24.122	378.4	0.000	5.52	102.3	2.2	0.39	0.0	0.00	0.19	0.07	0
1	1	18.12	18.12	33.535	24.122	378.4	0.004	5.52	102.3	2.2	0.39	0.0	0.00	0.19	0.07	1
	10 ISL	18.12	18.12	33.535	24.122	378.7	0.038	5.54	102.6	2.1	0.40	0.0	0.00	0.19	0.06	10
1	17	18.12	18.12	33.535	24.123	378.9	0.064	5.55	102.8	2.1	0.40	0.0	0.00	0.19	0.06	17
	20 ISL	18.12	18.12	33.536	24.124	379.0	0.076	5.54	102.6	2.1	0.40	0.0	0.00	0.19	0.07	20
	30 ISL	18.13	18.12	33.537	24.122	379.4	0.114	5.52	102.3	2.1	0.40	0.0	0.00	0.19	0.08	30
1	32	18.13	18.12	33.538	24.123	379.4	0.121	5.52	102.3	2.1	0.40	0.0	0.00	0.19	0.08	32
1	42	18.14	18.13	33.537	24.120	380.0	0.159	5.52	102.3	1.9	0.41	0.0	0.00	0.19	0.06	42
	50 ISL	18.02	18.01	33.508	24.128	379.6	0.190	5.59	103.3	1.7	0.41	0.0	0.00	0.22	0.08	50
1	53	17.97	17.96	33.497	24.132	379.3	0.201	5.61	103.6	1.7	0.41	0.0	0.00	0.23	0.09	53
1	63	15.62	15.61	33.355	24.571	337.6	0.237	6.03	106.2	1.7	0.45	0.0	0.00	0.39	0.28	63
1	73	13.88	13.87	33.184	24.812	314.8	0.269	6.21	105.5	2.3	0.51	0.5	0.10	0.44	0.37	73
	75 ISL	13.41	13.40	33.139	24.872	309.0	0.276	6.19	104.1	2.6	0.54	0.7	0.13	0.41	0.36	75
1	82	11.93	11.92	33.040	25.083	288.9	0.297	6.13	99.9	3.7	0.68	1.9	0.22	0.27	0.28	82
1	98	11.39	11.38	33.324	25.403	258.8	0.340	5.34	86.2	7.4	0.92	7.9	0.02	0.13	0.18	98
	100 ISL	11.27	11.26	33.346	25.442	255.1	0.346	5.26	84.7	8.0	0.95	8.6	0.02	0.12	0.17	100
1	113	10.46	10.45	33.460	25.674	233.2	0.377	4.81	76.1	11.9	1.15	12.6	0.01	0.05	0.08	113
	125 ISL	9.96	9.95	33.537	25.819	219.5	0.404	4.57	71.6	14.8	1.30	15.1	0.00	0.02	0.05	126
1	129	9.82	9.81	33.563	25.863	215.4	0.413	4.51	70.4	15.8	1.34	15.8	0.00	0.02	0.04	130
	150 ISL	9.14	9.12	33.779	26.143	189.2	0.456	4.11	63.3	22.0	1.54	19.8	0.00	0.01	0.03	151
1	154	9.04	9.02	33.820	26.191	184.6	0.463	4.03	61.9	23.2	1.58	20.5	0.00	0.01	0.03	155
1	180	8.73	8.71	33.967	26.355	169.5	0.509	3.34	51.0	30.3	1.84	24.4	0.00	0.01	0.03	181
	200 ISL	8.46	8.44	34.004	26.426	163.1	0.542	3.23	49.1	32.9	1.90	25.4	0.00	0.01	0.03	201
1	211	8.30	8.28	34.010	26.455	160.4	0.560	3.20	48.4	34.2	1.92	25.8	0.00	0.01	0.03	212
1	241	7.88	7.86	34.045	26.545	152.2	0.607	2.72	40.8	40.5	2.17	28.6	0.00			242
	250 ISL	7.71	7.69	34.044	26.569	150.0	0.621	2.63	39.3	42.4	2.22	29.3	0.00			251
1	281	7.13	7.10	34.038	26.647	142.8	0.666	2.34	34.5	48.8	2.33	31.6	0.00			283
	300 ISL	6.91	6.88	34.049	26.686	139.3	0.693	2.11	30.9	52.3	2.37	32.8	0.00			302
1	336	6.60	6.57	34.075	26.748	133.7	0.742	1.67	24.3	58.6	2.46	34.8	0.00			338
1	397	6.06	6.03	34.101	26.839	125.6	0.821	1.16	16.7	68.6	2.80	38.1	0.00			399
	400 ISL	6.03	6.00	34.103	26.845	125.1	0.825	1.14	16.4	69.2	2.81	38.2	0.00			402
1	462	5.56	5.52	34.160	26.948	115.7	0.900	0.69	9.8	79.9	3.06	40.6	0.00			465
	500 ISL	5.44	5.40	34.212	27.004	110.8	0.943	0.50	7.1	84.3	3.15	40.9	0.00			503
1	522	5.37	5.33	34.242	27.036	107.9	0.967	0.39	5.5	86.8	3.20	41.1	0.00			525

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	HEATHER	BAROMETER	DRT	WET	CLOUD AMT TTPE
30 10.9 N	122 55.3 V	09/11/89	1138 UTC	3 401 M	350	11 KT			1018.3 MB	16.7 C	14.4 C	

CAST	DEPTH M	TEMP DEC C	POT TEMP DEC 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	19.06	19.06	33.557	23.905	399.1	0.000	5.43	102.4	2.0	0.34	0.0	0.00	0.13	0.04	0
1 1		19.06	19.06	33.557	23.905	399.2	0.004	5.43	102.4	2.0	0.34	0.0	0.00	0.13	0.04	1
	10 ISL	19.06	19.06	33.554	23.903	399.7	0.040	5.43	102.4	2.0	0.34	0.0	0.00	0.12	0.04	10
1	17	19.06	19.06	33.553	23.902	400.0	0.068	5.42	102.2	1.9	0.34	0.0	0.00	0.12	0.04	17
	20 ISL	19.06	19.06	33.557	23.905	399.8	0.0 80	5.42	102.2	1.9	0.3 4	0.0	0.00	0.12	0.04	20
	30 ISL	19.06	19.05	33.564	23.911	399.6	0.120	5.41	102.0	1.8	0.33	0.0	0.00	0.13	0.04	30
1	32	19.06	19.05	33.565	23.912	399.6	0.128	5.41	102.0	1.8	0.33	0.0	0.00	0.13	0.04	32
1	42	19.08	19.07	33.549	23.895	401.6	0.168	5.42	102.2	1.8	0.33	0.0	0.00	0.12	0.04	42
	50 ISL	19.06	19.05	33.553	23.904	401.0	0.200	5.42	102.2	1.7	0.33	0.0	0.00	0.12	0.04	50
1	52	19.06	19.05	33.554	23.905	401.0	0.208	5.42	102.2	1.7	0.33	0.0	0.00	0.12	0.04	52
1	62	17.06	17.05	33.539	24.382	355.7	0.246	5.99	108.7	1.7	0.28	0.0	0.00	0.22	0.08	62
1	73	15.60	15.59	33.489	24.679	327.6	0.2 83	6.07	107.0	1.8	0.31	0.0	0.00	0.25	0.14	73
	75 ISL	15.47	15.46	33.486	24.705	325.2	0.290	6.06	106.5	1.8	0.32	0.0	0.00	0.26	0.15	75
1	82	15.04	15.03	33.464	24.783	318.0	0.313	6.01	104.7	1.8	0.35	0.0	0.00	0.27	0.19	82
1	97	13.33	13.32	33.326	25.034	294.2	0.358	5.89	99.0	2.4	0.43	0.2	0.09	0.26	0.22	97
	100 ISL	13.07	13.06	33.306	25.070	290.8	0.367	5.85	97.8	2.7	0.47	0.7	0.08	0.25	0.22	100
1	112	12.25	12.24	33.275	25.206	278.0	0.401	5.65	92.8	4.1	0.63	3.2	0.06	0.18	0.22	112
	125 ISL	11.77	11.75	33.358	25.360	263.5	0.437	5.38	87.5	6.1	0.80	6.5	0.02	0.13	0.17	125
1	128	11.68	11.66	33.384	25.397	260.1	0.444	5.32	86.4	6.6	0.83	7.2	0.01	0.12	0.15	129
	150 ISL	10.82	10.80	33.507	25.649	236.5	0.499	5.02	80.1	9.3	0.97	10.1	0.01	0.05	0.08	151
1	153	10.70	10.68	33.522	25.6 82	233.5	0.506	4.97	79.1	9.8	0.99	10.5	0.01	0.04	0.07	154
1	179	9.73	9.71	33.650	25.947	208.5	0.564	4.26	66.4	17.5	1.42	17.3	0.00	0.01	0.03	180
	200 ISL	9.12	9.10	33.792	26.157	188.8	0.605	3.95	60.8	22.5	1.61	20.7	0.00	0.00	0.03	201
1	209	8.91	8.89	33.849	26.235	181.5	0.622	3.87	59.3	24.4	1.66	21.7	0.00	0.00	0.03	210
1	240	8.42	8.40	33.959	26.397	166.5	0.676	3.67	55.7	29.9	1.82	23.9	0.00			241
	250 ISL	8.29	8.26	33.977	26.431	163.4	0.692	3.56	53.8	31.5	1.85	24.5	0.00			251
1	2 80	7.90	7.87	34.005	26.512	156.1	0.7 40	3.17	47.5	36.7	1.94	26.5	0.00			281
	300 ISL	7.60	7.57	34.015	26.563	151.4	0.771	2.92	43.5	40.9	2.07	28.2	0.00			302
1	335	7.08	7.05	34.027	26.646	143.8	0.823	2.47	36.3	48.7	2.33	31.3	0.00			337
1	395	6.29	6.25	34.057	26.775	131.8	0.905	1.65	23.8	62.2	2.70	35.9	0.00			3 97
	400 ISL	6.24	6.20	34.062	26.786	130.9	0.912	1.58	22.8	63.3	2.73	36.2	0.00			402
1	462	5.72	5.68	34.133	26.907	119.7	0.990	0.85	12.1	75.9	3.03	39.7	0.00			465
	500 ISL	5.50	5.46	34.173	26.966	114.4	1.034	0.65	9.2	81.4	3.11	40.8	0.00			503
1	530	5.33	5.29	34.205	27.012	110.3	1.068	0.49	6.9	85.7	3.18	41.6	0.00			533

LATITUDE	LONGITUDE	DAT/MO/TR	MESSENGER	BOTTOM	WIND	SPEED	WAVES	WEATHER	BAROMETER	DRT	WET	CLOUD AMT TTPE
29 50.3 N	123 36.0 W	09/11/89	1714 UTC	3952 M	330	12 CT	320 06 06	1	1018.9 MB	19.3 C	17.1 C	2/8 ST

CAST	DEPTH M	TEMP DEC C	POT TEMP DEC C	SALINITY PSS 78	SIGMA THETA	SVA	DYN HT	OXYGEN ML/L	OXT 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	19.17	19.17	33.555	23.875	401.9	0.000	5.42	102.4	2.4	0.31	0.1	0.00	0.12	0.05	0
	10 ISL	19.16	19.16	33.554	23.877	402.1	0.040	5.41	102.2	2.3	0.32	0.1	0.00	0.12	0.04	10
1	16	19.15	19.15	33.554	23.880	402.1	0.064	5.41	102.2	2.2	0.32	0.1	0.00	0.12	0.04	16
	20 ISL	19.15	19.15	33.554	23.880	402.2	0.080	5.41	102.2	2.2	0.32	0.1	0.00	0.12	0.04	20
	30 ISL	19.15	19.14	33.553	23.880	402.6	0.121	5.41	102.2	2.2	0.31	0.1	0.00	0.13	0.05	30
1	31	19.15	19.14	33.553	23.880	402.6	0.125	5.41	102.2	2.2	0.31	0.1	0.00	0.13	0.05	31
1	41	19.16	19.15	33.550	23.876	403.4	0.165	5.41	102.2	2.0	0.32	0.1	0.00	0.13	0.05	41
	50 ISL	19.15	19.14	33.551	23.879	403.4	0.201	5.42	102.4	2.0	0.31	0.1	0.00	0.13	0.05	50
1	51	19.15	19.14	33.551	23.880	403.4	0.205	5.42	102.4	2.0	0.31	0.1	0.00	0.13	0.05	51
1	60	19.13	19.12	33.549	23.883	403.4	0.242	5.43	102.5	1.9	0.30	0.1	0.00	0.13	0.05	60
1	71	17.08	17.07	33.569	24.401	354.2	0.283	5.94	107.8	1.8	0.28	0.1	0.00	0.22	0.11	71
	75 ISL	16.61	16.60	33.594	24.530	342.0	0.297	5.94	106.9	1.8	0.27	0.1	0.00	0.22	0.13	75
1	80	16.17	16.16	33.624	24.655	330.3	0.314	5.94	106.0	1.9	0.27	0.1	0.00	0.23	0.16	80
1	96	15.42	15.41	33.651	24.844	312.6	0.365	5.83	102.5	2.1	0.30	0.0	0.02	0.24	0.21	96
	100 ISL	15.18	15.16	33.640	24.888	308.5	0.378	5.80	101.5	2.2	0.32	0.1	0.06	0.24	0.21	100
1	111	14.56	14.54	33.624	25.010	297.1	0.411	5.71	98.6	2.6	0.37	0.4	0.16	0.22	0.19	111
	125 ISL	14.05	14.03	33.703	25.179	281.4	0.452	5.50	94.1	3.3	0.44	1.9	0.06	0.16	0.17	125
1	126	14.02	14.00	33.710	25.191	280.3	0.454	5.49	93.8	3.3	0.44	2.0	0.05	0.16	0.17	126
	150 ISL	13.23	13.21	33.785	25.411	259.9	0.519	5.32	89.5	4.3	0.52	3.9	0.02	0.09	0.12	151
1	152	13.14	13.12	33.785	25.429	258.2	0.524	5.31	89.2	4.5	0.53	4.1	0.02	0.08	0.12	153
1	178	10.91	10.89	33.659	25.752	227.5	0.588	4.95	79.2	9.7	0.93	10.2	0.01	0.02	0.05	179
	200 ISL	9.87	9.85	33.712	25.972	206.6	0.635	4.64	72.6	15.0	1.22	14.9	0.00	0.01	0.04	201
1	209	9.58	9.56	33.755	26.054	198.9	0.654	4.51	70.1	17.3	1.32	16.6	0.00	0.01	0.04	210
1	23 9	8.75	8.72	33.907	26.306	175.3	0.710	4.03	61.6	25.7	1.54	21.6	0.00			240
	250 ISL	8.53	8.50	33.940	26.366	169.7	0.729	3.95	60.1	27.9	1.60	22.5	0.00			251
1	280	8.04	8.01	33.994	26.482	159.0	0.778	3.75	56.4	33.6	1.78	24.5	0.00			281
	3 00 ISL	7.68	7.65	34.007	26.545	153.1	0.809	3.41	50.9	38.5	1.94	26.7	0.00			302
1	337	7.09	7.06	34.017	26.637	144.7	0.864	2.68	39.4	47.9	2.26	30.8	0.00			339
1	397	6.47	6.43	34.065	26.758	133.6	0.948	1.66	24.1	60.6	2.69	35.5	0.00			399
	400 ISL	6.44	6.40	34.068	26.765	133.0	0.952	1.62	23.5	61.3	2.71	35.7	0.00			402
1	464	5.78	5.74	34.126	26.895	121.0	1.033	0.89	12.7	75.5	3.01	39.5	0.00			467
	500 ISL	5.59	5.55	34.156	26.942	116.8	1.076	0.71	10.1	80.1	3.11	40.4	0.01			503
1	533	5.41	5.37	34.185	26.986	112.8	1.114	0.54	7.6	84.3	3.20	41.2	0.01			536

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON — CALCOFI CRUISE 8911 — STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 54.5 N	121 12.3 W	19/11/89	1907 UTC	14 M	1142 - 1725 PST	1150 PST	1722 PST	659.6 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	15.53	33.546	24.736	5.96	105.0	3.3	0.43	0.9	0.04	1.14	0.36	99.	22.3	25.9	24.1	0.10
11	15.08	33.535	24.826	5.89	102.8	3.4	0.45	1.2	0.05	1.37	0.66	31.	23.6	23.7	23.6	0.12
21	14.83	33.538	24.883	5.74	99.7	4.2	0.53	2.4	0.08	1.25	0.58	11.	18.0	17.3	17.6	0.08
32	14.03	33.568	25.076	5.40	92.3	6.3	0.72	5.2	0.13	1.01	0.50	3.5	5.5	5.3	5.4	0.09
40	13.16	33.583	25.265	4.99	83.7	9.3	0.92	8.3	0.17	0.88	0.47	1.3	2.7	2.4	2.6	0.06
64	10.74	33.691	25.804	3.62	57.7	20.1	1.59	19.1	0.11	0.29	0.24	0.11	0.12	0.13	0.13	0.04

RV NEW HORIZON — CALCOFI CRUISE 8911 — STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 23.4 N	124 18.8 W	18/11/89	1914 UTC	29 M	1157 - 1741 PST	1202 PST	1737 PST	118.2 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	17.80	33.440	24.127	5.54	101.9	1.8	0.33	0.0	0.00	0.13	0.05	99.	0.13	0.14	0.13	0.06
24	17.77	33.440	24.135	5.55	102.1	1.8	0.33	0.0	0.00	0.13	0.05	31.	1.5	1.6	1.6	0.04
44	17.77	33.440	24.136	5.56	102.2	1.7	0.33	0.0	0.00	0.14	0.05	11.	1.6	1.6	1.6	0.06
67	14.66	33.218	24.674	6.34	109.5	2.0	0.37	0.0	0.00	0.21	0.16	3.5	1.2	1.2	1.2	0.17
84	13.81	33.240	24.870	6.26	106.2	2.4	0.40	0.0	0.00	0.25	0.23	1.3	0.66	0.70	0.68	0.02
134	10.87	33.456	25.600	4.92	78.6	10.4	1.04	9.2	0.01	0.05	0.08	0.11	0.04	0.05	0.04	0.01

RV NEW HORIZON — CALCOFI CRUISE 9911 — STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 48.5 N	121 51.2 W	17/11/89	1838 UTC	12 M	1148 - 1734 PST	1152 PST	1733 PST	321.3 MG C/M2

DEPTH M	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ML/L	OXY PCT	SIO3 UM/L	PO4 UM/L	NO3 UM/L	NO2 UM/L	CHL UG/L	PHAEO UG/L	LIGHT PCT	UPTAKE (MG C/M3) 1	2	MEAN	DARK
0	15.36	33.529	24.760	5.86	102.8	2.1	0.36	0.0	0.00	0.77	0.30	99.	3.1	2.8	2.9	0.16
9	15.37	33.528	24.757	5.91	103.7	1.9	0.36	0.0	0.00	0.77	0.28	31.	12.6	12.3	12.4	0.19
17	15.32	33.525	24.766	5.90	103.5	1.8	0.36	0.0	0.00	0.79	0.31	11.	12.0	12.3	12.1	0.19
27	15.18	33.500	24.778	5.88	102.8	1.9	0.38	0.2	0.03	0.83	0.38	3.5	8.0	8.1	8.1	0.09
35	12.39	33.278	25.179	5.48	90.3	6.6	0.83	6.4	0.17	0.43	0.38	1.3	1.3	1.5	1.4	0.05
55	11.28	33.360	25.450	4.86	78.3	11.0	1.16	12.3	0.04	0.24	0.26	0.11	0.11	0.16	0.14	0.04

RV NEW HORIZON — CALCOFI CRUISE 8911 — STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 11.2 N	119 32.0 W	16/11/89	1941 UTC	21 M	1157 - 1724 PST	1143 PST	1722 PST	514.0 MG C/M2

DEPTH M	TEMP DEG C	SALINITY PSS 7 8	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	17.13	33.571	24.388	5.91	107.4	2.3	0.28	0.0	0.00	0.35	0.11	99.	7.4	7.0	7.2	0.11
16	16.23	33.509	24.550	6.04	107.8	2.5	0.32	0.0	0.00	0.63	0.25	31.	14.5	14.1	14.3	0.12
30	14.47	33.412	24.863	6.09	104.9	3.6	0.44	0.6	0.06	1.12	0.48	11.	12.7	12.4	12.6	0.08
47	12.35	33.412	25.291	5.02	82.7	8.6	0.93	7.5	0.40	0.43	0.35	3.5	1.9	1.8	1.9	0.04
60	11.98	33.424	25.371	4.99	81.6	8.8	0.96	8.7	0.04	0.32	0.32	1.3	0.81	0.75	0.78	0.02
93	10.93	33.662	25.749	3.76	60.2	17.9	1.48	17.1	0.01	0.06	0.12	0.11	0.01	0.00	0.01	0.03

RV NEW HORIZON — CALCOFI CRUISE 8911 — STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 56.9 N	122 7.0 W	15/11/89	1921 UTC	25 M	1139 - 1735 PST	1153 PST	1732 PST	195.0 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	17.34	33.281	24.116	5.62	102.4	2.1	0.36	0.1	0.00	0.21	0.06	99.	1.1	1.1	1.1	0.07
21	17.30	33.280	24.125	5.62	102.3	2.1	0.36	0.0	0.00	0.21	0.06	31.	2.7	2.3	2.5	0.08
38	17.04	33.263	24.174	5.65	102.3	1.9	0.36	0.0	0.00	0.24	0.08	11.	3.0	3.1	3.0	0.07
58	16.45	33.306	24.345	5.74	102.8	1.8	0.36	0.0	0.00	0.45	0.15	3.5	2.7	2.5	2.6	0.06
73	13.84	33.084	24.742	6.41	108.7	2.2	0.39	0.0	0.00	0.42	0.36	1.3	1.2	1.2	1.2	0.02
115	10.45	32.971	25.294	5.88	92.8	6.0	0.81	6.0	0.03	0.11	0.17	0.11	0.07	0.06	0.07	0.03

RV NEW HORIZON | CALCOFI CRUISE 8911 | STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 53.8 N	118 29.4 W	12/11/89	1857 UTC	15 M	1136 - 1731 PST	1138 PST	1720 PST	444.9 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
0	17.01	33.534	24.388	6.17	111.9	3.1	0.34	0.1	0.01	0.99	0.19	99.	27.3	28.9	28.1	0.21
11	16.57	33.512	24.474	6.13	110.2	2.6	0.33	0.1	0.00	0.81	0.17	31.	14.4	14.4	14.4	0.17
22	14.60	33.422	24.843	5.35	92.4	6.1	0.80	1.9	0.18	0.81	0.19	11.	9.7	8.2	9.0	0.13
34	13.08	33.364	25.111	5.43	90.9	7.3	0.91	3.8	0.45	0.40	0.29	3.5	2.2	2.1	2.2	0.08
44	12.88	33.369	25.155	5.32	88.6	7.9	0.97	4.7	0.48	0.33	0.29	1.3	0.79	0.92	0.85	0.08

RV NEW HORIZON | CALCOFI CRUISE 8911 | STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 40.1 N	121 0.8 W	13/11/89	1941 UTC	28 M	1200 - 1735 PST	1148 PST	1734 PST	162.5 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	17.68	33.484	24.190	5.57	102.3	2.0	0.36	0.1	0.00	0.18	0.06	99.	1.7	2.3	2.0	0.19
22	17.68	33.485	24.192	5.58	102.5	1.8	0.35	0.1	0.00	0.18	0.06	31.	2.3	2.3	2.3	0.05
41	16.97	33.430	24.319	5.79	104.8	1.8	0.35	0.0	0.00	0.27	0.13	11.	2.2	2.0	2.1	0.05
63	12.97	33.196	25.004	5.99	99.9	3.4	0.52	1.2	0.29	0.33	0.34	3.5	1.1	1.1	1.1	0.03
81	11.78	33.218	25.249	5.61	91.2	5.8	0.75	5.4	0.04	0.21	0.28	1.3	0.49	1.4	0.95	0.02
127	9.86	33.622	25.902	4.04	63.2	19.2	1.49	18.8	0.01	0.02	0.04	0.11	-0.09	-0.09	-0.09	0.11

RV NEW HORIZON | CALCOFI CRUISE B911 | STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 19.8 N	123 45.0 W	14/11/89	1926 UTC	29 M	1145 - 1800 PST	1159 PST	1744 PST	114.9 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
0	18.41	33.457	23.991	5.47	101.8	2.5	0.34	0.1	0.00	0.15	0.04	99.	0.92	0.90	0.91	0.08
23	18.42	33.455	23.988	5.49	102.2	2.3	0.33	0.1	0.00	0.15	0.04	31.	1.8	1.8	1.8	0.03
42	18.42	33.452	23.986	5.49	102.2	2.2	0.33	0.1	0.00	0.16	0.04	11.	1.4	1.5	1.4	0.02
65	16.88	33.395	24.314	6.06	109.5	2.2	0.31	0.1	0.00	0.28	0.12	3.5	0.99	0.92	0.95	0.02
83	14.89	33.515	24.854	5.97	103.7	2.5	0.33	0.0	0.00	0.25	0.21	1.3	0.46	0.54	0.50	0.01
132	11.78	33.358	25.359	5.32	86.6	7.0	0.82	7.4	0.02	0.13	0.14	0.11	0.04	0.03	0.04	0.03

RV NEW HORIZON | CALCOFI CRUISE B911 | STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 39.8 N	119 31.3 W	11/11/89	1824 UTC	22 M	1142 - 1730 PST	1142 PST	1720 PST	320.0 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	17.58	33.623	24.321	5.66	103.8	2.4	0.30	0.0	0.00	0.27	0.08	99.	4.2	4.1	4.2	0.07
17	17.57	33.621	24.322	5.68	104.2	2.2	0.30	0.0	0.00	0.29	0.09	31.	5.4	5.7	5.5	0.06
32	17.46	33.613	24.343	5.70	104.3	2.2	0.30	0.0	0.00	0.38	0.12	11.	5.0	4.7	4.8	0.04
50	13.55	33.423	25.063	5.72	96.7	5.8	0.62	3.1	0.08	1.08	0.46	3.5	5.0	4.9	4.9	0.05
65	11.81	33.446	25.420	4.97	81.0	9.7	0.99	9.4	0.05	0.65	0.42	1.3	1.5	1.3	1.4	0.03
101	10.46	33.700	25.861	3.67	58.2	20.3	1.57	19.2	0.02	0.11	0.20	0.11	0.05	0.02	0.03	0.02

RV NEW HORIZON | CALCOFI CRUISE 8911 | STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 25.8 N	121 59.4 V	10/11/89	1845 UTC	34 M	1137 - 1735 PST	1152 PST	1735 PST	171.4 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	18.12	33.487	24.085	5.54	102.6	2.2	0.39	0.1	0.00	0.14	0.05	99.	0.59	0.61	0.60	0.04
28	18.06	33.483	24.098	5.54	102.5	2.2	0.37	0.1	0.00	0.16	0.05	31.	2.3	2.3	2.3	0.02
52	15.68	33.307	24.520	6.14	108.3	2.2	0.41	0.1	0.00	0.29	0.17	11.	2.6	2.5	2.6	0.01
77	11.53	33.318	25.372	5.27	85.3	8.5	0.99	9.1	0.04	0.28	0.36	3.5	1.3	1.1	1.2	0.02
100	10.75	33.477	25.636	4.56	72.6	13.5	1.30	14.3	0.01	0.11	0.15	1.3	0.29	0.29	0.29	0.01
157	8.92	33.895	26.269	3.35	51.4	29.3	1.87	24.3	0.00	0.01	0.05	0.11	0.00	0.00	0.00	0.01

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON | CALCOFI CRUISE 8911 | STATION 93 48

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 16.2 N	118 44.0 W	7/11/89	1848 UTC	22 M	1127 - 1746 PST	1140 PST	1728 PST	347.2 MG C/M2

DEPTH M	TEMP DEC C	SALINITY PSS 7 8	SIGMA THETA	DISS O2 ML/L	OZY 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	18.49	33.782	24.219	5.53	103.3	1.9	0.33	0.0	0.00	0.33	0.07	99.	4.0	3.6	3.8	0.08
18	18.42	33.767	24.226	5.54	103.4	1.8	0.32	0.0	0.00	0.31	0.07	31.	6.1	5.9	6.0	0.08
32	16.54	33.459	24.441	5.91	106.1	1.8	0.34	0.1	0.00	0.39	0.15	11.	5.1	5.7	5.4	0.06
50	13.13	33.491	25.200	5.67	95.0	6.2	0.69	4.3	0.14	1.02	0.73	3.5	5.0	5.0	5.0	0.04
65	11.88	33.604	25.530	4.67	76.3	12.3	1.15	12.0	0.11	0.65	0.51	1.3	2.3	1.6	1.9	0.03
101	9.77	33.838	26.085	3.16	49.4	25.5	1.79	23.0	0.01	0.03	0.09	0.11	-0.02	-0.01	-0.02	0.03
124	9.18	33.944	26.265	2.56	39.5	31.2	2.04	26.7	0.01	0.02	0.08					
144	8.97	33.990	26.335	2.44	37.5	33.3	2.09	27.4	0.00	0.01	0.08					
174	8.75	34.060	26.425	2.35	35.9	36.2	2.16	28.0	0.01	0.01	0.05					
204	8.49	34.118	26.511	2.07	31.5	40.1	2.29	29.4	0.01	0.01	0.04					

RV NEW HORIZON | CALCOFI CRUISE 8911 | STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 11.0 N	120 55.4 W	8/11/89	1846 UTC	30 M	L149 - 1740 PST	1148 PST	1739 PST	159.0 MG C/M2

DEPTH M	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ML/L	OZY 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	18.55	33.415	23.924	5.48	102.3	2.1	0.37	0.0	0.00	0.13	0.02	99.	0.54	0.46	0.50	0.07
26	18.54	33.411	23.925	5.46	101.9	2.0	0.37	0.0	0.00	0.13	0.03	31.	1.4	1.3	1.4	0.10
46	18.04	33.406	24.045	5.58	103.1	1.7	0.38	0.0	0.00	0.20	0.05	11.	1.9	2.1	2.0	0.08
70	15.66	33.342	24.552	6.00	105.8	1.5	0.38	0.0	0.00	0.42	0.23	3.5	2.6	2.4	2.5	0.03
87	13.36	33.259	24.976	6.16	103.6	2.1	0.41	0.0	0.01	0.26	0.23	1.3	0.80	0.67	0.74	0.02
138	10.69	33.465	25.638	4.88	77.6	10.4	1.10	11.7	0.01	0.05	0.07	0.11	0.03	0.03	0.03	0.00

RV NEW HORIZON | CALCOFI CRUISE 8911 | STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	MESSENGER	SECCHI DEPTH	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
29 49.9 N	123 36.1 W	9/11/89	1846 UTC	32 M	1156 - 1755 PST	1159 PST	1747 PST	112.4 MG C/M2

DEPTH H	TEMP DEG C	SALINITY PSS 78	SIGMA THETA	DISS O2 ML/L	OZY 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	19.21	33.548	23.860	5.41	102.3	2.5	0.34	0.0	0.00	0.12	0.04	99.	0.62	0.54	0.58	0.04
25	19.17	33.547	23.870	5.39	101.9	2.2	0.34	0.0	0.00	0.12	0.04	31.	1.7	1.5	1.6	0.04
47	19.17	33.564	23.884	5.41	102.2	2.2	0.34	0.0	0.00	0.13	0.04	11.	1.2	1.3	1.2	0.02
72	17.32	33.578	24.351	5.94	108.4	2.0	0.30	0.0	0.00	0.23	0.11	3.5	0.81	0.90	0.86	0.02
92	15.50	33.569	24.763	5.92	104.2	2.3	0.32	0.0	0.00	0.23	0.21	1.3	0.54	0.49	0.52	0.01
145	13.74	33.830	25.342	5.29	90.0	4.5	0.50	3.3	0.02	0.07	0.15	0.11	0.05	0.03	0.04	0.01

Secchi Disk Observations

CalCOFI Cruise 8911

Line	Sta.	Day	Mo	Local Time (+8:PST)	Secchi Depth (m)	Forel Water Color	Weather	Clouds Type	Clouds Amt
77	49	19	11	1613	11	4	0		0
77	51	19	11	1420	13	4	0	-	0
77	55	19	11	1039	14	4	0	-	0
77	60	19	11	0830	13	4	0	-	0
77	90	18	11	1500	24	2	0	-	0
77	100	18	11	1039	29	2	1	SC	7/8
80	70	17	11	1008	12	4	1	CS	7/8
80	80	17	11	1535	18	3	1	CS	2/8
82	47	16	11	1630	13	4	0	-	0
83	40.6	16	11	1300	17	4	0	_	0
83	42	16	11	1128	21	4	0	-	0
83	80	15	11	1050	25	3	1	AS	3/8
87	33	12	11	1045	15	4	4	-	-
87	35	12	11	1304	20	3	2	ST	8/8
87	60	13	11	0751	14	4	2	ST	8/8
87	70	13	11	1128	28	2	1	ST	4/8
87	110	14	11	1047	29	2	1	ST	7/8
90	45	11	11	1504	21	3	1	ST	7/8
90	53	11	11	0950	22	3	1	CU	7/8
90	80	10	11	1607	27	2	1	ST	2/8
90	90	10	11	1015	34	2	0	-	0
90	120	9	11	1612	30	2	1	ST	7/8
93	26.6	6	11	1328	13	4	1	CI	1/8
93	28	6	11	1548	21	3	1	CU	4/8
93	45	7	11	0908	19	3	1	SC	6/8
93	48	7	11	1016	22	2	2	ST	8/8
93	50	7	11	1245	21	3	1	ST	6/8
93	55	7	11	1626	19	2	1	ST	7/8
93	80	8	11	1020	30	1	1	ST	6/8
93	90	8	11	1550	28	2	1	SC	3/8
93	120	9	11	1028	32	2	1	ST	2/8

CalCOFI Cruise 8911

MACROZOOPLANKTON BIOMASS
Net Mesh Size: 0.505 mm

Line	Sta.	Position		Date	Local Time (+8:PST)		Water Volume	Max. Tow	Volume per 1000 m Strained	
				Mo/Day	Start	End	Strained (m)	Depth (m)	Total (cm)	Small (cm)
77	49	35 05.9N	12046.8W	11/19	1649	1657	146	68	179	179
77	51	35 02.1N	120 53.9W	11/19	1504	1522	356	154	508	115
77	55	34 55.8N	121 13.0W	11/19	1221	1243	454	203	86	86
77	60	34 43.9N	121 32.6W	11/19	0800	0822	421	212	67	67
77	70	34 23.3N	122 16.1W	11/19	0235	0257	442	205	109	84
77	80	34 03.8N	122 55.5W	11/18	2115	2137	437	210	446	64
77	90	33 44.7N	123 36.5W	11/18	1617	1639	439	205	30	30
77	100	33 24.4N	124 20.1W	11/18	0910	0932	469	212	15	15
80	51	34 27.4N	120 32.7W	11/16	2208	2215	142	64	77	77
80	55	34 193N	120 50.2W	11/17	0120	0142	430	217	56	56
80	60	34 09.1N	121 10.3W	11/17	0505	0527	422	215	133	109
80	70	33 48.8N	121 51.5W	11/17	1110	1132	426	213	49	49
80	80	33 30.0N	122 32.7W	11/17	1704	1726	450	210	44	44
80	90	33 09.5N	123 12.4W	11/17	2213	2235	450	216	38	38
80	100	32 49.5N	123 54.6W	11/18	0325	0347	453	209	26	26
82	47	34 183N	120 05.6W	11/16	1848	1910	425	207	63	63
83	40.6	34 14.1N	119 25.4W	11/16	1337	1340	56	19	18	18
83	42	34 11.7N	119 33.5W	11/16	1055	1106	222	95	31	31
83	51	33 53.0N	120 09.4W	11/16	0508	0517	160	82	44	44
83	55	33 45.5N	120 25.6W	11/16	0205	0227	452	210	164	164
83	60	33 35.1N	12045.5W	11/15	2222	2244	438	212	155	155
83	70	33 153N	121 25.6W	11/15	1708	1730	427	210	40	40
83	80	32 57.6N	122 07.0W	11/15	1159	1221	467	209	13	13
83	90	32 35.9N	12249.2W	11/15	0523	0545	450	212	27	27
83	100	32 15.9N	123 28.9W	11/14	2328	2350	427	212	14	14
83	110	31 55.9N	12411.1W	11/14	1759	1821	462	216	22	22
87	33	33 53.1N	118 29.8W	11/12	1150	1156	107	50	65	65
87	35	33 49.8N	118 39.1W	11/12	1420	1442	442	204	34	34
87	40	33 38.8N	118 59.1W	11/12	1802	1825	458	224	44	44
87	45	33 29.0N	119 20.8W	11/12	2127	2149	438	205	57	57
87	50	33 19.5N	11941.5W	11/13	0015	' 0022	146	68	41	41
87	55	33 09.0N	12001.6W	11/13	0340	0403	454	221	79	79
87	60	32 59.7N	120 21.8W	11/13	0715	0738	439	229	59	59
87	70	32 39.8N	121 01.2W	11/13	1237	1300	514	229	12	12
87	80	32 19.5N	121 43.6W	11/13	1910	1933	472	227	23	23
87	90	31 59.5N	122 24.9W	11/14	0020	0043	457	232	33	33
87	100	31 39.5N	123 05.4W	11/14	0540	0602	463	216	17	17
87	110	31 20.5N	12344.9W	11/14	1203	1225	475	222	17	17
90	28	33 28.9N	117 46.1W	11/12	0607	0613	125	56	177	177
90	30	33 25.7N	117 53.6W	11/12	0357	0419	418	213	53	53
90	35	33 14.0N	118 15.0W	11/12	0015	0037	440	208	39	39
90	37	33 11.7N	118 23.7W	11/11	2105	2127	422	208	43	43
90	45	32 55.5N	118 56.5W	11/11	1613	1635	435	213	21	21
90	53	32 39.6N	119 29.8W	11/11	0910	0933	455	224	18	18
90	60	32 25.4N	119 58.0W	11/11	0420	0442	454	218	46	46
90	70	32 05.2N	12038.9W	11/10	2238	2300	442	211	43	32
90	80	31 46.2N	121 18.8W	11/10	1725	1748	456	221	42	26
90	90	31 26.2N	121 59.7W	11/10	1150	1212	466	213	30	30
90	100	31 05.0N	12240.5W	11/10	0510	0533	449	217	74	62
90	110	3046.1N	123 20.0W	11/09	2309	2331	454	212	33	33
90	120	30 25.2N	124 00.1W	11/09	1731	1754	472	224	15	15
93	26.7	32 57.7N	117 18.5W	11/06	1408	1415	123	55	294	294
93	28	32 54.4N	117 25.6W	11/06	1714	1736	435	212	37	37
93	30	32 51.0N	117 33.6W	11/06	2001	2023	437	210	57	57
93	35	32 41.2N	117 53.3W	11/07	0001	0023	441	218	41	41
93	40	32 31.8N	118 13.5W	11/07	0405	0428	458	219	72	28
93	45	32 21.8N	118 33.7W	11/07	0830	0852	431	217	63	33
93	50	32 10.8N	118 53.5W	11/07	1353	1415	428	213	318	173
93	55	32 01.6N	11915.6W	11/07	1759	1822	474	224	272	272
93	60	31 50.8N	119 35.8W	11/07	2159	2222	465	224	960	62
93	70	31 30.9N	120 15.5W	11/08	0330	0352	457	219	39	39
93	80	31 13.0N	120 56.7W	11/08	0920	0944	501	239	46	16
93	90	30 50.8N	121 37.1W	11/08	1714	1737	472	230	42	42
93	100	3031.6N	122 15.1W	11/08	2249	2312	471	226	200	200
93	110	30 11.2N	12256.0W	11/09	0435	0458	472	224	19	19
93	120	29 50.7N	123 36.2W	11/09	1125	1148	471	233	6	6