

UNIVERSITY OF CALIFORNIA, SAN DIEGO   SCRIPPS INSTITUTION OF OCEANOGRAPHY

# data report

CalCOFI Cruise 1711  
9 – 24 November, 2017

CC Reference 18 - 03  
1 Sep., 2018



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

**PHYSICAL, CHEMICAL AND BIOLOGICAL DATA**

**CalCOFI Cruise 1711  
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## INTRODUCTION

The data presented in this report were collected during cruise 1711\* of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the R/V Sally Ride. The CalCOFI program was organized in the late 1940's to study the causes of variations in population size of fishes of importance to the State of California. It is carried out by NOAA's National Marine Fisheries Service Southwest Fisheries Science Center, the California Department of Fish and Wildlife, and the Integrative Oceanography Division (IOD) at Scripps Institution of Oceanography (SIO). IOD contributes to this program by investigations of the physical, chemical and biological structure of the California Current. Data from the cruise were collected and processed by personnel of the Integrative Oceanography Division and the Southwest Fisheries Science Center. CalCOFI data presented in this report and collected on previous cruises can be accessed at <http://www.calcofi.org>.

## STANDARD PROCEDURES

### *CTD/Rosette Cast Data*

A Sea-Bird Electronics, Inc., Conductivity-Temperature-Depth (CTD) instrument (Seabird 911+, Serial number 3161-936) with a rosette was deployed at each station on this cruise. The rosette was equipped with 24 ten-liter plastic (PVC) bottles equipped with epoxy-coated springs and Viton O-rings. Each CTD/rosette cast usually sampled 20 depths to a maximum sampling depth of 515 meters, bottom depth permitting. Many stations have multiple bottles tripped at the same depth to provide more water for ancillary programs. Additional bottle depths also appear in combined hydrographic and primary productivity casts. The sample spacing was designed to sample depth intervals as close as 10 meters around the sharp upper thermocline features such as the chlorophyll, oxygen, nitrite maxima and the shallow salinity minimum. Salinity, oxygen and nutrients were determined at sea for all depths sampled. Chlorophyll-*a* and phaeopigments were determined at sea on samples from the top 200 meters, bottom depth permitting.

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

Salinity samples were collected from all rosette bottles and analyzed at sea using a Guildline model 8410 Portasal salinometer. Salinity samples were drawn into 200 ml Kimax high-alumina borosilicate bottles that were rinsed three times with sample prior to filling. The results were compared with the CTD salinity to verify that the rosette bottle did not mis-trip or leak. The salinometer was standardized before and after each group of samples with standardized seawater. Periodic checks on the conductivity of the standardized seawater were made by comparison with IAPSO Standard Seawater batch P157. Salinity values were calculated using the algorithms for the Practical Salinity Scale, 1978 (UNESCO, 1981a) and are reported to three decimal places, provided that accepted standards were met.

Dissolved oxygen analyses were performed with an Ocean Data Facility of Scripps Institution of Oceanography designed automated oxygen titrator using photometric end-point detection based on the absorption of 365nm wavelength ultra-violet light. A computer using PC software controlled the titration of the samples and the data logging. The method used a modified Winkler titration following the technique of Carpenter (1965) with modifications by Culberson (1991), but with higher concentrations of thiosulfate solution (50 g/l). Standard KIO<sub>3</sub> solutions prepared ashore were run at the beginning of each run. Reagent and sea water blanks were determined to account for presence of oxidizing or reducing materials.

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

Nutrient samples were analyzed at sea using a QuAAtro continuous flow analyzer (SEAL Analytical). Dissolved silicate, nitrate, and nitrite were analyzed using a modification of the method described by Armstrong (1967) and Gordon et al. (1992). Phosphate was measured with a modification of the Murphy and Riley (1962) protocol and ammonium is analyzed using a modified fluorometric method described by Kerouel and Aminot (1997). Samples were collected in 45ml high-density polypropylene screw top tubes which were acid washed and rinsed with sample three times prior to filling. Standardizations and cadmium-reduction coil efficiency determinations were performed at the beginning of every run. Drift and baseline corrections were performed in each run using a high standard and blank respectively inserted before and after sample sets. A sample of reference material for nutrients in seawater (RMNS), produced by KANSO technos ([www.kanso.co.jp](http://www.kanso.co.jp)) was included in every run and those data were monitored throughout the cruise and available to adjust values for nitrate, nitrite, phosphate, and silicate if appropriate. The mean values for  $\text{NO}_2 + \text{NO}_3$ ,  $\text{PO}_4$ , and dissolved reactive silicate species (SIL) for the cruise were calculated and compared to certified manufacturer values (see table below). A separate reference sample was used to monitor ammonium stability throughout the cruise. Samples not analyzed immediately after collection were refrigerated and run the following day.

<b>1708SR</b>	<b><math>\text{NO}_2 + \text{NO}_3</math> (<math>\mu\text{mol/L}</math>)</b>	<b><math>\text{PO}_4</math> (<math>\mu\text{mol/L}</math>)</b>	<b>SIL (<math>\mu\text{mol/L}</math>)</b>
Mean $\pm$ SD (n=34)	$36.44 \pm .23$	$2.56 \pm .02$	$110.40 \pm .72$
Certified Value* (Lot CB)	36.65	2.58	111.82

\*Converted from  $\mu\text{mol/kg}$  using assumed lab temperature of 20°C and salinity 34.374 provided by manufacturer.

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

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

#### *Primary Productivity Sampling*

Primary productivity samples were taken each day shortly before local apparent noon (LAN). Primary production was estimated from  $^{14}\text{C}$  uptake using a simulated *in situ* technique. Light penetration was estimated from the Secchi depth (assuming that the 1% light level is three times the Secchi depth). The depths with ambient light intensities corresponding to light levels simulated by the on-deck incubators were identified and sampled on the rosette up-cast. Occasionally an extra bottle or two were tripped in addition to the usual 20 levels sampled in the combined rosette-productivity cast in order to maintain the normal sampling depth resolution. Triplicate samples (two light and one dark control) were drawn from each productivity sample depth into 250 ml polycarbonate incubation bottles. Samples were inoculated with a cruise average of 6.50  $\mu\text{Ci}$  of  $^{14}\text{C}$  as  $\text{NaHCO}_3$  (200 $\mu\text{l}$  of stock solution) prepared in a 0.3 g/liter solution of sodium carbonate (Fitzwater *et al.*, 1982). Samples were incubated from LAN to civil twilight in seawater-cooled incubators with neutral-density screens which simulate *in situ* light levels. At the end of the incubation, the samples were filtered onto Millipore HA filters and placed in scintillation vials. One half ml of 10% HCl was added to each sample. The sample was then allowed to sit, without a cap, at room temperature for 12 hours (after Lean and Burnison, 1979). Following this, 10 ml of scintillation cocktail were added to each sample and the samples were returned to SIO where the radioactivity was determined with a scintillation counter. Salinity, oxygen, nutrients, chlorophyll-*a* and phaeopigments were determined from all rosette productivity bottles.

### *Macrozooplankton Net Tows*

Macrozooplankton was sampled with a 71 cm mouth diameter paired net (bongo net) equipped with 0.505mm plankton mesh. Bottom depth permitting, the nets were towed obliquely from 210 meters to the surface. The tow time for a standard tow was 21.5 minutes. Volumes filtered were determined from flowmeter readings and the mouth area of the net. Only one sample of each pair was retained and preserved. The biomass, as wet displacement volume, after removal of large ( $>5$  ml) organisms, was determined in the laboratory ashore. These procedures are summarized in greater detail in Kramer *et al.* (1972).

### *Ancillary Programs*

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

- 1) *Underway Data:* Continuous near surface measurements of temperature, salinity and *in vivo* chlorophyll fluorescence were recorded from seawater pumped through the ship's uncontaminated seawater system. Water was drawn from a depth of approximately 5 meters. The data were logged in one-second increments using a Sea-Bird Electronics, Inc., SBE 45 MicroTSG Thermosalinographs for internal and external measurements, and a WetLabs C-star transmissometer and Wetlabs FLNTU and Eco-triplet fluorometers. The data has been processed to show 10 minute averages.
- 2) *ADCP:* Continuously sample profiles of currents using the RDI/Teledyne Acoustic Doppler Current Profiler. This will be dependent on the ability to sync the ADCP's output with the EK60 and ME70. The EK60 and ME70 will hold priority over the ADCP. The ADCP raw data are collected and archived for potential data processing ashore. The National Centers for Environmental Information (NCEI) in collaboration with the E.Firing Acoustic Doppler Current Profiler (ADCP) Laboratory at the University of Hawaii have established the Joint Archive for Shipboard ADCP (JASADCP). The JASADCP is responsible for the acquisition, review, documentation, archival, and distribution of shipboard ADCP data sets, data may be accessed through their website (<http://ilikai.soest.hawaii.edu/sadc/index.html>). Shipboard ADCP data is acquired by University of Hawaii Data Acquisition System (UDHAS) and uses Common Ocean Data Access System (CODAS) processing to incrementally build a dataset of averaged, edited ocean velocities for each ADCP and ping type specified. Processed data and plots are served on the shipboard network, and daily status summaries are emailed and available online ([http://currents.soest.hawaii.edu/uhdas\\_fromships.html](http://currents.soest.hawaii.edu/uhdas_fromships.html)).
- 3) *Underway Sea Surface pCO<sub>2</sub> and pH measurements:* Automated shipboard analysis of the partial pressure of CO<sub>2</sub> and pH were made from the ship's underway flow-through system. pCO<sub>2</sub> measurements were taken with the Shipboard Underway pCO<sub>2</sub> Environmental Recorder (SUPER-CO<sub>2</sub>) sold by Sunburst Sensors designed with a showered equilibrator and a LI-COR 840A CO<sub>2</sub>/H<sub>2</sub>O non-dispersive infrared gas analyzer. pH measurements were taken with a Honeywell Durafet based on Ion Selective Field Effect Transistor (ISFET) technology. The Durafet pH sensor was calibrated before and after the cruise. pCO<sub>2</sub> was calibrated with standard gases traceable to NIST every 4 hours, along with an atmospheric sample. Temperature and salinity were also sampled using a SeaBird Thermosalinograph (SBE45). Measurements were recorded every 4 seconds. (T. Martz, SIO)
- 4) *California Current Ecosystem Long Term Ecological Research Program:* The CCE-LTER program augments standard CalCOFI measurements to further characterize the lower trophic levels as well as the carbon system. Measurements of particulate organic carbon and nitrogen, dissolved organic carbon and nitrogen, taxon-specific phytoplankton pigments, flow-cytometric counts of bacteria and picoautotrophs and the determination of mesozooplankton size structure using a Laser Optical Plankton Counter are sampled for all CalCOFI stations. On CalCOFI lines 90 and 80 measurements also include microscopic counts of heterotrophic and autotrophic phytoplankton for biomass and abundance and mesozooplankton community structure sampled with the Planktonic Rate Processes in Oligotrophic Ocean Systems (PRPOOS) tow net. (M. Ohman, SIO)
- 5) *Advanced Laser Fluorometer Analyzer (ALFA):* Continuous underway analysis of phytoplankton pigment groups and variable fluorescence ( $F_v/F_m$ ). ALFA, developed by A. Chekalyuk at Lamont-Doherty Earth Observatory, uses laser stimulated emission at 405 and 532 nm together with spectral deconvolution analysis to

distinguish fluorescence from three types of phycoerythrin, chlorophyll-*a*, and chromophoric dissolved organic matter (CDOM). The ALFA is useful for differentiating the contribution of cyanobacteria and cryptophytes from other phytoplankton taxa present in natural phytoplankton assemblages, as well as for assessing phytoplankton photophysiological status. (R. Goericke, SIO)

6) *Southern California Coastal Ocean Observing System (SCCOOS) Nearshore Observations:* The objective of these observations is to extend CalCOFI time series to the nearshore. Nearshore observations consist of 8 stations at the ends and interspersed with current CalCOFI lines on the 20 m isobath with a standard set of CalCOFI hydrographic observations as well as a CalBOBL net tow, particulate organic carbon and nitrogen, dissolved organic carbon and nitrogen and taxon-specific phytoplankton pigments data. (R. Goericke, SIO)

7) *Inorganic Carbon System:* The CalCOFI group collected samples for the characterization of the inorganic carbon system at selected locations along the cruise track with 14 profile and 8 additional surface water stations. Total inorganic carbon and alkalinity will be measured which will allow the calculation of pH and pCO<sub>2</sub>. The objectives of these measurements are first the long-term characterization of the inorganic carbon system and its response to changing ocean climate and second measurements of pH in the coastal zone in order to monitor the impact of ‘corrosive’ waters on benthic ecosystems in the Southern California Bight. (R. Goericke, SIO)

8) *Marine Mammal Observations:* During daylight transits, visual line-transect surveys were conducted by marine mammal observers focusing on cetaceans. Acoustic line-transect surveys were performed using a towed hydrophone array which consists of multiple hydrophone elements that sample sounds up to 100 kHz allowing for localization of calling animals. Acoustic monitoring also takes place on individual stations using sonobuoys. (J. Hildebrand, SIO)

9) *Microbial Diversity and Gene Expression:* Samples suitable for purification of DNA and RNA from bacterial and microbial eukaryotic biomass are collected for molecular diversity assays targeted to various genetic marker loci (16S and 18S rRNA). DNA samples are collected at every station, in parallel with particulate organic matter (POM) samples, on Whatman GF/F filters. RNA samples are collected in parallel with primary productivity samples on 0.2 µM sterivex filters with a maximum filtration time of 30 min. Additional samples from the mixed layer, chlorophyll max, and two depths below the euphotic zone are collected along lines 80 and 90. (A. Allen, SIO and JCVI)

10) *Wave Buoy:* CORDC Miniature Wave Buoys are free-drifting surface-following wave measuring buoys. Four buoys were deployed, each at one of the western most stations along lines 93.3, 86.7, 80.0 and 76.7. The buoys are configured to report every 3 hrs, via Iridium, the SST, the bulk standard wave parameters (Hs, Tp, Dp), and the first 5 (a's and b's) spectral moments. The buoys will help provide data on the California Current as well as any passing hurricane activity further offshore. (E. Terrill, SIO)

## TABULATED DATA

### *CTD/Rosette Cast Data*

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

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

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

### *Primary Productivity Data*

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

### *Macrozooplankton Data*

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

## FOOTNOTES

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

D: CTD salinity value listed in place of normal shipboard salinity analysis.

ISL: After a depth value indicates that this is an interpolated or extrapolated standard level.

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

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## FIGURES

### Cruise 1711

1. CalCOFI Cruise 1711 track and station positions.
2. Horizontal distribution of dynamic height anomaly (0 over 500m). In areas shallower than 500 m, the dynamic heights were extrapolated on the basis of the offshore deeper steric height as described in Reid and Mantyla (1976).
3. Horizontal distributions at 10 meters: A) chlorophyll-*a*; B) potential density; C) temperature; and D) salinity.
4. Horizontal distributions at 200 meters: A) dynamic height anomaly (200 over 500 m); B) potential density; C) temperature; and D) salinity.
5. Sections along CalCOFI line 90 (vertical exaggeration, 1000): A) potential density; B) temperature; C) salinity; D) silicate; E) nitrate; F) phosphate; G) chlorophyll-*a*; H) oxygen saturation; I) oxygen; J) nitrite

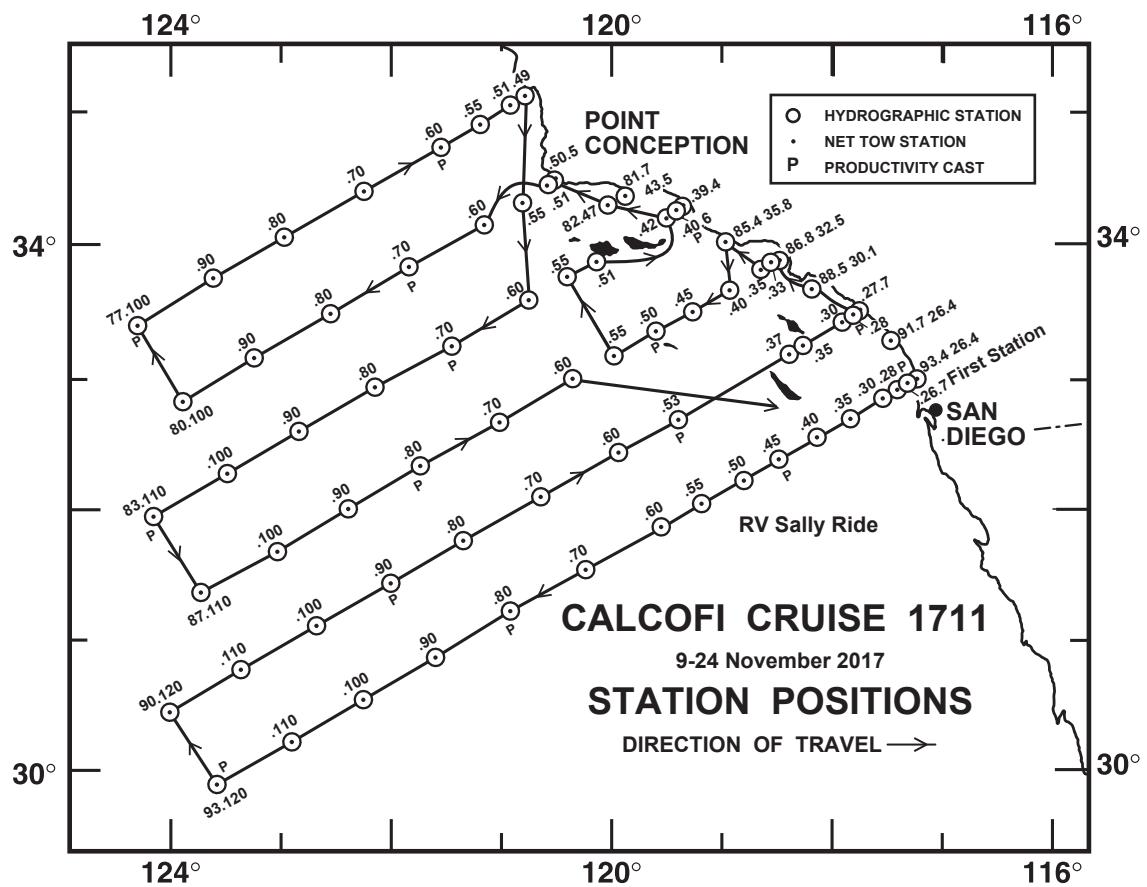


FIGURE 1

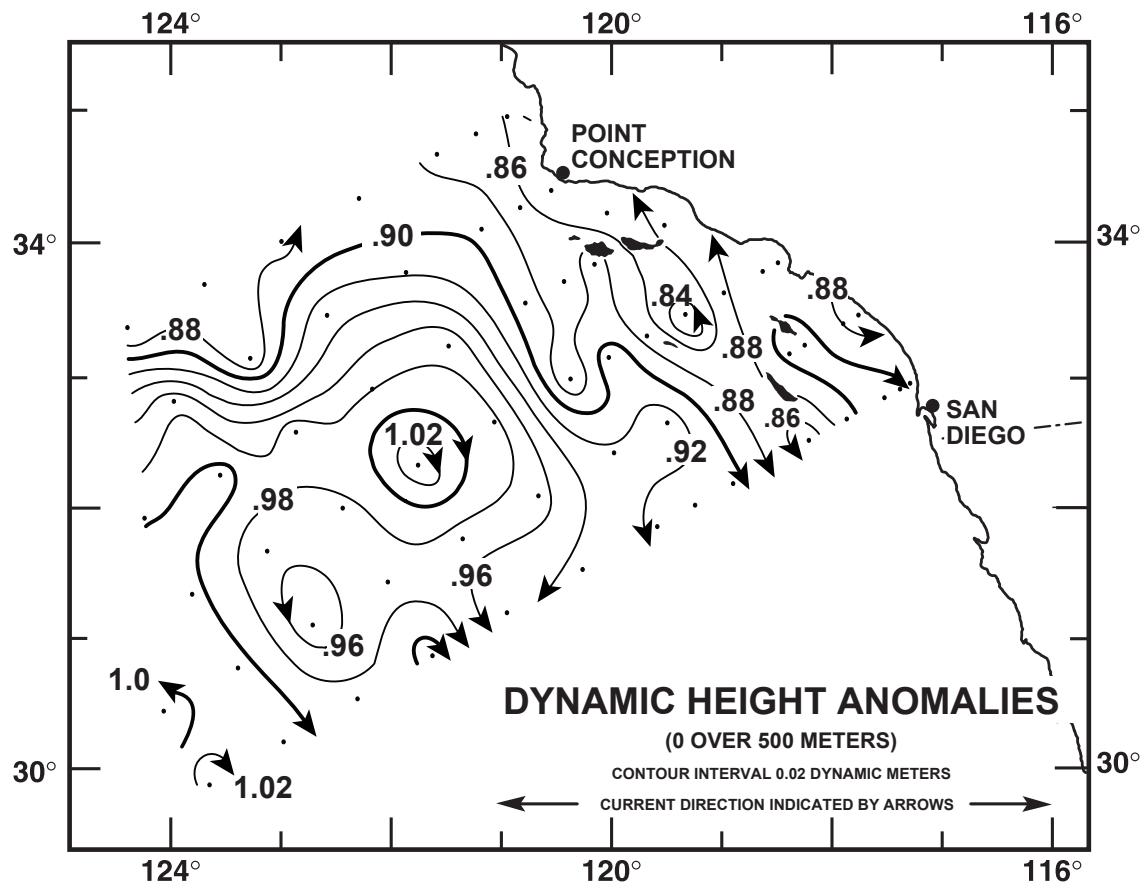


FIGURE 2

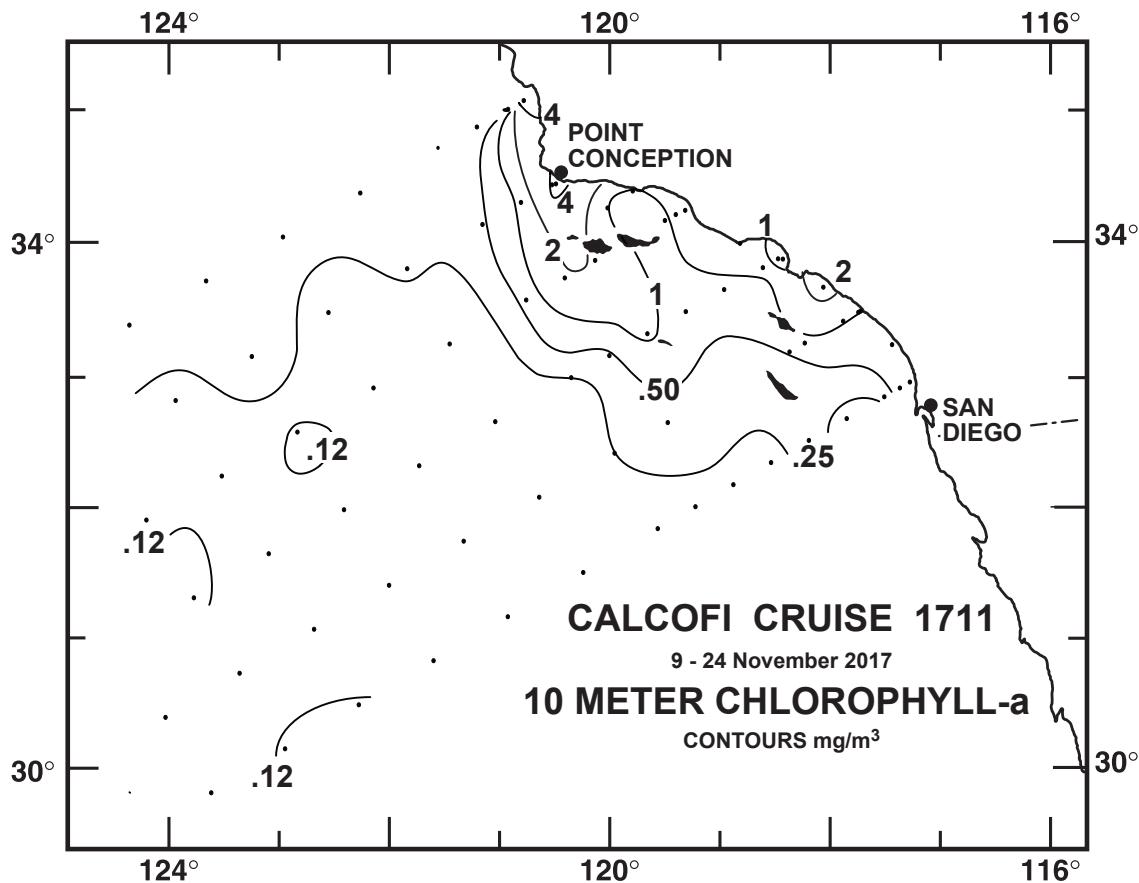


FIGURE 3A

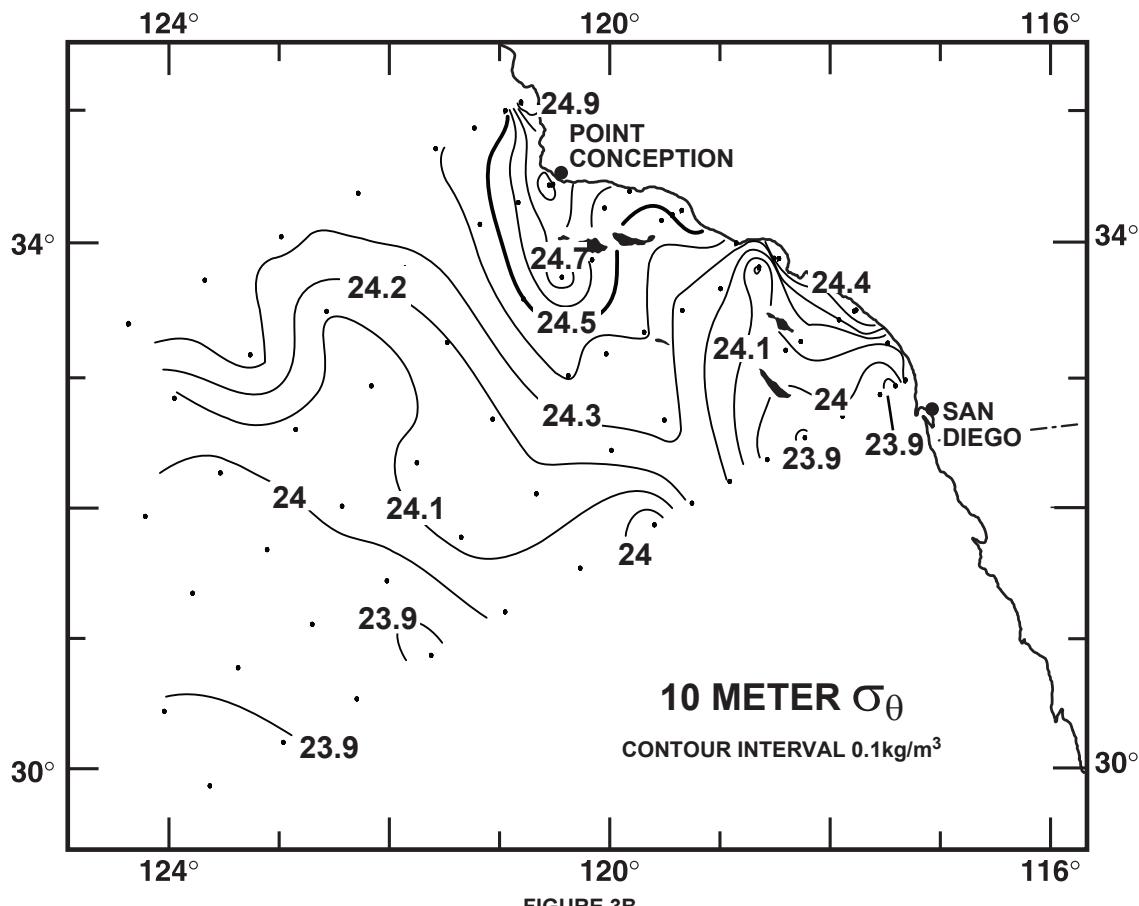


FIGURE 3B

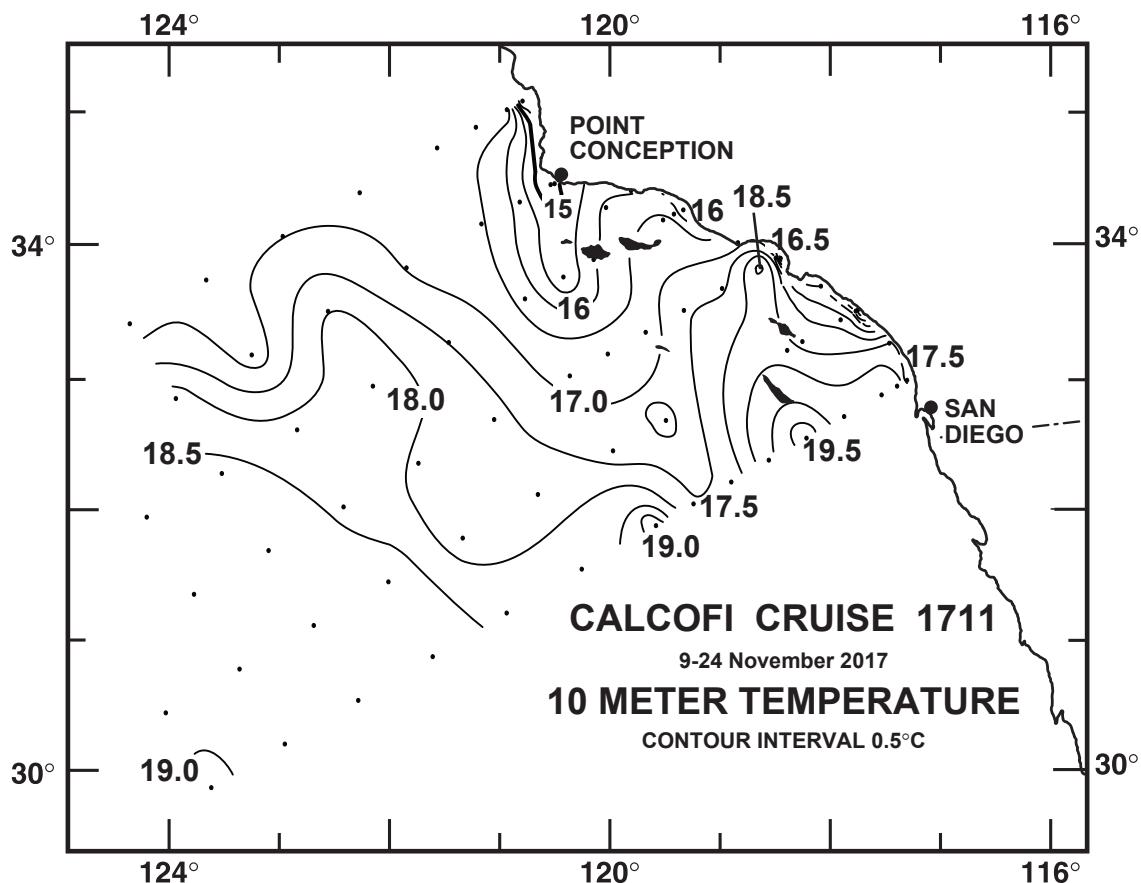


FIGURE 3C

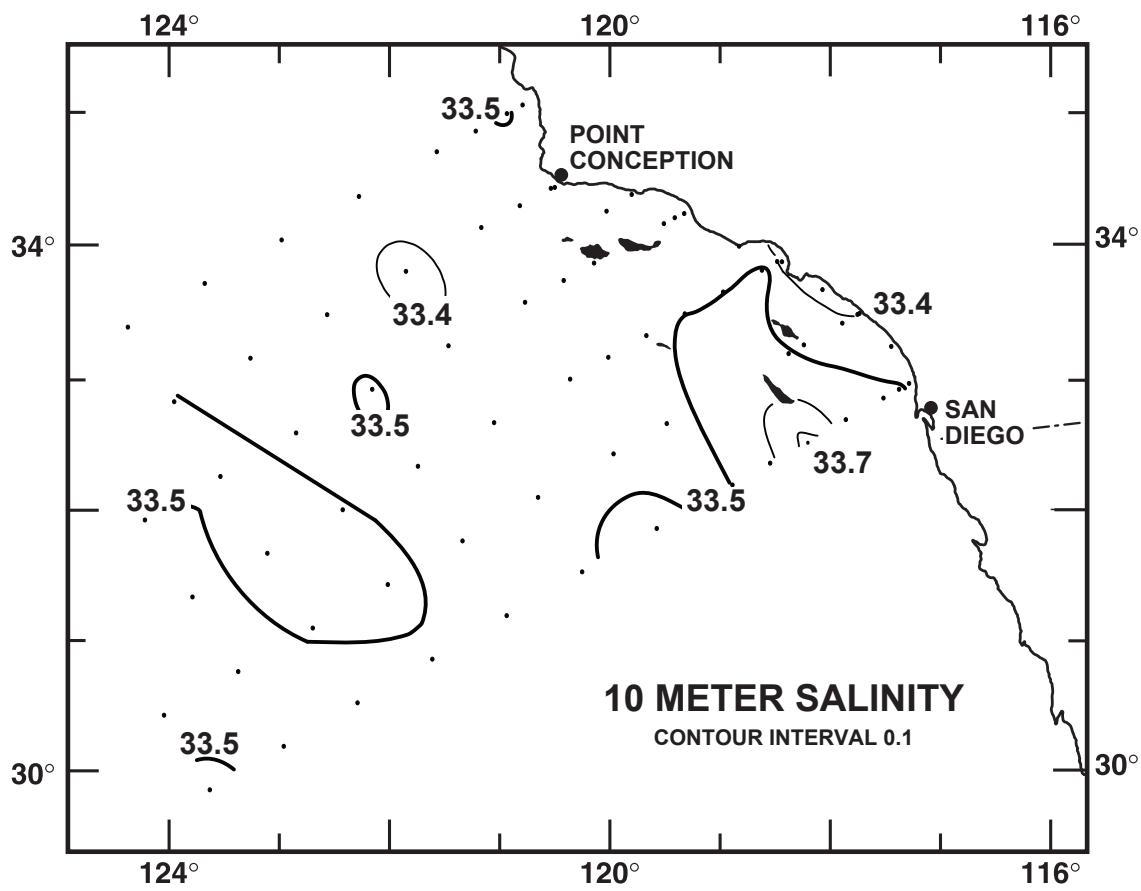


FIGURE 3D

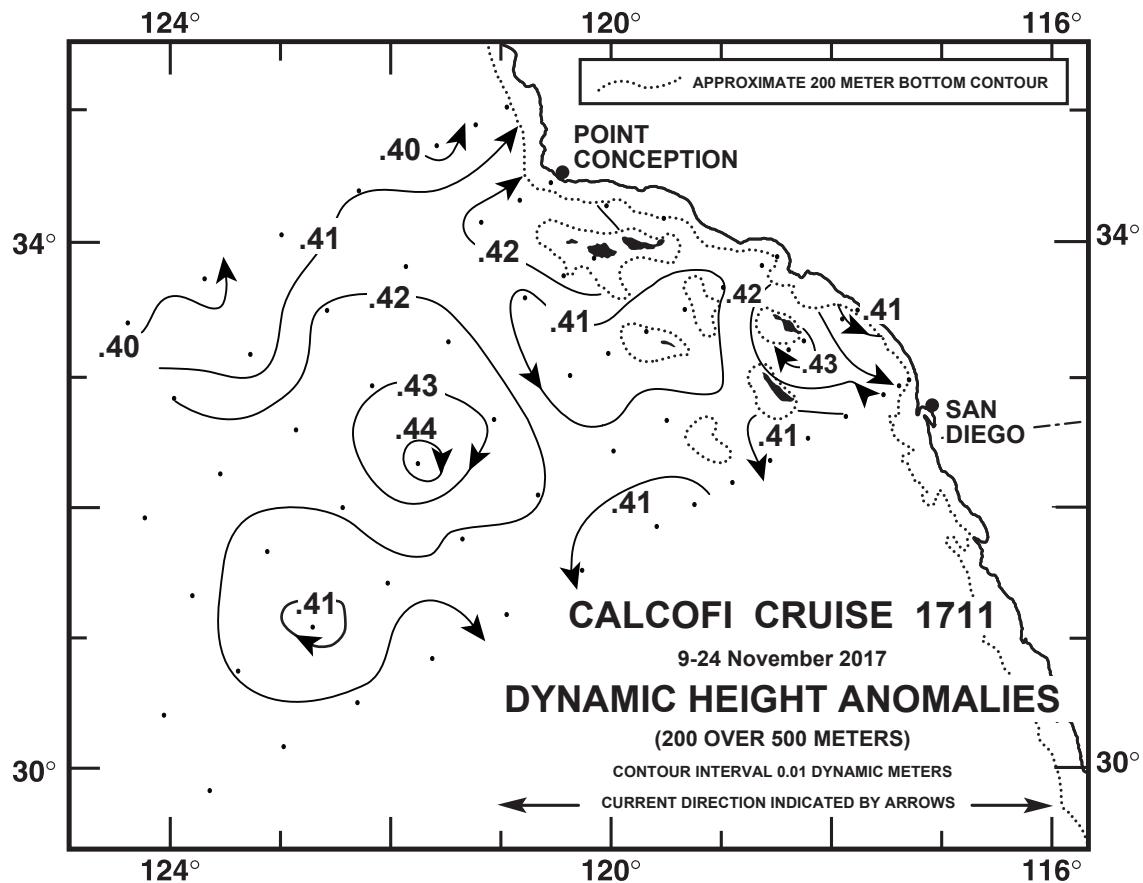


FIGURE 4A

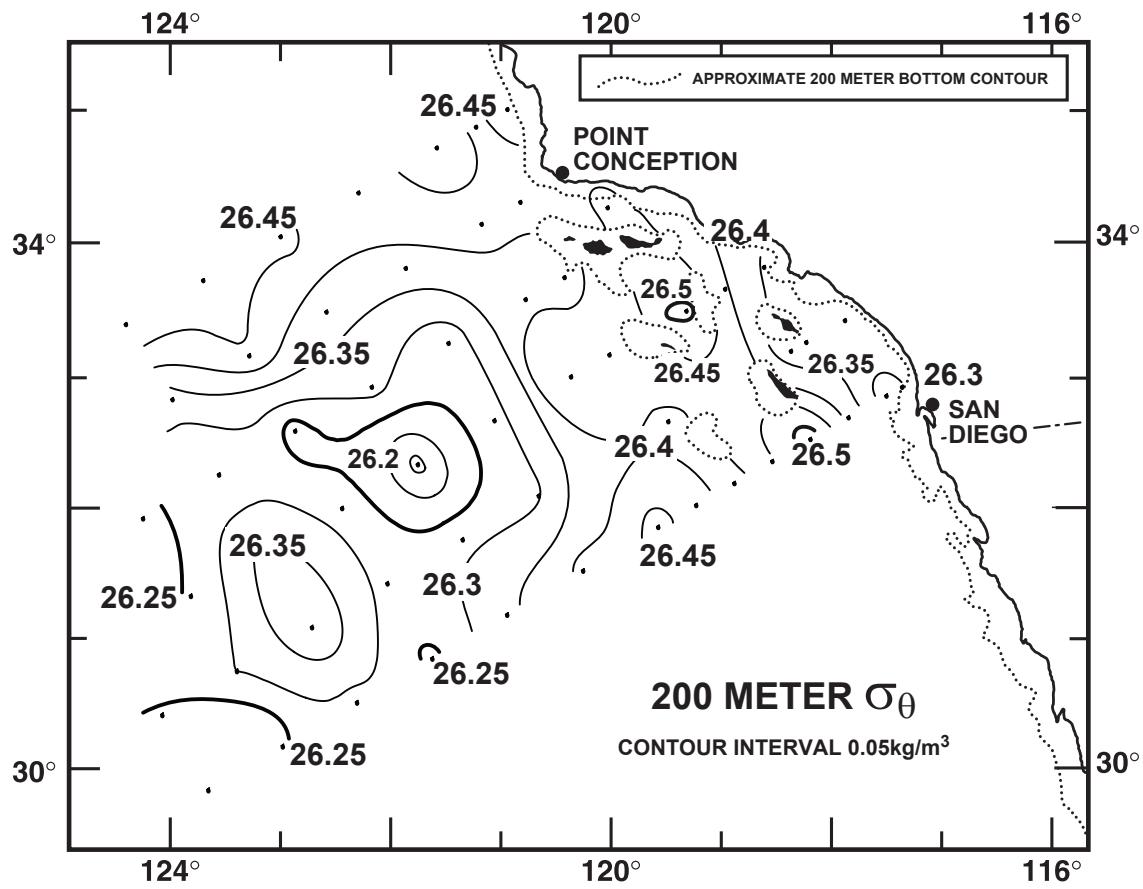


FIGURE 4B

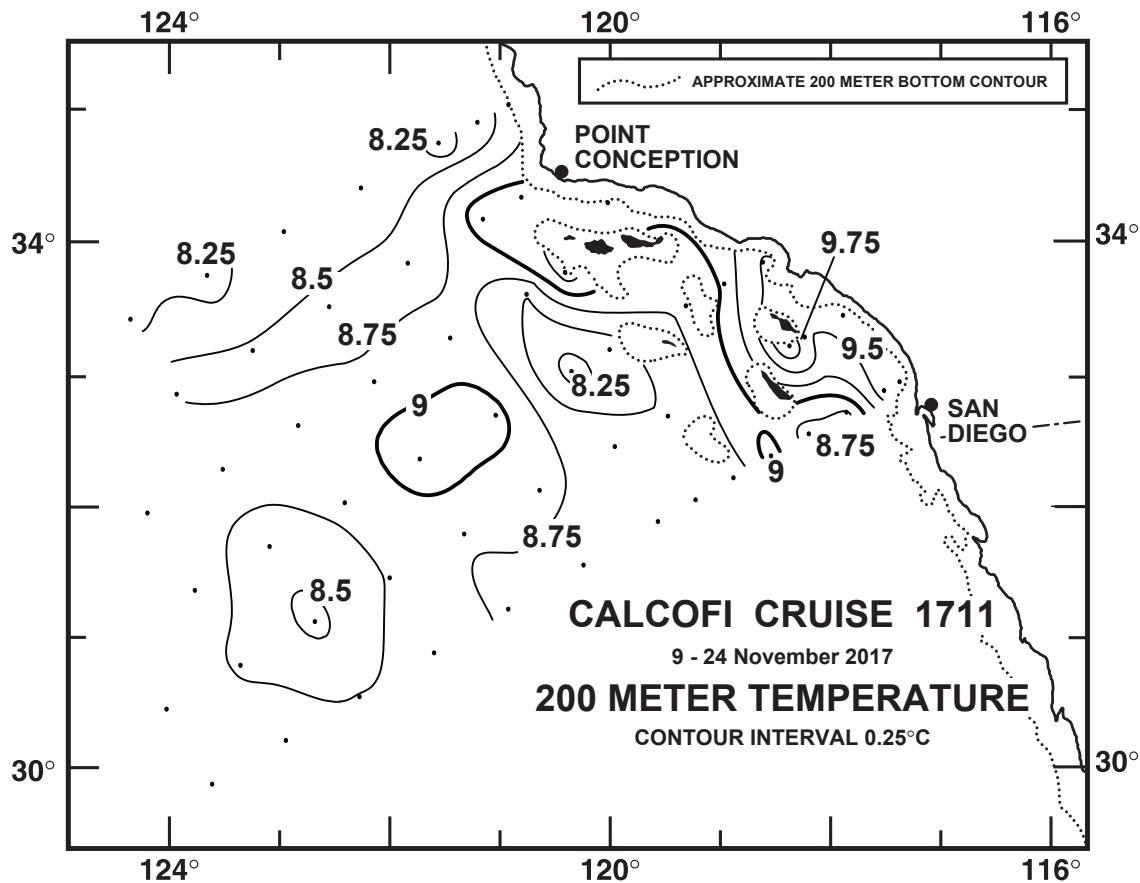


FIGURE 4C

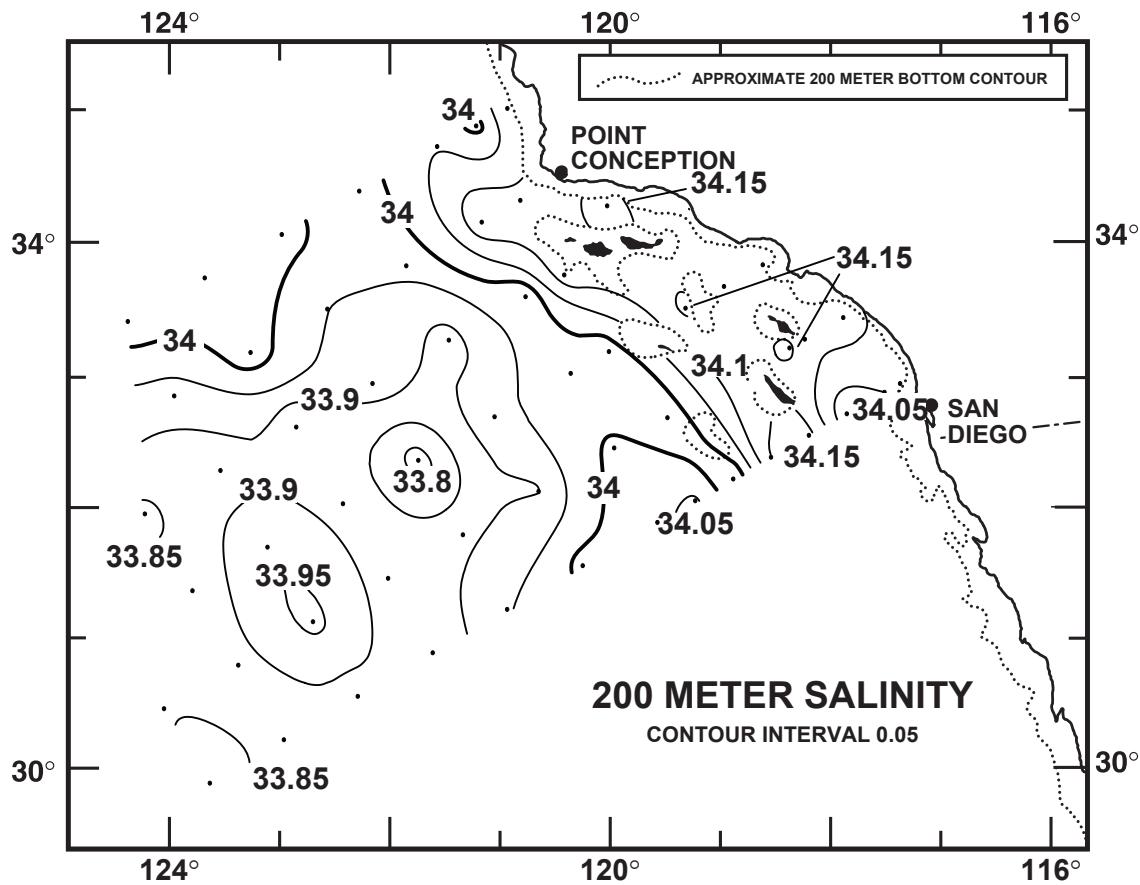
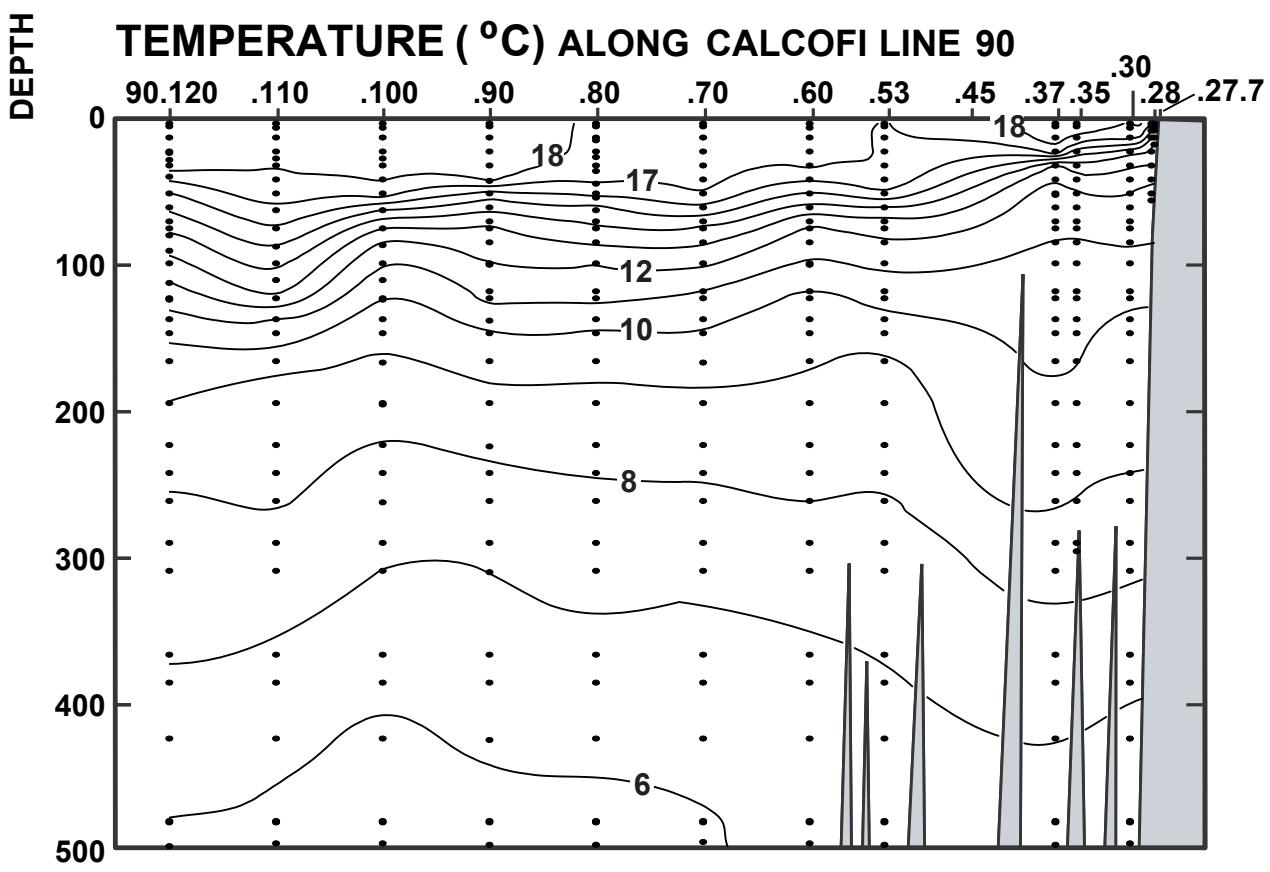
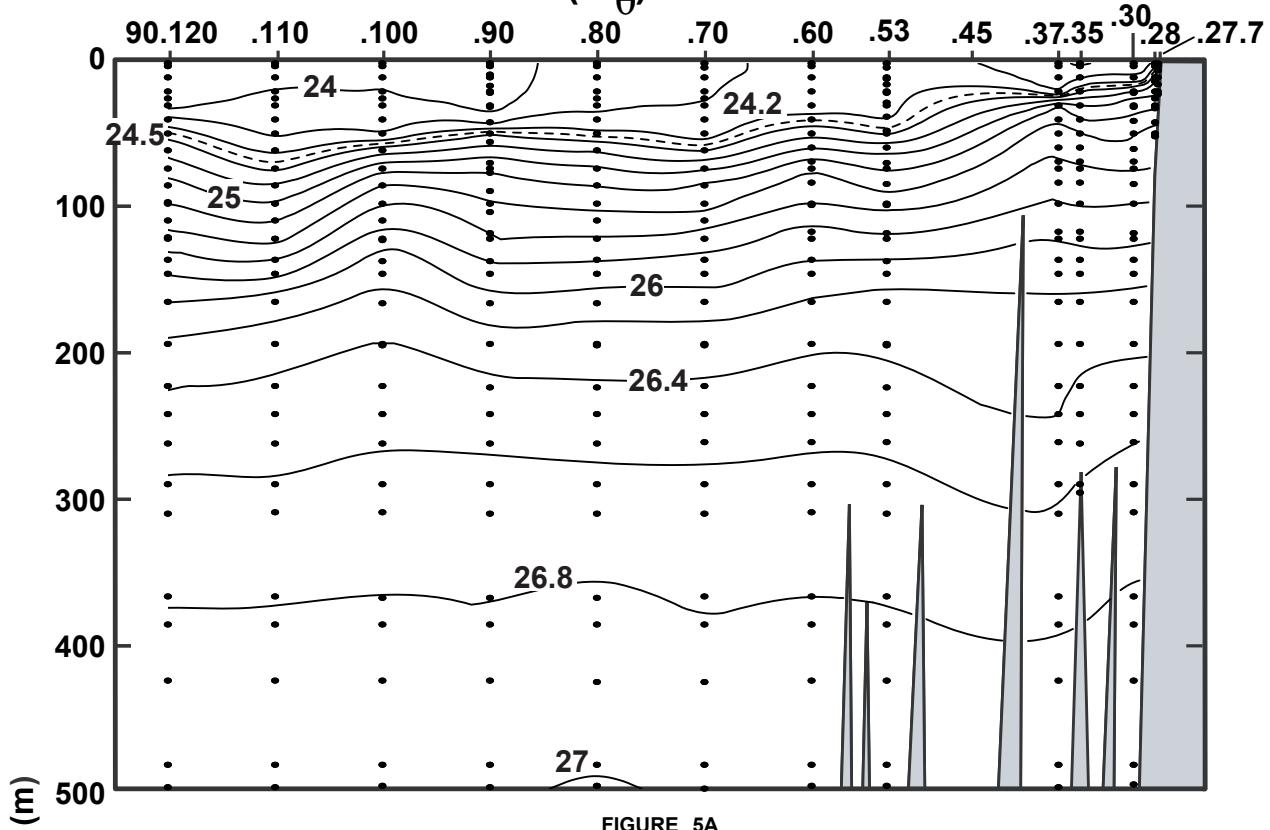


FIGURE 4D

# CALCOFI CRUISE 1711

12 - 15 November 2017

## POTENTIAL DENSITY ( $\sigma_0$ ) ALONG CALCOFI LINE 90



# CALCOFI CRUISE 1711

12 - 15 November 2017

## SALINITY ALONG CALCOFI LINE 90

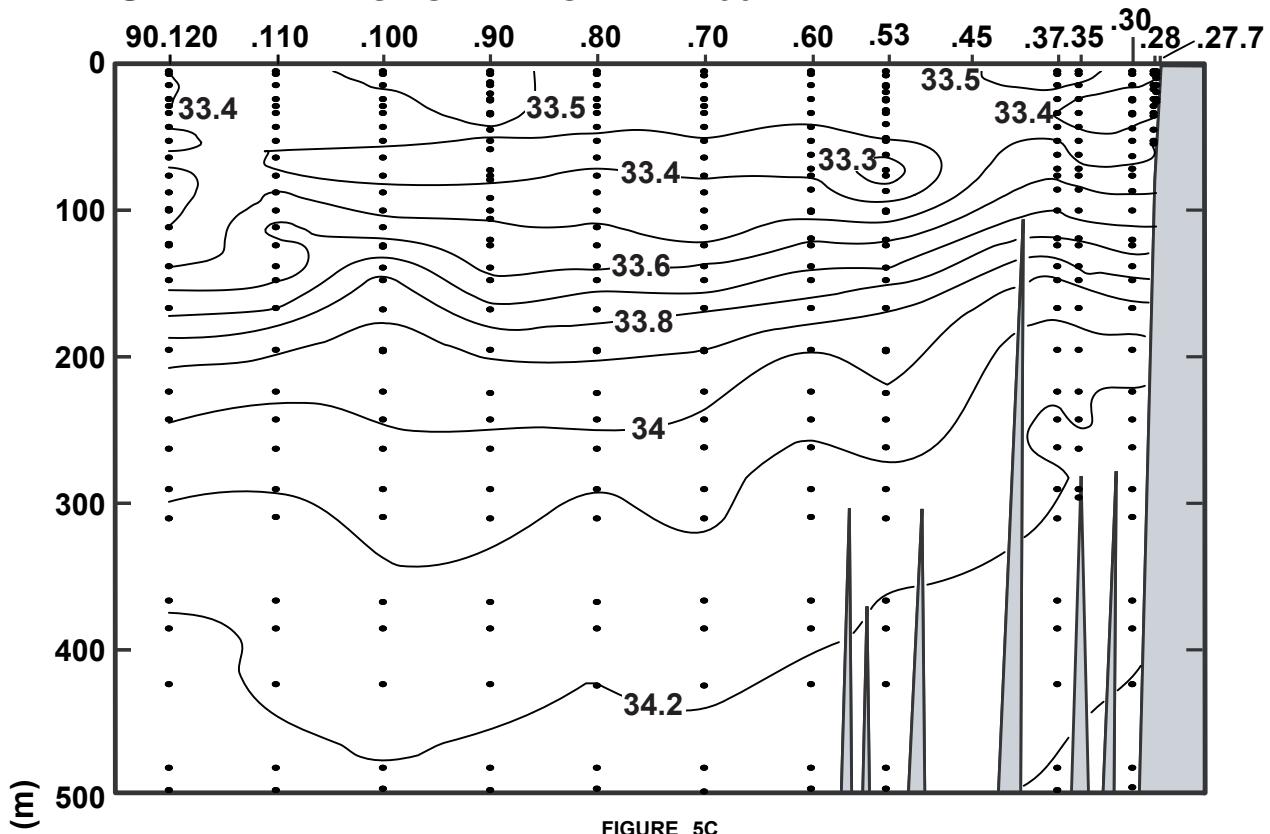


FIGURE 5C

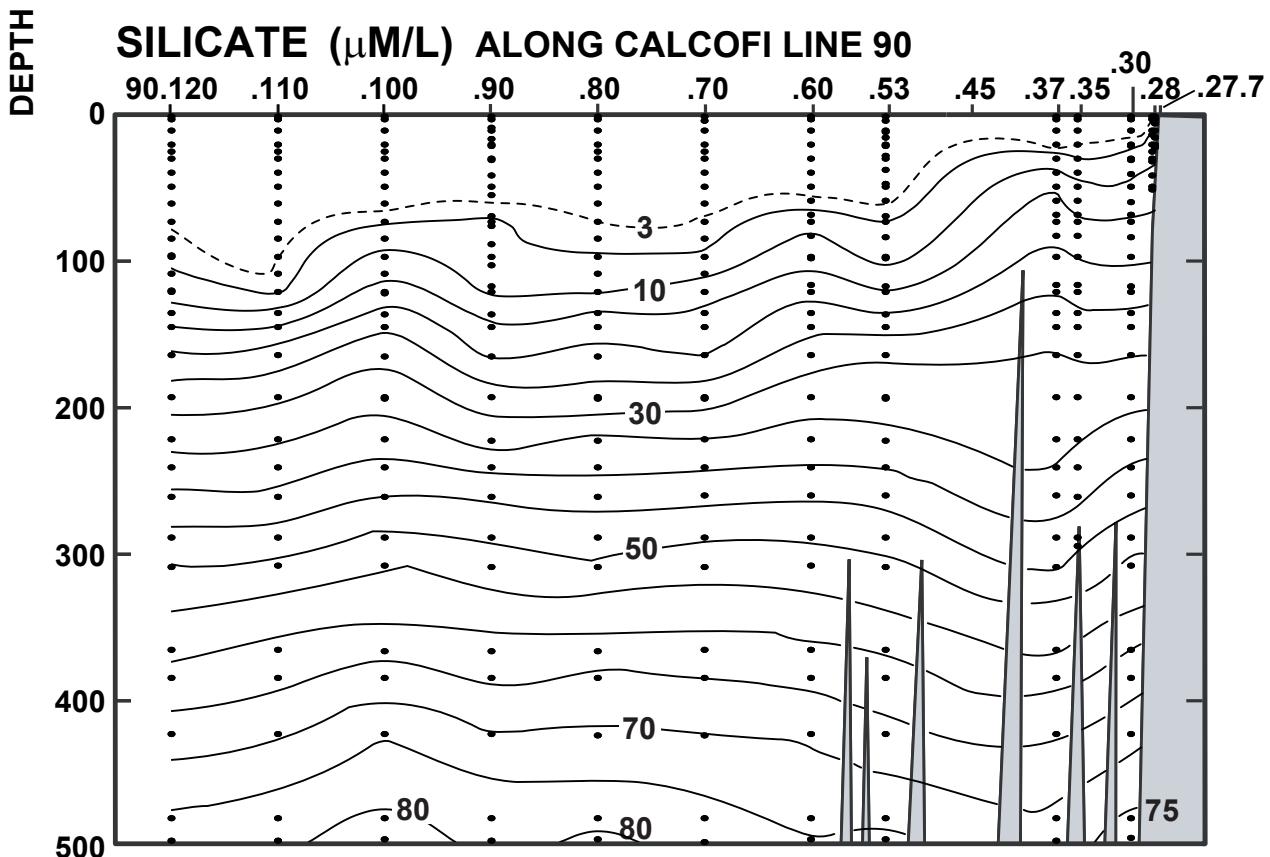


FIGURE 5D

# CALCOFI CRUISE 1711

12 - 15 November 2017

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

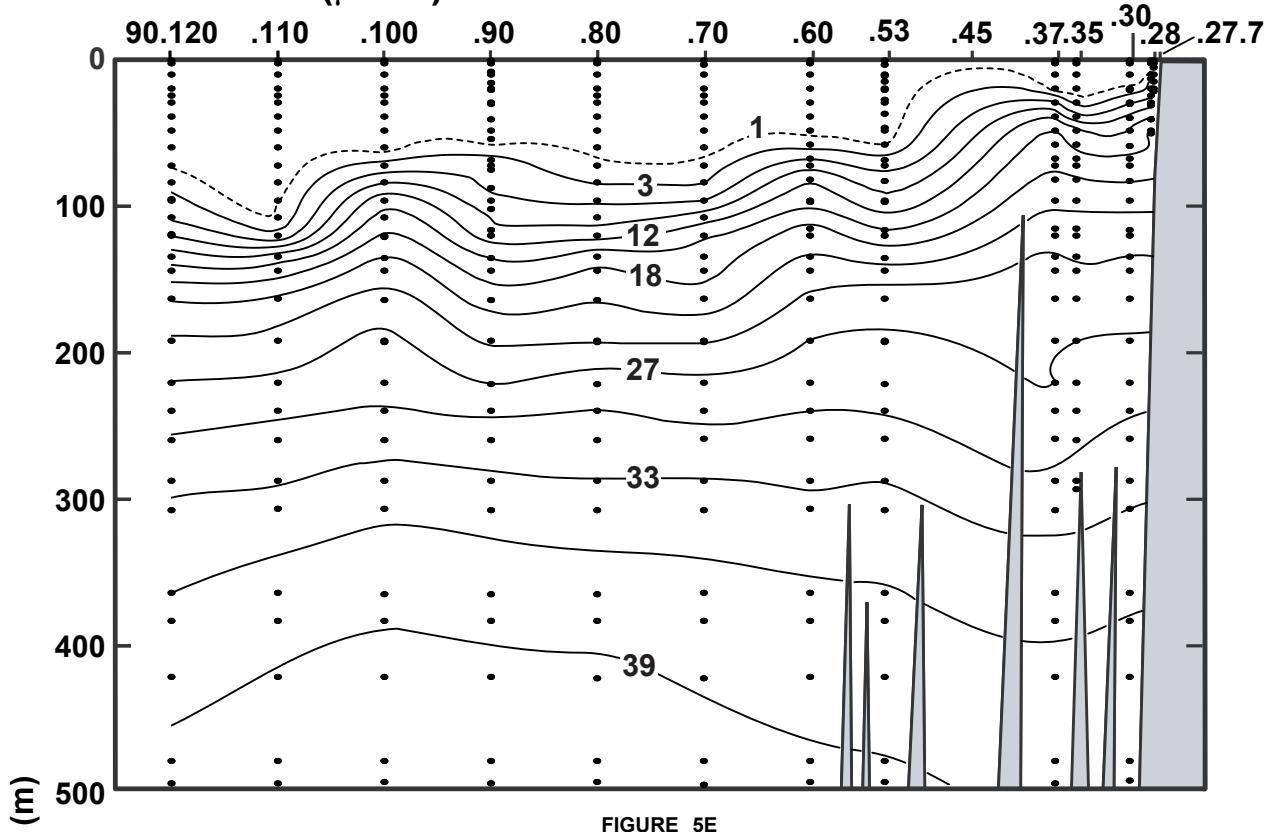


FIGURE 5E

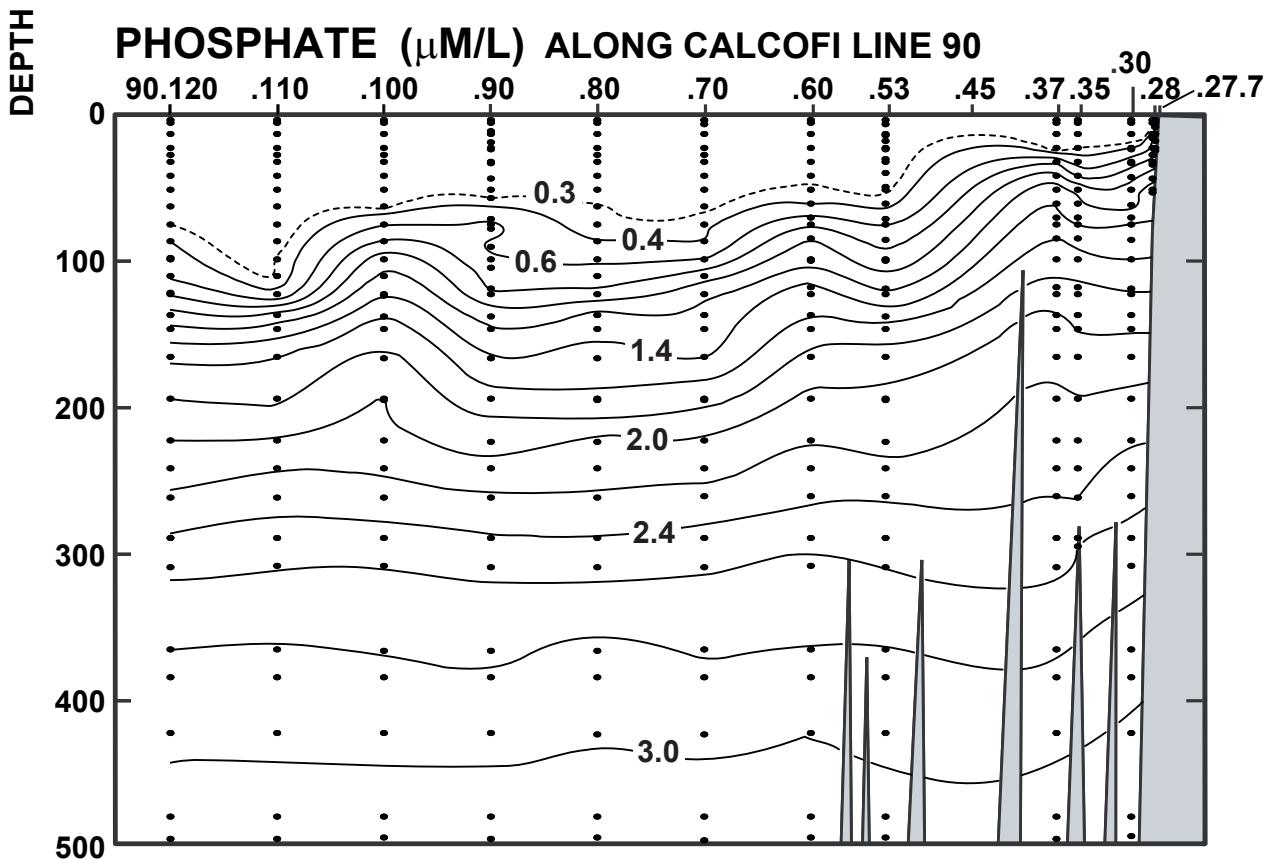


FIGURE 5F

# CALCOFI CRUISE 1711

12 - 15 November 2017

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

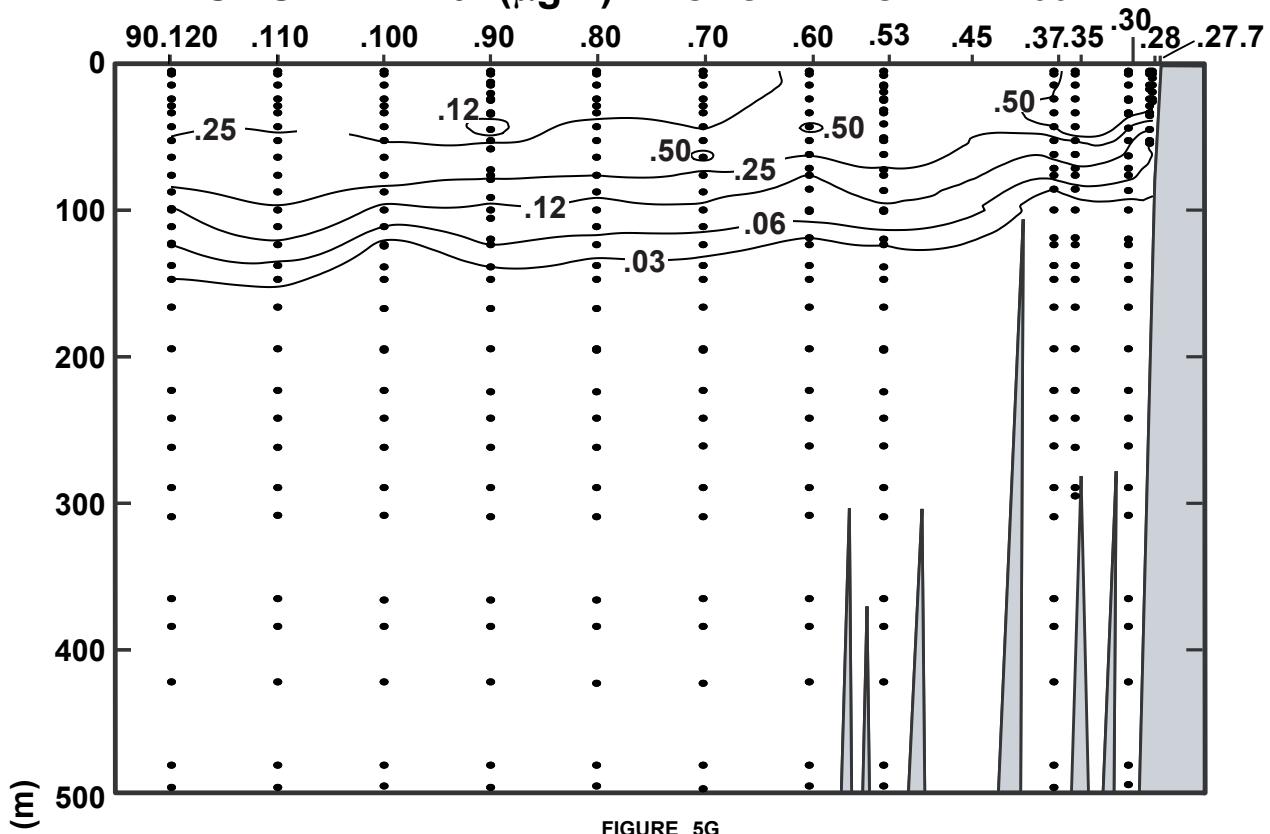


FIGURE 5G

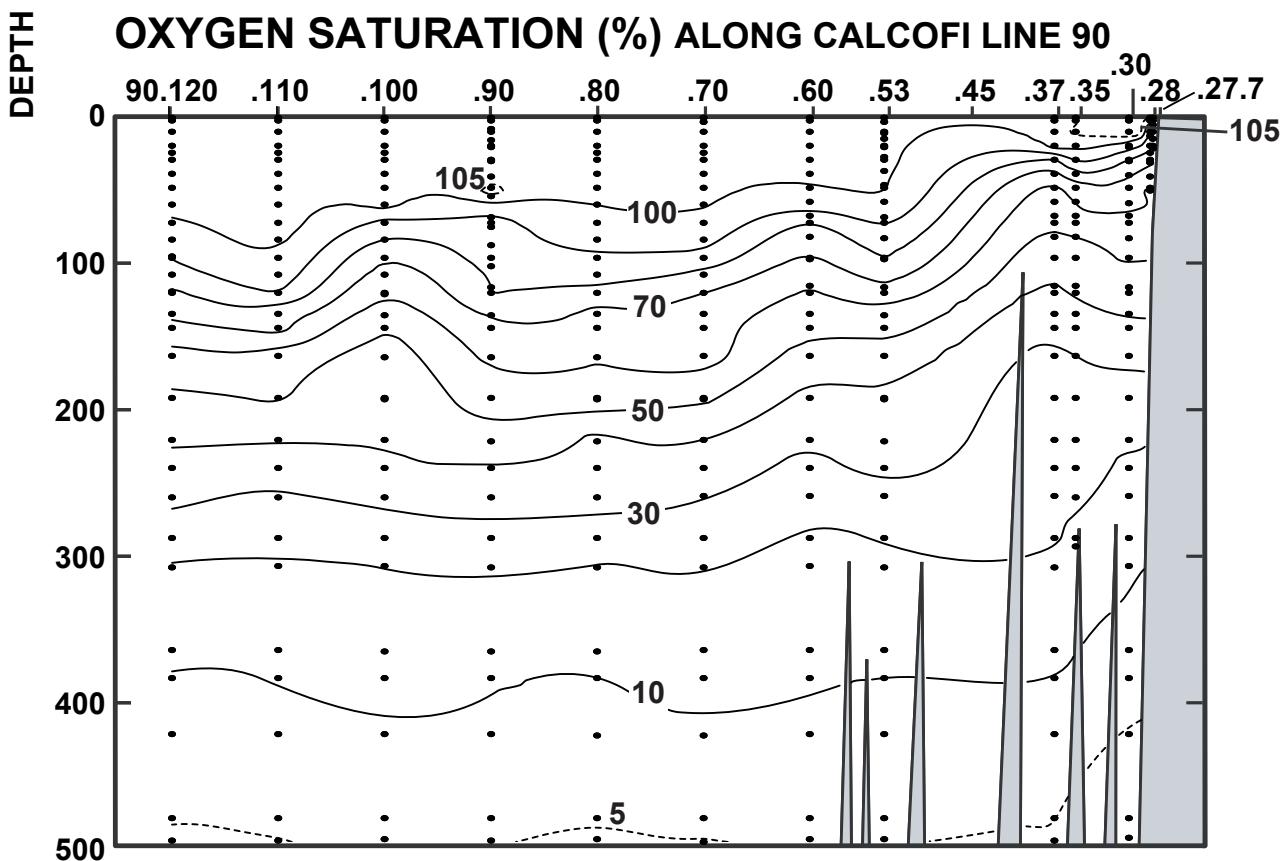
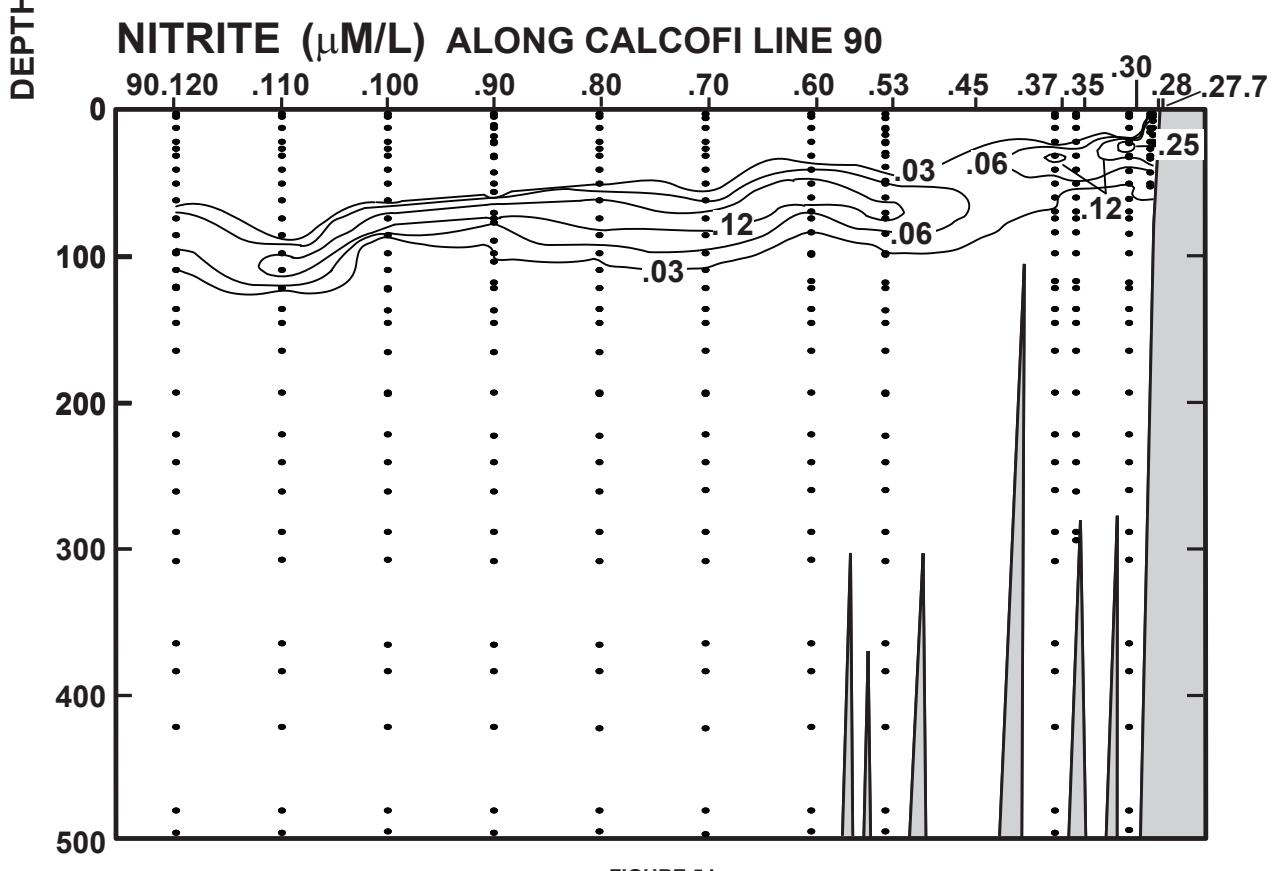
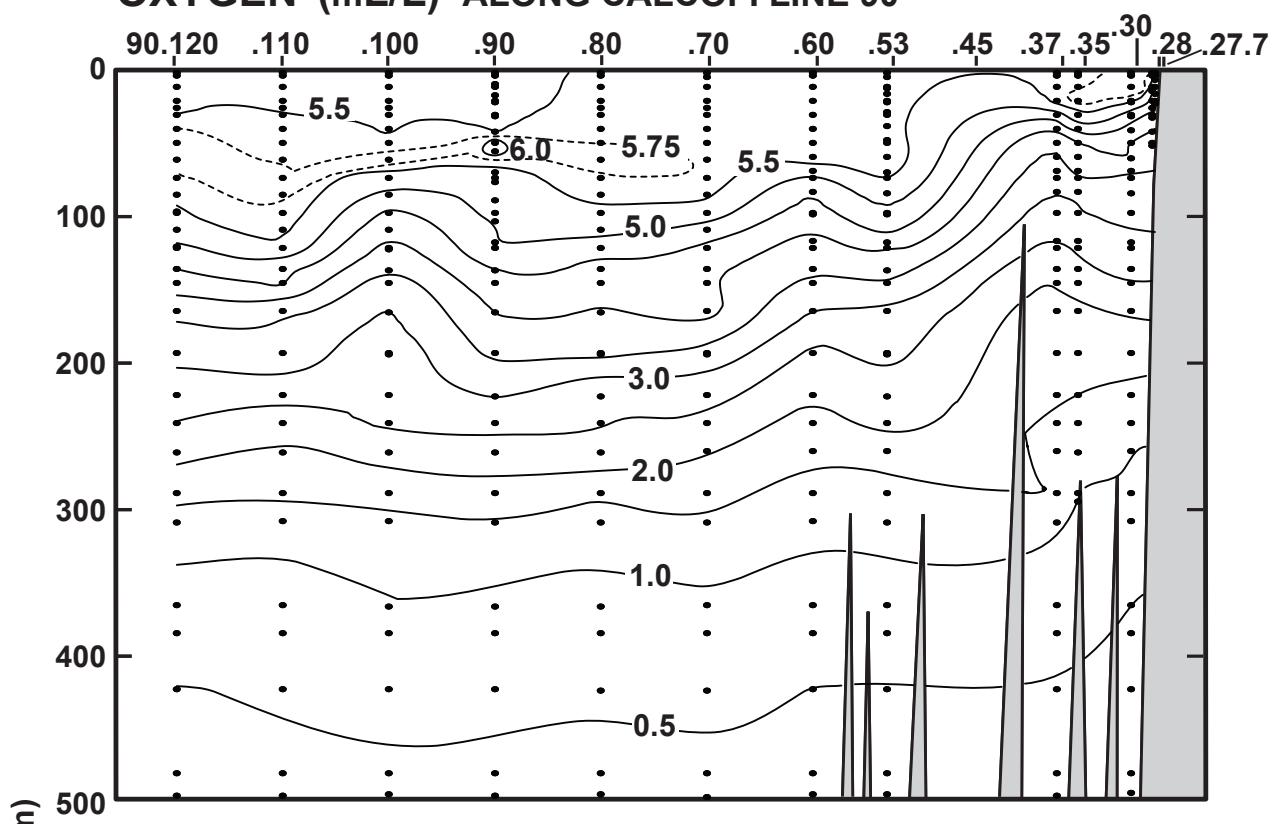


FIGURE 5H

# CALCOFI CRUISE 1711

12 - 15 November 2017

## OXYGEN (mL/L) ALONG CALCOFI LINE 90



## PERSONNEL

### CalCOFI Cruise 1711

#### SHIP'S COMMANDER

Tom Desjardins, R/V *Sally Ride*

#### PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participating (Legs)
Schuller, Daniel (Chief Scientist)	Staff Research Associate, SIO	1-3
Bland, Katy	Volunteer, SIO	1-3
Dotterweich, Megan	Volunteer, SIO	1-3
Dovel, Shonna	Staff Research Associate, SIO	1-3
Faber, David	Staff Research Associate, SIO	1-2
Gardner, Emily	Fishery Biologist, NMFS	1-3
Griffith, David	Fishery Biologist, NMFS	1-3
Hunt, Erin	Scientist, SIO	1-3
Osborn, Nicolas	Fishery Biologist, NMFS	1-3
Rogers-Wolgast, Jennifer	Staff Research Associate, SIO	1-3
Schulberg, Anne	Scientist, JCVI	1
Solsona Berga, Alba	Acoustic Technician, SIO	1-3
Sullaway, Genoa	Volunteer, SIO	1-3
Trickey, Jennifer	Staff Research Associate, SIO	1-3
Vasquez Del Mercado, Lenora	Fishery Biologist, NMFS	1-3
Whitaker, Katherine	Marine Mammal Observer, SIO	1-3
Wilkinson, James	Information Systems Analyst, SIO	3
Wolgast, David	Staff Research Associate, SIO	1-3

Leg 1: San Diego to DanaPoint, California, 9 – 15 November, 2017

Leg 2: Dana Point to Ventura, California, California, 15 – 17 November, 2017

Leg 3: Ventura to San Diego, California, 17 - 24 November, 2017

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 76.7 49.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD
35 5.3 N	120 46.6 W	21/11/2017	0144	UTC	67 m	310	18 kn			1016.3 mb	17.1 C	14.8 C					061
0	13.95	13.95	33.461	25.009	293.9	0.000	5.80	253.1	98.8	6.4	0.46	1.7	0.18	0.12	5.16	0.23	0
2	13.95	13.95	33.461	25.009	294.0	0.006	5.80	253.1	98.8	6.4	0.46	1.7	0.18	0.12	5.16	0.23	2 08
5	13.94	13.94	33.460	25.011	293.9	0.015	5.81	253.5	99.0	6.5	0.47	1.7	0.18	0.08	4.91	0.22	5 07
10	13.95	13.95	33.460	25.008	294.3	0.029	5.75	250.9	98.0	6.5	0.51	2.0	0.19	0.16	4.79	0.28	10 05
11	13.95	13.95	33.461	25.009	294.3	0.031											10 06
20	13.26	13.26	33.465	25.153	280.8	0.058	4.85	211.9	81.6	8.6	0.77	6.7	0.33	0.15	0.70	0.22	20 04
30	12.43	12.43	33.482	25.330	264.2	0.085	4.24	185.3	70.1	11.0	1.03	10.9	0.27	0.07	0.37	0.25	30 03
40	12.12	12.11	33.522	25.421	255.8	0.111	4.02	175.5	66.0	13.7	1.15	12.4	0.31	0.07	0.40	0.27	40 02
50	ISL 11.81	D 11.80	33.536	D 25.490	249.5	0.135	3.84	D167.4	D 62.7	14.6	1.22	13.3	0.27	0.17	0.34	0.29	50
52	11.72	11.71	33.536	25.507	247.9	0.142	3.87	168.9	63.0	14.8	1.23	13.5	0.27	0.19	0.33	0.29	52 01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 76.7 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD
35 1.3 N	120 55.1 W	20/11/2017	2313	UTC	237 m	320	14 kn	320 01 04	0	1016.4 mb	17.9 C	16.0 C	13 m	0/8			060
0	16.86	16.86	33.519	24.412	350.7	0.000	5.63	245.8	101.8	1.5	0.30	0.1	0.05	0.05	0.47	0.16	0
2	16.86	16.85	33.519	24.413	350.8	0.007	5.63	245.8	101.8	1.5	0.30	0.1	0.05	0.05	0.47	0.16	2 16
10 ISL 16.83	D 16.83	33.514	D 24.416	350.8	0.032	5.59	D243.7	D101.0	1.6	0.27	0.1	0.04	0.00	0.47	0.16	10	
11	16.81	16.81	33.517	24.422	350.2	0.039	5.62	245.4	101.5	1.6	0.27	0.1	0.04	0.00	0.47	0.16	11 14
20 ISL 15.74	D 15.74	33.466	D 24.628	330.9	0.066	5.25	D228.8	D 92.8	2.9	0.43	2.6	0.21	0.00	0.35	0.17	20	
21	15.70	15.70	33.465	24.637	330.1	0.072	5.25	229.3	92.8	3.1	0.45	2.9	0.22	0.00	0.34	0.17	21 13
30 ISL 14.73	D 14.72	33.429	D 24.822	312.7	0.099	5.18	D225.8	D 89.7	3.9	0.51	3.4	0.24	0.00	0.36	0.18	30	
31	14.72	14.71	33.429	D 24.825	312.5	0.102	5.18	D225.7	D 89.7								31 12
41	14.28	14.27	33.419	24.911	304.5	0.135	5.18	226.3	88.9	4.8	0.58	4.1	0.26	0.09	0.39	0.20	41 11
50 ISL 13.00	D 13.00	33.408	D 25.162	280.8	0.160	5.03	D218.9	D 84.0	7.3	0.85	7.9	0.15	0.00	0.19	0.16	50	
51	12.49	12.48	33.408	25.263	271.2	0.164	4.85	211.8	80.2	7.6	0.88	8.4	0.13	0.00	0.17	0.15	51 10
61	11.21	11.21	33.485	25.561	243.0	0.190	4.15	181.3	66.8	12.6	1.21	14.9	0.03	0.00	0.09	0.13	62 09
71	10.73	10.72	33.540	25.690	230.9	0.214	3.95	172.4	62.9	14.9	1.36	17.1	0.03	0.00	0.07	0.10	72 08
75 ISL 10.55	D 10.54	33.579	D 25.753	225.1	0.221	3.91	D170.3	D 62.1	16.2	1.42	18.0	0.00	0.00	0.05	0.09	76	
86	10.05	10.04	33.645	25.890	212.2	0.247	3.51	153.3	55.2	19.7	1.58	20.5	0.00	0.00	0.02	0.06	87 07
100	9.76	9.75	33.747	26.018	200.3	0.276	3.17	138.2	49.4	22.9	1.73	22.4	0.00	0.00	0.02	0.07	101 06
121	9.36	9.35	33.825	26.144	188.7	0.317	3.08	134.3	47.7	25.5	1.79	23.6	0.00	0.00	0.01	0.05	122 05
125 ISL 9.38	D 9.37	33.846	D 26.158	187.5	0.323	2.98	D129.8	D 46.2	26.4	1.82	24.0	0.00	0.00	0.01	0.05	126	
140	9.05	9.03	33.922	26.271	177.0	0.352	2.72	188.6	41.8	29.5	1.93	25.4	0.03	0.00	0.01	0.06	141 04
150 ISL 8.97	D 8.95	33.949	D 26.305	173.9	0.368	2.66	D115.8	D 40.9	31.5	2.00	26.0	0.04	0.00	0.01	0.07	151	
170	8.77	8.75	34.032	26.403	165.1	0.403	2.17	94.8	33.2	35.3	2.15	27.2	0.06	0.08	0.01	0.10	171 03
200	8.64	8.62	34.100	26.477	158.6	0.451	1.63	71.1	24.9	40.5	2.35	29.3	0.12	0.06	0.12	0.22	202 02
231	8.35	8.32	34.124	26.541	153.0	0.500	1.48	64.5	22.4	43.8	2.44	30.5	0.12	0.11		233 01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 76.7 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD
34 53.3 N	121 11.9 W	20/11/2017	1934	UTC	558 m	350	09 kn	010 01 05	1	1018.2 mb	19.0 C	17.2 C	16 m	4/8			059
0	16.78	16.78	33.489	24.408	351.1	0.000	5.59	244.1	100.9	1.2	0.24	0.0	0.02	0.00	0.39	0.16	0
2	16.78	16.77	33.489	24.409	351.2	0.007	5.59	244.1	100.9	1.2	0.24	0.0	0.00	0.00	0.39	0.16	2 21
10 ISL 16.72	D 16.71	33.488	D 24.422	350.2	0.032	5.60	D243.9	D100.8	1.2	0.24	0.0	0.00	0.00	0.42	0.16	10	
11	16.71	16.71	33.488	24.424	350.0	0.039	5.60	244.3	100.8	1.2	0.24	0.0	0.00	0.00	0.42	0.16	11 19
11	16.71	16.71	33.500	24.433	349.2	0.039	5.69	248.4	102.5	1.1	0.23	0.0	0.00	0.00			11 20
20 ISL 16.67	D 16.66	33.487	D 24.434	349.5	0.067	5.60	D244.3	D100.9	1.1	0.27	0.0	0.00	0.00	0.48	0.17	20	
21	16.67	16.66	33.488	24.435	349.4	0.074	5.61	244.7	100.9	1.1	0.27	0.0	0.03	0.00	0.49	0.18	21 22
30 ISL 16.65	D 16.64	33.488	D 24.440	349.2	0.102	5.60	D243.9	D100.7	1.1	0.24	0.0	0.03	0.07	0.52	0.15	30	
31	16.64	16.64	33.493	24.444	348.8	0.108	5.59	244.1	100.6	1.1	0.24	0.0	0.03	0.05	0.52	0.15	31 17
41	16.42	16.41	33.474	24.482	345.6	0.143	5.51	240.4	98.7	1.5	0.29	0.5	0.08	0.00	0.39	0.18	41 16
50 ISL 14.63	D 14.63	33.406	D 24.826	313.0	0.171	5.28	D230.2	D 91.3	3.1	0.50	3.3	0.31	0.00	0.33	0.21	50	
51	14.56	14.56	33.404	24.840	311.7	0.176	5.29	230.9	91.3	3.3	0.52	3.6	0.34	0.00	0.32	0.21	51 15
61	12.76	12.75	33.374	25.185	278.9	0.205	4.91	214.5	81.6	6.9	0.83	8.7	0.08	0.00	0.21	0.18	62 14
71	11.84	11.83	33.398	25.378	260.7	0.232	4.73	206.3	77.0	9.0	1.01	11.6	0.03	0.00	0.15	0.14	72 13
75 ISL 11.50	D 11.49	33.483	D 25.508	248.5	0.241	4.40	D191.6	D 71.2	10.8	1.11	13.2	0.00	0.00	0.12	0.11	76	
86	10.63	10.62	33.556	25.721	228.3	0.269	3.99	174.0	63.3	15.7	1.38	17.8	0.00	0.00	0.05	0.05	87 12
100 ISL 9.99	D 9.98	33.685	D 25.932	208.5	0.298	3.48	D151.4	D 54.6	21.0	1.63	21.3	0.00	0.00				

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 76.7 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD	
34 43.8 N	121 32.9 W	20/11/2017	1650	UTC	891 m	290 11 kn	270 02 08	2	1018.3 mb	17.8 C	17.0 C	19 m	6/8	ST	058		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SI03* µM	P04* µM	N03* µM	N02* µM	NH4* µM	CHL-A µg/L	PHAEAO µg/L	PRES db
0	16.85	16.85	33.491	24.392	352.7	0.000	5.57	243.0	100.6	1.4	0.24	0.0	0.03	0.04	0.37	0.16	0
2 A	16.85	16.85	33.491	24.392	352.7	0.007	5.57	243.0	100.6	1.4	0.24	0.0	0.03	0.0	0.37	0.16	2
10 ISL	16.84 D	16.84	33.490 D	24.395	352.8	0.032	5.56	2424.4	0100.5	1.4	0.23	0.0	0.00	0.00	0.37	0.16	10
12 A	16.84	16.84	33.491	24.396	352.7	0.042	5.58	243.4	100.7	1.3	0.23	0.0	0.00	0.00	0.37	0.16	12
15 A	16.84	16.83	33.490	24.396	352.8	0.053	5.57	243.0	100.6	1.3	0.23	0.0	0.00	0.00	0.36	0.16	15
20 ISL	16.84 D	16.83	33.490 D	24.397	353.0	0.067	5.56	2424.4	0100.4	1.3	0.23	0.0	0.00	0.00	0.37	0.16	20
22	16.83	16.83	33.490	24.398	353.0	0.078	5.56	2424.3	0100.4	1.3	0.23	0.0	0.00	0.00	0.37	0.15	22
30 A	16.83	16.83	33.493	24.400	353.0	0.106	5.56	242.8	100.5	1.3	0.23	0.0	0.00	0.00	0.37	0.17	30
41	16.74	16.74	33.485	24.416	351.9	0.145	5.56	242.7	100.2	1.3	0.24	0.1	0.04	0.00	0.36	0.17	41
50 ISL	16.03 D	16.02	33.463 D	24.563	353.2	0.174	5.36	2323.7	095.3	2.3	0.39	2.0	0.18	0.00	0.33	0.18	50
52 A	15.90	15.89	33.454	24.586	356.0	0.183	5.28	230.4	93.6	2.5	0.42	2.4	0.21	0.13	0.32	0.18	52
59	13.06	13.05	33.416	25.158	281.4	0.204	4.67	204.0	78.2	7.2	0.93	10.5	0.04	0.00	0.18	0.16	59
66 A	11.58	11.57	33.478	25.489	250.0	0.223	4.15	181.2	67.3	11.7	1.21	14.7	0.05	0.00	0.11	0.12	67
75 ISL	11.14 D	11.13	33.519 D	25.602	239.5	0.243	3.99	D173.9	64.2	13.8	1.33	16.5	0.03	0.00	0.08	0.10	76
76	11.11	11.10	33.519	25.607	239.0	0.247	3.97	173.4	63.8	14.0	1.34	16.7	0.03	0.00	0.07	0.09	77
86	10.47	10.46	33.596	25.779	222.8	0.270	3.64	158.8	57.7	17.7	1.50	19.1	0.00	0.00	0.03	0.06	87
100 ISL	9.88 D	9.87	33.658 D	25.929	208.8	0.299	3.75	D163.1 D	58.6	19.6	1.52	19.8	0.00	0.00	0.02	0.05	101
101	9.86	9.84	33.670	25.942	207.6	0.303	3.69	161.0	57.7	19.7	1.52	19.9	0.00	0.00	0.02	0.05	102
121	9.41	9.40	33.834	26.144	188.7	0.342	2.94	128.2	45.5	26.5	1.83	24.0	0.00	0.00	0.01	0.04	122
125 ISL	9.32 D	9.31	33.850 D	26.170	186.3	0.349	2.90	D126.2 D	44.9	26.9	1.84	24.2	0.00	0.00	0.01	0.04	126
141	9.04	9.03	33.895	26.251	178.9	0.379	2.93	127.7	45.0	28.7	1.87	25.0	0.00	0.00	0.00	0.04	142
150 ISL	8.93 D	8.92	33.919 D	26.287	175.6	0.394	2.82	D122.6 D	43.2	30.1	1.92	25.7	0.00	0.00	0.00	0.04	151
171	8.69	8.67	33.967	26.364	168.7	0.431	2.59	113.1	39.6	33.3	2.02	27.1	0.00	0.00	0.03	0.03	172
200 ISL	8.19 D	8.16	34.048 D	26.505	155.7	0.478	2.25 D	97.8 D	33.9	39.2	2.15	28.8	0.00	0.00	0.00	0.02	202
201	8.09	8.07	34.031	26.506	155.6	0.480	2.38	104.1	35.9	39.4	2.15	28.8	0.00	0.00	0.00	0.02	203
231	7.81	7.78	34.046	26.560	150.9	0.526	2.09	91.3	31.3	43.6	2.26	30.6	0.00	0.00		233	06
250 ISL	7.67 D	7.64	34.084 D	26.610	146.5	0.557	1.78 D	77.2 D	26.5	46.9	2.34	31.7	0.00	0.00		252	
271	7.33	7.31	34.048	26.630	144.8	0.585	1.83	80.0	27.1	50.6	2.43	32.9	0.00	0.00		273	05
300 ISL	6.65 D	6.62	34.030 D	26.709	137.3	0.626	1.81 D	78.6 D	26.3	56.4	2.52	34.6	0.00	0.00		302	
321	6.27	6.24	34.026	26.756	132.9	0.654	1.59	69.2	22.9	60.6	2.59	35.8	0.00	0.00		324	04
380	5.78	5.75	34.065	26.849	124.6	0.730	1.13	49.3	16.1	70.1	2.80	38.5	0.00	0.00		383	03
400 ISL	5.67 D	5.63	34.079 D	26.874	122.3	0.756	0.98 D	42.6 D	14.0	72.7	2.88	38.9	0.00	0.00		403	
440	5.80	5.77	34.196	26.952	115.8	0.802	0.52	22.9	7.5	77.8	3.03	39.7	0.00	0.00		444	02
500 ISL	5.82 D	5.77	34.316 D	27.046	107.8	0.872	0.26 D	11.3 D	3.7	83.7	3.13	40.6	0.00	0.00		504	
515	5.70	5.66	34.324	27.067	105.9	0.886	0.23	10.1	3.3	85.2	3.16	40.8	0.00	0.00		519	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 76.7 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD	
34 23.3 N	122 14.8 W	20/11/2017	1007	UTC	4010 m	280 09 kn			1017.3 mb	17.0 C	16.5 C					057	
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SI03* µM	P04* µM	N03* µM	N02* µM	NH4* µM	CHL-A µg/L	PHAEAO µg/L	PRES db
0	16.77	16.77	33.497	24.416	350.4	0.000	5.60	244.6	101.1	1.3	0.24	0.0	0.02	0.05	0.43	0.14	0
2	16.77	16.77	33.497	24.416	350.4	0.007	5.60	244.6	101.1	1.3	0.24	0.0	0.00	0.05	0.43	0.14	2
10	16.78	16.77	33.497	24.416	350.8	0.035	5.60	244.6	101.1	1.0	0.23	0.0	0.00	0.00	0.41	0.15	10
20 ISL	16.76 D	16.76	33.502 D	24.422	350.5	0.067	5.60 D	243.9 D	100.9	0.9	0.21	0.0	0.00	0.00	0.43	0.14	20
21	16.77	16.76	33.501	24.421	350.7	0.074	5.61	244.9	101.2	0.8	0.21	0.0	0.00	0.00	0.43	0.13	18
30	16.87	16.86	33.483	24.384	354.5	0.105	5.54	241.8	100.1	1.1	0.27	0.3	0.07	0.00	0.45	0.17	30
40	13.66	13.65	33.408	25.031	293.1	0.138	4.82	210.4	81.6	5.5	0.79	8.2	0.10	0.00	0.37	0.23	40
50 ISL	12.31 D	12.31	33.422 D	25.307	267.0	0.164	4.52 D	196.9 D	74.5	7.9	0.99	11.2	0.04	0.00	0.25	0.20	50
51	12.11	12.10	33.419	25.345	263.4	0.168	4.56	199.3	74.8	8.2	1.01	11.5	0.04	0.00	0.24	0.20	51
60	11.38	11.37	33.447	25.501	248.6	0.191	4.39	191.5	70.8	11.0	1.13	13.6	0.03	0.00	0.15	0.12	60
70	10.88	10.87	33.494	25.628	236.8	0.216	4.18	182.5	66.8	13.1	1.23	15.3	0.03	0.00	0.09	0.08	71
75 ISL	10.91 D	10.90	33.500 D	25.627	237.0	0.226	4.18	D182.1 D	66.9	13.7	1.26	15.9	0.00	0.00	0.07	0.08	76
85	10.45	10.44	33.545	25.742	226.2	0.251	4.03	175.7	63.7	15.1	1.33	17.1	0.00	0.00	0.04	0.06	86
100	9.92	9.90	33.603	25.879	213.5	0.284	4.03	175.9	63.1	17.0	1.37	18.0	0.00	0.00	0.03	0.04	101
120	9.44	9.42	33.721	26.051	197.5	0.325	3.78	165.0	58.6	20.9	1.52	20.6	0.03	0.00	0.03	0.03	121
125 ISL	9.40 D	9.38	33.736 D	26.070	195.9	0.333	3.74	D162.7 D	57.9	21.7	1.55	21.0	0.00	0.00	0.02	0.03	126
141	9.09	9.08	33.818	26.183	185.4	0.365	3.49	152.4	53.8	24.4	1.65	22.5	0.00	0.00	0.02	0.03	142
150 ISL	9.02 D	9.00	33.867 D	26.234	180.7	0.380	3.60	D156.7 D	55.3	25.4	1.65	22.8	0.00	0.00	0.02	0.03	151
170	8.72	8.71	33.920	26.322	172.7	0.417	3.54	154.5									

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 76.7 80.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN mL/L	OXYGEN μmol/Kg	OXY PCT	SI03*		P04*	N03*	N02*	NH4*	CHL-A	PHAE0	PRES	ORD
										μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	056
0	16.91	16.91	33.441	24.339	357.7	0.000	5.64	246.3	102.0	1.8	0.23	0.1	0.04	0.05	0.33	0.09	0.09	0	
2	16.91	16.91	33.441	24.339	357.8	0.007	5.64	246.3	102.0	1.8	0.23	0.1	0.04	0.05	0.33	0.09	0.09	2	
10	16.91	16.91	33.438	24.338	358.2	0.036	5.65	246.6	102.2	1.6	0.23	0.0	0.00	0.18	0.32	0.09	0.09	10	
20	16.83	16.82	33.429	24.352	357.2	0.072	5.66	247.2	102.2	1.4	0.21	0.0	0.00	0.00	0.35	0.11	0.20	18	
30	16.80	16.80	33.428	24.358	357.0	0.107	5.65	246.8	102.0	1.3	0.22	0.0	0.00	0.00	0.43	0.12	0.17	17	
40	16.50	16.49	33.408	24.413	352.1	0.143	5.68	248.0	101.9	1.3	0.22	0.0	0.00	0.00	0.57	0.25	0.40	16	
50	14.71	14.71	33.358	24.772	318.2	0.176	5.44	237.6	94.2	2.6	0.45	2.4	0.37	0.00	0.50	0.27	0.50	15	
60	12.43	12.42	33.416	25.280	269.8	0.206	4.60	200.8	75.9	8.3	1.01	11.6	0.00	0.00	0.17	0.17	60	14	
70	11.42	11.41	33.517	25.548	244.5	0.231	3.99	174.1	64.5	13.1	1.35	16.9	0.00	0.00	0.10	0.12	71	13	
75 ISL	11.16 D	11.15	33.552	D 25.623	237.5	0.242	3.87	D 168.7	D 62.3	14.8	1.43	18.1	0.00	0.00	0.08	0.10	76		
85	10.49	10.48	33.588	25.769	223.7	0.267	3.58	156.1	56.7	18.1	1.58	20.6	0.00	0.00	0.05	0.06	86	12	
100	9.64	9.63	33.724	26.020	200.1	0.298	3.33	145.4	51.9	22.4	1.74	22.3	0.00	0.00	0.01	0.03	101	11	
120	9.24	9.23	33.830	26.168	186.4	0.337	2.76	120.5	42.6	27.0	1.91	25.6	0.00	0.00	0.01	0.03	121	10	
125 ISL	9.20 D	9.18	33.845	D 26.187	184.7	0.345	2.77	D 120.4	D 42.7	27.8	1.92	25.9	0.00	0.00	0.01	0.03	126		
140	8.90	8.89	33.907	26.283	175.8	0.373	2.57	112.3	39.5	30.2	1.96	26.8	0.00	0.00	0.00	0.03	141	09	
150 ISL	8.78 D	8.77	33.957	D 26.341	170.5	0.390	2.59	D 112.7	D 39.6	31.3	1.98	27.0	0.00	0.00	0.00	0.03	151		
170	8.55	8.53	33.973	26.390	166.1	0.425	2.54	110.6	38.6	33.4	2.02	27.5	0.00	0.00	0.00	0.03	171	08	
200	8.28	8.26	34.026	26.473	158.8	0.473	2.20	95.9	33.2	38.1	2.17	29.3	0.00	0.00	0.02	0.02	202	07	
230	7.86	7.83	34.076	26.576	149.5	0.520	1.76	76.6	26.3	43.6	2.34	31.5	0.00	0.00		0.00	232	06	
250 ISL	7.45 D	7.43	34.049	D 26.614	146.0	0.549	1.86	D 81.0	D 27.7	46.4	2.38	32.3	0.00	0.00		0.00	252		
270	7.18	7.15	34.046	26.650	142.7	0.578	1.76	76.8	26.0	49.1	2.41	33.1	0.00	0.00		0.00	272	05	
300 ISL	6.84 D	6.81	34.065	D 26.712	137.2	0.620	1.46	D 63.6	D 21.4	54.4	2.57	34.8	0.00	0.00		0.00	302		
320	6.71	6.68	34.102	26.759	133.0	0.647	1.14	49.8	16.7	57.9	2.67	35.9	0.00	0.00		0.00	323	04	
380	6.37	6.33	34.151	26.844	125.7	0.724	0.76	33.3	11.0	65.9	2.83	37.7	0.00	0.00		0.00	383	03	
400 ISL	6.21 D	6.17	34.147	D 26.861	124.2	0.751	0.74	D 32.4	D 10.7	68.1	2.87	38.3	0.00	0.00		0.00	403		
440	5.91	5.87	34.151	26.903	120.5	0.798	0.64	27.8	9.1	72.7	2.95	39.4	0.00	0.00		0.00	444	02	
500 ISL	5.65 D	5.61	34.220	D 26.990	112.8	0.871	0.39	D 17.1	D 5.6	80.0	3.07	40.7	0.00	0.00		0.00	504		
516	5.48	5.43	34.217	27.009	111.0	0.887	0.36	15.8	5.1	81.9	3.10	41.1	0.00	0.00		0.00	520	01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 76.7 90.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN mL/L	OXYGEN μmol/Kg	OXY PCT	SI03*		P04*	N03*	N02*	NH4*	CHL-A	PHAE0	PRES	ORD
										μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	055
0	16.86	16.86	33.449	24.358	356.0	0.000	5.73	250.3	103.6	1.1	0.21	0.0	0.02	0.07	0.41	0.10	0.10	0	
2	16.86	16.86	33.449	24.358	356.0	0.007	5.73	250.3	103.6	1.1	0.21	0.0	0.00	0.07	0.41	0.10	0.10	20	
10 ISL	16.85 D	16.84	33.445	D 24.359	356.2	0.033	5.70	D 248.6	D 103.0	1.0	0.20	0.0	0.00	0.41	0.11	0.11	0.11	19	
11	16.85	16.84	33.447	D 24.361	356.1	0.039	5.71	249.1	103.1	1.0	0.20	0.0	0.00	0.41	0.11	0.11	0.11	19	
20 ISL	16.82 D	16.81	33.444	D 24.366	355.9	0.068	5.69	D 248.2	D 102.8	1.0	0.20	0.0	0.00	0.46	0.14	0.14	0.14	20	
21	16.82	16.81	33.445	24.366	355.9	0.075	5.69	248.4	102.7	1.0	0.20	0.0	0.00	0.46	0.14	0.14	0.14	18	
30 ISL	16.62 D	16.61	33.437	D 24.407	352.3	0.104	5.67	D 247.2	D 101.9	1.1	0.22	0.0	0.00	0.59	0.23	0.23	0.23	30	
31	16.36	16.36	33.436	24.466	346.8	0.110	5.66	246.9	101.2	1.1	0.22	0.0	0.00	0.60	0.23	0.23	0.23	17	
41	15.54	15.53	33.396	24.621	332.2	0.144	5.55	242.2	97.6	1.7	0.33	0.7	0.41	0.16	0.55	0.25	0.25	16	
50 ISL	13.47 D	13.46	33.351	D 25.024	294.0	0.170	5.19	D 226.1	D 87.5	4.4	0.65	6.2	0.08	0.00	0.23	0.17	50		
51	13.23	13.22	33.344	25.068	289.9	0.175	5.06	221.1	85.0	4.7	0.69	6.8	0.04	0.00	0.20	0.16	51	15	
61	11.57	11.57	33.420	25.445	254.1	0.202	4.45	194.5	72.2	10.0	1.12	13.5	0.03	0.00	0.10	0.12	61	14	
71	10.95	10.94	33.510	25.628	236.8	0.227	3.89	170.0	62.3	14.4	1.35	17.1	0.03	0.00	0.06	0.08	72	13	
75 ISL	10.88 D	10.87	33.525	D 25.651	234.7	0.235	3.87	D 168.4	D 61.8	15.2	1.39	17.7	0.00	0.00	0.05	0.08	76		
86	10.28	10.27	33.584	25.802	220.5	0.261	3.66	159.6	57.7	17.3	1.49	19.4	0.00	0.00	0.03	0.06	87	12	
100 ISL	9.81 D	9.80	33.689	D 25.965	205.4	0.289	3.35	D 146.0	D 52.4	21.2	1.65	21.7	0.00	0.00	0.02	0.05	101		
101	9.73	9.72	33.691	25.979	204.0	0.293	3.34	145.8	52.1	21.5	1.66	21.9	0.00	0.00	0.02	0.05	102	11	
121	9.26	9.25	33.801	26.142	188.9	0.332	2.94	128.5	45.5	22.7	1.84	24.7	0.00	0.00	0.01	0.04	122	10	
125 ISL	9.17 D	9.16	33.819	D 26.170	186.2	0.338	3.00	D 130.7	D 46.3	24.0	1.86	25.0	0.00	0.00	0.01	0.04	126		
141	8.94	8.92	33.876	26.253	178.7	0.369	2.71	118.5	41.6	29.3	1.93	26.4	0.00	0.00	0.01	0.04	142	09	
150 ISL	8.84 D	8.82	33.899	D 26.287	175.7	0.384	2.73	D 118.8	D 41.8	30.3	1.95	26.7	0.00	0.00	0.01	0.03	151		
171	8.42	8.40	33.957	26.398	165.4	0.421	2.62	114.4	39.8	32.7	2.01	27.5	0.00	0.00	0.01	0.03	172	08	
200 ISL	8.11 D	8.09	34.009	D 26.486	157.5	0.467	2.34	D 101.9	D 35.3	37.7	2.15	29.2	0.00	0.00	0.01	0.04	202		
201	8.13	8.11	34.006	26.480	158.1	0.469	2.31	101.0	34.9	37.9	2.15								

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 76.7 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD	
33 23.3 N	124 19.4 W	19/11/2017	1726	UTC	4586 m	100 06 kn	310 02 07	1	1020.0 mb	17.0 C	16.5 C	16 m	2/8	ST	054		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN mL/L	OXYGEN µmol/Kg	OXY PCT	SI03* µM	P04* µM	N03* µM	N02* µM	NH4* µM	CHL-A µg/L	PHAEAO µg/L	PRES db
0	16.71	16.71	33.452	24.395	352.4	0.000	5.78	252.5	104.2	1.4	0.20	0.0	0.02	0.03	0.43	0.15	0
2 A	16.71	16.71	33.452	24.395	352.5	0.007	5.78	252.5	104.2	1.4	0.20	0.0	0.00	0.03	0.43	0.15	2 22
10 A	16.67	16.67	33.450	24.404	351.9	0.035	5.77	252.0	103.9	1.4	0.20	0.0	0.00	0.00	0.48	0.15	10 20
13 A	16.67	16.66	33.451	24.406	351.9	0.046	5.78	252.2	104.0	1.3	0.21	0.0	0.00	0.00	0.44	0.15	13 19
20 ISL	16.64 D	16.64	33.450	D 24.411	351.6	0.067	5.75	D 250.6	D 103.4	1.4	0.21	0.0	0.00	0.00	0.53	0.20	20
26 A	16.43	16.42	33.450	24.461	347.0	0.091	5.77	251.7	103.3	1.4	0.21	0.0	0.00	0.00	0.60	0.25	26 18
30 ISL	16.04 D	16.04	33.436	D 24.539	339.8	0.102	5.76	D 251.0	D 102.4	1.8	0.27	0.2	0.00	0.00	0.62	0.27	30
35	14.96	14.96	33.386	24.739	320.8	0.122	5.49	239.7	95.5	2.3	0.34	0.5	0.37	0.08	0.64	0.30	35 17
45 A	13.22	13.21	33.336	25.064	290.0	0.152	5.16	225.2	86.5	4.7	0.60	4.8	0.04	0.00	0.25	0.18	45 16
50 ISL	12.24 D	12.23	33.354	D 25.269	270.6	0.164	4.78	D 208.2	D 78.6	6.6	0.78	7.8	0.04	0.00	0.18	0.16	50
56 A	11.84	11.83	33.376	25.361	261.9	0.182	4.54	198.1	74.0	8.9	0.99	11.3	0.04	0.00	0.11	0.12	56 15
63	11.37	11.36	33.423	25.485	250.3	0.200	4.33	188.9	69.8	11.1	1.14	13.8	0.03	0.00	0.08	0.11	64 14
71	10.91	10.90	33.502	25.629	236.8	0.220	4.01	175.1	64.1	14.3	1.32	16.7	0.00	0.00	0.05	0.09	72 13
75 ISL	10.66 D	10.65	33.554	D 25.713	228.8	0.227	3.77	D 163.9	D 59.9	15.5	1.38	17.6	0.00	0.00	0.05	0.08	76
86	10.16	10.15	33.619	25.851	215.9	0.253	3.54	154.3	55.7	19.0	1.54	20.2	0.00	0.00	0.03	0.07	87 12
100 ISL	9.77 D	9.76	33.703	D 25.982	203.8	0.281	3.21	D 139.7	D 50.1	22.7	1.72	22.8	0.00	0.00	0.02	0.06	101
101	9.70	9.68	33.702	25.993	202.6	0.285	3.20	139.8	49.9	22.9	1.73	23.0	0.00	0.00	0.02	0.06	102 11
121	8.98	8.96	33.833	26.213	182.1	0.323	2.91	127.2	44.7	27.2	1.87	25.2	0.00	0.00	0.01	0.05	122 10
125 ISL	8.96 D	8.95	33.864	D 26.240	179.6	0.329	2.88	D 125.3	D 44.2	27.9	1.88	25.4	0.00	0.00	0.01	0.05	126
141	8.71	8.69	33.916	26.320	172.2	0.359	2.80	122.2	42.7	30.4	1.92	26.0	0.00	0.00	0.01	0.04	142 09
150 ISL	8.66 D	8.65	33.966	D 26.366	168.1	0.373	2.56	D 111.3	D 39.0	32.0	1.97	26.7	0.00	0.00	0.01	0.04	151
171	8.39	8.37	34.000	26.435	161.9	0.409	2.38	103.7	36.1	35.7	2.10	28.5	0.00	0.00	0.02	0.04	172 08
200 ISL	8.12 D	8.10	34.039	D 26.508	155.5	0.454	2.07	D 89.8	D 31.1	39.7	2.23	30.0	0.00	0.00	0.01	0.03	202
201	8.07	8.05	34.041	26.517	154.6	0.456	2.04	89.2	30.8	39.9	2.23	30.0	0.00	0.00	0.01	0.03	203 07
230	7.86	7.84	34.062	26.564	150.6	0.501	1.87	81.8	28.1	43.4	2.34	31.2	0.00	0.00		232 06	
250 ISL	7.60 D	7.57	34.054	D 26.597	147.7	0.530	1.88	D 81.7	D 28.0	45.9	2.37	31.9	0.00	0.00		252	
271	7.17	7.14	34.041	26.647	143.0	0.561	1.82	79.5	26.9	48.5	2.40	32.5	0.00	0.00		273 05	
300 ISL	6.79 D	6.76	34.064	D 26.717	136.6	0.602	1.44	D 62.5	D 21.0	55.3	2.56	34.6	0.00	0.00		302	
321	6.57	6.54	34.086	26.764	132.4	0.630	1.20	52.5	17.5	60.3	2.68	36.1	0.00	0.00		324 04	
381	6.32	6.28	34.155	26.854	124.7	0.707	0.75	32.7	10.8	67.6	2.88	37.8	0.00	0.00		384 03	
400 ISL	6.24 D	6.21	34.176	D 26.880	122.4	0.732	0.68	D 29.4	D 9.8	70.1	2.93	38.3	0.00	0.00		403	
440	6.00	5.96	34.212	26.940	117.1	0.778	0.46	20.0	6.6	75.4	3.02	39.3	0.00	0.00		444 02	
500 ISL	5.68 D	5.64	34.236	D 26.999	112.0	0.850	0.37	D 16.1	D 5.3	81.3	3.10	40.2	0.00	0.00		504	
515	5.61	5.57	34.246	27.016	110.6	0.864	0.33	14.4	4.7	82.7	3.12	40.5	0.00	0.00		519 01	

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 80.0 50.5

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD	
34 27.4 N	120 29.3 W	18/11/2017	0342	UTC	25 m	330 11 kn			1017.4 mb	16.0 C	14.5 C					047	
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN mL/L	OXYGEN µmol/Kg	OXY PCT	SI03* µM	P04* µM	N03* µM	N02* µM	NH4* µM	CHL-A µg/L	PHAEAO µg/L	PRES db
0	14.97	14.97	33.435	24.774	316.3	0.000	5.80	253.1	100.9	2.7	0.34	1.1	0.12	0.11	4.44	0.52	0
2	14.97	14.97	33.435	24.774	316.4	0.006	5.80	253.1	100.9	2.7	0.34	1.1	0.12	0.11	4.44	0.52	2 06
5	14.97	14.97	33.433	24.772	316.6	0.016	5.79	253.0	100.8	3.1	0.35	1.1	0.13	0.16	4.47	0.58	5 05
10	14.95	14.95	33.431	24.774	316.6	0.032	5.77	252.1	100.4	3.1	0.34	1.1	0.13	0.08	4.73	0.63	10 03
10	14.95	14.95	33.432	24.775	316.6	0.033											10 04
15	14.56	14.56	33.433	24.860	308.6	0.047	5.50	240.3	95.0	4.1	0.41	2.4	0.17	0.10	4.24	0.44	15 02
20	14.52	14.51	33.424	24.862	308.5	0.063	5.45	238.2	94.0	4.2	0.45	2.7	0.17	0.22	4.15	0.53	20 01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 80.0 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD	
34 27.0 N	120 31.4 W	18/11/2017	0437	UTC	74 m	320 13 kn			1017.6 mb	15.2 C	14.2 C					048	
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN mL/L	OXYGEN µmol/Kg	OXY PCT	SI03* µM	P04* µM	N03* µM	N02* µM	NH4* µM	CHL-A µg/L	PHAEAO µg/L	PRES db
0	14.32	14.32	33.423	24.903	304.0	0.000	5.62	245.3	96.5	4.5	0.45	2.5	0.18	0.12	4.17	0.45	0
2	14.32	14.32	33.423	24.903	304.0	0.006	5.62	245.3	96.5	4.5	0.45	2.5	0.18	0.12	4.17	0.45	2 09
6	14.32	14.32	33.423	24.902	304.3	0.018	5.57	243.4	95.7	4.4	0.46	2.6	0.18	0.09	4.24	0.43	6 08
10	14.34	14.34	33.420	24.896	305.0	0.031	5.52	241.1	94.8	4.5	0.47	2.8	0.19	0.18	3.80	0.44	10 06
11	14.34	14.34	33.424	24.899	304.7	0.032											10 07
20	13.54	13.54	33.408	25.053	290.4	0.060	4.97	217.1	84.0	6.6	0.63	5.7	0.22	0.14	3.66	0.40	20 05
30	12.25	12.24	33.460	25.348	26												

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 80.0 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	sva	DYN	HT	OXYGEN	OXYGEN	OXY	NO3*	NO2*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA		ml/L	μmol/Kg	PCT	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	15.90	15.90	33.467	24.592	333.6	0.000	5.78	252.4	102.5	1.2	0.25	0.0	0.02	0.00	0.83	0.23	0
3	15.90	15.90	33.467	24.592	333.7	0.010	5.78	252.4	102.5	1.2	0.25	0.0	0.00	0.00	0.83	0.23	3 24
10 ISL	15.84	D 15.84	33.466 D	24.605	332.7	0.029	5.80	D252.9	D102.7	1.2	0.24	0.0	0.00	0.00	0.98	0.25	10
11	15.84	15.84	33.465	24.605	332.8	0.035											10 23
11	15.84	15.84	33.467	24.606	332.6	0.035											10
16	15.85	15.85	33.462	24.601	333.4	0.053	5.82	253.8	103.0	1.2	0.23	0.0	0.00	0.00	1.37	0.30	16 20
20	15.60	15.60	33.453	24.649	328.9	0.067	5.86	255.8	103.3	1.4	0.25	0.0	0.00	0.00	1.63	0.31	20 18
21	15.60	15.60	33.467	24.660	327.9	0.068											20 19
30	15.33	15.33	33.443	24.702	324.2	0.099	5.90	257.6	103.5	1.8	0.26	0.0	0.04	0.00	1.47	0.37	30 17
40	12.42	12.41	33.427	25.291	268.3	0.129	4.48	195.4	73.9	8.5	0.97	10.6	0.18	0.00	0.33	0.31	40 16
50	11.66	11.65	33.459	25.458	252.5	0.155	4.21	183.7	68.4	11.4	1.25	15.0	0.04	0.00	0.18	0.15	50 15
60	10.98	10.97	33.520	25.630	236.4	0.179	3.90	170.3	62.5	14.8	1.42	17.8	0.03	0.00	0.07	0.10	60 14
70	10.44	10.43	33.562	25.757	224.5	0.202	3.84	167.7	60.8	16.9	1.48	18.9	0.00	0.00	0.03	0.05	71 13
75 ISL	10.29	D 10.28	33.602 D	25.815	219.1	0.210	3.79	D165.0 D	59.8	18.5	1.56	20.0	0.00	0.00	0.02	0.04	76
85	9.84	9.83	33.687	25.958	205.7	0.235	3.31	144.5	51.8	21.8	1.72	22.4	0.00	0.00	0.01	0.03	86 12
100	9.56	9.54	33.762	26.064	195.9	0.265	3.01	131.3	46.8	24.4	1.81	23.7	0.00	0.00	0.01	0.03	101 11
120	9.58	9.56	33.922	26.185	184.9	0.303	2.41	105.4	37.6	28.3	1.99	31.0	0.00	0.00	0.01	0.04	121 10
125 ISL	9.54	D 9.53	33.942 D	26.207	182.9	0.309	2.38	D103.5 D	37.0	28.8	2.02	25.3	0.00	0.00	0.01	0.04	126
140	9.49	9.47	34.000	26.261	178.1	0.339	2.14	93.3	33.2	30.4	2.11	26.1	0.00	0.00	0.01	0.05	141 09
150 ISL	9.50	D 9.49	34.018 D	26.273	177.2	0.354	2.10	D 91.3 D	32.6	31.1	2.14	26.4	0.00	0.00	0.01	0.05	151
170	9.42	9.40	34.070	26.329	172.3	0.392	1.91	83.5	29.7	32.6	2.19	27.1	0.00	0.00	0.01	0.05	171 08
200	9.12	9.09	34.112	26.411	165.1	0.442	1.73	75.5	26.7	35.2	2.27	28.0	0.00	0.00	0.02	0.04	202 07
230	8.94	8.92	34.158	26.476	159.5	0.491	1.50	65.3	23.0	38.0	2.37	29.1	0.00	0.00			232 06
250 ISL	8.80	D 8.78	34.194 D	26.527	155.1	0.521	1.31	D 56.8 D	20.0	40.1	2.45	29.8	0.00	0.00			252
270	8.73	8.70	34.221	26.560	152.3	0.553	1.12	48.9	17.1	42.2	2.52	30.6	0.00				272 05
300 ISL	8.45	D 8.42	34.242 D	26.620	147.1	0.597	0.95	D 41.4 D	14.5	45.6	2.60	31.6	0.00	0.00			302
320	8.21	8.17	34.243	26.659	143.6	0.627	0.87	37.9	13.1	47.9	2.65	32.4	0.00				323 04
380	7.44	7.40	34.212	26.747	135.8	0.711	0.79	34.3	11.7	55.3	2.77	34.9	0.00				383 03
400 ISL	7.41	D 7.37	34.237 D	26.772	133.8	0.738	0.68	D 29.6 D	10.1	57.5	2.81	35.4	0.00	0.00			403
441	6.97	6.93	34.247	26.841	127.6	0.792	0.55	23.9	8.1	61.9	2.90	36.5	0.00				445 02
500 ISL	6.57	D 6.52	34.262 D	26.908	121.7	0.867	0.43	D 18.9 D	6.3	68.4	2.99	37.8	0.00	0.00			504
517	6.49	6.44	34.267	26.924	120.5	0.886	0.39	17.1	5.7	70.2	3.01	38.1	0.00	0.00			521 01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 80.0 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	sva	DYN	HT	OXYGEN	OXYGEN	OXY	NO3*	NO2*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA		ml/L	μmol/Kg	PCT	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	16.64	16.64	33.467	24.422	349.8	0.000	5.62	245.4	101.1	1.5	0.25	0.0	0.03	0.45	0.16	0	
2	16.64	16.64	33.465 D	24.421	350.0	0.004	5.62	245.4	101.1	1.5	0.25	0.0	0.03	0.45	0.16	2 21	
10	16.65	16.65	33.464	24.419	350.4	0.035	5.63	245.9	101.3	1.4	0.23	0.0	0.03	0.43	0.16	10 19	
11	16.65	16.65	33.465	24.420	350.4	0.037										10 20	
20 ISL	16.65	D 16.64	33.465 D	24.421	350.6	0.067	5.60	D244.3 D	100.8	1.4	0.24	0.0	0.00	0.00	0.43	0.17	20
21	16.65	16.65	33.468	24.423	350.5	0.074	5.62	245.6	101.2	1.4	0.24	0.0	0.00	0.43	0.17	21 18	
30	16.64	16.64	33.462	24.421	351.0	0.105	5.62	245.6	101.2	1.4	0.24	0.0	0.00	0.46	0.16	30 17	
40	15.70	15.70	33.369	24.563	337.7	0.140	5.68	248.0	100.2	1.8	0.28	0.0	0.15	0.44	0.31	40 16	
50 ISL	13.74	D 13.74	33.290 D	24.922	303.7	0.170	5.70	D248.6 D	96.7	2.6	0.39	1.6	0.38	0.00	0.31	0.28	50
51	13.02	13.01	33.285	25.064	290.1	0.175	5.72	249.7	95.5	2.7	0.40	1.8	0.41	0.00	0.30	0.27	51 15
60	12.01	12.00	33.338	25.301	267.8	0.200	5.27	230.4	86.3						0.12	0.13	60 14
70	11.21	11.21	33.447	25.531	246.0	0.226	4.38	191.1	70.4	11.8	1.16	14.3	0.00	0.00	0.08	0.11	71 13
75 ISL	10.87	D 10.86	33.506 D	25.639	235.9	0.236	4.21	D183.5 D	67.3	13.4	1.27	16.0	0.00	0.00	0.07	0.10	76
86	10.43	10.42	33.568	25.765	224.1	0.263	3.67	160.3	58.1	17.1	1.52	19.6	0.00	0.00	0.04	0.06	87 12
100	9.89	9.88	33.773	26.016	200.5	0.293	2.92	127.5	45.7	23.8	1.77	22.5	0.00	0.00	0.02	0.07	101 11
120	9.73	9.71	33.913 D	26.154	187.9	0.330	2.38	D103.4 D	37.1								121 10
125 ISL	9.71	D 9.70	33.923 D	26.164	187.0	0.339	2.35	D102.1 D	36.6	27.8	1.95	24.6	0.00	0.00	0.01	0.06	126
140	9.43	9.42	33.972	26.249	179.3	0.369	2.27	99.2	35.3	30.2	2.06	25.9	0.00	0.00	0.05	0.141	09
150 ISL	9.40	D 9.38	34.020 D	26.292	175.4	0.385	2.10	D 91.5 D	32.6	31.1	2.11	26.4	0.00	0.00	0.01	0.05	151
171	9.34	9.33	34.088	26.355	169.8	0.423	1.81	79.2	28.1	33.1	2.20	27.3	0.00	0.00	0.01	0.05	172 08
200	9.24	9.22	34.146	26.418	164.5	0.471	1.59	69.6	24.7	35.6	2.29	28.1	0.00	0.00	0.01	0.05	202 07
230	9.10	9.07	34.198	26.484	158.9	0.520	1.34	58.3	20.6	38.3	2.39	29.0	0.00				232 06
250 ISL	8.98	D 8.95	34.231 D	26.528	155.1	0.550	1.18	D 51.4 D	18.2	40.1	2.45	29.7	0.00	0.00			252
270	8.76	8.73	34.233	26.566	151.8												

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 80.0 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLOUDS	AMT	TYPE	ORD	
33 48.9 N	121 49.5 W	18/11/2017	1747	UTC	3600 m	330 12 kn	320 03	10 1	1021.3 mb	18.0 C	16.0 C	20 m	2/8	ST	050		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SWA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEAO μg/L	PRES db
0	16.95	16.95	33.337	24.250	366.2	0.000	5.70	249.1	103.2	1.7	0.22	0.0	0.04	0.05	0.30	0.07	0
3 A	16.95	16.95	33.337	24.250	366.3	0.011	5.70	249.1	103.2	1.7	0.22	0.0	0.04	0.05	0.30	0.07	3 24
10 ISL	16.94	D 16.94	33.337 D 24.254	366.2	0.032	5.68	D247.6	D102.7	1.8	0.21	0.0	0.04	0.00	0.30	0.07	10	
13 A	16.94	16.94	33.337 D 24.255	366.2	0.043	5.70	248.9	103.1	1.8	0.21	0.0	0.03	0.00	0.30	0.07	13 21	
13	16.94	16.94	33.340	24.257	366.1	0.048											13 22
17 A	16.94	16.94	33.336	24.254	366.4	0.062	5.68	248.2	102.8	1.8	0.20	0.0	0.00	0.00	0.30	0.08	17 20
20 ISL	16.94	D 16.93	33.337 D 24.255	366.4	0.068	5.68	D247.6	D102.7	1.8	0.20	0.0	0.00	0.00	0.31	0.08	20	
25	16.92	16.91	33.333	24.258	366.4	0.091	5.69	248.3	102.8	1.8	0.20	0.0	0.00	0.00	0.32	0.07	25 19
30 ISL	16.76	D 16.76	33.326 D 24.288	365.6	0.105	5.71	D249.1	D102.9	1.7	0.24	0.1	0.00	0.00	0.37	0.10	30	
32 A	16.65	16.64	33.322	24.312	361.5	0.117	5.74	250.7	103.2	1.7	0.25	0.1	0.00	0.38	0.39	0.12	32 18
44	15.17	15.16	33.324	24.646	329.9	0.158	5.83	254.6	101.8	2.0	0.26	0.0	0.00	0.05	0.76	0.37	44 16
44	15.17	15.16	33.325	24.647	329.9	0.158											44 17
50 ISL	14.57	D 14.57	33.311 D 24.765	318.7	0.174	5.70	D248.3	D 98.3	2.7	0.33	0.4	0.00	0.07	0.66	0.34	50	
56 A	13.71	13.70	33.268	24.913	304.8	0.197	5.64	246.2	95.5	3.4	0.39	0.7	0.48	0.09	0.56	0.31	56 15
63	12.40	12.39	33.224 D 25.138	283.4	0.214	5.62	D244.9	D 92.6									64 14
70 A	11.68	11.68	33.266	25.305	267.6	0.236	5.45	238.0	88.5	5.3	0.61	5.4	0.05	0.00	0.16	0.14	71 13
75 ISL	11.50	D 11.49	33.299 D 25.365	262.0	0.246	5.21	D227.0	D 84.3	6.6	0.72	7.2	0.04	0.00	0.13	0.12	76	
86	11.08	11.07	33.387	25.510	248.5	0.278	4.77	208.5	76.6	9.5	0.96	11.1	0.04	0.00	0.07	0.08	87 12
100 ISL	10.63	D 10.61	33.530 D 25.701	230.6	0.308	3.98	D173.5	D 63.3	15.3	1.35	17.0	0.03	0.00	0.04	0.06	101	
101	10.51	10.49	33.537	25.728	228.0	0.314	3.95	172.4	62.6	15.7	1.38	17.4	0.03	0.00	0.03	0.06	102 11
121	10.01	9.99	33.659	25.909	211.2	0.357	3.51	153.3	55.1	19.9	1.58	20.4	0.00	0.00	0.02	0.05	122 10
125 ISL	9.82	D 9.80	33.710 D 25.981	204.4	0.363	3.65	D158.7	D 57.0	21.0	1.62	21.1	0.00	0.00	0.02	0.04	126	
141	9.31	9.29	33.811	26.143	189.2	0.397	3.12	136.1	48.2	25.5	1.78	23.8	0.00	0.00	0.01	0.03	142 09
150 ISL	9.17	D 9.15	33.852 D 26.198	184.1	0.412	3.21	D139.7	D 49.5	27.0	1.84	24.4	0.00	0.00	0.01	0.03	151	
171	8.91	8.89	33.928	26.300	174.9	0.452	2.68	116.9	41.1	30.5	1.97	26.0	0.00	0.00	0.01	0.04	172 08
200 ISL	8.61	D 8.58	33.972 D 26.382	167.6	0.500	2.51	D109.4	D 38.3	34.0	2.05	27.6	0.00	0.00	0.01	0.03	202	
201	8.60	8.58	33.974	26.384	167.5	0.503	2.53	110.5	38.6	34.1	2.05	27.6	0.00	0.00	0.01	0.03	203 07
230	8.08	8.06	33.981	26.468	159.8	0.551	2.87	125.1	43.2	36.0	1.99	27.3	0.00	0.00			232 06
250 ISL	7.98	D 7.95	34.067 D 26.552	152.2	0.580	2.10	D 91.3	D 31.5	40.4	2.17	29.5	0.00	0.00				252
271	7.60	7.57	34.049	26.593	148.4	0.614	1.91	83.4	28.5	45.1	2.35	31.7	0.00	0.00			273 05
300 ISL	7.48	D 7.45	34.076 D 26.632	145.2	0.655	1.58	D 68.6	D 23.4	49.4	2.49	33.3	0.00	0.00				302
320	7.26	7.23	34.098	26.681	140.8	0.686	1.32	57.4	19.4	52.3	2.59	34.5	0.00	0.00			323 04
380	6.57	6.54	34.105	26.781	131.8	0.767	1.04	45.2	15.1	61.0	2.73	36.8	0.00	0.00			383 03
400 ISL	6.43	D 6.40	34.112 D 26.805	129.7	0.793	0.96	D 41.7	D 13.9	64.3	2.79	37.5	0.00	0.00				403
440	6.04	6.00	34.131	26.871	123.6	0.844	0.76	D 32.9	D 10.9	71.0	2.92	39.0	0.00	0.00			444 02
500 ISL	5.40	D 5.36	34.137 D 26.954	115.9	0.917	0.64	D 27.8	D 9.0	81.1	3.02	40.6	0.00	0.00				504
515	5.28	5.24	34.141	26.972	114.3	0.933	0.60	26.3	8.5	83.6	3.04	41.0	0.00	0.00			519 01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 80.0 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLOUDS	AMT	TYPE	ORD	
33 29.0 N	122 32.0 W	18/11/2017	2244	UTC	3973 m	330 08 kn	320 04	07 1	1020.1 mb	17.2 C	14.9 C	30 m	1/8	ST	051		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SWA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEAO μg/L	PRES db
0	18.05	18.05	33.474	24.093	381.2	0.000	5.48	239.5	101.4	1.5	0.19	0.0	0.02	0.00	0.16	0.02	0
2	18.05	18.05	33.474	24.093	381.3	0.008	5.48	239.5	101.4	1.5	0.19	0.0	0.00	0.00	0.16	0.02	2 21
10 ISL	18.03	D 18.03	33.472 D 24.097	381.2	0.035	5.49	D239.3	D 101.4	1.5	0.19	0.0	0.00	0.00	0.16	0.03	10	
11	18.01	18.01	33.473	24.103	380.7	0.042	5.49	239.6	101.4	1.5	0.19	0.0	0.00	0.00	0.16	0.03	11 20
20	16.91	16.91	33.276	24.215	370.3	0.076	5.72	250.2	103.4	1.4	0.21	0.0	0.00	0.00	0.25	0.07	20 19
30 ISL	16.08	D 16.07	33.239 D 24.379	354.9	0.109	5.83	D254.2	D 103.6	1.3	0.24	0.0	0.00	0.00	0.51	0.09	30	
31	16.00	15.99	33.245	24.402	352.8	0.115	5.84	255.0	103.6	1.3	0.24	0.0	0.00	0.00	0.54	0.10	31 18
41	15.41	15.40	33.417	24.667	327.9	0.149	5.67	247.4	99.4	2.2	0.28	0.0	0.10	0.24	0.54	0.32	41
50 ISL	14.60	D 14.59	33.525 D 24.926	303.5	0.174	6.01	D262.0	D 103.9	2.3	0.20	0.0	0.00	0.00	0.46	0.26	50	
51	14.16	14.15	33.521	25.016	294.9	0.181	6.02	262.9	103.1	2.3	0.19	0.0	0.00	0.00	0.45	0.26	51 16
60	13.33	13.32	33.348	25.051	291.7	0.207	5.89	257.4	99.1	2.7	0.22	0.3	0.16	0.00	0.44	0.32	60 14
71	14.20	14.19	33.792	25.216	276.5	0.239	5.64	246.2	96.8	3.0	0.32	1.3	0.11	0.00	0.25	0.18	72 13
75 ISL	14.09	D 14.08	33.820 D 25.262	272.3	0.247	5.56	D242.2	D 95.2	3.5	0.37	2.2	0.00	0.00	0.23	0.16	76	
86	13.09	13.08	33.763	25.423	257.2	0.276	5.34	D232.4	D 89.5	6.9	0.65	7.5	0.00	0.00	0.06	0.07	87 12
100 ISL	11.82	D 11.81	33.676 D 25.600	240.5	0.311	5.12	D222.8	D 83.5	6.9	0.65	7.5	0.00	0.00	0.06	0.07	101	
101	11.67	11.66	33.671	25.624	238.2	0.316	5.09	222.4	82.9	7.1	0.66	7.7	0.00	0.00	0.05	0.06	102 11
121	10.43	10.41	33.632	25.817	220.1	0.362	4.36	190.4	69.0	14.5	1.19	15.4	0.00	0.00	0.02	0.03	122 10</td

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DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN mL/L	OXYGEN μmol/Kg	OXY PCT	SI03*		P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
										μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	16.72	16.72	33.394	24.349	356.8	0.000	5.79	253.0	104.4	1.7	0.23	0.1	0.03	0.05	0.40	0.11	0		
2	16.72	16.72	33.394	24.349	356.9	0.007	5.79	253.0	104.4	1.7	0.23	0.1	0.03	0.05	0.40	0.11	2	20	
10	16.64	16.63	33.397	24.371	355.1	0.036	5.80	253.1	104.2	1.4	0.22	0.0	0.00	0.06	0.44	0.14	10	19	
20	15.39	15.38	33.420	24.672	326.7	0.070	5.60	244.5	98.2	1.7	0.26	0.0	0.05	0.10	0.90	0.40	20	18	
30	14.24	14.24	33.358	24.870	308.1	0.101	5.44	237.5	93.2	3.3	0.41	1.3	0.58	0.00	0.36	0.21	30	17	
40	13.27	13.26	33.283	25.013	294.7	0.132	5.79	253.0	97.2	3.2	0.37	1.3	0.23	0.10	0.29	0.24	40	16	
50	11.95	11.94	33.300	25.282	269.3	0.160	5.03	219.7	82.2	6.7	0.76	7.3	0.05	0.05	0.10	0.09	50	15	
60	11.06	11.05	33.368	25.497	249.0	0.186	5.05	220.5	80.9	7.8	0.81	9.2	0.04	0.00	0.07	0.10	60	14	
70	10.69	10.68	33.501	25.667	233.1	0.210	4.47	195.1	71.1	12.5	1.13	14.3	0.03	0.00	0.05	0.06	71	13	
75	10.57	D 10.56	33.525	D 25.707	229.4	0.219	4.36	D 189.7	D 69.1	12.9	1.13	14.4	0.03	0.00	0.04	0.05	76		
85	10.33	10.32	33.616	25.819	218.9	0.244	4.48	195.5	70.7	13.7	1.13	14.8	0.03	0.00	0.03	0.03	86	12	
100	9.78	9.77	33.691	25.971	204.8	0.275	3.80	166.0	59.4	19.6	1.48	20.0	0.00	0.00	0.01	0.02	101	11	
120	9.41	9.40	33.778	26.100	192.9	0.315	3.33	145.5	51.7	23.2	1.68	22.5	0.00	0.00	0.01	0.03	121	10	
125	9.40	D 9.39	33.816	D 26.131	190.0	0.323	4.10	D 135.0	D 48.1	24.3	1.74	23.3	0.00	0.00	0.01	0.03	126		
140	9.14	9.12	33.865	26.213	182.6	0.353	2.67	116.7	41.2	27.6	1.92	25.5	0.00	0.00	0.01	0.03	141	09	
150	9.10	D 9.09	33.910	D 26.253	178.9	0.369	2.64	D 115.1	D 40.7	29.2	1.97	26.2	0.00	0.00	0.01	0.03	151		
170	8.87	8.85	33.974	26.342	170.8	0.406	2.35	102.4	36.0	32.6	2.07	27.6	0.00	0.00	0.01	0.03	171	08	
200	8.54	8.52	34.041	26.446	161.5	0.456	1.97	86.1	30.0	37.0	2.22	29.5	0.00	0.09	0.01	0.03	202	07	
230	8.09	8.06	34.074	26.541	152.9	0.503	1.82	79.5	27.4	41.7	2.32	30.9	0.00	0.00			232	06	
250	7.96	D 7.94	34.093	D 26.575	150.0	0.533	1.66	D 72.3	D 25.0	44.6	2.41	31.9	0.00	0.00			252		
270	7.70	7.67	34.116	26.632	144.8	0.563	1.43	62.4	21.4	47.5	2.50	32.9	0.00	0.08			272	05	
300	ISL	7.29	D 7.26	34.111	D 26.687	139.9	0.606	1.33	D 57.9	D 19.7	52.6	2.58	34.4	0.00	0.00			302	
320	6.91	6.88	34.099	26.730	135.9	0.633	1.30	56.7	19.0	56.0	2.63	35.4	0.00				323	04	
380	6.28	6.25	34.113	26.824	127.4	0.712	0.93	40.4	13.4	65.2	2.83	38.0	0.00	0.00			383	03	
400	ISL	5.98	D 5.94	34.106	D 26.857	124.3	0.738	0.90	D 39.0	D 12.9	68.4	2.87	38.7	0.00	0.00			403	
441	5.76	5.72	34.140	26.912	119.4	0.787	0.68	29.5	9.7	75.0	2.96	40.0	0.00	0.00			445	02	
500	ISL	5.30	D 5.26	34.178	D 26.998	111.6	0.858	0.47	D 20.4	D 6.6	84.6	3.07	41.5	0.00	0.00			504	
516		5.22	5.17	34.184	27.013	110.3	0.873	0.43	18.6	6.0	87.3	3.10	41.9	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

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DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN mL/L	OXYGEN μmol/Kg	OXY PCT	SI03*		P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
										μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	18.27	18.27	33.501	24.060	384.3	0.000	5.47	239.0	101.7	1.9	0.20	0.0	0.02	0.18	0.14	0.11	0		
1	18.26	18.27	33.503	24.061	384.3	0.005										1	24		
2	18.27	18.27	33.501	24.060	384.4	0.008	5.47	239.0	101.7	1.9	0.20	0.0	0.00	0.18	0.14	0.11	2	23	
10	18.28	18.27	33.502	24.060	384.7	0.039	5.45	238.1	101.3	1.7	0.19	0.0	0.00	0.46	0.14	0.04	10	22	
20	ISL	18.28	18.27	33.501	D 24.060	385.1	0.075	5.44	D 237.3	D 101.1	1.7	0.20	0.0	0.00	0.29	0.13	0.04	20	
26	18.28	18.27	33.505	24.063	385.1	0.100	5.45	237.9	101.2	1.7	0.20	0.0	0.00	0.19	0.13	0.04	26	21	
30	ISL	18.28	D 18.27	33.501	D 24.060	385.5	0.114	5.44	D 237.2	D 101.0	1.6	0.19	0.0	0.00	0.00	0.14	0.05	30	
40	18.29	18.28	33.641	24.165	375.9	0.153	5.49	239.5	102.0	1.6	0.16	0.0	0.00	0.17	0.05	40	20		
50	17.21	17.20	33.491	24.313	362.1	0.190	5.67	247.5	103.1	1.6	0.19	0.0	0.00	0.10	0.25	0.11	50	19	
62	15.11	15.10	33.351	24.682	327.1	0.232	6.06	264.8	105.7	1.9	0.22	0.0	0.00	0.32	0.21	0.21	62	18	
67	14.38	14.37	33.316	24.811	314.9	0.248	6.05	264.2	103.9	2.2	0.27	0.1	0.03	0.09	0.39	0.28	68	16	
67	14.38	14.37	33.323	24.817	314.4	0.249											68	17	
75	14.75	14.74	33.633	24.978	299.4	0.272	5.73	250.2	99.4	2.4	0.26	0.6	0.08	0.00	0.29	0.21	76	15	
87	13.91	13.89	33.629	25.153	283.0	0.307	5.49	239.6	93.5	3.2	0.35	2.0	0.14	0.00	0.21	0.18	88	14	
100	12.89	12.88	33.579	25.319	267.4	0.343	5.60	244.5	93.4	3.1	0.33	1.8	0.07	0.00	0.14	0.12	101	13	
112	12.10	12.08	33.543	25.446	255.5	0.374	5.21	227.5	85.5	5.7	0.58	5.9	0.03	0.00	0.08	0.10	113	12	
125	10.78	10.77	33.455	25.617	239.2	0.407	4.34	189.5	69.2	12.4	1.16	14.4	0.00	0.00	0.05	0.07	126	11	
140	10.13	10.11	33.538	25.795	222.5	0.441	4.02	175.6	63.2	16.2	1.36	17.7	0.00	0.00	0.03	0.04	141		
150	ISL	10.00	D 9.99	33.700	D 25.943	208.7	0.465	3.97	D 172.6	D 62.2	17.7	1.36	18.2	0.00	0.00	0.02	0.03	151	
170	9.44	9.44	33.849	26.149	189.4	0.503	4.13	180.3	64.1	20.7	1.37	19.2	0.00	0.00	0.00	0.01	171	09	
200	8.73	8.71	33.920	26.322	173.3	0.558	3.55	155.1	54.2	27.2	1.68	23.4	0.00	0.00	0.00	0.01	202	08	
230	8.24	8.21	33.972	26.439	162.7	0.608	2.71	118.2	40.9	34.7	2.02	27.9	0.00	0.00			232	07	
250	ISL	7.90	D 7.88	33.973	D 26.489	158.0	0.643	3.23	D 140.7	D 48.5	38.0	2.07	28.6	0.00	0.00			252	
270	7.58	7.55	34.006	26.563	151.3	0.671	2.63	114.8	39.1	41.3	2.12	29.3	0.00	0.00			272	06	
300	ISL	7.11	D 7.09	34.029	D 26.646	143.6	0.719	2.00	D 87.0	D 29.5	48.1	2.26	31.5	0.00	0.00			302	
320	6.75	6.72	33.998	2															

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LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SV	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEO μg/L	PRES db
34	16.5 N	120 1.4 W	17/11/2017	2245 UTC	571 m	280 19 kn	250 02 04	0	1015.8 mb	17.2 C	15.3 C	08 m	0/8	0/46			
0	16.12	16.12	33.466	24.542	338.4	0.000	5.90	257.6	105.0	0.7	0.23	0.0	0.02	0.00	0.84	0.17	0
2	16.12	16.12	33.466	24.542	338.5	0.007	5.90	257.6	105.0	0.7	0.23	0.0	0.00	0.00	0.84	0.17	2 24
10 ISL	16.12	16.12	33.466 D	24.542	338.8	0.031	5.86	D255.2	D104.3	0.7	0.22	0.4	0.00	0.00	0.82	0.24	10
11	16.08	16.08	33.464	24.549	338.1	0.037	5.86	256.0	104.3	0.7	0.22	0.5	0.00	0.60	0.81	0.25	11 23
20 ISL	14.22	14.22	33.431 D	24.931	302.0	0.063	5.51	D240.2	D94.5	2.5	0.46	2.7	0.00	0.11	4.89	0.97	20
21	14.12	14.12	33.423	24.946	300.6	0.069	5.35	233.5	91.4	2.7	0.49	3.0	0.21	0.05	5.35	1.05	21 22
30 ISL	13.66	13.65	33.421 D	25.040	291.9	0.093	4.72	D205.8	D80.0	6.4	0.76	6.9	0.14	0.00	3.07	0.68	30
31	13.58	13.58	33.419 D	25.054	290.6	0.096	4.58	D199.5	D77.5								31 21
41	12.55	12.54	33.456	25.288	268.6	0.127	4.11	179.3	68.0	11.0	1.08	11.6	0.06	0.00	0.29	0.22	41 20
50 ISL	11.92	11.91	33.494 D	25.437	254.5	0.148	3.91	D170.4	D63.9	12.9	1.20	13.6	0.05	0.00	0.18	0.20	50
51	11.80	11.80	33.490	25.456	252.8	0.153	3.84	167.9	62.7	13.2	1.21	13.9	0.04	0.00	0.17	0.19	51 19
61	11.07	11.07	33.582	25.661	233.5	0.177	3.41	148.9	54.7	17.3	1.46	17.6	0.04	0.00	0.13	0.16	61 18
71	10.46	10.45	33.703	25.864	214.4	0.199	2.98	130.3	47.3	21.7	1.69	21.1	0.03	0.00	0.09	0.12	72 17
75 ISL	10.29	10.28	33.753 D	25.933	207.9	0.206	2.87	D124.9	D45.3	23.4	1.77	22.1	0.00	0.00	0.08	0.11	76
86	9.87	9.86	33.923	26.137	188.7	0.230	2.29	99.8	35.8	28.0	1.99	25.0	0.00	0.00	0.05	0.10	87 16
100 ISL	9.75	D 9.74	33.962 D	26.187	184.2	0.254	2.17	D 94.6	D 34.0	29.7	2.05	25.5	0.00	0.00	0.02	0.10	101
101	9.74	9.73	33.965	26.192	183.9	0.258	2.14	93.5	33.5	29.8	2.05	25.5	0.00	0.00	0.02	0.10	102 15
120	9.63	9.62	34.030 D	26.261	177.7	0.291	1.92	D 83.3	D 29.9								121 14
125 ISL	9.48	D 9.46	34.044 D	26.297	174.3	0.299	1.85	D 80.6	D 28.8	33.1	2.17	26.9	0.00	0.00	0.02	0.08	126
140	9.41	9.39	34.097	26.351	169.6	0.326	1.66	72.5	25.8	35.2	2.25	27.8	0.00	0.00	0.02	0.07	141 13
150 ISL	9.39	D 9.37	34.116 D	26.370	168.0	0.342	1.60	D 69.7	D 24.9	36.2	2.29	28.1	0.00	0.00	0.02	0.07	151
171	9.30	9.29	34.146	26.407	164.9	0.378	1.30	56.8	20.2	38.3	2.38	28.9	0.00	0.00	0.01	0.07	172 12
200	9.12	9.10	34.175	26.460	160.5	0.426	1.05	45.9	16.2	41.8	2.49	30.2	0.00	0.08	0.02	0.07	202 11
230	8.73	8.71	34.197	26.540	153.4	0.473	0.82	35.6	12.5	46.7	2.63	31.6	0.00	0.00			232 10
250 ISL	8.54	D 8.51	34.202 D	26.574	150.4	0.503	0.77	D 33.5	D 11.7	50.2	2.70	32.3	0.00	0.00			252
270	8.25	8.22	34.204	26.620	146.4	0.533	0.64	27.7	9.6	53.8	2.76	33.0	0.00				272 09
300 ISL	7.94	D 7.91	34.210 D	26.671	141.9	0.577	0.57	D 24.7	D 8.5	57.6	2.80	33.3	0.00				302
320	7.85	7.81	34.213 D	26.688	140.6	0.605	0.54	23.4	8.0	60.1	2.82	33.6	0.00				323 08
380	7.38	7.34	34.228	26.768	133.8	0.688	0.40	17.6	6.0	67.2	2.95	33.9	0.00				383 07
400 ISL	7.23	D 7.19	34.237 D	26.797	131.3	0.715	0.36	D 15.4	D 5.3	70.4	3.00	33.8	0.00				403
440	6.91	6.87	34.247	26.849	126.7	0.767	0.26	11.3	3.8	76.8	3.09	33.5	0.00				444 06
480	6.80	6.76	34.249	26.867	125.6	0.817	0.32	14.1	4.7	75.1	3.05	35.0	0.03				484 05
500 ISL	6.78	D 6.73	34.253 D	26.873	125.3	0.843	0.28	D 12.0	D 4.0	81.9	3.14	32.7	0.00				504
515	6.77	6.72	34.256	26.878	125.1	0.861	0.14	6.3	2.1	87.0	3.21	30.9	0.00				519 04
538	6.69	6.64	34.258	26.890	124.3	0.890	0.25	11.1	3.7	80.5	3.15	33.3	0.08				543 03
561	6.66	6.60	34.263	26.899	123.7	0.918	0.23	10.2	3.4	85.4	3.23	31.4	0.36	0.19			566 02
566	6.66	6.60	34.268	26.903	123.4	0.924	0.23	9.9	3.3	85.8	3.25	31.3	0.37	0.19			571 01

A) SANTA BARBARA BASIN STATION.

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 83.3 39.4

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SV	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEO μg/L	PRES db
34	15.4 N	119 19.5 W	17/11/2017	1601 UTC	191 m	110 03 kn	190 02 05	2	1016.4 mb	18.2 C	18.0 C	5/8	ST	043			
0	15.76	15.76	33.424	24.591	333.7	0.000	5.52	241.2	97.7	4.0	0.35	0.4	0.18	0.12	2.74	0.70	0
2	15.76	15.76	33.424	24.591	333.8	0.007	5.52	241.2	97.7	4.0	0.35	0.4	0.18	0.12	2.74	0.70	2 05
6	15.48	15.48	33.418	24.649	328.4	0.020	5.11	222.9	89.7	4.4	0.50	0.5	0.27	0.26	2.13	0.73	6 04
10 ISL	15.45	15.45	33.418	24.655	328.0	0.033	5.01	218.9	88.1	4.6	0.55	0.5	0.29	0.34	2.02	0.81	10 03
11	15.45	15.45	33.417	24.654	328.1	0.035											10 02
15	15.46	15.46	33.415	24.652	328.5	0.049	4.99	217.9	87.7	4.7	0.54	0.5	0.31	0.34	1.90	0.77	15 01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 83.3 42.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03*		P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
										μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	17.48	17.48	33.487	24.241	367.0	0.000	5.61	245.1	102.7	1.3	0.20	0.1	0.03	0.04	0.95	0.18	0.18	0	
2	17.48	17.48	33.487	24.242	367.1	0.007	5.61	245.1	102.7	1.3	0.20	0.1	0.03	0.00	0.95	0.18	0.18	2 11	
10	16.66	16.66	33.469	24.421	350.3	0.036	5.59	244.0	100.6	1.4	0.26	0.5	0.07	0.18	0.74	0.34	10	09	
10	16.66	16.66	33.467	24.419	350.4	0.035												10 10	
20	15.36	15.36	33.461	24.709	323.2	0.070	5.35	233.5	93.8	3.1	0.40	2.1	0.16	0.19	0.54	0.28	20	08	
30	14.21	14.20	33.442	24.942	301.2	0.101	4.86	212.3	83.3	6.2	0.66	5.5	0.28	0.06	0.41	0.20	30	07	
40	13.03	13.03	33.453	25.190	277.9	0.130	4.47	195.0	74.7	8.8	0.87	8.6	0.25	0.00	0.34	0.17	40	06	
50	11.98	11.97	33.516	25.443	254.0	0.156	3.86	168.4	63.1	13.5	1.21	13.6	0.15	0.00	0.18	0.19	50	05	
60	11.39	11.38	33.523	25.559	243.2	0.181	3.69	161.2	59.7	14.6	1.31	15.2	0.09	0.00	0.16	0.13	60	04	
70	10.72	10.71	33.580	25.723	227.7	0.205	3.39	148.0	54.0	17.3	1.51	18.6	0.00	0.16	0.06	0.08	71	03	
75 ISL	10.71 D	10.70	33.610	25.749	225.4	0.214	3.27	D142.3 D	52.1	18.1	1.55	18.9	0.00	0.00	0.06	0.08	76		
85	10.63	10.62	33.652	25.794	221.3	0.239	3.05	133.1	48.5	19.8	1.64	19.5	0.00	0.00	0.04	0.09	86	02	
100 ISL	10.45 D	10.44	33.702	25.866	214.8	0.269	2.90	D126.2 D	45.9	21.6	1.72	21.1	0.00	0.00	0.04	0.10	101		
101	10.44	10.43	33.702	25.867	214.8	0.273	2.87	125.2	45.5	21.7	1.73	21.2	0.03	0.00	0.03	0.11	102	01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 83.3 51.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03*		P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
										μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	16.22	16.22	33.463	24.516	340.9	0.000	5.64	246.2	100.6	2.8	0.29	0.9	0.07	0.19	1.49	0.37	0		
2	16.22	16.22	33.463	24.516	341.0	0.007	5.64	246.2	100.6	2.8	0.29	0.9	0.07	0.19	1.49	0.37	2 10		
10	15.94	15.94	33.464	24.581	335.0	0.034	5.64	246.4	100.2	2.2	0.29	0.8	0.06	0.10	2.00	0.40	10	08	
10	15.94	15.94	33.464	24.581	335.0	0.034											10 09		
20	15.83	15.83	33.463	24.605	333.1	0.067	5.69	248.5	100.8	1.9	0.28	0.6	0.05	0.13	2.17	0.42	20	07	
30	15.71	15.71	33.468	24.637	330.4	0.100	5.60	244.4	98.9	2.2	0.31	1.0	0.06	0.13	2.13	0.52	30	06	
40	15.60	15.60	33.476	24.669	327.7	0.133	5.48	239.3	96.6	2.9	0.36	1.8	0.07	0.24	1.68	0.44	40	05	
50	14.08	14.07	33.497	25.012	295.2	0.164	4.88	213.2	83.5	6.9	0.68	6.3	0.12	0.26	1.09	0.42	50	04	
60	12.27	12.27	33.517	25.389	259.5	0.192	4.21	183.8	69.3	12.0	1.07	12.2	0.14	0.05	0.41	0.23	60	03	
71	11.77	11.76	33.549	25.510	248.2	0.220	3.96	172.7	64.4	13.6	1.20	14.0	0.12	0.05	0.32	0.21	72	02	
75 ISL	11.76 D	11.75	33.550	25.512	248.2	0.229	3.98	D173.2 D	64.8	13.9	1.22	14.3	0.12	0.00	0.31	0.21	76		
86	11.52	11.51	33.570	25.573	242.6	0.257	3.81	166.4	61.8	14.9	1.29	15.2	0.12	0.00	0.28	0.23	87	01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 83.3 55.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03*		P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
										μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	15.59	15.59	33.457	24.654	327.7	0.000	5.87	256.4	103.5	2.3	0.29	0.9	0.08	0.18	2.53	0.47	0		
2	15.59	15.59	33.457	24.654	327.8	0.007	5.87	256.4	103.5	2.3	0.29	0.9	0.08	0.18	2.53	0.47	2 21		
10	15.02	15.02	33.455	24.777	316.3	0.032	5.66	247.2	98.6	2.6	0.38	1.8	0.11	0.23	1.97	0.60	10	19	
10	15.02	15.02	33.455	24.778	316.3	0.032											10 20		
20	14.49	14.48	33.466	24.902	304.8	0.064	5.35	D233.3 D	92.2	2.5	0.37	1.7	0.10	0.27	2.02	0.59	20	18	
30	14.25	14.24	33.444	24.936	301.8	0.094	5.24	228.7	89.8	4.5	0.55	4.2	0.18	0.27	1.54	0.69	30	17	
40	12.30	12.29	33.443	25.326	264.9	0.122	4.32	188.8	71.2	10.0	1.00	10.7	0.13	0.00	0.40	0.25	40	16	
50	11.65	11.64	33.480	25.477	250.7	0.148	3.98	173.7	64.6	12.4	1.19	13.7	0.06	0.00	0.25	0.19	50	15	
60	11.12	11.11	33.508	25.596	239.6	0.172	4.14	180.7	66.5	13.1	1.20	14.4	0.04	0.00	0.17	0.16	60	14	
70	10.66	10.65	33.573	25.728	227.2	0.196	4.00	174.8	63.7	15.2	1.30	16.5	0.03	0.00	0.13	0.15	71	13	
75 ISL	10.42 D	10.41	33.629	25.814	219.2	0.205	3.96	D172.2 D	62.6	17.1	1.41	18.0	0.00	0.00	0.10	0.14	76		
85	10.16	10.15	33.693	25.907	210.6	0.228	3.24	141.5	51.0	20.9	1.64	20.9	0.00	0.00	0.05	0.12	86	12	
100	9.75	9.74	33.834	26.087	193.7	0.259	2.72	118.8	42.5	25.1	1.86	23.7	0.00	0.00	0.04	0.06	101	11	
120	9.67	9.66	33.942	26.186	184.8	0.297	2.31	100.8	36.0	28.2	2.01	25.2	0.00	0.00	0.03	0.07	121	10	
125 ISL	9.67 D	9.65	33.958	26.199	183.7	0.304	2.30	D100.0 D	35.9	28.5	2.03	25.3	0.00	0.00	0.03	0.08	126		
140	9.61	9.59	33.986	26.232	180.9	0.333	2.17	94.7	33.8	29.5	2.07	25.8	0.00	0.00	0.03	0.11	141	09	
150 ISL	9.60 D	9.58	34.001	26.244	179.9	0.349	2.15	D93.6 D	33.5	30.0	2.10	26.1	0.00	0.00	0.03	0.09	151		
170	9.51	9.49	34.045	26.295	175.6	0.387	1.98	86.3	30.8	31.0	2.15	26.7	0.00	0.00	0.02	0.07	171	08	
200	9.42	9.39	34.128	26.376	168.6	0.438	1.70	74.4	26.5	34.0	2.25	27.7	0.00	0.00	0.02	0.06	202	07	
230	9.11	9.09	34.196	26.479	159.3	0.488	1.37	59.8	21.1	37.8	2.40	28.9	0.00	0.00		232	06		
250 ISL	8.86 D	8.83	34.219	26.537	154.1	0.518	1.23	D53.4 D	18.8	40.0									

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 83.3 60.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	CAST SVA	TIME UTC	BOTTOM 1374 m	WIND 310 08 kn	WEA	BAROMETER 1015.9 mb	DRY 17.5 C	WET 16.5 C	SECCHI CLD AMT	TYPE	ORD 063		
0	16.38	16.38	33.461	24.479	344.4	0.000	5.61	245.1	100.5	1.4	0.24	0.1	0.06	0.14	0.14	0	
2	16.38	16.38	33.461	24.479	344.5	0.007	5.61	245.1	100.5	1.4	0.24	0.1	0.06	0.14	0.14	2 21	
10 ISL	16.38	16.38	33.462	24.480	344.7	0.031	5.59	D243.9	D100.1	1.3	0.24	0.1	0.05	0.08	0.50	0.19	10
11	16.38	16.38	33.461	24.479	344.8	0.038	5.63	245.6	100.7	1.3	0.24	0.1	0.05	0.07	0.50	0.19	11 19
11	16.38	16.38	33.463	24.480	344.7	0.037											11 20
20	16.37	16.37	33.462	24.483	344.8	0.069	5.60	244.6	100.3	1.6	0.25	0.3	0.06	0.20	0.51	0.17	20 18
30	16.20	16.20	33.455	24.517	341.9	0.103	5.57	243.3	99.4	1.8	0.26	0.6	0.09	0.00	0.51	0.20	30 17
41	15.91	15.90	33.451	24.581	336.1	0.141	5.57	243.1	98.7	2.1	0.29	0.7	0.13	0.00	0.39A	0.23A	41 16
50 ISL	13.49	D 13.48	33.403	D 25.062	290.4	0.167	4.98	D217.0	D 84.1	5.6	0.67	6.3	0.12	0.00	0.32	0.26	50
51	13.38	13.37	33.403	25.085	288.3	0.172	4.97	216.8	83.6	6.0	0.71	6.9	0.11	0.00	0.31	0.26	51 15
60	12.69	12.69	33.424	25.236	274.0	0.197	4.69	204.8	77.9	8.0	0.88	9.6	0.06	0.00	0.21	0.16	60 14
70	11.56	11.55	33.480	25.494	249.7	0.223	4.14	180.9	67.2	12.1	1.18	14.2	0.03	0.00	0.09	0.10	71 13
75 ISL	11.24	D 11.23	33.505	D 25.572	242.3	0.234	4.11	D178.8	D 66.1	13.0	1.21	14.8	0.00	0.00	0.13	0.13	76
85	10.59	10.57	33.544	25.719	228.5	0.259	4.16	181.6	66.0	14.7	1.26	16.1	0.00	0.00	0.20	0.18	86 12
100	10.36	10.35	33.580	25.787	222.4	0.293	4.11	179.3	64.9	15.8	1.29	16.8	0.00	0.00	0.03	0.05	101 11
120	9.88	9.87	33.673	25.940	208.2	0.336	3.60	157.0	56.3	20.1	1.53	20.2	0.00	0.00	0.02	0.04	121 10
125 ISL	9.85	D 9.83	33.686	D 25.956	206.7	0.345	3.58	D155.6	D 55.9	21.2	1.58	20.9	0.00	0.00	0.01	0.04	126
140	9.32	9.30	33.784	26.121	191.3	0.376	3.27	142.9	50.6	24.6	1.71	23.0	0.00	0.00	0.01	0.03	141 09
150 ISL	9.10	D 9.08	33.837	D 26.198	184.2	0.394	3.15	D137.0	D 48.5	26.3	1.77	23.8	0.00	0.00	0.00	0.03	151
170	8.84	8.82	33.896	26.284	176.3	0.431	2.87	125.0	43.9	29.6	1.88	25.5	0.00	0.00	0.03	0.03	171 08
200	8.50	8.48	33.965	26.392	166.6	0.482	2.56	111.9	39.0	34.0	2.01	27.3	0.00	0.00	0.00	0.03	202 07
230	8.16	8.14	34.054	26.514	155.5	0.531	2.03	88.4	30.6	39.0	2.22	29.5	0.00	0.00			232 06
250 ISL	8.27	D 8.24	34.146	D 26.572	150.5	0.562	1.59	D 69.0	D 24.0	42.4	2.36	30.6	0.00				252
270	8.09	8.06	34.164	26.612	147.0	0.592	1.30	56.8	19.6	45.8	2.49	31.7	0.00	0.00			272 05
300 ISL	7.92	D 7.89	34.210	D 26.674	141.6	0.635	0.97	D 42.4	D 14.6	50.6	2.62	33.3	0.00				302
320	7.46	7.43	34.201	26.734	135.9	0.663	0.87	37.8	12.9	53.8	2.70	34.4	0.00				323 04
380	6.73	6.70	34.190	26.827	127.6	0.742	0.72	31.2	10.4	63.1	2.84	36.8	0.00				383 03
400 ISL	6.83	D 6.79	34.256	D 26.867	124.3	0.769	0.51	D 22.1	D 7.4	65.3	2.89	37.2	0.00				403
440	6.51	6.47	34.270	26.921	119.5	0.817	0.39	16.9	5.6	69.7	3.00	38.0	0.00				444 02
500 ISL	6.11	D 6.06	34.281	D 26.982	114.2	0.889	0.33	D 14.5	D 4.8	76.8	3.08	39.4	0.00				504
516	5.99	5.94	34.289	27.004	112.2	0.905	0.29	12.7	4.2	78.7	3.10	39.8	0.00				520 01

A) SECOND FLUOROMETER READING NOT RECORDED CHLOROPHYLL AND PHAEOPIGMENT CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS  
 D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 83.3 70.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	CAST SVA	TIME UTC	BOTTOM 3788 m	WIND 320 10 kn	WEA	BAROMETER 1018.1 mb	DRY 21.0 C	WET 19.2 C	SECCHI CLD AMT	TYPE	ORD 2/8		
0	17.55	17.55	33.427	24.178	373.1	0.000	5.56	242.7	101.8	1.7	0.20	0.0	0.02	0.01	0.15	0.06	0
2 A	17.55	17.55	33.427	24.178	373.2	0.008	5.56	242.7	101.8	1.7	0.20	0.0	0.00	0.15	0.06	2 23	
10 ISL	17.51	D 17.50	33.429	D 24.191	372.2	0.034	5.54	D241.6	D 101.4	1.5	0.18	0.0	0.00	0.14	0.05	10	
11	17.48	17.48	33.426	24.195	371.9	0.041	5.56	242.7	101.6	1.5	0.18	0.0	0.00	0.14	0.05	11 21	
18 A	17.44	17.44	33.425	24.204	371.3	0.067	5.56	242.5	101.5	1.4	0.18	0.0	0.00	0.15	0.05	18	
20 ISL	17.44	D 17.43	33.426	D 24.206	371.2	0.071	5.55	D242.0	D 101.4	1.4	0.18	0.0	0.00	0.15	0.05	20	
23 A	17.42	17.41	33.435	24.218	370.1	0.086	5.61	244.7	102.4	1.4	0.18	0.0	0.00	0.15	0.05	23 19	
30 ISL	17.42	D 17.41	33.425	D 24.210	371.1	0.109	5.55	D241.9	D 101.3	1.4	0.18	0.0	0.00	0.15	0.06	30	
34	17.40	17.40	33.424	24.214	371.0	0.126	5.58	243.5	101.8	1.4	0.18	0.0	0.00	0.15	0.06	34 18	
45 A	17.05	17.05	33.411	24.287	366.4	0.167	5.64	246.0	102.2	1.4	0.19	0.0	0.00	0.24	0.10	45 17	
50 ISL	16.52	D 16.51	33.410	D 24.411	352.6	0.182	5.77	D251.3	D 103.4	1.6	0.19	0.0	0.00	0.29	0.14	50	
56	16.03	16.02	33.485	24.581	336.7	0.205	5.85	255.6	104.1	1.7	0.18	0.0	0.00	0.35	0.19	56 16	
67	15.02	15.01	33.590	24.886	307.9	0.241	5.92	258.6	103.3	2.2	0.18	0.0	0.06	0.44	0.32	68 15	
75 ISL	14.37	D 14.36	33.591	D 25.027	294.7	0.263	5.84	D254.4	D 100.4	2.5	0.22	0.5	0.11	0.00	0.31	0.24	76
78 A	14.02	14.01	33.576	25.088	288.9	0.274	5.83	254.7	99.7	2.6	0.23	0.7	0.13	0.00	0.26	0.21	79 14
88	13.68	13.67	33.641	25.209	277.6	0.302	5.72	249.5	97.0	2.6	0.22	0.5	0.19	0.00	0.18	0.16	89 13
98 A	13.02	13.01	33.588	25.301	269.1	0.329	5.51	240.5	92.2	3.7	0.36	2.6	0.06	0.00	0.11	0.12	99 12
100 ISL	12.99	D 12.97	33.577	D 25.299	269.3	0.334	5.50	D239.4	D 91.9	4.3	0.42	3.5	0.05	0.00	0.11	0.11	101
112	11.71	11.69	33.454	25.449	255.1	0.366	4.83	211.0	78.6	8.0	0.80	9.1	0.03	0.00	0.08	0.09	113 11
125	10.89	10.88	33.501	25.633	237.7	0.398	4.40	192.2	70.4	11.9	1.08	13.4	0.00	0.00	0.05	0.07	126 10
141	10.25	10.24	33.570	25.798	222.2	0.435	4.03	176.0	63.6	15.5	1.28	16.6	0.00	0.00	0.03	0.05	142 09
150 ISL	10.12	D 10.10	33.593	D 25.840	218.5	0.455	3.87	D168.5	D 60.8	17.7	1.37	18.0	0.00	0.00			

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 83.3 80.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	WIND ml/L	SPEED μmol/Kg	WEA	BAROMETER 1016.9 mb	DRY 18.1 C	WET 17.9 C	SECCHI	CLD	AMT	TYPE	ORD 065
0	18.72	18.72	33.528	23.970	392.9	0.000	5.43	237.1	101.8	1.5	0.21	0.1	0.02	0.04	0.13	0.04	0
2	18.72	18.71	33.528	23.970	393.0	0.008	5.43	237.1	101.8	1.5	0.21	0.1	0.00	0.00	0.13	0.04	2 21
10	18.55	18.55	33.512	23.998	390.6	0.039	5.44	237.4	101.6	1.3	0.19	0.0	0.00	0.00	0.14	0.04	10 19
10	18.55	18.55	33.511	23.997	390.7	0.041											10 20
20	ISL 18.16	D 18.16	33.486	D 24.075	383.7	0.074	5.48	D238.9	D101.5	1.3	0.19	0.0	0.00	0.00	0.16	0.05	20
25	18.13	18.13	33.486	D 24.083	383.1	0.097	5.50	239.8	101.8	1.4	0.19	0.0	0.00	0.00	0.17	0.05	25 18
30	ISL 18.06	D 18.06	33.480	D 24.097	382.0	0.113	5.49	D239.4	D101.5	1.4	0.20	0.0	0.00	0.00	0.20	0.07	30
40	17.68	17.67	33.447	24.165	375.8	0.154	5.58	243.6	102.4	1.3	0.21	0.0	0.00	0.00	0.26	0.10	40 17
50	ISL 15.45	D 15.44	33.347	D 24.604	334.2	0.187	5.96	D259.8	D104.7	1.7	0.23	0.0	0.00	0.00	0.31	0.22	50
51	15.46	15.46	33.336	24.592	335.4	0.193	5.99	261.3	105.1	1.8	0.23	0.0	0.00	0.00	0.32	0.23	51 16
62	14.75	14.74	33.493	24.869	309.3	0.228	5.85	255.4	101.4	2.3	0.25	0.1	0.03	0.00	0.39	0.24	62 15
75	13.76	13.75	33.472	25.061	291.3	0.267	5.68	247.7	96.4	2.9	0.32	1.2	0.16	0.00	0.24	0.31	76 14
88	12.97	12.96	33.428	25.186	279.7	0.305	5.45	237.9	91.0	4.0	0.45	3.2	0.11	0.00	0.18	0.25	89 13
100	12.25	12.23	33.459	25.351	264.2	0.337	5.07	221.3	83.4	6.2	0.66	6.7	0.04	0.00	0.11	0.16	101 12
112	11.39	11.37	33.475	25.524	247.9	0.368	4.47	195.2	72.2	10.4	1.01	11.9	0.03	0.00	0.08	0.12	113 11
125	10.74	10.72	33.527	25.681	233.1	0.399	4.39	191.7	70.0	12.7	1.12	14.2	0.00	0.00	0.04	0.07	126 10
140	10.18	10.16	33.571	25.811	220.9	0.433	3.97	173.1	62.4	16.5	1.35	17.4	0.00	0.00	0.03	0.04	141 09
150	ISL 9.84	D 9.82	33.641	D 25.923	210.5	0.454	3.64	D158.2	D 56.8	19.1	1.47	19.2	0.00	0.00	0.02	0.04	151
170	9.30	9.29	33.768	26.111	192.9	0.495	3.27	142.7	50.5	24.4	1.72	22.8	0.00	0.00	0.01	0.02	171 08
200	8.82	8.79	33.939	26.323	173.3	0.550	2.72	118.6	41.6	30.8	1.95	26.1	0.00	0.00	0.00	0.02	202 07
230	8.40	8.38	33.987	26.425	164.0	0.601	2.65	115.6	40.2	34.4	2.01	27.2	0.00	0.00			232 06
250	ISL 8.25	D 8.23	34.026	D 26.479	159.2	0.634	2.29	D 99.8	D 34.7	37.9	2.12	28.5	0.00	0.00			252
271	8.04	8.01	34.044	26.525	155.2	0.666	2.20	95.9	33.1	41.5	2.23	29.8	0.00				273 05
300	ISL 7.58	D 7.55	34.058	D 26.604	148.0	0.711	1.80	D 80	78.4 D 26.8	45.6	2.37	31.6	0.00	0.00			302
320	7.43	7.39	34.075	26.639	144.8	0.739	1.61	70.2	23.9	48.5	2.46	32.9	0.00				323 04
380	6.82	6.78	34.106	26.749	135.0	0.823	1.16	50.5	16.9	59.0	2.70	35.8	0.00				383 03
400	ISL 6.89	D 6.85	34.165	D 26.787	131.9	0.852	0.84	D 36.5	D 12.3	60.8	2.76	36.4	0.00	0.00			403
440	6.51	6.47	34.168	26.840	127.2	0.903	0.74	32.1	10.7	64.5	2.87	37.5	0.00	0.00			444 02
500	ISL 6.07	D 6.02	34.198	D 26.922	119.8	0.979	0.52	D 22.7	D 7.5	73.1	3.01	39.2	0.00	0.00			504
517	5.96	5.91	34.206	26.942	118.0	0.997	0.45	19.6	6.4	75.6	3.05	39.7	0.00	0.00			521 01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	WIND ml/L	SPEED μmol/Kg	WEA	BAROMETER 1018.7 mb	DRY 17.2 C	WET 17.0 C	SECCHI	CLD	AMT	TYPE	ORD 066
0	18.38	18.38	33.492	24.024	387.7	0.000	5.44	237.6	101.3	2.4	0.20	0.6	0.04	0.07	0.10	0.02	0
2	18.38	18.38	33.492	24.024	387.8	0.008	5.44	237.6	101.3	2.4	0.20	0.6	0.04	0.07	0.10	0.02	2 21
10	18.36	18.36	33.496	24.033	387.3	0.039	5.45	238.1	101.4	1.9	0.19	0.0	0.00	0.00	0.10	0.02	10 19
10	18.36	18.36	33.497	24.034	387.2	0.040											10 20
20	ISL 18.24	D 18.24	33.507	D 24.071	384.0	0.074	5.45	D237.7	D101.2	1.8	0.18	0.0	0.00	0.00	0.11	0.03	20
25	18.23	18.22	33.506	D 24.076	383.8	0.097	5.45	238.2	101.2	1.8	0.18	0.0	0.00	0.00	0.12	0.03	25 18
30	ISL 18.21	D 18.20	33.518	D 24.089	382.7	0.113	5.46	D237.9	D101.2	1.8	0.18	0.0	0.00	0.00	0.13	0.04	30
40	17.72	17.71	33.531	24.220	370.6	0.154	5.61	245.0	103.1	1.9	0.17	0.0	0.00	0.00	0.17	0.05	40 17
50	15.98	15.98	33.346	24.484	345.7	0.189	5.87	256.4	104.2	1.7	0.22	0.0	0.00	0.00	0.43	0.26	50 16
62	15.30	15.29	33.538	24.785	317.4	0.229	6.03	263.2	105.6	2.3	0.17	0.0	0.00	0.00	0.33	0.22	62 15
75	15.26	15.25	33.693	24.913	305.7	0.270	5.97	260.9	104.7	2.2	0.14	0.0	0.00	0.00	0.25	0.23	76 14
87	13.69	13.68	33.495	25.094	288.5	0.305	5.91	257.9	100.1	2.6	0.24	0.5	0.08	0.00	0.30	0.28	88 13
100	13.46	13.45	33.637	25.251	273.9	0.342	5.56	242.8	93.9	3.5	0.33	2.0	0.10	0.00	0.16	0.15	101 12
112	13.04	13.02	33.716	25.398	260.3	0.374	5.37	234.3	89.9	4.1	0.38	3.2	0.03	0.00	0.10	0.12	113 11
125	11.61	11.59	33.458	25.471	253.3	0.407	4.79	209.0	77.7	8.5	0.83	9.7	0.00	0.00	0.08	0.10	126 10
140	10.66	10.65	33.528	25.695	232.2	0.444	4.60	200.9	73.2	11.6	1.03	13.0	0.00	0.00	0.05	0.07	141 09
150	ISL 10.29	D 10.27	33.593	D 25.810	221.3	0.466	4.17	D181.6	D 65.8	14.3	1.16	15.1	0.00	0.00	0.03	0.06	151
170	9.76	9.74	33.713	25.995	204.1	0.509	3.89	170.0	60.8	19.6	1.43	19.4	0.00	0.00	0.01	0.02	171 08
200	9.01	8.99	33.850	26.223	182.9	0.567	3.31	144.5	50.9	26.9	1.73	23.7	0.00	0.00	0.00	0.02	202 07
230	8.47	8.45	33.938	26.377	168.6	0.620	3.07	134.2	46.7	31.8	1.84	26.0	0.00	0.00			232 06
250	ISL 8.22	D 8.19	33.971	D 26.442	162.7	0.654	2.86	D124.5	D 43.2	35.2	1.95	27.3	0.00	0.00			252
270	7.91	7.89	33.987	26.499	157.5	0.685	2.67	116.7	40.1	38.7	2.06	28.6	0.00	0.00			272 05
300	ISL 7.49	D 7.46	34.017	D 26.584	149.7	0.732	2.23	D 97.1	D 33.2	44.3	2.23	30.9	0.00	0.00			302
320</																	

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 83.3 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN	HT	OXYGEN	OXYGEN	OXY	NO3*	NO2*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA		ml/L	μmol/Kg	PCT	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	18.64	18.64	33.512	23.975	392.4	0.000	5.40	235.8	101.0	1.2	0.20	0.0	0.01	0.03	0.13	0.04	0
2	18.64	18.64	33.512	23.976	392.5	0.008	5.40	235.8	101.0	1.2	0.20	0.0	0.00	0.13	0.04	2	21
10 ISL	18.64	D 18.64	33.506	D 23.972	393.2	0.036	5.39	D235.2	D100.9	1.4	0.18	0.0	0.00	0.00	0.14	0.03	10
11	18.65	18.65	33.506	23.970	393.4	0.043	5.41	236.2	101.2	1.4	0.18	0.0	0.00	0.00	0.14	0.03	11
11	18.65	18.65	33.507	23.970	393.5	0.042											20
20 ISL	18.55	D 18.55	33.501	D 23.991	391.7	0.075	5.41	D235.7	D100.9	1.3	0.19	0.0	0.00	0.00	0.15	0.04	20
26	18.49	18.48	33.497	24.005	390.6	0.102	5.43	237.3	101.3	1.2	0.19	0.0	0.00	0.00	0.15	0.04	26
30 ISL	18.45	D 18.44	33.488	D 24.008	390.5	0.114	5.41	D236.1	D100.9	1.2	0.20	0.0	0.00	0.00	0.17	0.05	30
41	18.19	18.18	33.475	24.063	385.6	0.160	5.45	238.0	101.0	1.2	0.21	0.0	0.00	0.00	0.21	0.07	41
50	16.98	16.97	33.404	24.299	363.4	0.194	5.63	246.1	102.0	1.2	0.21	0.0	0.00	0.00	0.30	0.16	50
62	15.49	15.48	33.510	24.721	323.4	0.235	5.98	261.1	105.1	2.1	0.18	0.0	0.00	0.00	0.33	0.26	62
75	14.50	14.49	33.515	24.941	302.9	0.276	5.97	260.8	103.0	2.3	0.20	0.1	0.04	0.00	0.31	0.25	76
87	13.26	13.24	33.379	25.092	288.6	0.311	5.90	257.6	99.0	2.8	0.31	1.1	0.11	0.00	0.28	0.24	88
100	13.93	13.92	33.678	25.187	280.2	0.348	5.67	247.7	96.8	2.8	0.28	0.6	0.15	0.00	0.22	0.17	101
112	12.56	12.54	33.458	25.291	270.3	0.381	5.61	244.9	92.8	3.8	0.41	2.8	0.04	0.00	0.16	0.12	113
125 ISL	11.85	D 11.83	33.439	D 25.412	259.0	0.415	5.22	D227.5	D 85.2	6.1	0.64	6.6	0.03	0.00	0.10	0.10	126
126	11.69	11.68	33.439	25.441	256.2	0.418	5.23	228.6	85.1	6.3	0.66	6.9	0.03	0.00	0.10	0.09	127
140	11.99	11.97	33.680	25.573	244.2	0.453	5.25	229.4	86.0	5.6	0.54	5.9	0.00	0.00	0.06	0.06	141
150 ISL	11.10	D 11.08	33.651	D 25.714	230.7	0.477	4.80	D209.1	D 77.2	9.5	0.78	9.7	0.00	0.00	0.04	0.05	151
170	9.80	9.78	33.753	26.018	202.0	0.520	4.35	190.0	68.0	17.4	1.25	17.4	0.00	0.00	0.01	0.01	171
200	8.92	8.90	33.871	26.253	179.9	0.577	3.67	160.1	56.2	25.7	1.61	22.7	0.00	0.00	0.00	0.01	202
231	8.50	8.47	33.983	26.408	165.7	0.631	2.47	107.6	37.5	34.3	2.06	28.2	0.00	0.00		233	06
250 ISL	8.32	D 8.29	34.043	D 26.483	159.0	0.663	2.07	D 90.1	D 31.3	38.6	2.14	29.6	0.00			252	
270	7.74	7.71	34.019	26.550	152.6	0.693	2.21	96.4	33.0	43.0	2.22	31.0	0.00	0.00		272	05
300 ISL	7.33	D 7.30	34.028	D 26.615	146.7	0.740	2.03	D 88.1	D 30.0	47.3	2.36	32.7	0.00	0.00		302	
320	7.29	7.26	34.064	26.650	143.8	0.767	1.63	71.0	24.1	50.2	2.46	33.9	0.00			323	04
380	6.73	6.69	34.122	26.774	132.6	0.850	0.99	43.1	14.4	60.5	2.74	37.2	0.00			383	03
400 ISL	6.55	D 6.51	34.125	D 26.800	130.3	0.880	0.92	D 39.8	D 13.3	63.5	2.80	37.9	0.00			403	
440	6.23	6.19	34.157	26.868	124.2	0.927	0.67	29.4	9.7	69.5	2.93	39.3	0.00			444	02
500 ISL	5.86	D 5.82	34.215	D 26.960	115.9	1.004	0.42	D 18.3	D 6.0	77.8	3.05	40.5	0.00	0.00		504	
516	5.78	5.73	34.225	26.979	114.3	1.017	0.37	16.0	5.2	80.0	3.08	40.9	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN	HT	OXYGEN	OXYGEN	OXY	NO3*	NO2*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA		ml/L	μmol/Kg	PCT	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	18.65	18.65	33.457	23.932	396.6	0.000	5.46	238.4	102.1	2.4	0.20	0.2	0.03	0.07	0.12	0.05	0
2 A	18.65	18.65	33.457	23.932	396.6	0.008	5.46	238.4	102.1	2.4	0.20	0.2	0.03	0.07	0.12	0.05	2
10 ISL	18.62	D 18.62	33.459	D 23.941	396.0	0.036	5.40	D235.6	D101.0	2.0	0.19	0.1	0.00	0.00	0.13	0.04	10
13	18.57	18.57	33.465	23.957	394.6	0.052	5.41	236.1	101.0	1.8	0.19	0.0	0.00	0.00	0.13	0.04	13
13	18.57	18.57	33.464	23.957	394.7	0.052										13	23
20 ISL	18.41	D 18.41	33.520	D 24.040	387.0	0.075	5.43	D236.8	D101.1	1.8	0.17	0.0	0.00	0.00	0.12	0.05	20
22 A	18.34	18.33	33.532	24.068	384.4	0.087	5.45	238.0	101.4	1.8	0.17	0.0	0.00	0.00	0.12	0.06	22
28 A	18.21	18.20	33.553	24.117	380.0	0.110	5.48	239.2	101.7	1.8	0.17	0.0	0.00	0.00	0.14	0.06	28
30 ISL	18.19	D 18.19	33.563	D 24.128	379.0	0.114	5.46	D238.1	D101.3	1.8	0.17	0.0	0.00	0.00	0.16	0.07	30
37	17.38	17.37	33.458	24.245	368.1	0.143	5.60	244.6	102.2	1.8	0.19	0.0	0.00	0.00	0.23	0.10	37
46	16.22	16.21	33.457	D 24.515	342.6	0.172	5.85	D255.1	D104.4	1.8	0.23	0.0	0.03	0.00	0.31	0.22	46
50 ISL	15.81	D 15.80	33.432	D 24.588	335.7	0.186	5.90	D257.0	D104.3	1.8	0.21	0.0	0.00	0.00	0.25	0.18	50
54 A	15.40	15.39	33.405	24.660	329.0	0.202	5.92	258.3	103.8	1.9	0.21	0.0	0.00	0.00	0.26	0.20	54
67	14.74	14.73	33.404	24.803	315.7	0.244	5.82	254.1	100.7	2.4	0.23	0.0	0.03	0.00	0.31	0.22	68
75 ISL	14.41	D 14.40	33.398	D 24.868	309.8	0.267	5.78	D251.9	D 99.4	2.4	0.27	0.5	0.11	0.00	0.27	0.20	76
80	13.93	13.92	33.414	24.981	299.1	0.284	5.69	248.6	97.0	2.4	0.30	0.8	0.16	0.00	0.24	0.19	81
94 A	13.22	13.21	33.397	25.113	286.8	0.325	5.51	240.9	92.5	3.6	0.41	2.7	0.13	0.00	0.15	0.15	95
100 ISL	12.81	D 12.80	33.397	D 25.194	279.2	0.340	5.39	D234.9	D 89.7	4.2	0.48	3.9	0.06	0.00	0.13	0.13	101
101	12.79	12.78	33.394	25.196	279.1	0.345	5.38	D234.9	89.5	4.3	0.49	4.1	0.05	0.00	0.13	0.13	102
110	12.21	12.19	33.404	25.316	267.8	0.370	5.28	230.5	86.7	5.0	0.55	5.2	0.04	0.00	0.11	0.12	111
119 A	11.82	11.80	33.386	25.376	262.3	0.394	5.00	218.3	81.4	7.1	0.75	8.3	0.03	0.00	0.09	0.11	111
125 ISL	11.70	D 11.69	33.406	D 25.413	258.8	0.408	4.83	D210.5	D 78.6	8.6	0.87	10.2	0.00	0.00	0.07	0.09	126
130	11.15	11.14	33.415	25.520	248.6	0.422	4.62	201.8	74.2	9.8	0.97	11.8	0.00	0.00	0.06	0.09	131
141	10.65	10.64	33.484	25.662	235.3	0.449	4.37	191.0	69.5	12.8	1.14	14.4	0.00	0.00	0.04	0.06	142
150 ISL	10.39																

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 85.4 35.8

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD	
34	0.4 N	118 49.9 W	16/11/2017	0555	UTC	35 m	110	05 kn		1013.4 mb	18.3 C	17.0 C					035	
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	17.04	17.04	33.426	24.298	361.6	0.000	5.84	255.1	105.9	2.5	0.21	0.3	0.03	0.22	1.15	0.24	0	
2	17.04	17.04	33.426	24.298	361.7	0.007	5.84	255.1	105.9	2.5	0.21	0.3	0.03	0.22	1.15	0.24	2	06
5	16.98	16.97	33.427	24.314	360.3	0.018	5.86	255.8	106.1	2.1	0.22	0.2	0.00	0.23	1.03	0.24	5	05
10	16.70	16.69	33.410	24.367	355.4	0.036	5.76	251.5	103.7	2.3	0.24	0.2	0.06	0.18	1.62	0.39	10	03
10	16.70	16.69	33.410	24.367	355.4	0.035											10	04
20	ISL	14.32 D	14.32	33.360 D	24.854	309.3	0.066	5.14	D224.1 D	88.3	7.1	0.71	5.4	0.55	0.12	0.76	0.32	20
21	14.23	14.23	33.358	24.872	307.6	0.072	4.67	204.0	80.0	7.5	0.76	6.0	0.60	0.11	0.68	0.32	21	02
27	13.61	13.61	33.365	25.006	295.1	0.090	4.44	193.8	75.1	8.4	0.85	7.8	0.42	0.13	0.48	0.27	27	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 86.7 33.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD	
33	53.4 N	118 29.4 W	15/11/2017	2341	UTC	55 m	050	01 kn	180	01	13	1	1012.5 mb	19.0 C	18.0 C	15 m	3/8	ST 033
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	17.66	17.66	33.439	24.162	374.6	0.000	5.83	254.6	107.0	1.6	0.16	0.0	0.02	0.00	1.27	0.08	0	
2	17.66	17.65	33.439	24.162	374.7	0.008	5.83	254.6	107.0	1.6	0.16	0.0	0.00	0.00	1.27	0.08	2	06
10	ISL	17.18 D	17.18	33.422 D	24.262	365.4	0.034	5.91	D257.6 D	107.4	1.8	0.17	0.0	0.00	0.00	0.78	0.17	10
11	17.15	17.15	33.414	24.264	365.3	0.041	5.87	256.2	106.6	1.8	0.17	0.0	0.00	0.00	0.71	0.18	11	04
11	17.15	17.15	33.408	24.259	365.7	0.040											11	05
20	ISL	15.94 D	15.94	33.398 D	24.532	340.1	0.069	5.96	D259.9 D	105.8	4.2	0.46	2.1	0.00	0.00	0.74	0.25	20
26	13.52	13.52	33.324	24.993	296.3	0.092	5.23	228.2	88.2	5.8	0.65	3.4	0.48	2.53	0.75	0.29	26	03
30	ISL	13.37 D	13.37	33.342 D	25.037	292.2	0.100	4.95	D215.6 D	83.3	6.9	0.78	5.0	0.46	4.10	0.65	0.28	30
41	12.59	12.59	33.319	25.174	279.4	0.135	4.32	188.7	71.6	9.9	1.14	9.4	0.38	8.41	0.38	0.25	41	02
50	12.20	12.19	33.401	25.313	266.4	0.160	3.97	173.3	65.2	11.4	1.10	12.1	0.48	0.42	0.16	0.17	50	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 86.7 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD		
33	49.4 N	118 37.6 W	16/11/2017	0153	UTC	643 m	270	09 kn		1013.1 mb	19.0 C	17.3 C					034		
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP	
m	DEG C	DEG C		THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µg/L	µg/L	db		
0	18.88	18.88	33.529	23.928	396.9	0.000	5.65	246.5	106.1	1.2	0.15	0.1	0.02	0.47	0.97	0.19	0		
2	18.88	18.88	33.529	23.928	397.0	0.008	5.65	246.5	106.1	1.2	0.15	0.1	0.00	0.47	0.97	0.19	2	21	
10	18.81	18.81	33.522	23.942	396.0	0.040	5.66	247.2	106.3	1.1	0.14	0.0	0.00	0.00	1.05	0.24	10	19	
10	18.81	18.81	33.522	23.942	395.9	0.041											10	20	
20	16.85	16.84	33.418	24.339	385.8	0.077	5.87	256.2	106.0	2.0	0.25	0.0	0.00	0.07	0.87	0.32	20	18	
30	13.75	13.74	33.350	24.967	298.9	0.110	5.40	236.0	91.7	4.7	0.54	2.8	0.20	0.00	1.08	0.65	30	17	
40	13.21	13.20	33.356	25.082	288.2	0.140	5.12	223.4	85.8	5.7	0.68	5.2	0.20	0.45	0.60	0.49	40	16	
50	12.15	12.14	33.406	25.327	265.0	0.167	4.40	192.1	72.2	9.6	1.01	11.0	0.05	0.05	0.22	0.25	50	15	
60	11.53	11.52	33.468	25.490	249.7	0.193	3.90	170.3	63.2	12.9	1.25	14.7	0.03	0.00	0.11	0.15	60	14	
70	10.96	10.95	33.531	25.643	235.4	0.217	3.60	157.0	57.6	15.9	1.43	17.5	0.00	0.00	0.06	0.12	71	13	
75	ISL	10.80 D	10.79	33.558 D	25.692	230.8	0.227	3.52	D153.1 D	56.1	17.0	1.50	18.4	0.00	0.00	0.05	0.10	76	
85	10.54	10.53	33.626	25.790	221.8	0.252	3.19	139.2	50.6	19.3	1.64	20.2	0.00	0.00	0.02	0.06	86	12	
100	10.36	10.35	33.707	25.886	213.0	0.284	2.89	126.0	45.7	21.9	1.75	21.7	0.00	0.00	0.02	0.05	101	11	
120	10.13	10.11	33.811	26.007	201.9	0.326	2.61	113.8	41.1	24.2	1.89	23.4	0.00	0.00	0.01	0.04	121	10	
125	ISL	10.08 D	10.07	33.862 D	26.055	197.5	0.334	2.49	D108.2 D	39.1	24.8	1.93	23.7	0.00	0.00	0.02	0.05	126	
140	9.98	9.96	33.917	26.116	192.0	0.365	2.31	100.6	36.2	26.7	2.03	24.8	0.00	0.05	0.04	0.05	141	09	
150	ISL	9.93 D	9.91	33.968 D	26.165	187.6	0.383	2.22	D 96.8 D	34.9	27.9	2.06	25.2	0.00	0.00	0.04	0.05	151	
170	9.72	9.70	34.037	26.254	179.5	0.421	2.05	89.3	32.0	30.3	2.13	26.2	0.00	0.00	0.04	0.05	171	08	
200	9.54	9.52	34.113	26.343	171.8	0.474	1.82	79.3	28.3	33.0	2.23	27.2	0.00	0.00	0.03	0.03	202	07	
230	9.15	9.13	34.182	26.462	161.0	0.523	1.36	59.2	20.9	38.3	2.42	29.2	0.00	0.00			232	06	
250	ISL	8.96 D	8.94	34.214 D	26.517	156.1	0.555	1.30 D	56.6 D	20.0	40.4	2.48	30.0	0.00	0.00			252	
270	8.74	8.71	34.235	26.570	151.4	0.586	1.12	48.8	17.1	42.5	2.53	30.7	0.00	0.00			272	05	
300	ISL	8.46 D	8.43	34.269 D	26.640	145.2	0.631	0.88 D	38.4 D	13.4	46.3	2.64	31.9	0.00	0.00			302	
320	8.23	8.19	34.274	26.680	141.7	0.659	0.78	33.9	11.7	48.8	2.71	32.7	0.00	0.00			323	04	
380	7.53	7.49	34.286	26.792	131.6	0.741	0.54	23.5	8.0	56.6	2.86	35.1	0.00	0.00			383	03	
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RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 86.7 40.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03*		P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
										μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	18.38	18.38	33.546	24.066	383.7	0.000	5.71	249.2	106.3	1.0	0.15	0.0	0.01	0.02	0.84	0.30	0		
2	18.38	18.38	33.546	24.066	383.8	0.008	5.71	249.2	106.3	1.0	0.15	0.0	0.00	0.02	0.84	0.30	2	24	
10	17.42	17.42	33.472	24.244	367.2	0.038	5.71	249.3	104.3	1.3	0.19	0.0	0.00	0.00	0.71	0.30	10	23	
20	15.60	15.59	33.392	24.603	333.2	0.073	5.81	253.8	102.4	2.0	0.25	0.0	0.00	0.00	0.84	0.41	20	22	
30	14.58	14.58	33.357	24.798	315.0	0.105	5.70	248.8	98.3	3.1	0.35	1.2	0.10	0.00	0.90	0.53	30	21	
40	13.57	13.56	33.347	25.001	295.9	0.136	5.44	237.5	91.9	4.7	0.54	3.8	0.25	0.10	0.59	0.39	40	20	
50	12.61	12.61	33.384	25.220	275.3	0.164	5.22	228.0	86.5	6.4	0.70	6.5	0.26	0.34	0.38	0.22	50	19	
60	12.08	12.07	33.443	25.369	261.3	0.191	4.79	209.1	78.5	8.5	0.86	9.1	0.13	0.00	0.26	0.22	60	18	
70	11.62	11.61	33.504	25.502	248.9	0.217	4.78	208.5	77.5	9.1	0.88	9.8	0.07	0.06	0.15	0.17	71	17	
75	ISL 11.37	D 11.36	33.557	D 25.588	240.8	0.227	4.77	D 207.9	D 77.1	11.6	1.06	12.3	0.05	0.00	0.12	0.15	76		
85	10.88	10.87	33.562	25.681	232.2	0.253	3.67	160.4	58.7	16.6	1.41	17.1	0.03	0.00	0.08	0.12	86	16	
100	ISL 10.21	D 10.20	33.678	D 25.888	212.8	0.284	3.29	D 143.0	D 51.8	20.2	1.62	20.1	0.00	0.00	0.01	0.05	101		
101	10.27	10.26	33.668	25.870	214.4	0.288	3.28	143.2	51.8	20.4	1.63	20.3	0.00	0.00	0.01	0.04	102	14	
120	9.78	9.76	33.768	26.032	199.4	0.328	2.95	128.9	46.1	24.0	1.80	22.9	0.03	0.00	0.03	0.08	121	15	
125	ISL 9.78	D 9.77	33.790	D 26.049	198.0	0.335	2.92	D 127.0	D 45.6	25.3	1.86	23.5	0.03	0.00	0.03	0.07	126		
141	9.44	9.42	33.961	26.240	180.1	0.368	2.44	106.5	37.9	29.4	2.05	25.5	0.04	0.00	0.02	0.05	142	13	
150	ISL 9.41	D 9.39	33.984	D 26.263	178.1	0.382	2.30	D 100.0	D 35.6	30.4	2.07	25.8	0.00	0.00	0.01	0.04	151		
171	9.16	9.14	34.018	26.330	172.1	0.420	2.16	94.2	33.3	32.5	2.13	26.7	0.00	0.00	0.01	0.04	172	12	
200	9.01	8.99	34.099	26.418	164.4	0.469	1.81	78.8	27.8	36.0	2.28	28.1	0.00	0.06	0.01	0.03	202	11	
230	8.82	8.80	34.192	D 26.521	155.2	0.516	1.40	D 60.8	D 21.4							232	10		
250	ISL 8.80	D 8.77	34.243	D 26.565	151.4	0.547	1.16	D 50.6	D 17.8	42.9	2.53	30.3	0.00	0.00		252			
271	8.44	8.41	34.247	26.624	146.1	0.580	0.97	42.1	14.7	45.9	2.63	31.3	0.00	0.00		273	09		
300	ISL 8.26	D 8.23	34.267	D 26.669	142.4	0.621	0.85	D 36.9	D 12.9	49.5	2.70	32.3	0.00	0.00		302			
320	8.03	7.99	34.268	26.705	139.2	0.650	0.71	31.0	10.7	52.0	2.74	33.0	0.00	0.00		323	08		
380	7.27	7.23	34.283	26.827	128.1	0.730	0.49	21.4	7.3	61.0	2.91	35.3	0.00	0.00		383	07		
400	ISL 7.12	D 7.08	34.293	D 26.857	125.5	0.755	0.45	D 19.5	D 6.6	62.7	2.94	35.8	0.00	0.00		403			
440	6.91	6.86	34.292	26.885	123.3	0.805	0.42	18.3	6.2	66.2	2.99	36.6	0.00	0.00		444	06		
481	6.61	6.57	34.304	26.935	118.9	0.855	0.34	14.7	4.9	71.3	3.03	37.5	0.00	0.00		485	05		
500	ISL 6.42	D 6.38	34.317	D 26.970	115.7	0.878	0.30	D 13.1	D 4.4	73.6	3.06	37.8	0.00	0.00		504			
516	6.36	6.31	34.315	26.977	115.2	0.896	0.32	14.0	4.7	75.6	3.09	38.1	0.00	0.00		520	04		
600	ISL 5.87	D 5.81	34.349	D 27.068	107.3	0.991	0.22	D 9.4	D 3.1	86.0	3.18	38.9	0.00	0.00		605			
631	5.62	5.57	34.358	27.106	103.8	1.022	0.21	9.0	3.0	89.9	3.22	39.2	0.00	0.00		637	03		
700	ISL 5.40	D 5.34	34.380	D 27.151	100.2	1.095	0.16	D 6.9	D 2.2	96.5	3.26	38.3	0.00	0.00		706			
739	5.33	5.27	34.383	27.162	99.5	1.131	0.17	7.5	2.4	100.2	3.29	37.8	0.00	0.00		746	02		
744	5.34	5.27	34.381	27.160	99.8	1.136	0.13	5.8	1.9	99.7	3.31	37.9	0.00	0.00		751	01		

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03*		P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
										μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	17.55	17.55	33.510	24.241	367.1	0.000	5.61	245.1	102.9	1.3	0.16	0.0	0.01	0.02	0.55	0.22	0		
2	17.55	17.55	33.510	24.241	367.1	0.007	5.61	245.1	102.8	1.3	0.16	0.0	0.00	0.05	0.22	0.22	2	21	
10	17.43	17.43	33.501	24.264	365.3	0.037	5.60	244.6	102.4	1.2	0.17	0.0	0.00	0.05	0.64	0.25	10	20	
20	13.23	13.23	33.326	25.052	290.5	0.069	5.44	237.5	91.3	4.0	0.52	3.7	0.25	0.00	0.48	0.24	20	18	
30	12.10	12.09	33.339	25.283	268.6	0.097	5.09	222.2	83.4	6.8	0.76	7.7	0.14	0.00	0.31	0.26	30	17	
40	11.50	11.50	33.407	25.447	253.3	0.123	4.70	205.1	76.0	9.4	0.94	10.7	0.09	0.00	0.21	0.24	40	16	
50	11.02	11.02	33.501	25.607	238.3	0.148	4.27	186.5	68.5	13.2	1.16	14.0	0.07	0.00	0.14	0.17	50	15	
60	10.45	10.45	33.583	25.771	222.9	0.171	3.62	158.2	57.4	17.5	1.47	18.4	0.03	0.00	0.07	0.11	60	14	
70	10.29	10.28	33.604	25.816	218.8	0.193	3.53	154.1	55.7	18.4	1.54	19.2	0.00	0.00	0.05	0.09	71	13	
75	ISL 10.17	D 10.16	33.644	D 25.868	214.1	0.202	3.49	D 151.9	D 54.9	19.8	1.59	20.0	0.00	0.00	0.04	0.08	76		
85	9.86	9.85	33.731	25.989	202.8	0.225	3.22	140.7	50.4	22.8	1.68	21.5	0.00	0.00	0.02	0.07	86	12	
100	ISL 9.66	D 9.65	33.795	D 26.071	195.2	0.253	2.99	D 130.3	D 46.7	24.7	1.78	22.7	0.00	0.00	0.01	0.07	101		
101	9.69	9.67	33.791	26.065	195.9	0.257	2.97	129.6	46.3	24.8	1.79	22.8	0.00	0.00	0.01	0.07	102	11	
120	9.36	9.34	33.925	D 26.224	181.1	0.291	2.54	D 110.7	D 39.4								121	10	
125	ISL 9.29	D 9.28	33.939	D 26.245	179.2	0.300	2.46	D 107.2	D 38.1	29.2	2.01	25.0	0.00	0.00	0.01	0.05	126		
140	9.29	9.28	34.032	26.318	172.6	0.328	2.10	91.5	32.5	32.0	2.14	26.5	0.00	0.00	0.01	0.04	141	09	
150	ISL 9.24	D 9.22	34.063	D 26.352	169.7	0.344	2.02	D 87.9	D 31.3	33.4	2.18	27.0	0.00	0.00	0.01	0.04	151		
170	9.03	9.01	34.112	26.425	163.1	0.378	1.77	77.1	27.2	36.4	2.26	28.0	0.00	0.00	0.01	0.04	171	08	
200	8.75	8.73	34.163	26.509	155.7	0.426	1.49	64.9	22.8	39.7	2.39	29.3	0.00	0.00	0.01	0.04	202	07	
230	8.65	8.62																	

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 86.7 50.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD		
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN	HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA		ml/L	μmol/Kg	PCT	μM	μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	16.91	16.91	33.488	24.377	354.1	0.000	5.65	246.5	102.1	2.4	0.21	0.3	0.04	0.00	0.93	0.08	0.08	0	
2 A	16.91	16.91	33.488	24.377	354.2	0.007	5.65	246.5	102.1	2.4	0.21	0.3	0.04	0.00	0.93	0.08	2	11	
10 A	16.73	16.73	33.485	24.415	350.8	0.035	5.66	D246.8	D102.1	2.0	0.21	0.1	0.00	0.00	1.14	0.03	10	10	
12	16.63	16.63	33.474	D 24.430	349.4	0.039											12	08	
13 A	16.58	16.58	33.474	24.444	348.2	0.046	5.66	247.2	101.8	2.0	0.22	0.0	0.00	0.00	1.15	0.14	13	07	
20 ISL	16.35	16.35	33.460	D 24.486	344.5	0.067	5.67	D247.3	D101.5	2.1	0.24	0.2	0.00	0.00	1.11	0.17	20		
25 A	16.26	16.25	33.459	24.507	342.6	0.087	5.63	249.0	100.6	2.2	0.25	0.3	0.04	0.00	1.08	0.19	25	06	
30 ISL	16.01	D 16.01	33.452	D 24.558	338.0	0.101	5.57	D242.8	D 99.0	2.4	0.29	0.7	0.07	0.00	0.91	0.24	30		
33	15.94	15.93	33.446	24.569	337.0	0.114	5.54	241.9	98.3	2.5	0.32	1.0	0.09	0.06	0.81	0.27	33	05	
41 A	15.13	15.12	33.424	24.732	321.7	0.141	5.42	236.6	94.6	3.2	0.40	2.1	0.17	0.06	0.77	0.22	41	04	
50 ISL	13.24	D 13.23	33.392	D 25.104	286.4	0.166	5.04	D219.4	D 84.5	5.9	0.66	5.9	0.23	0.00	0.42	0.20	50		
53 A	12.01	12.00	33.387	25.338	264.1	0.176	5.02	219.1	82.1	6.8	0.75	7.2	0.25	0.00	0.30	0.19	53	03	
62	11.23	11.22	33.417	25.505	248.4	0.199	4.73	206.6	76.1	9.6	0.96	11.0	0.06	0.00	0.14	0.16	63	02	
70	10.89	10.89	33.496	25.627	236.9	0.219	4.44	193.7	70.9	12.6	1.14	14.0	0.07	0.00	0.10	0.07	71	01	

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 86.7 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD		
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN	HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA		ml/L	μmol/Kg	PCT	μM	μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	17.28	17.28	33.455	24.263	364.9	0.000	5.56	242.9	101.4	1.5	0.24	0.0	0.01	0.00	0.32	0.06	0		
2	17.28	17.28	33.455	24.263	365.0	0.007	5.56	242.9	101.4	1.5	0.24	0.0	0.00	0.00	0.32	0.06	2	21	
10 ISL	17.12	D 17.12	33.451	D 24.298	362.0	0.035	5.59	D243.8	D101.5	1.3	0.24	0.0	0.00	0.00	0.36	0.03	10		
11	17.12	17.12	33.451	24.300	361.9	0.040	5.59	244.2	101.6	1.3	0.24	0.0	0.00	0.00	0.36	0.03	11	19	
11	17.12	17.12	33.452	24.300	361.9	0.040											11	20	
20 ISL	17.10	D 17.10	33.451	D 24.304	361.8	0.069	5.59	D243.8	D101.5	1.4	0.24	0.0	0.00	0.00	0.36	0.03	20		
21	17.10	17.10	33.453	24.306	361.6	0.076	5.60	244.6	101.7	1.5	0.24	0.0	0.00	0.00	0.36	0.03	21	18	
30 ISL	17.08	D 17.08	33.449	D 24.308	361.8	0.106	5.58	D243.4	D101.3	1.3	0.23	0.0	0.00	0.00	0.38	0.12	30		
31	17.09	17.08	33.450	24.308	361.8	0.112	5.58	243.7	101.3	1.3	0.23	0.0	0.00	0.00	0.38	0.13	31	17	
40	16.35	16.34	33.396	24.439	349.6	0.144	5.69	248.6	101.8	1.6	0.26	0.0	0.04	0.00	0.77	0.10	40	16	
50 ISL	15.07	D 15.06	33.345	D 24.686	326.3	0.176	5.54	D241.3	D 96.5	2.1	0.33	0.5	0.20	0.00	0.65	0.32	50		
51	14.74	14.74	33.354	24.763	319.1	0.181	5.68	247.9	98.3	2.1	0.34	0.5	0.22	0.00	0.64	0.35	51	15	
61	12.66	12.66	33.334	25.172	280.2	0.211	5.42	236.8	89.9	4.8	0.58	4.9	0.04	0.00	0.26	0.16	61	14	
71	12.39	12.38	33.453	25.318	266.5	0.239	5.28	230.3	87.0	5.3	0.59	5.3	0.04	0.00	0.20	0.15	72	13	
75 ISL	12.12	D 12.11	33.408	D 25.335	265.0	0.248	4.91	D213.7	D 80.5	5.5	0.69	6.8	0.00	0.00	0.17	0.13	76		
86	11.21	11.20	33.444	25.531	246.5	0.277	4.75	207.3	76.4	9.4	0.96	11.1	0.00	0.00	0.10	0.08	87	12	
100 ISL	10.84	D 10.83	33.569	D 25.695	231.2	0.309	4.70	D204.5	D 75.0	11.1	0.98	12.1	0.00	0.00	0.05	0.05	101		
101	10.73	10.71	33.567	25.712	229.5	0.313	4.69	204.8	74.7	11.2	0.98	12.2	0.00	0.00	0.05	0.05	102	11	
121	9.96	9.94	33.694	25.945	207.8	0.357	4.07	177.6	63.8	17.5	1.35	17.6	0.00	0.00	0.02	0.02	122	10	
125 ISL	9.84	D 9.83	33.727	D 25.989	203.6	0.364	3.76	D163.6	D 58.8	18.9	1.42	18.6	0.00	0.00	0.02	0.02	126		
141	9.25	9.23	33.812	26.154	188.2	0.396	3.40	148.5	52.5	24.4	1.69	22.6	0.00	0.01	0.03	0.03	142	09	
150 ISL	9.22	D 9.20	33.842	D 26.182	185.7	0.412	3.33	D144.8	D 51.4	26.3	1.75	23.5	0.00	0.01	0.03	0.03	151		
171	8.69	8.67	33.916	26.324	172.5	0.451	3.02	131.7	46.1	30.6	1.88	25.5	0.00	0.01	0.02	0.02	172	08	
200 ISL	8.32	D 8.30	33.970	D 26.423	163.5	0.499	2.70	D117.5	D 40.9	34.5	2.01	27.2	0.00	0.01	0.02	0.02	202		
201	8.30	8.28	33.969	26.426	163.3	0.501	2.72	118.9	41.2	34.7	2.01	27.2	0.00	0.01	0.02	0.02	203	07	
230	7.90	7.87	34.023	26.529	153.9	0.547	2.21	96.3	33.1	40.5	2.22	29.8	0.00	0.00		232	06		
250 ISL	7.73	D 7.71	34.061	D 26.583	149.1	0.578	1.83	D 79.7	D 27.4	44.2	2.35	31.2	0.00	0.00		252			
271	7.54	7.51	34.095	26.638	144.1	0.608	1.52	66.3	22.6	48.1	2.49	32.8	0.00	0.00		273	05		
300 ISL	7.40	D 7.37	34.149	D 26.701	138.6	0.650	1.10	D 47.8	D 16.3	52.3	2.61	34.1	0.00	0.00		302			
320	7.28	7.25	34.168	26.733	135.9	0.677	0.96	42.0	14.2	55.2	2.70	35.0	0.00	0.00		323	04		
381	6.92	6.89	34.209	26.816	128.8	0.757	0.68	29.9	10.0	61.5	2.84	36.4	0.00	0.00		384	03		
400 ISL	6.81	D 6.78	34.225	D 26.844	126.4	0.783	0.61	D 26.5	D 8.9	64.7	2.89	36.9	0.00	0.00		403			
441	6.42	6.38	34.260	26.925	119.0	0.832	0.45	19.5	6.5	71.6	3.01	38.1	0.00	0.00		445	02		
500 ISL	6.11	D 6.07	34.282	D 26.983	114.2	0.904	0.35	D 15.2	D 5.0	76.6	3.07	39.2	0.00	0.00		504			
516	6.08	6.03	34.284	26.989	113.8	0.919	0.33	14.3	4.7	78.0	3.09	39.6	0.00	0.00		520	01		

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 86.7 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD		
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA		ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	16.74	16.74	33.481	24.410	350.9	0.000	5.64	246.3	101.7	1.4	0.21	0.0	0.02	0.00	0.26	0.09	0	
2	16.74	16.74	33.481	24.411	351.0	0.007	5.64	246.3	101.7	1.4	0.21	0.0	0.00	0.00	0.26	0.09	2	
10	16.74	16.74	33.481	24.412	351.2	0.035	5.65	246.9	101.9	1.3	0.20	0.0	0.00	0.00	0.26	0.09	10	
10	16.74	16.74	33.483	24.413	351.1	0.037											20	
20	16.60	D 16.60	33.482	D 24.445	348.3	0.067	5.62	D 245.1	D 101.1	1.5	0.22	0.0	0.00	0.00	0.33	0.13	20	
21	16.63	16.63	33.482	24.438	349.1	0.074	5.65	246.6	101.6						0.34	0.13	21	
30	16.38	16.37	33.477	24.493	344.1	0.105	5.61	245.2	100.5	1.6	0.23	0.0	0.06	0.00	0.52	0.31	30	
40	13.88	13.88	33.425	24.998	296.2	0.137	4.88	213.1	83.0	6.0	0.69	6.3	0.44	0.00	0.32	0.31	40	
50	ISL 12.21	D 12.20	33.420	D 25.325	265.2	0.163	4.57	D 199.0	D 75.1	8.9	0.94	10.3	0.14	0.00	0.17	0.18	50	
51	12.11	12.10	33.420	25.345	265.3	0.168	4.58	200.1	75.1	9.2	0.96	10.7	0.11	0.00	0.15	0.17	51	
60	11.42	11.41	33.421	25.475	251.2	0.191	4.58	199.8	73.9	10.5	1.04	12.4	0.04	0.00	0.09	0.11	60	
71	11.22	11.21	33.502	25.573	242.1	0.218	4.05	176.7	65.1	13.7	1.28	15.9	0.03	0.00	0.08	0.10	72	
75	ISL 11.17	D 11.16	33.511	D 25.589	240.7	0.225	4.02	D 175.2	D 64.7	14.5	1.33	16.6	0.03	0.00	0.07	0.09	76	
85	10.62	10.60	33.553	25.721	228.3	0.251	3.89	169.7	61.8	16.4	1.44	18.4	0.03	0.00	0.04	0.07	86	
100	10.12	10.11	33.655	25.886	212.9	0.284	3.46	150.9	54.3	20.4	1.60	20.5	0.03	0.00	0.02	0.06	101	
120	9.64	9.63	33.736	26.030	199.6	0.325	3.22	140.8	50.2	23.2	1.71	22.3	0.00	0.00	0.01	0.05	121	
125	ISL 9.59	D 9.58	33.774	D 26.068	196.1	0.333	3.11	D 135.5	D 48.4	24.7	1.77	23.0	0.00	0.00	0.01	0.05	126	
140	9.04	9.03	33.885	26.244	179.6	0.363	2.70	118.0	41.6	28.9	1.94	25.2	0.00	0.00	0.01	0.04	141	
150	ISL 8.82	D 8.81	33.936	D 26.318	172.7	0.379	2.73	D 119.0	D 41.9	30.8	1.96	25.9	0.00	0.00	0.01	0.04	151	
170	8.26	8.25	33.961	26.424	162.9	0.415	2.76	120.5	41.7	34.7	2.00	27.4	0.00	0.00	0.00	0.03	171	
200	8.12	8.09	33.991	26.471	159.0	0.463	2.50	108.9	37.6	37.6	2.11	28.7	0.00	0.00	0.00	0.02	202	
230	7.84	7.82	34.014	26.530	153.8	0.510	2.26	98.8	33.9	41.3	2.21	30.1	0.00	0.00		232	06	
250	ISL 7.73	D 7.70	34.032	D 26.561	151.2	0.539	2.07	D 90.0	D 30.9	44.3	2.31	31.2	0.00	0.00		252		
270	7.47	7.44	34.044	26.608	146.9	0.570	1.86	81.0	27.6	47.3	2.41	32.3	0.00	0.00		272	05	
300	ISL 7.21	D 7.18	34.097	D 26.686	139.9	0.613	1.34	D 58.3	D 19.8	52.8	2.56	34.2	0.00	0.00		302		
320	7.04	7.01	34.114	26.724	136.5	0.641	1.16	50.4	17.0	56.5	2.66	35.4	0.00	0.00		323	04	
380	6.70	6.67	34.244	26.874	123.2	0.719	0.50	21.8	7.3	67.0	2.94	37.4	0.00	0.00		383	03	
400	ISL 6.60	D 6.56	34.261	D 26.901	120.8	0.744	0.45	D 19.5	D 6.5	69.5	2.98	38.0	0.00	0.00		403		
440	6.30	6.26	34.277	26.953	116.3	0.791	0.36	15.5	5.1	74.6	3.06	39.1	0.00	0.00		444	02	
500	ISL 6.14	D 6.09	34.293	D 26.989	113.6	0.861	0.32	D 13.7	D 4.5	78.4	3.11	39.7	0.00	0.00		504		
517	6.02	5.97	34.303	27.011	111.6	0.879	0.28	12.3	4.1	79.5	3.13	39.8	0.00	0.00		521	01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 86.7 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD		
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA		ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	17.68	17.68	33.455	24.169	374.0	0.000	5.53	241.3	101.4	1.9	0.21	0.0	0.02	0.20	0.18	0.00	0	
2	17.68	17.68	33.455	24.169	374.0	0.008	5.53	241.3	101.4	1.9	0.21	0.0	0.00	0.20	0.18	0.00	2	
10	ISL 17.68	D 17.67	33.456	D 24.170	374.2	0.034	5.52	D 240.6	D 101.3	1.9	0.20	0.0	0.00	0.15	0.02	0.02	10	
11	17.67	17.67	33.460	24.175	373.8	0.041	5.57	243.2	102.2	1.9	0.20	0.0	0.00	0.15	0.03	0.03	11	
12	17.68	17.68	33.455	24.169	374.4	0.043											12	
20	ISL 17.61	D 17.61	33.453	D 24.184	373.3	0.071	5.53	D 241.0	D 101.3	1.8	0.20	0.0	0.00	0.00	0.17	0.03	20	
26	17.52	17.51	33.444	24.200	372.0	0.097	5.55	242.4	101.6	1.7	0.20	0.0	0.00	0.18	0.02	0.02	18	
30	ISL 17.49	D 17.48	33.439	D 24.204	371.7	0.109	5.54	D 241.6	D 101.3	1.7	0.20	0.0	0.00	0.20	0.03	0.03	30	
41	17.40	17.40	33.435	24.222	370.5	0.153	5.60	244.4	102.2	1.7	0.20	0.0	0.00	0.26	0.05	0.11	41	
50	ISL 16.99	D 16.98	33.416	D 24.307	362.7	0.184	5.64	D 245.7	D 102.1	1.7	0.22	0.0	0.00	0.30	0.11	0.11	50	
51	17.01	17.00	33.416	24.302	363.2	0.190	5.67	247.4	102.6	1.7	0.22	0.0	0.00	0.30	0.11	0.16	51	
63	15.55	15.54	33.563	24.748	320.9	0.231	5.80	253.4	102.2	2.3	0.22	0.0	0.04	0.37	0.36	0.64	15	
75	ISL 14.76	D 14.75	33.568	D 24.925	304.4	0.266	5.71	D 249.0	D 99.1	2.6	0.25	0.3	0.13	0.06	0.27	0.28	76	
76	14.65	14.64	33.568	24.949	302.2	0.271	5.76	251.3	99.6	2.6	0.25	0.4	0.14	0.06	0.27	0.27	77	
88	14.00	13.99	33.581	25.097	288.4	0.306	5.68	247.8	96.9	3.0	0.29	1.0	0.18	0.00	0.15	0.15	89	
100	ISL 13.39	D 13.37	33.604	D 25.240	275.0	0.339	5.48	D 238.9	D 92.5	3.7	0.35	2.3	0.06	0.00	0.10	0.10	101	
101	13.35	13.34	33.605	25.248	274.3	0.343	5.50	240.2	92.7	3.8	0.36	2.4	0.05	0.00	0.10	0.09	102	
113	11.80	11.78	33.543	25.501	250.2	0.374	5.25	229.2	85.6	6.4	0.62	6.7	0.03	0.00	0.06	0.07	114	
125	ISL 11.37	D 11.36	33.569	D 25.600	241.0	0.403	4.92	D 214.3	D 79.5	8.5	0.77	9.2	0.00	0.00	0.05	0.06	126	
126	11.08	11.07	33.560	25.646	236.6	0.406	4.93	215.1	79.1	8.7	0.78	9.4	0.00	0.00	0.04	0.06	127	
141	10.54	10.53	33.598	25.770	225.0	0.441	4.51	197.1	71.6	13.2	1.08	13.9	0.00	0.00	0.03	0.04	142	
150	ISL 10.23	D 10.21	33.618	D 25.841	218.4	0.460	4.24	D 184.5	D 66.8	15.7	1.21	16.0	0.00	0.00	0.02	0.03	151	
171	9.35	9.33	33.738	26.081	195.8	0.504	3.72	162.4	57.5	21.5	1.52	20.8	0.00	0.00	0.01	0.02		

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 86.7 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD	
32 19.4 N	121 43.0 W	23/11/2017	1651	UTC	4076 m	320 14 kn	320 03 08	1	1017.3 mb	19.5 C	17.5 C	24 m	4/8	ST	072		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SI03* µM	P04* µM	N03* µM	N02* µM	NH4* µM	CHL-A µg/L	PHAEOL µg/L	PRES db
0	17.87	17.87	33.484	24.144	376.3	0.000	5.48	239.2	101.0	1.8	0.18	0.0	0.02	0.03	0.16	0.04	0
2 A	17.87	17.87	33.484	24.144	376.4	0.008	5.48	239.2	101.0	1.8	0.18	0.0	0.00	0.00	0.16	0.04	2 24
10	17.87	17.87	33.483	24.145	376.6	0.038	5.50	240.4	101.4	1.6	0.18	0.0	0.00	0.00	0.16	0.03	10 22
10	17.87	17.87	33.482	24.144	376.7	0.039											10 23
15 A	17.87	17.86	33.485	24.147	376.6	0.056	5.48	239.3	101.0	1.4	0.17	0.0	0.00	0.00	0.18	0.03	15 21
19 A	17.87	17.86	33.482	24.145	377.0	0.072	5.53	241.3	101.8	1.5	0.16	0.0	0.00	0.00	0.17	0.03	19 20
20 ISL	17.87	17.86	33.482	D 24.145	377.0	0.072	5.47	D238.3	D100.7	1.5	0.16	0.0	0.00	0.00	0.17	0.03	20
28	17.87	17.86	33.482	24.146	377.2	0.106	5.49	239.8	101.2	1.4	0.17	0.0	0.00	0.00	0.17	0.04	28 19
30 ISL	17.86	D 17.85	33.482	D 24.148	377.1	0.110	5.46	D238.2	D100.6	1.4	0.17	0.0	0.00	0.00	0.19	0.04	30
38 A	17.77	17.76	33.476	24.166	375.7	0.143	5.50	240.0	101.1	1.4	0.17	0.0	0.00	0.00	0.23	0.06	38 18
47	17.75	17.74	33.474	24.170	375.7	0.177	5.49	239.7	100.9	1.4	0.17	0.0	0.00	0.00	0.32	0.07	47 17
50 ISL	17.74	D 17.74	33.475	D 24.172	375.6	0.186	5.46	D238.3	D100.4	1.4	0.17	0.0	0.00	0.00	0.31	0.09	50
56	17.42	17.41	33.442	24.224	370.8	0.211	5.57	243.2	101.7	1.4	0.18	0.0	0.00	0.00	0.29	0.13	56 16
66 A	16.28	16.26	33.412	24.470	347.6	0.247	5.73	250.3	102.3	1.3	0.21	0.0	0.00	0.00	0.24	0.22	67 15
75	15.57	15.56	33.500	24.695	326.4	0.277	5.81	253.5	102.3	1.8	0.22	0.0	0.00	0.11	0.21	0.22	76 14
84 A	15.32	15.31	33.617	24.842	312.7	0.306	5.75	251.2	100.9	2.2	0.20	0.0	0.06	0.07	0.17	0.16	85 13
100 ISL	14.68	D 14.67	33.676	D 25.027	295.5	0.353	5.69	D247.9	D 98.6	2.5	0.22	0.4	0.19	0.00	0.13	0.10	101
101	14.65	14.64	33.693	25.046	293.7	0.357	5.69	248.5	98.5	2.5	0.22	0.4	0.20	0.00	0.13	0.10	102 12
113	13.86	13.85	33.606	25.146	284.5	0.392	5.59	244.0	95.2	3.0	0.29	1.4	0.13	0.00	0.11	0.10	114 11
125 ISL	12.91	D 12.89	33.498	D 25.255	274.2	0.425	5.49	D239.1	D 91.6	3.8	0.40	3.0	0.04	0.00	0.10	0.06	126
126	12.48	12.46	33.503	25.343	265.8	0.428	5.51	240.8	91.1	3.9	0.41	3.2	0.03	0.00	0.10	0.06	127 10
141	11.79	11.77	33.523	25.489	252.1	0.467	5.11	223.1	83.2	6.3	0.64	7.0	0.00	0.00	0.06	0.06	142 09
150 ISL	11.20	D 11.18	33.534	D 25.605	241.1	0.489	4.81	D209.3	D 77.3	8.3	0.77	9.2	0.00	0.00	0.05	0.05	151
171	10.15	10.13	33.598	25.838	219.1	0.537	4.54	198.2	71.4	13.1	1.07	14.2	0.00	0.00	0.03	0.03	172 08
200	9.21	9.19	33.770	26.128	191.9	0.597	3.89	169.8	60.0	21.9	1.51	20.9	0.00	0.00	0.01	0.02	202 07
231	8.84	8.82	33.925	26.309	175.2	0.654	3.00	130.9	45.9	29.8	1.87	25.7	0.00	0.00			233 06
250 ISL	8.76	D 8.73	34.011	D 26.391	167.9	0.686	2.49	D108.3	D 38.1	33.3	1.97	27.3	0.00	0.00			252
271	8.05	8.02	33.984	26.478	159.7	0.722	2.64	115.0	39.6	37.3	2.07	28.9	0.00	0.00			273 05
300 ISL	7.64	D 7.61	33.991	D 26.543	153.7	0.767	2.59	D112.7	D 38.6	42.5	2.20	30.8	0.00	0.00			302
320	7.31	7.28	34.007	26.602	148.3	0.797	2.27	99.0	33.5	46.1	2.29	32.1	0.00	0.00			323 04
381	6.78	6.75	34.077	26.731	136.7	0.884	1.35	59.1	19.8	56.9	2.65	36.2	0.00	0.00			384 03
400 ISL	6.64	D 6.61	34.092	D 26.761	134.0	0.911	1.16	D 50.5	D 16.9	59.5	2.72	37.0	0.00	0.00			403
441	6.32	6.28	34.119	26.826	128.2	0.964	0.93	40.6	13.4	65.1	2.86	38.7	0.00	0.00			445 02
500 ISL	5.94	D 5.89	34.152	D 26.902	121.5	1.040	0.66	D 28.7	D 9.5	73.7	3.02	40.5	0.00	0.00			504
515	5.87	5.83	34.166	26.921	119.8	1.055	0.63	27.4	9.0	76.0	3.06	41.0	0.00	0.00			519 01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 86.7 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD	
31 59.4 N	122 23.6 W	23/11/2017	1108	UTC	4139 m	340 14 kn			1017.6 mb	17.5 C	17.0 C						071
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SI03* µM	P04* µM	N03* µM	N02* µM	NH4* µM	CHL-A µg/L	PHAEOL µg/L	PRES db
0	18.34	18.34	33.503	24.044	385.8	0.000	5.47	238.9	101.8	1.7	0.19	0.0	0.02	0.00	0.16	0.04	0
2	18.34	18.34	33.503	24.045	385.9	0.008	5.47	238.9	101.8	1.7	0.19	0.0	0.00	0.00	0.16	0.04	2 21
10	18.33	18.32	33.497	24.043	386.3	0.039	5.46	238.3	101.5	1.4	0.19	0.0	0.00	0.00	0.16	0.04	10 19
10	18.33	18.32	33.497	24.043	386.3	0.039											10 20
20 ISL	18.22	D 18.21	33.492	D 24.067	384.5	0.074	5.45	D237.7	D101.1	1.2	0.19	0.0	0.00	0.00	0.17	0.04	20
25	18.11	18.10	33.484	24.089	382.6	0.096	5.48	239.4	101.5	1.1	0.19	0.0	0.00	0.00	0.18	0.04	25 18
30 ISL	18.03	D 18.03	33.477	D 24.102	381.5	0.112	5.47	D238.3	D101.0	1.1	0.19	0.0	0.00	0.00	0.18	0.05	30
40	17.89	17.89	33.472	24.132	379.0	0.154	5.53	241.6	102.0	1.2	0.19	0.0	0.00	0.00	0.20	0.06	40 17
50	16.53	16.52	33.459	24.447	349.3	0.190	5.83	254.6	104.7	1.5	0.20	0.0	0.00	0.00	0.28	0.14	50 16
62	14.90	14.89	33.503	24.845	311.6	0.230	5.86	255.8	101.8	2.1	0.21	0.0	0.00	0.00	0.30	0.27	62 15
75	13.52	13.51	33.573	25.188	279.2	0.268	5.54	241.9	93.6	3.0	0.32	1.6	0.17	0.00	0.23	0.22	76 14
87	13.19	13.18	33.552	25.238	274.7	0.301	5.42	236.4	90.9	3.7	0.40	2.9	0.08	0.00	0.16	0.19	88 13
100	12.33	12.32	33.536	25.395	260.1	0.336	5.21	227.4	85.8	5.3	0.55	5.6	0.03	0.00	0.10	0.15	101 12
112	11.62	11.61	33.528	25.522	248.2	0.367	4.82	210.6	78.3	8.1	0.79	9.3	0.00	0.00	0.07	0.11	113 11
125	11.22	11.20	33.540	25.606	240.4	0.398	4.68	204.2	75.3	10.0	0.92	11.3	0.00	0.00	0.06	0.09	126 10
140	10.32	10.31	33.580	25.794	222.6	0.433	4.14	181.0	65.4	15.2	1.27	16.5	0.00	0.00	0.03	0.04	141 09
150 ISL	10.07	D 10.06	33.628	D 25.874	215.2	0.454	4.12	D179.3	D 64.7	17.5	1.36	18.0	0.00	0.00	0.02	0.04	151
170	9.37	9.35	33.770	26.102	193.8	0.496	3.72	162.5	57.6	22.2	1.54	21.1	0.00	0.00	0.02	0.02	171 08
200	8.80	8.78	33.882	26.282	177.2	0.551	3.40	148.4	52.0	27							

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 86.7 100.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03* μM	PO4* μM	NO3* μM	NO2* μM	NH4* μM	CHL-A μg/L	PHAE0 μg/L	PRES db	STATION	TYPE	ORD
																		070		
0	18.99	18.99	33.541	23.909	398.7	0.000	5.38	235.0	101.3	1.9	0.20	0.2	0.04	0.07	0.15	0.04	0.04	0		
2	18.99	18.99	33.541	23.910	398.8	0.008	5.38	235.0	101.3	1.9	0.20	0.2	0.04	0.07	0.15	0.04	0.04	2 21		
10	18.99	18.99	33.537	23.908	399.3	0.040	5.38	234.9	101.3	1.3	0.21	0.0	0.00	0.18	0.15	0.04	0.04	10 19		
11	18.99	18.99	33.541	23.910	399.0	0.042												10 20		
20	ISL 18.99	D 18.99	33.538	D 23.909	399.6	0.076	5.37	D 234.1	D 101.1	1.2	0.21	0.0	0.00	0.00	0.18	0.05	0.05	20		
25	18.99	18.98	33.539	D 23.911	399.6	0.097	5.37	D 234.1	D 101.1									25 18		
30	ISL 18.99	D 18.98	33.539	D 23.912	399.7	0.117	5.37	D 234.1	D 101.1	1.2	0.20	0.0	0.00	0.00	0.21	0.07	0.07	30		
40	18.93	18.92	33.546	23.933	398.0	0.160	5.38	235.0	101.2	1.1	0.20	0.0	0.00	0.00	0.24	0.08	0.08	40 17		
50	18.57	18.56	33.512	23.998	392.3	0.199	5.48	239.1	102.3	1.1	0.21	0.0	0.00	0.08	0.37	0.19	0.50	16		
62	15.24	15.23	33.375	24.672	328.1	0.242	6.00	262.2	105.0	1.7	0.35	0.0	0.00	0.54	0.30	0.62	15			
75	13.67	13.66	33.342	24.978	299.1	0.283	5.55	242.4	94.0	3.5	0.52	2.5	0.13	0.07	0.50	0.39	76 14			
87	12.37	12.36	33.378	25.264	272.1	0.318	4.95	216.0	81.5	6.5	0.75	7.1	0.03	0.00	0.24	0.22	88 13			
100	11.56	11.55	33.411	25.441	255.5	0.352	4.66	203.4	75.5	9.2	0.95	11.0	0.03	0.00	0.14	0.19	101 12			
112	10.68	10.66	33.528	25.691	231.8	0.381	4.20	183.2	66.7	14.1	1.25	16.1	0.00	0.00	0.05	0.09	113 11			
125	10.28	10.26	33.599	25.816	220.2	0.410	3.98	173.7	62.8	16.6	1.38	18.1	0.00	0.00	0.03	0.04	126 10			
140	9.69	9.67	33.702	25.996	203.3	0.442	3.66	159.7	57.0	20.7	1.55	20.8	0.00	0.00	0.01	0.03	141 09			
150	ISL 9.47	D 9.45	33.759	D 26.077	195.8	0.461	3.77	D 164.0	D 58.5	22.3	1.57	21.4	0.00	0.00	0.01	0.03	151			
170	8.92	8.91	33.870	26.251	179.5	0.500	3.73	162.9	57.2	25.4	1.61	22.6	0.00	0.00	0.02	0.02	171 08			
200	8.57	8.55	33.948	26.368	168.9	0.552	2.74	119.8	41.8	32.7	1.97	27.1	0.00	0.00	0.00	0.02	202 07			
230	8.19	8.17	33.997	26.465	160.1	0.601	2.37	103.4	35.8	37.1	2.13	29.1	0.00	0.00			232 06			
250	ISL 8.00	D 7.97	34.019	D 26.511	156.1	0.634	2.22	D 96.5	D 33.4	40.1	2.21	30.2	0.00	0.00			252			
270	7.61	7.58	34.028	26.575	150.1	0.664	2.05	89.4	30.5	43.1	2.29	31.4	0.00	0.00			272 05			
300	ISL 7.20	D 7.18	34.039	D 26.642	144.1	0.709	1.84	D 79.9	D 27.1	48.8	2.44	33.2	0.00	0.00			302			
320	7.06	7.03	34.064	26.681	140.6	0.736	1.53	66.8	22.5	52.6	2.54	34.4	0.00	0.00			323 04			
381	6.43	6.39	34.108	26.803	129.6	0.819	0.97	42.4	14.1	63.3	2.77	37.4	0.00	0.00			384 03			
400	ISL 6.29	D 6.26	34.118	D 26.828	127.4	0.845	0.91	D 39.4	D 13.1	66.7	2.84	38.2	0.00	0.00			403			
440	5.93	5.89	34.156	26.905	120.3	0.893	0.61	26.5	8.7	74.0	2.99	39.7	0.00	0.00			444 02			
500	ISL 5.65	D 5.60	34.211	D 26.983	113.5	0.966	0.42	D 18.1	D 5.9	81.1	3.10	40.9	0.00	0.00			504			
517	5.48	5.44	34.210	27.003	111.6	0.982	0.38	16.6	5.4	83.1	3.13	41.3	0.00	0.00			521 01			

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 86.7 110.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03* μM	PO4* μM	NO3* μM	NO2* μM	NH4* μM	CHL-A μg/L	PHAE0 μg/L	PRES db	STATION	TYPE	ORD
																		5/8 ST 069		
0	18.56	18.56	33.454	23.951	394.7	0.000	5.44	237.7	101.6	2.1	0.18	0.0	0.02	0.05	0.11	0.03	0			
2	18.56	18.56	33.454	23.951	394.8	0.008	5.44	237.7	101.6	2.1	0.18	0.0	0.00	0.05	0.11	0.03	2 21			
10	18.54	18.54	33.458	23.961	394.1	0.040	5.45	237.9	101.6	1.9	0.18	0.0	0.00	0.00	0.11	0.03	10 19			
10	18.54	18.54	33.454	23.958	394.5	0.039											10 20			
20	ISL 18.37	D 18.37	33.451	D 23.997	391.1	0.075	5.45	D 237.5	D 101.3	1.8	0.17	0.0	0.00	0.00	0.14	0.03	20			
25	18.32	18.32	33.457	D 24.015	389.6	0.095	5.45	D 237.7	D 101.3								25 18			
30	ISL 18.24	D 18.24	33.472	D 24.046	386.8	0.115	5.46	D 238.3	D 101.4	1.8	0.17	0.0	0.00	0.00	0.17	0.03	30			
40	18.08	18.07	33.484	D 24.097	382.4	0.156	5.49	239.9	101.6	1.8	0.16	0.0	0.00	0.00	0.20	0.03	40 17			
50	17.90	17.89	33.485	24.143	378.4	0.194	5.50	240.3	101.4	1.7	0.18	0.0	0.00	0.00	0.22	0.08	50 16			
62	16.11	16.10	33.417	24.509	343.7	0.237	5.85	255.7	104.2	1.8	0.18	0.0	0.00	0.00	0.29	0.22	62 15			
75	14.72	14.70	33.410	24.813	315.1	0.280	5.80	253.5	100.4	2.2	0.23	0.0	0.03	0.00	0.30	0.33	76 14			
87	14.39	14.38	33.706	25.111	287.0	0.319	5.68	248.2	97.9	2.6	0.21	0.6	0.15	0.00	0.21	0.18	89 13			
100	ISL 13.96	D 13.94	33.725	D 25.217	277.3	0.352	5.58	D 243.0	D 95.2	2.8	0.24	1.0	0.10	0.00	0.14	0.12	101			
101	13.93	13.91	33.723	25.222	276.9	0.356	5.59	243.9	95.3	2.8	0.24	1.0	0.10	0.00	0.14	0.11	102 12			
113	13.24	13.23	33.651	25.306	269.1	0.389	5.49	239.6	92.2	3.5	0.32	2.3	0.04	0.00	0.12	0.10	114 11			
125	ISL 12.57	D 12.56	33.578	D 25.382	262.0	0.420	5.35	D 233.0	D 88.7	4.6	0.46	4.3	0.00	0.00	0.09	0.07	126			
126	12.18	12.16	33.584	25.462	254.4	0.423	5.35	233.7	88.0	4.7	0.47	4.5	0.00	0.00	0.08	0.07	127 10			
141	11.35	11.33	33.563	25.601	241.3	0.460	4.90	213.9	79.1	8.5	0.79	9.7	0.00	0.00	0.04	0.05	142 09			
150	ISL 10.90	D 10.88	33.660	D 25.757	226.6	0.481	4.81	D 209.3	D 76.9	11.9	0.98	12.6	0.00	0.00	0.03	0.04	151			
171	9.56	9.54	33.686	26.005	203.0	0.527	3.90	170.3	60.6	19.7	1.43	19.6	0.00	0.00	0.01	0.02	172 08			
200	8.93	8.91	33.866	26.249	180.3	0.583	3.06	133.6	46.9	28.4	1.80	25.1	0.00	0.00	0.00	0.02	202 07			
230	8.54	8.52	33.994	26.410	165.6	0.635	2.38	103.9	36.2	34.6	2.06	28.4	0.00	0.						

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 88.5 30.1

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD			
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SV	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	17.09	17.09	33.342	24.221	368.9	0.000	6.17	269.2	111.8	2.3	0.15	0.0	0.03	0.01	3.34	0.96	0	
1	17.09	17.09	33.342	24.222	369.0	0.004	6.17	269.2	111.8	2.3	0.15	0.0	0.03	0.00	3.34	0.96	1 03	
6	16.92	16.92	33.347	24.265	365.0	0.022	6.14	267.9	110.9	2.4	0.20	0.0	0.04	0.00	3.57	1.19	6 02	
10 ISL	16.50 D	16.50	33.376 D	24.386	353.7	0.035	5.73	D250.0	D102.8	2.9	0.25	0.1	0.10	0.00	2.58	0.76	10	
11	16.61	16.61	33.379	24.364	355.8	0.040	5.72	249.9	102.8	3.0	0.26	0.2	0.12	0.00	2.34	0.66	11 01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED 02;

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 90.0 27.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD			
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SV	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	16.85	16.85	33.416	24.336	358.0	0.000	5.73	250.1	103.5	2.9	0.26	0.1	0.05	0.07	1.30	0.37	0	
2	16.85	16.84	33.416	24.336	358.1	0.007	5.73	250.1	103.5	2.9	0.26	0.1	0.05	0.07	1.30	0.37	2 05	
5	15.79	15.79	33.400	24.566	336.2	0.018	5.44	237.6	96.2	3.8	0.33	0.6	0.16	0.27	1.54	0.39	5 04	
10	14.29	14.29	33.358	24.859	308.5	0.034	5.00	218.3	85.8	6.0	0.58	3.0	0.53	0.00	0.92	0.42	10 03	
15	13.98	13.97	33.360	24.927	302.2	0.049	4.79	209.1	81.6	6.9	0.68	4.3	0.47	0.00	0.70	0.46	15 02	
20 ISL	13.79 D	13.79	33.366 D	24.969	298.3	0.061	4.74	D206.5 D	80.5	6.9	0.69	4.2	0.46	0.00	0.79	0.38	20	
22	13.94	13.93	33.361	24.935	301.6	0.070	4.80	209.6	81.8	6.9	0.69	4.2	0.46	0.00	0.83	0.34	22 01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED 02;

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 90.0 28.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD			
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SV	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	17.97	17.97	33.479	24.115	379.1	0.000	5.76	251.6	106.4	1.5	0.18	0.1	0.02	0.11	0.98	0.29	0	
2 A	17.97	17.97	33.479	24.115	379.1	0.008	5.76	251.6	106.4	1.5	0.18	0.1	0.00	0.11	0.98	0.29	2 10	
10 A	16.36	16.36	33.400	24.437	348.8	0.037	5.88	256.6	105.1	2.2	0.23	0.0	0.00	0.00	0.75	0.28	10 08	
13 A	15.36	15.36	33.385	24.426	349.8	0.036	5.80	253.1	101.6	3.2	0.32	0.0	0.04	0.00	0.78	0.31	13 07	
16	14.71	14.71	33.345	24.760	318.1	0.057	5.30	246.2	94.3	4.6	0.44	1.0	0.21	0.00	1.15	0.52	16 05	
17	14.29	14.29	33.344	24.848	309.8	0.059	4.91	D213.7 D	83.4	5.8	0.57	2.9	0.16	0.00	0.90	0.46	17 06	
20 ISL	13.83 D	13.83	33.377 D	24.970	298.3	0.066	4.65	202.9	78.2	7.3	0.74	5.3	0.09	0.00	0.59	0.39	25 04	
25 A	13.33	13.33	33.372	25.068	289.1	0.084	4.65	202.9	78.2	7.3	0.74	5.3	0.09	0.00	0.59	0.39	25 04	
30 ISL	13.10 D	13.09	33.390 D	25.129	283.4	0.095	4.40	D191.8 D	73.7	8.8	0.88	7.5	0.15	0.00	0.43	0.34	30	
32	12.78	12.77	33.393	25.194	277.2	0.104	4.26	186.0	70.9	9.3	0.93	8.4	0.18	0.00	0.37	0.32	32 03	
42 A	12.06	12.05	33.441	25.370	260.8	0.130	3.97	173.2	65.0	11.7	1.14	12.7	0.04	0.00	0.13	0.19	42 02	
50 ISL	11.62 D	11.61	33.500 D	25.499	248.6	0.148	3.71	D161.4 D	60.2	14.4	1.32	15.2	0.04	0.00	0.07	0.15	50	
52 A	11.51	11.50	33.509 D	25.526	246.1	0.156	3.52	153.6	57.0	15.1	1.36	15.8	0.04	0.00	0.06	0.14	52 01	

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED 02;

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 90.0 30.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD			
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SV	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	17.88	17.88	33.451	24.116	379.0	0.000	5.79	252.6	106.6	1.9	0.12	0.0	0.01	0.23	0.72	0.16	0	
2	17.88	17.88	33.451	24.117	379.0	0.008	5.79	252.6	106.6	1.9	0.12	0.0	0.00	0.23	0.72	0.16	2 21	
10	17.27	17.27	33.409	24.231	368.4	0.038	5.92	258.6	107.8	2.2	0.17	0.0	0.00	1.03	0.15	10 19		
10 ISL	14.72 D	14.72	33.345 D	24.759	318.4	0.068	5.65	D246.2 D	97.7	4.3	0.41	1.6	0.00	0.00	1.78	0.84	20	
21	14.07	14.06	33.330	24.885	306.4	0.075	5.45	238.0	93.0	4.5	0.43	1.7	0.56	0.05	1.85	0.91	21 18	
30 ISL	12.91 D	12.91	33.379 D	25.157	280.7	0.098	4.76	D207.5 D	79.4	6.5	0.70	5.7	0.15	0.00	0.66	0.38	30	
31	13.14	13.13	33.370	25.105	285.7	0.104	4.70	205.3	78.7	6.7	0.73	6.1	0.10	0.00	0.52	0.32	31 17	
41	12.46	12.46	33.405	25.265	270.7	0.132	4.30	187.9	71.1	9.1	0.94	10.0	0.04	0.00	0.22	0.24	41 16	
50	12.02	12.02	33.430	25.368	261.1	0.156	4.01	175.3	65.7	10.9	1.08	12.1	0.03	0.00	0.14	0.17	50 15	
61	11.67	11.66	33.446	25.448	253.7	0.184	4.04	176.5	65.7	11.6	1.12	13.0	0.03	0.00	0.11	0.15	61 14	
70	11.50	11.50	33.530	25.543	244.9	0.207	3.55	154.8	57.4	14.8	1.35	15.9	0.00	0.00	0.08	0.10	71 13	
75 ISL	11.30 D	11.29	33.550 D	25.596	240.0	0.216	3.41	D148.5 D	55.0	15.6	1.40	16.5	0.00	0.00	0.07	0.09	76	
86	11.12	11.11	33.595	25.664	233.8	0.245	3.16	138.0	50.8	17.4	1.51	17.8	0.00	0.00	0.04	0.08	87 12	
100	10.45	10.44	33.631	25.810	220.1	0.277	3.22	140.5	51.0	19.0	1.60	20.1	0.00	0.00	0.02	0.06	101 11	
121	10.15	10.14	33.761	25.963	206.1	0.321	2.84	124.0	44.8	23.0	1.79	22.4	0.00	0.00	0.01	0.04	1	

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 90.0 35.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN mL/L	OXYGEN μmol/Kg	OXY PCT	WEA		BAROMETER 1014.8 mb	DRY 19.0 C	WET 17.9 C	SECCHI	CLD AMT	TYPE	ORD 027
										SI03*	P04*							
0	18.72	18.72	33.544	23.981	391.9	0.000	5.58	243.5	104.5	1.1	0.15	0.0	0.01	0.05	0.65	0.12	0	
2	18.72	18.72	33.544	23.981	391.9	0.008	5.58	243.5	104.5	1.1	0.15	0.0	0.00	0.05	0.65	0.12	2	
10	17.73	17.72	33.494	24.187	372.6	0.038	5.71	249.3	105.0	1.4	0.17	0.0	0.00	0.08	0.78	0.19	10	
10	17.73	17.72	33.493	24.187	372.6	0.038											17	
20	15.46	15.46	33.381	24.625	331.2	0.074	5.86	255.8	102.9	3.2	0.31	0.0	0.00	0.00	1.29	0.56	20	
30	13.60	13.60	33.359	25.004	295.3	0.105	5.42	236.8	91.7	4.9	0.48	1.6	0.09	0.00	1.81	0.76	30	
40	12.85	12.84	33.386	25.175	279.2	0.134	4.76	207.6	79.2	7.4	0.73	6.2	0.12	0.00	1.23	0.67	40	
50	11.86	11.85	33.453	25.417	256.4	0.160	3.95	172.6	64.5	12.0	1.13	13.0	0.05	0.00	0.20	0.23	50	
60	11.65	11.64	33.476	25.474	251.3	0.186	3.76	164.3	61.1	13.1	1.22	14.2	0.00	0.00	0.18	0.19	60	
70	11.30	11.29	33.517	25.571	242.3	0.210	3.59	156.6	57.8	14.8	1.33	15.9	0.00	0.00	0.11	0.17	71	
75	ISL 11.20 D	11.19	33.542 D	25.609	238.8	0.220	3.51	D152.9 D	56.5	15.6	1.38	16.5	0.00	0.00	0.10	0.16	76	
85	10.93	10.92	33.614 D	25.712	229.2	0.244	3.12	D135.9 D	50.0								86	
100	10.77	10.75	33.651	25.771	224.0	0.280	2.98	130.3	47.6	19.4	1.63	19.7	0.00	0.00	0.02	0.07	101	
120	10.45	10.43	33.787	25.933	209.0	0.323	2.59	113.1	41.1	22.9	1.83	22.2	0.00	0.00	0.01	0.05	121	
125	ISL 10.40 D	10.38	33.815 D	25.965	206.1	0.332	2.61	D113.5 D	41.3	23.4	1.85	22.5	0.00	0.00	0.01	0.05	126	
140	10.17	10.15	33.872	26.049	198.4	0.364	2.44	106.5	38.5	25.1	1.92	23.6	0.00	0.00	0.01	0.04	141	
150	ISL 10.12 D	10.10	33.966 D	26.131	190.9	0.382	2.23	D96.9 D	35.1	26.5	1.98	24.3	0.00	0.00	0.01	0.04	151	
170	10.02	10.00	34.051	26.215	183.4	0.421	1.93	84.1	30.3	29.1	2.10	25.6	0.00	0.00	0.04	0.17	171	
200	9.51	9.49	34.113	26.348	171.2	0.474	1.84	80.2	28.6	32.4	2.19	27.1	0.00	0.00	0.00	0.03	202	
230	9.38	9.36	34.191	26.432	164.0	0.525	1.51	65.9	23.4	35.1	2.32	28.0	0.00	0.00		232	03	
250	ISL 9.15 D	9.12	34.181 D	26.462	161.4	0.557	1.53 D	66.6 D	23.6	37.1	2.35	28.8	0.00	0.00		252		
271	8.84	8.81	34.176	26.508	157.3	0.591	1.51	65.9	23.1	39.1	2.38	29.6	0.00	0.00		273	02	
300	ISL 8.52 D	8.49	34.262 D	26.625	146.7	0.635	0.96 D	41.7 D	14.6	43.9	2.57	31.5	0.00	0.00		302		
306	8.50	8.46	34.261	26.629	146.4	0.644	0.90	39.1	13.6	44.9	2.61	31.9	0.03	0.00		308	01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED 02;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 90.0 37.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN mL/L	OXYGEN μmol/Kg	OXY PCT	WEA		BAROMETER 1014.6 mb	DRY 19.0 C	WET 18.0 C	SECCHI	CLD AMT	TYPE	ORD 026
										SI03*	P04*							
0	18.35	18.35	33.509	24.045	385.7	0.000	5.60	244.4	104.1	1.2	0.16	0.0	0.02	0.00	0.42	0.13	0	
2	18.35	18.35	33.509	24.046	385.8	0.008	5.60	244.4	104.1	1.2	0.16	0.0	0.00	0.42	0.13	2	22	
10	18.34	18.34	33.509	24.049	385.8	0.039	5.60	244.3	104.1	1.2	0.14	0.0	0.00	0.42	0.14	10	20	
10	18.34	18.34	33.509	24.049	385.8	0.040										10	21	
20	17.77	17.77	33.481	24.166	374.9	0.077	5.65	246.5	103.9	1.5	0.19	0.0	0.00	0.00	0.52	0.13	20	
30	12.74	12.74	33.385	25.196	277.0	0.109	4.71	205.8	78.3	7.5	0.78	6.8	0.16	0.00	1.22	0.79	30	
31	12.65	12.64	33.395	25.221	274.6	0.111											31	
40	12.11	12.11	33.436	25.356	262.0	0.136	4.09	178.4	67.0	11.0	1.08	11.8	0.07	0.00	0.42	0.52	40	
50	11.49	11.49	33.511	25.530	245.7	0.162	3.59	156.6	58.1	14.6	1.32	15.2	0.04	0.00	0.18	0.28	50	
60	11.35	11.34	33.535	25.575	241.6	0.186	3.44	150.1	55.5	15.8	1.40	16.1	0.04	0.00	0.14	0.19	60	
70	11.22	11.21	33.562	25.621	237.6	0.210	3.32	144.9	53.4	16.6	1.46	17.0	0.03	0.00	0.08	0.14	71	
75	ISL 11.13 D	11.12	33.593 D	25.661	233.9	0.219	3.24	D141.0 D	52.1	17.4	1.51	17.6	0.00	0.00	0.07	0.12	76	
85	10.98	10.96	33.630	25.717	228.7	0.245	3.02	131.9	48.4	18.9	1.60	18.8	0.00	0.00	0.03	0.08	86	
100	10.70	10.69	33.702	25.822	219.1	0.279	2.76	120.6	44.0	21.2	1.73	20.6	0.00	0.00	0.01	0.05	101	
120	10.44	10.42	33.812	25.955	207.0	0.321	2.48	108.2	39.3	23.8	1.88	22.6	0.00	0.00	0.01	0.04	121	
125	ISL 10.37 D	10.35	33.850 D	25.997	203.1	0.330	2.42	D105.4 D	38.4	24.7	1.92	23.0	0.00	0.00	0.01	0.04	126	
140	10.20	10.18	33.963	26.115	192.2	0.361	2.13	92.8	33.6	27.3	2.05	24.5	0.00	0.00	0.01	0.03	141	
150	ISL 10.16 D	10.14	34.014 D	26.162	187.9	0.379	2.00 D	87.1 D	31.6	28.3	2.09	25.0	0.00	0.00	0.00	0.03	151	
170	10.14	10.12	34.094	26.228	182.2	0.417	1.74	75.9	27.5	30.4	2.18	26.0	0.00	0.08	0.00	0.03	171	
200	10.06	10.04	34.160	26.293	176.7	0.471	1.56	68.0	24.5	31.7	2.25	26.6	0.00	0.00	0.00	0.03	202	
230	9.92	9.89	34.193	26.345	172.5	0.523	1.50	65.3	23.5	32.5	2.29	26.9	0.00	0.00		232	06	
250	ISL 9.74 D	9.71	34.217 D	26.394	168.2	0.557	1.45 D	63.2 D	22.7	35.0	2.35	27.7	0.00	0.00		252		
270	9.34	9.31	34.238	26.477	160.6	0.590	1.33	58.0	20.6	37.4	2.41	28.5	0.00	0.00		272	05	
300	ISL 8.44 D	8.41	34.149 D	26.550	153.7	0.638	1.51 D	65.8 D	23.0	41.6	2.49	30.3	0.00	0.00		302		
321	8.44	8.41	34.224	26.608	148.7	0.668	1.10	48.2	16.8	44.5	2.55	31.7	0.00	0.00		324	04	
380	7.64	7.60	34.243	26.744	136.3	0.752	0.75	32.5	11.1	54.5	2.77	34.6	0.00	0.00		383	03	
400	ISL 7.48 D	7.44	34.255 D	26.776	133.5	0.782	0.68 D	29.4 D	10.1	57.6	2.83	35.3	0.00	0.00		403		
440	7.07	7.03	34.287	26.859	126.0	0.831	0.44	19.2	6.5	63.8	2.95	36.7	0.00	0.00		444	02	
500	ISL 6.64 D	6.60	34.302 D	26.930	119.8	0.909	0.35 D	15.3 D	5.1	70.3	3.04	38.1	0.00	0.00		504		
516	6.53	6.48	34.309	26.951	117.9	0.923	0.30	13.1	4									

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 90.0 53.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SWA	DYN HT	OXYGEN ml/L	OXYGEN $\mu\text{mol/Kg}$	OXY PCT	SI03* $\mu\text{M}$	P04* $\mu\text{M}$	N03* $\mu\text{M}$	N02* $\mu\text{M}$	NH4* $\mu\text{M}$	CHL-A $\mu\text{g/L}$	PHAE0 $\mu\text{g/L}$	PRES db
0	16.96	16.96	33.466	24.348	356.9	0.000	5.60	244.4	101.4	1.3	0.23	0.0	0.02	0.02	0.38	0.07	0
3 A	16.96	16.96	33.466	24.348	357.0	0.011	5.60	244.4	101.4	1.3	0.23	0.0	0.00	0.00	0.38	0.07	3 23
3	16.96	16.96	33.469	24.350	356.7	0.011											3 24
10 ISL	16.96 D	16.96	33.466 D	24.348	357.3	0.031	5.62	D245.2	D101.8	1.3	0.23	0.0	0.00	0.00	0.37	0.09	10
11 A	16.96	16.96	33.467	24.348	357.3	0.039	5.62	245.2	101.7	1.3	0.23	0.0	0.00	0.00	0.36	0.10	11 21
11	16.96	16.96	33.468	24.349	357.2	0.039											11 22
15 A	16.95	16.94	33.479	24.362	356.1	0.054	5.61	245.0	101.6	1.2	0.23	0.0	0.00	0.00	0.40	0.07	15 20
20 ISL	16.94 D	16.93	33.465 D	24.354	357.0	0.067	5.63	D245.2	D101.8	1.3	0.23	0.0	0.00	0.00	0.35	0.11	20
21	16.94	16.94	33.466	24.354	357.1	0.075	5.61	245.1	101.6	1.3	0.23	0.0	0.00	0.00	0.35	0.11	21 19
28 A	16.93	16.93	33.473	24.362	356.6	0.100	5.59	244.2	101.2	1.3	0.23	0.0	0.00	0.00	0.35	0.12	28 18
30 ISL	16.91 D	16.91	33.464 D	24.360	356.9	0.103	5.63	D245.4	D101.8	1.2	0.23	0.0	0.00	0.00	0.36	0.12	30
38	16.88	16.87	33.466	24.370	356.2	0.136	5.60	244.5	101.2	1.2	0.23	0.0	0.00	0.06	0.41	0.11	38 17
48 A	15.98	15.97	33.406	24.530	341.2	0.171	5.66	247.0	100.4	1.6	0.27	0.2	0.05	0.20	0.45	0.27	48 15
48	15.98	15.97	33.403	24.528	341.4	0.170											48 16
50 ISL	15.82 D	15.81	33.397 D	24.559	338.5	0.174	5.69	D248.2	D100.8	1.8	0.28	0.2	0.06	0.19	0.45	0.26	50
60 A	13.86	13.85	33.308	24.912	305.0	0.210	5.76	251.4	97.9	2.5	0.34	0.7	0.10	0.14	0.42	0.23	60 14
71	12.62	12.61	33.252	25.118	285.6	0.242	5.60	244.6	92.7	4.3	0.53	3.9	0.16	0.00	0.22	0.20	72 13
75 ISL	12.34 D	12.33	33.261 D	25.179	279.8	0.250	5.50	D239.5	D90.5	5.0	0.59	4.9	0.13	0.00	0.21	0.18	76
86	11.87	11.86	33.331	25.322	266.5	0.283	5.18	226.0	84.4	6.7	0.74	7.6	0.04	0.00	0.15	0.13	87 12
100 ISL	11.44 D	11.43	33.453 D	25.496	250.2	0.317	4.95	D215.4	D80.0	8.3	0.84	9.5	0.03	0.00	0.11	0.09	101
101	11.23	11.21	33.438	25.524	247.6	0.322	4.91	214.5	79.1	8.4	0.85	9.6	0.03	0.00	0.11	0.08	102 11
121	10.33	10.31	33.595	25.804	221.2	0.369	4.36	190.3	68.9	14.0	1.17	15.0	0.00	0.00	0.04	0.05	122 10
125 ISL	10.31 D	10.29	33.616 D	25.825	219.4	0.375	4.02	D175.1	D63.5	15.3	1.24	16.0	0.00	0.00	0.03	0.04	126
141	9.76	9.75	33.692	25.976	205.2	0.412	3.67	160.1	57.3	20.1	1.52	20.1	0.03	0.00	0.02	0.03	142 09
150 ISL	9.40 D	9.38	33.782 D	26.106	193.0	0.427	3.46	D150.6	D53.6	23.0	1.64	21.8	0.00	0.00	0.01	0.03	151
170	8.87	8.85	33.887	26.273	177.4	0.467	2.90	126.3	44.4	29.4	1.90	25.6	0.00	0.00	0.00	0.03	171 08
200 ISL	8.52 D	8.50	33.964 D	26.388	167.0	0.516	5.59	D112.5	D39.3	32.9	2.02	27.4	0.00	0.00	0.00	0.03	202
201	8.54	8.52	33.950	26.375	168.3	0.521	2.62	114.5	39.9	33.0	2.02	27.5	0.00	0.00	0.00	0.03	203 07
231	8.38	8.35	33.999	26.439	162.7	0.570	2.36	103.0	35.8	36.3	2.13	28.7	0.00	0.00			233 06
250 ISL	8.17 D	8.15	34.033 D	26.497	157.5	0.599	2.17	D94.4	D32.8	39.8	2.25	29.9	0.00	0.00			252
270	7.91	7.89	34.077	26.570	150.9	0.631	1.73	75.5	26.0	43.5	2.38	31.2	0.00	0.00			272 05
300 ISL	7.57 D	7.54	34.120 D	26.655	143.2	0.674	1.37	D59.8	D20.5	48.0	2.50	32.9	0.00	0.00			302
321	7.46	7.43	34.127	26.676	141.4	0.706	1.25	54.7	18.6	51.2	2.59	34.1	0.00	0.09			324 04
380	7.07	7.03	34.204	26.793	131.1	0.786	0.74	32.2	10.9	59.9	2.81	36.2	0.00	0.00			383 03
400 ISL	6.93 D	6.89	34.211 D	26.817	129.0	0.812	0.69	D29.8	D10.1	62.1	2.86	36.7	0.00	0.00			403
440	6.63	6.59	34.249	26.888	122.8	0.862	0.48	21.1	7.0	66.4	2.95	37.9	0.00	0.00			444 02
500 ISL	6.11 D	6.07	34.260 D	26.965	115.8	0.935	0.40	D17.4	D5.8	74.1	3.05	39.1	0.00	0.00			504
515	6.12	6.07	34.274	26.976	115.1	0.951	0.36	15.6	5.1	76.1	3.08	39.4	0.00	0.00			519 01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 90.0 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SWA	DYN HT	OXYGEN ml/L	OXYGEN $\mu\text{mol/Kg}$	OXY PCT	SI03* $\mu\text{M}$	P04* $\mu\text{M}$	N03* $\mu\text{M}$	N02* $\mu\text{M}$	NH4* $\mu\text{M}$	CHL-A $\mu\text{g/L}$	PHAE0 $\mu\text{g/L}$	PRES db
0	17.23	17.23	33.432	24.258	365.4	0.000	5.57	243.3	101.4	1.6	0.24	0.0	0.01	0.00	0.30	0.08	0
2	17.23	17.23	33.432	24.258	365.5	0.007	5.57	243.3	101.4	1.6	0.24	0.0	0.00	0.00	0.30	0.08	2 20
10	17.23	17.23	33.433	24.260	365.7	0.037	5.57	243.4	101.4	1.6	0.21	0.0	0.00	0.00	0.26	0.06	10 19
20	17.23	17.23	33.433	24.259	366.1	0.073	5.57	243.4	101.4	1.5	0.21	0.0	0.00	0.00	0.32	0.05	20 18
30	17.16	17.16	33.432	24.276	364.9	0.110	5.58	243.5	101.4	1.5	0.23	0.0	0.00	0.00	0.32	0.12	30 17
40	16.11	16.10	33.392	24.490	344.8	0.145	5.67	247.7	101.0	1.7	0.25	0.0	0.03	0.00	0.57	0.31	40 16
50	14.91	14.91	33.362	24.732	322.0	0.178	5.72	249.9	99.4	2.5	0.34	0.7	0.19	0.22	0.39	0.30	50 15
60	13.72	13.71	33.366	24.986	297.9	0.209	5.74	250.6	97.3	3.3	0.37	1.7	0.21	0.00	0.26	0.17	60 14
70	12.22	12.21	33.317	25.244	273.5	0.238	5.23	228.4	85.9	6.0	0.64	5.9	0.04	0.00	0.13	0.16	71 13
75 ISL	11.92 D	11.91	33.409 D	25.372	261.4	0.250	4.93	D214.5	D80.4	7.6	0.76	7.9	0.04	0.00	0.12	0.15	76
85	11.42	11.41	33.433	25.485	250.9	0.277	4.50	196.4	72.7	10.7	1.01	11.9	0.03	0.00	0.09	0.12	86 12
100 ISL	10.88 D	10.86	33.474 D	25.614	238.9	0.312	4.36	D189.6	D69.6	12.6	1.13	14.0	0.00	0.00	0.08	0.08	101
101	10.94	10.93	33.470	25.600	240.3	0.317	4.34	189.5	69.4	12.8	1.14	14.1	0.00	0.00	0.08	0.08	102 11
120	9.93	9.92	33.592	25.869	215.0	0.360	3.84	167.5	60.1	18.3	1.45	19.0	0.00	0.00	0.03	0.04	121 10
125 ISL	9.85 D	9.83	33.614 D	25.901	212.0	0.369	3.81	D166.0	D59.6	19.2	1.49	19.6	0.00	0.00	0.02	0.04	126
140	9.51	9.49	33.677	26.006	202.3	0.402	3.57	156.0	55.5	21.8	1.59	21.2	0.00	0.00	0.01	0.04	141 09
150 ISL	9.31 D	9.29	33.758 D	26.102	193.3	0.4											

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 90.0 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD		
32	5.1 N	120 38.3 W	14/11/2017	0554 UTC	3821 m	320 15 kn			1020.5 mb	18.1 C	17.1 C					023		
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	17.63	17.63	33.456	24.180	372.9	0.000	5.52	241.2	101.3	1.8	0.19	0.0	0.01	0.00	0.15	0.04	0	
3	17.63	17.63	33.456	24.180	373.0	0.011	5.52	241.2	101.3	1.8	0.19	0.0	0.00	0.00	0.15	0.04	3	22
10	17.64	17.64	33.470	24.189	372.4	0.037	5.55	242.1	101.8	1.8	0.22	0.0	0.00	0.00	0.16	0.05	10	20
10	17.64	17.64	33.461	24.182	373.1	0.038											10	21
20	ISL	17.58	D 17.57	33.449	D 24.190	372.7	0.069	5.56	D 242.6	D 101.9	1.8	0.20	0.0	0.00	0.00	0.16	0.05	20
25	17.54	17.53	33.443	24.194	372.5	0.093	5.55	242.1	101.5	1.8	0.19	0.0	0.00	0.00	0.16	0.06	25	19
30	ISL	17.39	D 17.39	33.427	D 24.218	370.4	0.107	5.60	D 244.0	D 102.1	1.8	0.19	0.0	0.00	0.00	0.18	0.06	30
40	17.29	17.28	33.426	24.243	368.4	0.149	5.62	245.4	102.4	1.8	0.20	0.0	0.00	0.00	0.23	0.07	40	18
50	16.94	16.93	33.395	24.303	365.0	0.185	5.65	246.6	102.2	1.8	0.21	0.0	0.00	0.00	0.36	0.15	50	17
62	15.51	15.50	33.342	24.588	336.2	0.227	5.73	250.1	100.7	1.9	0.26	0.0	0.05	0.13	0.59	0.32	62	15
62	15.51	15.50	33.343	24.588	336.1	0.227											62	16
75	13.78	13.77	33.373	24.980	299.0	0.269	5.70	248.7	96.7	3.5	0.38	1.9	0.18	0.00	0.14	0.16	76	14
87	13.00	12.99	33.505	25.240	274.5	0.303	5.56	242.8	93.0	4.0	0.39	2.7	0.10	0.00	0.14	0.16	88	13
100	12.20	12.19	33.405	25.317	267.4	0.338	5.28	230.6	86.8	5.6	0.61	6.0	0.04	0.00	0.11	0.12	101	12
112	11.32	11.30	33.440	25.509	249.2	0.369	4.76	207.8	76.7	9.2	0.92	10.7	0.03	0.00	0.07	0.10	113	11
125	10.80	10.78	33.512	25.659	235.2	0.401	4.40	192.0	70.1	13.2	1.16	14.6	0.00	0.00	0.04	0.06	126	10
140	10.10	10.08	33.612	D 25.858	216.5	0.432	4.09	D 178.2	D 64.3								141	09
150	ISL	9.97	D 9.95	33.632	D 25.895	213.1	0.454	4.07	D 177.3	D 63.8	17.0	1.28	17.0	0.00	0.00	0.02	0.03	151
170	9.47	9.45	33.777	26.092	194.8	0.497	4.18	182.6	64.9	20.0	1.37	18.9	0.00	0.00	0.00	0.02	171	08
200	ISL	8.82	D 8.80	33.894	D 26.287	176.7	0.551	3.35	D 145.8	D 51.3	27.7	1.73	23.8	0.00	0.00	0.00	0.02	202
201	8.82	8.79	33.897	26.291	176.4	0.554	3.36	146.7	51.4	28.0	1.74	23.9	0.00	0.00	0.00	0.02	203	07
230	8.34	8.32	33.977	26.427	163.8	0.603	2.62	114.1	39.6								232	06
250	ISL	8.09	D 8.06	34.006	D 26.488	158.3	0.635	2.44	D 106.0	D 36.7	39.1	2.12	28.9	0.00	0.00			252
270	7.80	7.77	34.036	26.554	152.2	0.667	2.03	88.8	30.4	43.6	2.28	31.0	0.00	0.00			272	05
300	ISL	7.41	D 7.39	34.067	D 26.635	144.9	0.712	1.75	D 76.1	D 26.0	49.3	2.45	33.1	0.00	0.00			302
321	7.10	7.07	34.078	26.688	140.0	0.741	1.41	61.3	20.7	53.3	2.57	34.6	0.00	0.00			324	04
380	6.66	6.62	34.125	26.785	131.5	0.821	0.96	42.0	14.0	62.2	2.78	37.0	0.00	0.00			383	03
400	ISL	6.59	D 6.55	34.140	D 26.807	129.6	0.849	0.88	D 38.1	D 12.8	64.7	2.84	37.5	0.00	0.00			403
441	6.25	6.21	34.178	26.881	123.0	0.899	0.62	26.9	8.9	69.9	2.95	38.6	0.00	0.00			445	02
500	ISL	5.93	D 5.89	34.226	D 26.961	116.0	0.972	0.44	D 19.1	D 6.3	76.6	3.07	39.7	0.00	0.00			504
517	5.95	5.90	34.262	26.987	113.7	0.989	0.33	14.5	4.8	78.6	3.10	40.0	0.00	0.00			521	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED 02;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 90.0 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD		
31	45.1 N	121 19.0 W	13/11/2017	2346 UTC	3673 m	330 13 kn	340 03 06	1	1019.7 mb	19.1 C	17.5 C					6/8 ST 022		
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	17.70	17.70	33.420	24.136	377.1	0.000	5.56	242.5	102.0	1.7	0.19	0.0	0.01	0.04	0.17	0.04	0	
2	17.70	17.70	33.420	24.136	377.2	0.008	5.56	242.5	102.0	1.7	0.19	0.0	0.00	0.00	0.17	0.04	2	20
10	17.71	17.70	33.423	24.138	377.3	0.038	5.56	242.7	102.1	1.6	0.19	0.0	0.00	0.00	0.16	0.04	10	19
20	ISL	17.73	D 17.72	33.429	D 24.139	377.6	0.072	5.58	D 243.3	D 102.5	1.6	0.20	0.0	0.00	0.00	0.16	0.04	20
25	17.72	17.71	33.437	24.147	377.0	0.094	5.53	241.6	101.6	1.6	0.20	0.0	0.00	0.00	0.16	0.05	25	18
30	ISL	17.71	D 17.71	33.437	D 24.148	377.1	0.110	5.58	D 243.1	D 102.4	1.6	0.20	0.0	0.00	0.00	0.21	0.07	30
40	17.17	17.16	33.422	24.269	365.9	0.150	5.64	246.1	102.5	1.5	0.21	0.0	0.00	0.00	0.30	0.11	40	17
50	16.30	16.29	33.375	24.435	350.4	0.186	5.75	250.8	102.6	1.6	0.22	0.0	0.00	0.00	0.42	0.23	50	16
62	14.46	14.45	33.299	24.781	317.6	0.226	5.81	253.9	100.0	2.5	0.32	0.7	0.13	0.16	0.39	0.40	62	15
75	13.92	13.91	33.468	25.025	294.8	0.266	5.72	249.8	97.5	3.0	0.33	1.3	0.21	0.00	0.25	0.26	76	14
87	13.00	12.99	33.447	25.195	278.8	0.301	5.62	245.3	93.9	3.7	0.40	2.7	0.08	0.00	0.14	0.14	88	13
100	11.98	11.97	33.367	25.329	266.2	0.336	5.38	235.1	88.0	5.4	0.58	5.7	0.03	0.00	0.08	0.10	101	12
112	11.81	11.80	33.342	25.498	250.5	0.367	5.10	222.4	83.1	6.8	0.67	7.6	0.03	0.00	0.07	0.08	113	11
125	11.25	11.24	33.552	25.609	240.1	0.399	4.82	210.3	77.6	9.6	0.87	10.8	0.00	0.00	0.05	0.07	126	10
140	10.22	10.20	33.580	25.812	220.9	0.433	4.22	184.2	66.5	15.6	1.28	17.1	0.00	0.00	0.02	0.04	141	
150	ISL	9.95	D 9.94	33.659	D 25.919	210.9	0.455	4.36	D 189.9	D 68.4	17.7	1.35	18.3	0.00	0.00	0.02	0.03	151
171	9.23	9.21	33.771	26.126	191.5	0.498	3.92	170.9	60.4	22.0	1.50	20.9	0.00	0.00	0.01	0.02	172	08
200	ISL	8.76	D 8.74	33.885	D 26.289	176.4	0.551	3.66	D 159.4	D 56.0	27.3	1.67	23.8	0.00	0.00	0.00	0.02	202
201	8.73	8.71	33.890	26.299	175.5	0.553	3.57	155.9	54.5	27.5	1.68	24.0	0.00	0.00	0.00	0.02	203	07
231	8.36	8.34	33.987	26.432	163.4	0.603	2.48											

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 90.0 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD			
31 25.1 N	121 59.3 W	13/11/2017	1800	UTC	3905 m	360 12 kn	030 03 09	1	1022.2 mb	21.0 C	19.0 C	26 m	3/8	ST	021			
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA			ml/L	μmol/Kg	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	18.95	18.95	33.547	23.924	397.3	0.000	5.38	234.8	101.3	1.3	0.19	0.0	0.02	0.07	0.17	0.06	0.06	0
2 A	18.95	18.95	33.547	23.924	397.4	0.008	5.38	234.8	101.3	1.3	0.19	0.0	0.00	0.07	0.17	0.06	0.06	2 23
2	18.95	18.95	33.546	23.923	397.5	0.010												2 24
8	18.94	18.94	33.545	23.928	397.3	0.032	5.39	235.1	101.3	1.2	0.20	0.0	0.00	0.06	0.16	0.06	0.06	8 21
8	18.94	18.94	33.546	23.928	397.3	0.033												8 22
10 ISL	18.94 D	18.94	33.545 D	23.927	397.5	0.036	5.41	D236.0	D101.8	1.2	0.20	0.0	0.00	0.06	0.16	0.06	0.06	10
16 A	18.93	18.93	33.546	23.930	397.4	0.064	5.38	234.7	101.1	1.2	0.19	0.0	0.00	0.07	0.17	0.06	0.06	16 20
20 ISL	18.93 D	18.93	33.546 D	23.931	397.4	0.076	5.41	D236.0	D101.8	1.2	0.18	0.0	0.00	0.07	0.17	0.06	0.06	20
21 A	18.93	18.92	33.555	23.938	396.8	0.084	5.38	234.9	101.2	1.2	0.18	0.0	0.00	0.07	0.17	0.06	0.06	21 19
30 ISL	18.92 D	18.91	33.546 D	23.935	397.4	0.116	5.41	D235.9	D101.7	1.2	0.19	0.0	0.00	0.00	0.17	0.07	0.07	30
31	18.91	18.90	33.553	23.943	396.7	0.123	5.38	234.9	101.2	1.2	0.19	0.0	0.00	0.00	0.17	0.07	0.07	31 18
42 A	17.96	17.95	33.490	24.131	379.2	0.166	5.47	238.9	101.0	1.3	0.19	0.0	0.00	0.00	0.01	0.30	0.42	17
50 ISL	15.41 D	15.40	33.344 D	24.611	333.5	0.192	6.11	D266.4	D107.2	1.8	0.25	0.0	0.00	0.00	0.21	0.27	0.50	
56	14.82	14.81	33.329	24.728	322.5	0.214	6.05	264.3	104.9	2.1	0.29	0.0	0.00	0.00	0.36	0.24	0.56	15
56	14.82	14.81																56 16
71 A	13.11	13.10	33.351	25.099	287.4	0.260	5.31	232.0	88.9	4.7	0.57	3.8	0.20	0.00	0.33	0.26	0.26	72 14
75 ISL	12.94 D	12.93	33.384 D	25.157	282.0	0.269	5.14	D223.7 D	85.7	5.5	0.63	4.8	0.12	0.00	0.28	0.24	0.24	76
78	12.73	12.72	33.385	25.199	278.1	0.279	5.01	218.8	83.3	6.0	0.67	5.5	0.05	0.00	0.24	0.22	0.22	79 13
91 A	12.46	12.45	33.483	25.328	266.1	0.315	5.25	229.3	86.8	5.3	0.55	5.3	0.03	0.00	0.13	0.14	0.14	92 12
100 ISL	11.94 D	11.92	33.469 D	25.417	257.8	0.337	5.12	D222.8 D	83.6	6.6	0.65	7.1	0.03	0.00	0.11	0.12	0.12	101
106	11.74	11.73	33.500	25.477	252.2	0.353	5.03	219.5	81.8	7.4	0.72	8.3	0.03	0.00	0.09	0.11	0.11	107 11
121	11.18	11.17	33.529	25.603	240.5	0.390	4.98	217.6	80.2	8.2	0.77	9.4	0.00	0.00	0.07	0.09	0.09	122 10
125 ISL	11.26 D	11.25	33.536 D	25.594	241.5	0.399	4.98	D216.8 D	80.2	9.3	0.84	10.5	0.00	0.00	0.06	0.08	0.08	126
141	10.23	10.22	33.576	25.807	221.4	0.437	4.47	195.2	70.5	13.9	1.13	15.0	0.00	0.00	0.03	0.05	0.05	142 09
150 ISL	10.05 D	10.03	33.617 D	25.870	215.6	0.456	4.31	D187.5 D	67.6	15.6	1.21	16.3	0.00	0.00	0.02	0.04	0.04	151
171	9.32	9.30	33.717	26.069	197.0	0.500	4.02	175.4	62.1	19.6	1.41	19.5	0.00	0.00	0.01	0.03	0.03	172 08
200	8.76	8.74	33.881	26.286	176.7	0.554	3.62	157.9	55.3	26.8	1.65	23.6	0.00	0.00	0.00	0.00	0.03	202 07
231	8.14	8.12	33.954	26.439	162.6	0.607	3.02	131.6	45.5	33.3	1.91	27.0	0.00	0.00				233 06
250 ISL	7.92 D	7.89	33.998 D	26.507	156.4	0.636	2.62	D113.8 D	39.2	38.5	2.06	29.1	0.00	0.00				252
271	7.51	7.48	34.009	26.575	150.1	0.670	2.29	100.1	34.1	4.42	2.23	31.4	0.00	0.00				273 05
300 ISL	7.19 D	7.16	34.050 D	26.652	143.1	0.712	1.79	D 77.7 D	26.4	49.3	2.41	33.4	0.00	0.00				302
321	7.01	6.98	34.074	26.697	139.1	0.742	1.48	64.6	21.8	52.9	2.54	34.9	0.00	0.00				324 04
381	6.67	6.63	34.129	26.787	131.3	0.823	0.94	40.9	13.7	61.3	2.76	37.6	0.00	0.00				384 03
400 ISL	6.62 D	6.59	34.182 D	26.835	127.1	0.848	0.72	D 31.1 D	10.4	64.2	2.82	38.2	0.00	0.00				403
440	6.19	6.15	34.168	26.881	122.9	0.898	0.63	27.4	9.1	70.2	2.94	39.7	0.00	0.00				444 02
500 ISL	5.90 D	5.85	34.236 D	26.973	114.7	0.970	0.41	D 17.7 D	5.8	76.9	3.04	40.8	0.00	0.00				504
516	5.83	5.78	34.241	26.986	113.7	0.988	0.36	15.7	5.2	78.7	3.07	41.1	0.00	0.00				520 01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 90.0 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD			
31 5.1 N	122 39.7 W	13/11/2017	1145	UTC	4003 m	340 09 kn	340 09 kn	1	1020.3 mb	19.5 C	18.5 C	18.5 C	3/8	ST	020			
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C	THETA			ml/L	μmol/Kg	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	18.74	18.74	33.515	23.952	394.6	0.000	5.39	235.3	101.0	1.2	0.18	0.0	0.01	0.01	0.16	0.04	0.04	0
2	18.74	18.74	33.515	23.953	394.7	0.008	5.39	235.3	101.0	1.2	0.18	0.0	0.00	0.00	0.16	0.04	0.04	2 21
10	18.74	18.73	33.513	23.953	394.9	0.040	5.42	236.5	101.5	1.2	0.20	0.0	0.00	0.11	0.17	0.03	0.03	10 20
20 ISL	18.36 D	18.36	33.467 D	24.012	389.7	0.075	5.47	D238.7	D101.8	1.4	0.19	0.0	0.00	0.00	0.17	0.04	0.04	20
25	18.33	18.33	33.463	24.017	389.4	0.098	5.44	237.6	101.2	1.4	0.19	0.0	0.00	0.00	0.17	0.05	0.05	25 19
30 ISL	18.27 D	18.27	33.463 D	24.032	388.2	0.114	5.50	D239.7	D102.0	1.5	0.19	0.0	0.00	0.00	0.18	0.05	0.05	30
40	18.04	18.04	33.462	24.089	383.1	0.156	5.47	239.0	101.2	1.5	0.20	0.0	0.00	0.00	0.21	0.07	0.07	18 18
50	17.55	17.54	33.448	24.198	373.1	0.194	5.56	242.8	101.8	1.6	0.20	0.0	0.00	0.00	0.24	0.10	0.17	17 17
62	14.93	14.92	33.334	24.709	324.6	0.236	5.95	259.7	103.3	2.0	0.26	0.0	0.00	0.00	0.33	0.20	0.22	62 16
66	14.06	14.05	33.331	24.889	307.4	0.249				2.3	0.30	0.0	0.00	0.00	0.47	0.32	0.32	67 15
75	12.96	12.95	33.359	25.134	284.2	0.275	5.22	228.0	87.1	4.6	0.60	4.0	0.18	0.00	0.37	0.28	0.28	76 14
87	11.76	11.75	33.413	25.406	258.5	0.308	4.91	214.6	80.0	7.4	0.81	8.9	0.03	0.00	0.18	0.19	0.19	88 13
100	11.10	11.08	33.485	25.584	241.8	0.340	4.42											

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 90.0 110.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN mL/L	OXYGEN μmol/Kg	OXY PCT	WEA		BAROMETER 1021.4 mb	DRY 18.8 C	WET 17.1 C	SECCHI	CLD AMT	TYPE	ORD 019
										SI03*	P04*							
0	18.59	18.59	33.486	23.967	393.2	0.000	5.41	236.3	101.1	1.5	0.20	0.0	0.00	0.27	0.16	0.05	0	
2	18.59	18.59	33.486	23.967	393.2	0.008	5.41	236.3	101.1	1.5	0.20	0.0	0.00	0.27	0.16	0.05	2 20	
10	18.59	18.58	33.480	23.966	393.7	0.039	5.41	236.3	101.1	1.4	0.21	0.0	0.00	0.09	0.15	0.05	10 19	
20	ISL 18.44 D	18.44	33.477	D 24.000	390.9	0.075	5.46	D238.3	D101.8	1.6	0.20	0.0	0.00	0.00	0.20	0.07	20	
25	18.09	18.08	33.441	24.061	385.2	0.098	5.48	239.2	101.4	1.7	0.20	0.0	0.00	0.22	0.08	0.25	18	
30	ISL 18.00	18.00	33.435	D 24.076	384.0	0.114	5.51	D240.1	D101.7	1.7	0.20	0.0	0.00	0.00	0.22	0.07	30	
40	17.92	17.91	33.429	24.093	382.7	0.156	5.56	242.8	102.5	1.8	0.21	0.0	0.00	0.05	0.22	0.07	40 17	
50	17.67	17.66	33.439	24.163	376.4	0.194	5.51	240.4	101.0	1.8	0.21	0.0	0.00	0.00	0.29	0.12	50 16	
62	16.59	16.58	33.379	24.372	356.8	0.238	5.69	248.4	102.2	1.8	0.23	0.0	0.00	0.00	0.34	0.21	62 15	
75	15.93	15.92	33.424	24.558	339.5	0.283	5.84	254.8	103.5	2.1	0.23	0.0	0.00	0.12	0.33	0.25	76 14	
87	15.03	15.02	33.515	24.826	314.3	0.322	5.81	253.8	101.3	2.4	0.25	0.1	0.00	0.07	0.31	0.25	88 13	
100	14.15	14.13	33.516	25.016	296.4	0.362	5.71	249.3	97.7	2.9	0.30	0.8	0.12	0.09	0.23	0.21	101 12	
112	13.73	13.71	33.658	25.198	279.5	0.396	5.57	243.1	94.6	3.2	0.29	1.0	0.17	0.00	0.16	0.15	113 11	
125	12.83	12.82	33.580	25.333	266.8	0.432	5.42	236.4	90.3	4.2	0.42	3.4	0.03	0.00	0.11	0.12	126 10	
140	10.91	10.90	33.492	25.623	239.1	0.470	4.54	198.1	72.5	11.7	1.10	13.8	0.00	0.00	0.05	0.07	141 09	
150	ISL 10.65 D	10.63	33.596	D 25.752	227.0	0.492	4.62	D201.0	D 73.4	15.2	1.27	16.4	0.00	0.00	0.04	0.06	151	
170	9.25	9.23	33.694	26.063	197.5	0.536	3.60	157.3	55.6	22.1	1.60	21.5	0.00	0.00	0.01	0.03	171 08	
200	8.69	8.67	33.887	26.301	175.3	0.592	3.34	145.9	51.0	28.6	1.76	24.5	0.00	0.00	0.02	0.02	202 07	
230	8.36	8.33	33.973	26.421	164.3	0.643	2.71	118.4	41.1	34.5	2.02	27.6	0.00	0.00			232 06	
250	ISL 8.27 D	8.24	34.030	D 26.480	159.1	0.673	2.22	D 96.8	D 33.6	37.8	2.17	29.3	0.00	0.00			252	
271	8.07	8.04	34.072	26.543	153.5	0.708	1.91	83.2	28.7	41.2	2.33	31.0	0.00	0.00			273 05	
300	ISL 7.75 D	7.72	34.096	D 26.609	147.6	0.750	1.60	D 69.8	D 24.0	47.0	2.48	32.8	0.00	0.00			302	
320	7.53	7.50	34.126	26.664	142.6	0.781	1.26	54.8	18.7	50.9	2.58	34.1	0.00	0.00			323 04	
380	6.92	6.88	34.171	26.787	131.6	0.863	0.78	33.9	11.4	60.8	2.81	37.1	0.00	0.00			383 03	
400	ISL 6.75 D	6.71	34.192	D 26.826	128.0	0.889	0.70	D 30.3	D 10.2	63.5	2.86	37.8	0.00	0.00			403	
440	6.30	6.26	34.183	26.878	123.3	0.939	0.57	24.7	8.2	69.0	2.95	39.2	0.00	0.00			444 02	
500	ISL 5.92 D	5.88	34.238	D 26.971	115.0	1.011	0.39	D 17.1	D 5.7	76.8	3.06	40.3	0.00	0.00			504	
516	5.85	5.81	34.247	26.988	113.6	1.029	0.34	15.0	4.9	78.9	3.09	40.7	0.00	0.00			520 01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 90.0 120.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN mL/L	OXYGEN μmol/Kg	OXY PCT	WEA		BAROMETER 1018.7 mb	DRY 18.8 C	WET 17.2 C	SECCHI	CLD AMT	TYPE	ORD 6/8 ST 018
										SI03*	P04*							
0	18.78	18.78	33.400	23.856	403.8	0.000	5.44	237.6	102.0	1.8	0.19	0.0	0.02	0.05	0.13	0.03	0	
2	18.78	18.78	33.400	23.856	403.9	0.008	5.44	237.6	102.0	1.8	0.19	0.0	0.00	0.05	0.13	0.03	2 22	
10	18.76	18.76	33.392	23.855	404.3	0.040	5.42	236.7	101.6	1.8	0.19	0.0	0.00	0.13	0.03	10 20		
10	18.76	18.76	33.392	23.855	404.3	0.042											10 21	
20	ISL 18.68 D	18.67	33.398	D 23.882	402.1	0.077	5.46	D238.2	D102.2	1.8	0.19	0.0	0.00	0.00	0.16	0.03	20	
25	18.63	18.62	33.398	23.894	401.2	0.101	5.44	237.4	101.6	1.8	0.19	0.0	0.00	0.00	0.17	0.02	25 19	
30	ISL 18.53 D	18.52	33.406	D 23.925	398.4	0.118	5.49	D239.4	D102.4	1.8	0.19	0.0	0.00	0.00	0.19	0.05	30	
40	17.12	17.12	33.404	D 24.264	366.4	0.156	5.78	D251.9	D104.9								40 18	
50	15.91	15.90	33.377	24.524	341.8	0.195	5.89	257.2	104.4	2.0	0.21	0.0	0.00	0.00	0.26	0.15	50 17	
62	15.06	15.05	33.415	24.742	321.4	0.234	5.93	258.7	103.3	2.3	0.22	0.0	0.00	0.00	0.36	0.17	62 16	
75	14.24	14.23	33.388	24.897	307.0	0.275	5.75	251.1	98.6	2.7	0.30	0.8	0.09	0.00	0.34	0.19	76 14	
75	14.24	14.23	33.388	24.896	307.0	0.274											76 15	
87	13.23	13.22	33.364	25.085	289.2	0.311	5.59	244.1	93.8	3.4	0.40	2.3	0.14	0.00	0.21	0.16	88 13	
99	12.84	12.83	33.389	25.182	280.3	0.345	5.44	237.4	90.5	4.2	0.47	3.6	0.04	0.00	0.11	0.14	100 12	
100	ISL 12.69 D	12.68	33.381	D 25.206	278.1	0.346	5.45	D237.2	D 90.4	4.3	0.48	3.8	0.04	0.00	0.11	0.14	101	
112	12.01	12.00	33.400	25.350	264.5	0.380	5.28	230.3	86.3	5.4	0.57	5.5	0.03	0.00	0.08	0.11	113 11	
124	11.62	11.60	33.424	25.443	255.9	0.412	4.97	217.0	80.6	7.6	0.76	8.6	0.00	0.00	0.06	0.09	125 10	
125	ISL 11.36 D	11.34	33.440	D 25.503	250.2	0.413	4.79	D208.7	D 77.3	7.9	0.78	8.9	0.00	0.00	0.06	0.08	126	
140	10.71	10.69	33.494	25.661	235.4	0.451	4.50	196.6	71.7	12.2	1.08	13.6	0.00	0.00	0.04	0.05	141 09	
150	ISL 10.28 D	10.26	33.567	D 25.792	223.1	0.472	4.29	D186.7	D 67.7	15.1	1.24	16.0	0.00	0.00	0.03	0.04	151	
170	9.50	9.48	33.664	25.998	203.7	0.516	3.62	157.8	56.1	20.8	1.56	20.8	0.00	0.00	0.00	0.03	171 08	
200	8.98	8.95	33.854	26.231	182.0	0.574	3.15	137.6	48.4	27.6	1.80	24.4	0.00	0.06	0.00	0.02	202 07	
230	8.48	8.45	33.955	26.389	167.5	0.627	2.70	117.9	41.0	33.3	2.00	27.1	0.00	0.00			232 06	
250	ISL 8.21 D	8.19	33.996	D 26.462	160.8	0.659	2.49	D108.1	D 37.5	37.1	2.11	28.7	0.00	0.00			252	
271	7.87	7.84	34.027	26.537	153.9	0.693	2.16	94.1	32.3	41.0	2.23	30.3</td						

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAE0 μg/L	PRES db
0	18.33	18.33	33.460	24.013	388.8	0.000	5.67	247.5	105.4	2.1	0.22	0.7	0.00	0.42	0.95	0.21	0
2 A	18.33	18.33	33.460	24.013	388.9	0.008	5.67	247.5	105.4	2.1	0.22	0.7	0.00	0.42	0.95	0.21	2 09
10 A	17.73	17.73	33.443	24.147	376.4	0.038	5.80	253.3	106.6	1.9	0.26	0.2	0.00	0.85	0.76	0.20	10 07
10	17.73	17.73	33.442	24.147	376.4	0.037											10 08
13 A	16.75	16.75	33.405	24.350	357.1	0.049	5.92	258.2	106.6	1.9	0.26	0.2	0.00	0.25	0.59	0.17	13 06
20 ISL	15.01 D	15.01	33.353 D	24.701	323.9	0.070	5.79	D252.5	D100.9	3.5	0.37	0.5	0.00	0.13	0.88	0.32	20
25	14.51	14.51	33.347	24.805	314.1	0.088											24 05
25 A	14.23	14.23	33.347	24.864	308.5	0.089	5.44	D237.1	D93.2	4.6	0.45	0.8	0.09	0.05	1.10	0.43	25 04
30 ISL	13.67 D	13.66	33.369 D	24.998	295.9	0.101	5.14	D224.0	D87.1	6.8	0.71	4.7	0.19	0.21	0.69	0.38	30
33	13.13	13.13	33.390	25.123	284.0	0.113	4.54	198.0	76.0	8.2	0.87	7.1	0.24	0.30	0.45	0.35	33 03
42 A	12.33	12.32	33.460	25.334	264.1	0.138	3.97	173.3	65.4	11.3	1.16	11.6	0.03	0.13	0.22	0.22	42 02
50 ISL	12.30 D	12.29	33.461 D	25.341	263.8	0.156	3.99	D173.9 D	65.7	11.6	1.15	12.0	0.05	0.10	0.19	0.21	50
52 A	12.30	12.29	33.462	25.341	263.8	0.164	3.94	172.0	64.9	11.7	1.15	12.1	0.06	0.09	0.18	0.21	52 01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED 02;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 28.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAE0 μg/L	PRES db
0	19.32	19.32	33.524	23.813	407.8	0.000	5.60	244.3	106.1	1.4	0.16	0.2	0.02	0.04	0.84	0.14	0
2	19.32	19.32	33.524	23.814	407.9	0.008	5.60	244.3	106.1	1.4	0.16	0.2	0.00	0.00	0.84	0.14	2 20
10	19.30	19.30	33.525	23.819	407.7	0.041	5.61	244.8	106.3	1.1	0.16	0.0	0.00	0.10	0.80	0.19	10 19
20	17.57	17.57	33.422	24.170	374.6	0.080	5.77	251.4	105.6	2.1	0.26	0.0	0.00	0.59	0.22	20 18	
30	14.28	14.27	33.345	24.853	309.7	0.114	5.60	244.2	96.1	3.7	0.47	1.4	0.13	0.05	0.92	0.45	30 17
40	12.68	12.68	33.424	25.237	273.4	0.143	4.38	190.9	72.7	8.8	0.95	8.6	0.04	0.05	0.33	0.31	40 16
50	12.36	12.35	33.484	25.347	263.2	0.170	3.81	166.0	62.8	11.9	1.17	11.8	0.00	0.00	0.18	0.24	50 15
60	11.78	11.77	33.535	25.496	249.2	0.196	3.43	149.4	55.9	14.9	1.38	14.7	0.00	0.10	0.08	0.13	60 14
71	11.50	11.49	33.586	25.588	240.8	0.223	3.18	138.4	51.5	16.9	1.52	16.5	0.00	0.00	0.04	0.10	72 13
75 ISL	11.48 D	11.47	33.592 D	25.597	240.0	0.230	3.16	D137.8 D	51.2	17.3	1.55	17.0	0.00	0.00	0.04	0.10	76
86	11.31	11.30	33.641	25.665	233.8	0.258	2.88	125.3	46.5	18.7	1.65	18.2	0.00	0.07	0.03	0.09	87 12
100 ISL	11.07 D	11.06	33.692 D	25.749	226.1	0.288	2.74	D119.3 D	44.0	20.3	1.73	19.4	0.00	0.07	0.02	0.08	101
101	11.04	11.03	33.691	25.754	225.7	0.293	2.71	118.1	43.6	20.4	1.74	19.5	0.00	0.07	0.02	0.08	102 11
120	10.68	10.67	33.784	25.891	213.1	0.334	2.50	108.6	39.8	22.9	1.88	21.3	0.00	0.09	0.01	0.06	121 10
125 ISL	10.64 D	10.62	33.799 D	25.910	211.4	0.343	2.52	D109.6 D	40.1	23.3	1.90	21.6	0.00	0.08	0.01	0.06	126
140	10.50	10.48	33.850	25.975	205.6	0.376	2.36	102.9	37.5	24.5	1.97	22.5	0.00	0.05	0.01	0.05	141 09
150 ISL	10.18 D	10.16	33.832 D	26.016	201.8	0.395	2.49	D108.4 D	39.3	25.6	2.00	23.1	0.00	0.00	0.01	0.05	151
170	9.97	9.95	33.963	26.154	189.1	0.435	2.30	99.9	36.0	27.8	2.05	24.3	0.00	0.00	0.01	0.04	171 08
200	9.55	9.53	34.055	26.297	176.1	0.490	2.11	91.7	32.8	30.9	2.16	26.1	0.00	0.05	0.00	0.04	202 07
230	8.88	8.85	34.054	26.405	166.2	0.541	2.10	91.3	32.2	34.5	2.21	27.7	0.00	0.07		232 06	
250 ISL	8.67 D	8.64	34.103 D	26.476	159.8	0.575	1.86	D80.8 D	28.3	38.1	2.33	28.9	0.00			252	
271	8.35	8.33	34.161	26.570	151.1	0.607	1.48	64.2	22.4	41.8	2.46	30.2	0.00			273 05	
300 ISL	7.81 D	7.78	34.154 D	26.646	144.1	0.651	1.30	D56.4 D	19.4	47.1	2.58	32.0	0.00			302	
320	7.67	7.64	34.171	26.681	141.2	0.678	1.12	48.8	16.8	50.9	2.67	33.2	0.00			323 04	
380	7.47	7.43	34.286	26.802	130.7	0.759	0.57	24.8	8.5	58.3	2.91	34.6	0.00			383 03	
400 ISL	7.19 D	7.15	34.293 D	26.846	126.6	0.788	0.46	D20.2 D	6.9	61.9	2.96	35.4	0.00			403	
441	6.71	6.67	34.309	26.925	119.4	0.835	0.32	14.1	4.7	69.2	3.07	36.9	0.00	0.07		445 02	
500 ISL	6.27 D	6.23	34.328 D	26.998	112.9	0.909	0.25	D10.8 D	3.6	75.9	3.15	38.0	0.00	0.24		504	
516	6.18	6.14	34.334	27.015	111.5	0.922	0.23	9.8	3.3	77.7	3.17	38.4	0.00	0.28		520 01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED 02;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 30.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAE0 μg/L	PRES db
0	18.79	18.79	33.517	23.941	395.7	0.000	5.53	241.5	103.8	1.8	0.17	0.0	0.05	0.32	0.25	0.06	0
2	18.79	18.78	33.517	23.941	395.7	0.008	5.53	241.5	103.8	1.8	0.17	0.0	0.00	0.32	0.25	0.06	2 20
10	18.78	18.78	33.515	23.944	395.8	0.040	5.51	240.3	103.3	1.8	0.18	0.1	0.00	0.24	0.07	10 19	
20	16.14	16.14	33.395	24.483	344.8	0.077	5.84	254.9	104.0	2.1	0.25	0.0	0.00	0.09	0.50	0.23	20 18
30	14.28	14.27	33.366	24.869	308.2	0.109	5.15	224.7	88.3	5.3	0.53	2.0	0.24	0.12	1.00	0.47	30 17
40	13.71	13.70	33.387	25.005	295.6	0.139	4.64	202.7	78.7	7.3	0.75	5.3	0.19	0.16	0.47	30 16	
50	12.78	12.78	33.415	25.211	276.1	0.168	4.29	187.4	71.4	9.2	0.95	8.7	0.16	0.12	0.25	50 15	
60	12.46	12.45	33.452	25.304	267.6	0.195	4.00	174.7	66.1	10.8	1.06	10.7	0.04	0.05	0.18	0.17	60 14
71	12.07	12.06	33.480	25.400	258.7	0.224	3.80										

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 35.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03* μM	PO4* μM	NO3* μM	NO2* μM	NH4* μM	CHL-A μg/L	PHAE0 μg/L	PRES db	STATION	93.3	35.0
																		006		
0	18.73	18.73	33.562	23.992	390.8	0.000	5.42	236.6	101.6	0.6	0.13	0.0	0.02	0.16	0.20	0.06	0			
2	18.73	18.73	33.562	23.992	390.9	0.008	5.42	236.6	101.6	0.6	0.13	0.0	0.00	0.16	0.20	0.06	2	20		
10 ISL	18.72	D 18.72	33.557 D 23.990	391.4	0.036	5.46	D238.0	D102.3	0.7	0.14	0.0	0.00	0.31	0.19	0.05	10				
11	18.72	18.72	33.559	23.993	391.2	0.043	5.41	236.1	101.4	0.8	0.14	0.0	0.03	0.33	0.19	0.05	11	19		
20 ISL	17.97	D 17.96	33.494 D 24.130	378.4	0.074	5.58	D243.5	D103.1	0.9	0.18	0.0	0.00	0.23	0.05	0.05	20				
21	17.73	17.73	33.474	24.171	374.6	0.082	5.58	243.4	102.5	0.9	0.18	0.0	0.00	0.00	0.23	0.06	21	18		
30 ISL	16.43	D 16.42	33.397 D 24.420	351.1	0.111	5.79	D252.6	D103.8	1.4	0.23	0.0	0.00	0.41	0.10	0.10	30				
31	15.78	15.77	33.392	24.564	337.4	0.118	5.75	251.0	101.6	1.4	0.23	0.0	0.00	0.43	0.11	0.11	31	17		
41	13.87	13.87	33.348	24.940	301.8	0.150	5.47	238.8	93.0	3.4	0.48	2.0	0.21	0.05	0.63	0.25	41	16		
50 ISL	13.10	D 13.09	33.362 D 25.108	285.9	0.173	5.07	D221.0	D84.9	5.3	0.68	5.1	0.26	0.21	0.45	0.24	50				
51	13.03	13.02	33.366	25.125	284.4	0.179	5.02	219.1	83.9	5.6	0.70	5.5	0.27	0.23	0.43	0.24	51	15		
61	12.11	12.10	33.399	25.329	265.1	0.206	4.56	198.8	74.7	8.1	0.93	9.3	0.10	0.07	0.34	0.17	61	14		
71	11.41	11.40	33.443	25.493	249.7	0.232	4.75	207.2	76.7	8.8	0.91	10.1	0.04	0.09	0.11	0.13	72	13		
75 ISL	11.22	D 11.21	33.475 D 25.553	244.1	0.240	4.56	D198.4	D73.3	10.8	1.06	12.2	0.00	0.00	0.10	0.12	76				
85	10.67	10.66	33.551	25.710	229.4	0.266	3.68	160.6	58.5	16.0	1.45	17.4	0.00	0.00	0.07	0.11	86	12		
100	10.09	10.07	33.639	25.879	213.5	0.299	3.37	147.0	52.9	19.8	1.62	20.3	0.00	0.00	0.04	0.07	101	11		
121	9.54	9.52	33.745	26.054	197.3	0.342	3.07	134.0	47.7	23.3	1.78	22.5	0.00	0.00	0.01	0.05	122	10		
125 ISL	9.47	D 9.45	33.771 D 26.086	194.4	0.348	3.08	D134.2	D47.9	24.1	1.81	22.9	0.00	0.00	0.01	0.05	126				
141	9.25	9.24	33.835	26.171	186.6	0.380	2.76	120.6	42.7	27.1	1.91	24.4	0.00	0.00	0.01	0.04	142	09		
150 ISL	9.18	D 9.17	33.870 D 26.210	183.1	0.395	2.71	D117.9	D41.8	28.5	1.96	25.0	0.00	0.00	0.01	0.04	151				
171	8.87	8.85	33.950	26.323	172.7	0.434	2.40	104.9	36.8	31.7	2.06	26.5	0.00	0.00	0.00	0.03	172	08		
200 ISL	8.69	D 8.67	34.007 D 26.395	166.4	0.483	2.27	D98.6	D34.6	34.2	2.15	27.6	0.00	0.00	0.00	0.03	202				
201	8.67	8.65	34.004	26.396	166.3	0.485	2.21	96.5	33.8	34.3	2.15	27.6	0.03	0.12	0.00	0.03	203	07		
231	8.45	8.42	34.083	26.494	157.6	0.534	1.82	79.6	27.7	38.3	2.30	29.1	0.00	0.00		0.00	233	06		
250 ISL	8.45	D 8.42	34.182 D 26.572	150.6	0.562	1.41	D16.3	D21.4	42.5	2.43	30.2	0.00	0.00		0.00	252				
271	7.92	7.89	34.202	26.667	141.7	0.594	1.11	48.4	16.7	47.2	2.58	31.5	0.03	0.07		0.07	273	05		
300 ISL	7.86	D 7.83	34.231 D 26.700	139.1	0.634	0.93	D 40.4	D 13.9	50.1	2.67	32.2	0.00	0.00		0.00	302				
321	7.81	7.77	34.267	26.736	136.1	0.664	0.74	32.2	11.1	52.3	2.74	32.7	0.00	0.00		0.00	324	04		
382	7.23	7.19	34.283	26.832	127.6	0.744	0.53	22.9	7.8	59.1	2.89	35.0	0.00	0.00		0.00	385	03		
400 ISL	7.17	D 7.13	34.283 D 26.841	127.0	0.768	0.50	D 21.9	D 7.4	60.4	2.91	35.3	0.00	0.00		0.00	403				
442	6.95	6.91	34.296	26.882	123.7	0.820	0.43	18.6	6.3	63.3	2.95	35.9	0.03	0.00		0.00	446	02		
500 ISL	6.54	D 6.50	34.310 D 26.949	117.9	0.892	0.34	D 14.6	D 4.9	70.0	3.04	37.3	0.00	0.00		0.00	504				
518	6.40	6.35	34.316	26.973	115.7	0.911	0.29	12.8	4.2	72.0	3.07	37.8	0.00	0.00		0.00	522	01		

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 40.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SI03* μM	PO4* μM	NO3* μM	NO2* μM	NH4* μM	CHL-A μg/L	PHAE0 μg/L	PRES db	STATION	93.3	40.0
																		007		
0	19.65	19.65	33.714	23.875	402.0	0.000	5.39	235.4	103.0	0.6	0.16	0.0	0.02	0.01	0.32	0.08	0			
2	19.65	19.64	33.714	23.875	402.1	0.008	5.39	235.4	103.0	0.6	0.16	0.0	0.00	0.00	0.32	0.08	2	21		
10 ISL	19.65	D 19.65	33.715 D 23.876	402.3	0.037	5.44	D237.2	D103.8	1.2	0.17	0.1	0.00	0.00	0.33	0.08	10				
11	19.65	19.65	33.714	23.875	402.4	0.044	5.40	235.6	103.0	1.3	0.17	0.2	0.07	0.00	0.33	0.07	11	19		
11	19.65	19.65	33.717	23.877	402.2	0.045												11	20	
20	19.64	19.64	33.721	23.883	402.1	0.080	5.40	235.8	103.1	0.5	0.16	0.0	0.00	0.00	0.32	0.08	20	18		
30	17.13	17.12	33.648	24.451	348.2	0.118	5.73	250.1	104.2	0.4	0.19	0.0	0.00	0.05	0.55	0.07	30	17		
41	12.22	D 12.22	33.520	25.400	257.9	0.151	4.44	194.0	73.1	8.8	1.10	11.7	0.26	0.08	0.52	0.42	41	16		
50 ISL	11.12	D 11.11	33.577 D 25.650	234.3	0.172	3.71	D161.7	D 59.7	15.0	1.42	17.1	0.08	0.00	0.30	0.37	50				
51	10.95	10.94	33.574	25.676	231.7	0.176	3.68	160.6	58.9	15.7	1.46	17.7	0.06	0.00	0.28	0.37	51	15		
61	10.19	10.18	33.627	25.851	215.3	0.198	3.41	148.9	53.7	19.7	1.62	20.3	0.03	0.10	0.08	0.14	61	14		
71	9.91	9.90	33.697	25.953	205.8	0.219	3.14	137.3	49.2	22.3	1.75	22.1	0.03	0.25	0.06	0.11	72	13		
75 ISL	9.86	D 9.85	33.712 D 25.974	203.9	0.226	3.16	D137.4	D 49.4	23.2	1.78	22.6	0.00	0.00	0.05	0.10	76				
86	9.54	9.53	33.780	26.079	194.2	0.249	2.88	125.7	44.8	25.8	1.87	23.9	0.00	0.00	0.03	0.07	87	12		
100 ISL	9.22	D 9.21	33.863 D 26.197	183.2	0.274	2.70	D117.3	D 41.6	28.3	1.96	25.2	0.00	0.00	0.02	0.07	101				
101	9.24	9.23	33.865	26.195	183.5	0.278	2.67	116.4	41.2	28.5	1.97	25.3	0.00	0.00	0.02	0.07	102	11		
121	9.13	9.12	33.885	26.229	180.6	0.314	2.61	113.9	40.2	29.3	2.01	25.8	0.00							

RV SALLY RIDE

## CALCOFI CRUISE 1711

STATION 93.3 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD		
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN	HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA		ml/L	μmol/Kg	oxy	oxy	oxy	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	18.93	18.93	33.585	23.959	394.0	0.000	5.45	238.1	102.6	1.1	0.16	0.0	0.02	0.00	0.21	0.07	0		
2 A	18.93	18.93	33.585	23.959	394.0	0.008	5.45	238.1	102.6	1.1	0.16	0.0	0.00	0.00	0.21	0.07	2	24	
9	18.92	18.92	33.584	23.960	394.2	0.036	5.44	237.6	102.4	0.8	0.16	0.0	0.00	0.00	0.21	0.07	9	22	
9	18.92	18.92	33.585	23.961	394.1	0.035											9	23	
10 ISL	18.92 D	18.92	33.584	D 23.961	394.2	0.036	5.49	D239.3	D103.2	0.8	0.16	0.0	0.00	0.00	0.21	0.07	10		
15 A	18.92	18.91	33.584	23.963	394.2	0.059	5.44	237.4	102.3	0.6	0.15	0.0	0.00	0.00	0.22	0.08	15	21	
19 A	18.84	18.84	33.583	23.982	392.5	0.075	5.44	237.6	102.2	0.5	0.16	0.0	0.00	0.00	0.24	0.06	19		
20 ISL	17.73 D	17.72	33.480	D 24.177	373.9	0.075	5.71	D249.1	D105.0	0.7	0.18	0.0	0.00	0.00	0.27	0.09	20		
28	14.91	14.91	33.351	24.722	322.1	0.106	5.94	259.5	103.2	2.1	0.32	0.0	0.00	0.00	0.48	0.26	28	19	
30 ISL	14.39 D	14.39	33.347	D 24.831	311.9	0.110	5.82	D253.8	D100.1	2.7	0.39	0.8	0.00	0.00	0.55	0.29	30		
37 A	13.33	13.33	33.358	25.057	290.4	0.134	5.18	225.9	87.0	5.0	0.63	3.7	0.21	0.00	0.77	0.40	37	18	
46	12.53	12.52	33.380	25.234	273.8	0.159	4.71	205.4	77.8	7.3	0.85	7.9	0.09	0.17	0.43	0.36	46	17	
50 ISL	12.37 D	12.36	33.389	D 25.271	270.4	0.168	4.68	D203.9	D77.2	7.7	0.89	8.4	0.07	0.00	0.39	0.33	50		
55	12.20	12.19	33.397	25.311	266.8	0.183	4.57	199.6	75.1	8.2	0.93	9.2	0.05	0.00	0.35	0.30	55	16	
64 A	11.75	11.74	33.428	25.419	256.7	0.207	4.38	191.1	71.2	10.2	1.08	11.8	0.04	0.00	0.23	0.23	65	15	
73	11.19	11.18	33.477	25.560	243.4	0.229	4.01	174.9	64.4	13.1	1.27	14.5	0.03	0.05	0.14	0.18	74	14	
75 ISL	11.10 D	11.09	33.493	D 25.588	240.8	0.232	3.94	D171.7	D63.3	13.8	1.31	15.1	0.00	0.00	0.13	0.17	76		
81 A	10.69	10.68	33.534	25.692	231.0	0.248	3.73	162.7	59.3	15.7	1.42	17.0	0.00	0.00	0.08	0.15	82	13	
91	10.34	10.33	33.594	25.800	220.9	0.271	3.49	152.4	55.2	18.5	1.56	19.1	0.03	0.00	0.04	0.09	92	12	
100 ISL	9.87 D	9.85	33.689	D 25.955	206.3	0.288	3.26	D142.0	D51.0	21.8	1.71	21.4	0.00	0.00	0.02	0.06	101		
101	9.82	9.81	33.697	25.968	205.1	0.292	3.18	138.9	49.7	22.2	1.73	21.7	0.00	0.00	0.01	0.06	102	11	
121	9.52	9.51	33.810	26.107	192.3	0.332	2.84	124.1	44.2	25.6	1.88	23.6	0.00	0.00	0.04	0.04	122	10	
125 ISL	9.46 D	9.45	33.854	D 26.151	188.2	0.338	2.78	D121.0	D43.1	26.5	1.92	23.9	0.00	0.00	0.04	0.04	126		
140	9.48	9.46	33.977	26.246	179.5	0.367	2.33	101.5	36.1	29.6	2.07	25.1	0.00	0.00	0.04	0.04	141	9	
150 ISL	9.47 D	9.46	34.026	D 26.285	176.1	0.384	2.20	D 95.7	D 34.2	30.7	2.12	25.5	0.00	0.00	0.04	0.04	151		
171	9.35	9.34	34.091	26.356	169.8	0.421	1.92	83.8	29.8	33.1	2.22	26.5	0.00	0.00	0.00	0.04	172	8	
200	9.11	9.09	34.156	26.447	161.7	0.470	1.61	70.3	24.8	36.8	2.35	27.9	0.00	0.00	0.00	0.04	202	7	
231	8.74	8.71	34.171	26.518	155.5	0.519	1.47	64.0	22.4	40.2	2.42	29.3	0.00	0.00		233	6		
250 ISL	8.59 D	8.56	34.191	D 26.558	152.0	0.548	1.34	D 58.4	D 20.5	42.6	2.48	30.1	0.00	0.00		252			
271	8.17	8.15	34.181	26.613	146.9	0.580	1.27	55.4	19.2	45.2	2.54	31.1	0.00	0.00		273	5		
300 ISL	8.02 D	7.99	34.206	D 26.656	143.4	0.622	1.06	D 46.1	D 16.0	49.4	2.65	32.2	0.00	0.00		302			
320	7.77	7.74	34.234	26.716	137.9	0.650	0.85	36.9	12.7	52.2	2.73	33.0	0.00	0.00		323	4		
380	7.17	7.13	34.274	26.834	127.4	0.729	0.53	23.1	7.8	61.0	2.91	35.4	0.00	0.00		383	3		
400 ISL	6.97 D	6.93	34.277	D 26.864	124.7	0.756	0.49	D 21.1	D 7.1	63.1	2.94	35.9	0.00	0.00		403			
441	6.72	6.68	34.282	26.902	121.5	0.805	0.41	17.9	6.0	67.4	3.01	37.0	0.00	0.00		445	2		
500 ISL	6.37 D	6.32	34.293	D 26.959	116.7	0.877	0.34	D 15.0	D 5.0	73.3	3.08	38.3	0.00	0.00		504			
517	6.30	6.26	34.301	26.974	115.5	0.895	0.31	13.5	4.5	75.0	3.10	38.6	0.00	0.00		521	1		

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

## CALCOFI CRUISE 1711

STATION 93.3 50.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD		
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN	HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA		ml/L	μmol/Kg	oxy	oxy	oxy	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	18.31	18.31	33.535	24.075	382.9	0.000	5.50	240.2	102.3	1.4	0.19	0.0	0.02	0.19	0.18	0.07	0		
2	18.31	18.31	33.535	24.075	382.9	0.008	5.50	240.2	102.3	1.4	0.19	0.0	0.00	0.19	0.18	0.07	2	20	
10 ISL	17.65 D	17.65	33.501	D 24.210	370.4	0.034	5.60	D244.3	D102.8	1.4	0.22	0.0	0.00	0.00	0.23	0.09	10		
11	17.41	17.41	33.477	24.249	366.7	0.042	5.62	245.2	102.6	1.4	0.22	0.0	0.00	0.00	0.23	0.09	11	19	
20 ISL	17.14 D	17.13	33.447	D 24.292	362.9	0.071	5.67	D247.4	D103.1	1.5	0.24	0.0	0.00	0.00	0.29	0.12	20		
21	17.11	17.11	33.452	24.303	361.9	0.078	5.65	246.7	102.6	1.5	0.24	0.0	0.00	0.00	0.30	0.13	21	18	
30 ISL	15.97 D	15.96	33.396	D 24.524	341.1	0.107	5.78	D252.1	D102.6	2.3	0.28	0.2	0.00	0.00	0.70	0.30	30		
31	15.85	15.85	33.394	24.549	338.8	0.113	5.74	250.4	101.5	2.3	0.28	0.2	0.04	0.00	0.74	0.32	31	17	
41	14.18	14.18	33.320	24.854	310.0	0.145	5.76	251.4	98.5	3.2	0.40	1.6	0.10	0.10	0.75	0.36	41	16	
50 ISL	13.18 D	13.17	33.332	D 25.070	289.6	0.170	5.37	D233.9	D 90.0	5.4	0.63	4.9	0.19	0.08	0.52	0.53	50		
51	13.04	13.03	33.333	25.097	287.0	0.175	5.27	229.9	88.0	5.6	0.66	5.2	0.20	0.08	0.49	0.55	51	15	
61	12.28	12.27	33.407	25.302	267.7	0.203	4.77	208.1	78.5	8.0	0.90	8.8	0.16	0.00	0.37	0.27	61	14	
72	11.76	11.75	33.453	25.436	255.2	0.232	4.27	186.5	69.5	11.2	1.14	12.3	0.07	0.00	0.24A	0.21A	73	13	
75 ISL	11.72 D	11.71	33.447	D 25.440	254.9	0.238	4.30	D187.3	D 70.0	11.7	1.17	12.7	0.07	0.00	0.22	0.20	76		
86	11.22	11.21	33.500	25.572	242.6	0.267	4.09	178.6	65.9	13.2	1.26	14.3	0.05	0.00</td					

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 55.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	WEA		BAROMETER 1015.4 mb	DRY 17.5 C	WET 16.2 C	SECCHI	CLD AMT	TYPE	ORD 010
										SI03*	P04*							
0	17.53	17.53	33.468	24.215	369.6	0.000	5.57	243.0	101.9	1.2	0.22	0.0	0.02	0.15	0.24	0.07	0	
2	17.53	17.53	33.468	24.215	369.6	0.007	5.57	243.0	101.9	1.2	0.22	0.0	0.00	0.15	0.24	0.07	2 21	
10	17.53	17.53	33.468	24.215	370.0	0.037	5.56	242.6	101.7	1.2	0.22	0.0	0.00	0.25	0.22	0.07	10 19	
10	17.53	17.53	33.468	24.215	370.0	0.038											10 20	
20	17.53	17.53	33.467	24.214	370.4	0.074	5.56	242.5	101.7	1.1	0.22	0.0	0.00	0.12	0.25	0.06	20 18	
30	17.41	17.40	33.461	24.240	368.3	0.111	5.59	244.0	102.1	1.2	0.22	0.0	0.00	0.09	0.27	0.09	30 17	
40	16.70	16.70	33.419	24.375	355.8	0.147	5.67	247.5	102.1	1.4	0.23	0.0	0.00	0.10	0.47	0.15	40 16	
50	14.09	14.09	33.351	24.897	306.1	0.180	5.88	256.9	100.5	2.6	0.28	0.0	0.03	0.05	0.68	0.36	50 15	
60	13.59	13.58	33.490	25.109	286.2	0.210	5.64	246.0	95.3	3.4	0.34	1.4	0.22	0.06	0.34	0.33	60 14	
70	12.65	12.64	33.445	25.262	271.8	0.238	5.47	238.8	90.7	4.6	0.48	3.7	0.13	0.00	0.21	0.21	71 13	
75 ISL	12.23 D	12.22	33.482 D	25.372	261.5	0.249	5.28	D230.1 D	86.9	6.2	0.62	5.8	0.09	0.00	0.18	0.19	76	
85	11.79	11.78	33.485	25.457	253.6	0.277	4.62	201.6	75.2	9.6	0.90	10.1	0.03	0.00	0.12	0.15	86 12	
100	10.74	10.73	33.499	25.656	234.8	0.314	4.15	181.0	66.0	13.2	1.18	14.1	0.03	0.16	0.09	0.13	101 11	
120	9.74	9.72	33.617	25.921	209.9	0.358	3.82	166.9	59.6	18.8	1.46	19.4	0.00	0.08	0.02	0.05	121 10	
125 ISL	9.72 D	9.70	33.671 D	25.967	205.7	0.367	3.70	D161.0 D	57.7	20.5	1.54	20.4	0.00	0.07	0.02	0.04	126	
139	9.31	9.30	33.793	26.128	190.6	0.396	3.17	138.5	49.1	25.5	1.76	23.4	0.00	0.05	0.01	0.03	140 09	
150 ISL	9.10 D	9.08	33.884 D	26.234	180.7	0.415	3.10	D135.0 D	47.8	27.1	1.82	24.2	0.00	0.07	0.00	0.03	151	
170	9.08	9.06	33.935	26.278	177.0	0.453	2.70	117.6	41.5	29.9	1.93	25.6	0.03	0.10	0.00	0.04	171 08	
200	8.79	8.77	34.059	26.421	164.0	0.504	2.18	95.1	33.3	34.7	2.13	27.7	0.00	0.00	0.00	0.02	202 07	
230	8.20	8.18	34.056	26.510	155.9	0.552	1.99	87.0	30.1	39.4	2.25	29.8	0.00	0.00			232 06	
250 ISL	8.01 D	7.99	34.087 D	26.563	151.2	0.582	1.71	D 74.6 D	25.8	43.1	2.39	31.0	0.00	0.00			252	
270	8.04	8.02	34.177	26.629	145.3	0.612	1.25	54.7	18.9	46.9	2.53	32.1	0.00	0.00			272 05	
300 ISL	8.13 D	8.10	34.287 D	26.703	139.0	0.655	0.77	D 33.6 D	11.7	50.1	2.65	33.0	0.00	0.00			302	
321	7.74	7.70	34.279	26.756	134.1	0.684	0.72	31.2	10.7	52.4	2.74	33.6	0.00	0.00			324 04	
380	6.94	6.90	34.251	26.848	125.9	0.761	0.55	23.9	8.0	63.1	2.90	36.8	0.00	0.00			383 03	
400 ISL	6.76 D	6.73	34.257 D	26.876	123.3	0.787	0.49	D 21.4 D	7.2	65.7	2.94	37.3	0.00	0.00			403	
441	6.50	6.46	34.286	26.934	118.3	0.835	0.37	16.0	5.3	71.1	3.03	38.3	0.00	0.00			445 02	
500 ISL	6.27 D	6.23	34.301 D	26.977	114.9	0.907	0.32	D 14.0 D	4.7	75.6	3.09	39.1	0.00	0.00			504	
516	6.17	6.13	34.311	26.998	113.0	0.922	0.27	11.8	3.9	76.8	3.10	39.3	0.00	0.00			520 01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED 02;

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	WEA		BAROMETER 1016.5 mb	DRY 17.9 C	WET 16.0 C	SECCHI	CLD AMT	TYPE	ORD 011
										SI03*	P04*							
0	19.11	19.11	33.579	23.908	398.8	0.000	5.37	234.3	101.4	1.2	0.21	0.2	0.02	0.22	0.16	0.04	0	
2	19.11	19.11	33.579	23.908	398.9	0.008	5.37	234.3	101.4	1.2	0.21	0.2	0.00	0.22	0.16	0.04	2 20	
10	19.11	19.11	33.571	23.903	399.7	0.040	5.38	234.7	101.5	0.9	0.19	0.0	0.00	0.00	0.16	0.04	10 19	
20	18.14	18.13	33.474	24.073	383.8	0.079	5.58	243.7	103.4	0.9	0.25	0.0	0.00	0.27	0.22	0.07	20 18	
30	17.09	17.08	33.407	24.275	365.0	0.117	5.69	248.5	103.3	1.0	0.24	0.0	0.00	0.00	0.35	0.19	30 17	
40	15.17	15.17	33.340	24.658	328.7	0.148	5.88	D256.2	D102.7	1.4	0.24	0.0	0.00				40 16	
50	13.94	13.94	33.323	24.906	305.3	0.183	5.58	243.7	95.1	3.6	0.46	1.8	0.17	0.00	0.64	0.43	50 15	
61	12.76	12.75	33.367	25.179	279.5	0.213	4.94	D215.0 D	82.0								61 14	
70	12.36	12.35	33.386	25.272	270.9	0.240	4.79	209.1	78.9	7.2	0.77	6.8	0.08	0.00	0.25	0.27	71 13	
75 ISL	12.17 D	12.16	33.410 D	25.327	265.7	0.251	4.55	D198.3 D	74.7	8.8	0.90	9.2	0.07	0.00	0.21	0.24	76	
85	11.42	11.41	33.458	25.504	249.1	0.279	4.15	181.0	67.0	12.0	1.17	13.8	0.03	0.00	0.12	0.17	86 12	
100 ISL	10.55 D	10.54	33.562 D	25.739	226.9	0.313	3.75	D163.1 D	59.5	15.8	1.39	17.4	0.03	0.00	0.06	0.10	101	
101	10.53	10.51	33.548	25.733	227.5	0.317	3.77	164.5	59.8	16.1	1.40	17.6	0.03	0.00	0.06	0.09	102 11	
120	9.74	9.72	33.697	25.983	204.1	0.358	3.31	144.4	51.6	21.8	1.67	21.7	0.00	0.00	0.01	0.05	121 10	
125 ISL	9.75 D	9.73	33.708 D	25.991	203.5	0.367	3.32	D144.3 D	51.7	22.7	1.70	22.2	0.00	0.00	0.01	0.04	126	
140	9.29	9.27	33.803	26.140	189.5	0.398	3.05	132.9	47.1	25.3	1.80	23.8	0.00	0.00	0.00	0.03	141 09	
150 ISL	9.22 D	9.20	33.857 D	26.194	184.6	0.415	2.96	D128.8 D	45.7	27.2	1.85	24.6	0.00	0.00	0.00	0.03	151	
170	8.81	8.79	33.949	26.331	171.9	0.452	2.72	118.9	41.7	30.9	1.96	26.2	0.00	0.00	0.00	0.03	171 08	
200	8.50	8.48	34.049	26.458	160.3	0.502	2.08	90.6	31.6	36.5	2.20	28.9	0.00	0.00	0.00	0.03	202 07	
231	8.31	8.28	34.101	26.529	154.2	0.551	1.74	76.0	26.4	40.5	2.34	30.6	0.00	0.00			233 06	
250 ISL	8.25 D	8.22	34.110 D	26.546	152.9	0.580	1.65	D 72.0 D	25.0	42.0	2.39	31.0	0.00	0.00			252	
270	8.13	8.10	34.141	26.589	149.2	0.610	1.45	63.4	21.9	43.6	2.45	31.4	0.00	0.00			272 05	
300 ISL	7.89 D	7.86	34.165 D	26.643	144.5	0.654	1.24	D 53.9 D	18.6	47.9	2.56	32.8	0.00	0.00			302	
320	7.75	7.72	34.192	26.686	140.7	0.682	1.03	44.9	15.4	50.8	2.64	33.7	0.00	0.00			323 04	
380	7.26	7.22	34.235	26.790	131.6	0.764	0.68											

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD			
31 30.9 N	120 14.5 W	11/11/2017	1253	UTC	3923 m	360 15 kn			1016.6 mb	19.0 C	17.0 C					012		
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA		ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	18.42	18.42	33.491	24.014	388.7	0.000	5.49	239.5	102.2	1.4	0.19	0.2	0.03	0.03	0.23	0.05	0	
2	18.42	18.42	33.491	24.014	388.8	0.008	5.49	239.5	102.2	1.4	0.19	0.2	0.03	0.00	0.23	0.05	2	
10	18.41	18.41	33.491	24.018	388.7	0.039	5.45	237.7	101.4	0.7	0.17	0.0	0.00	0.00	0.23	0.05	10	
20	ISL	18.40 D	18.40	33.491 D	24.020	388.9	0.074	5.50	D239.7 D102.3	0.7	0.17	0.0	0.00	0.00	0.23	0.06	20	
26	18.30	18.29	33.477	24.036	387.6	0.101	5.48	239.3	101.9	0.7	0.17	0.0	0.00	0.00	0.23	0.07	26	
30	ISL	18.15	18.14	33.470 D	24.069	384.7	0.113	5.55	D242.1 D102.8	0.7	0.17	0.0	0.00	0.00	0.23	0.07	30	
40	17.54	17.53	33.476	24.222	370.5	0.154	5.48	239.3	100.3	0.7	0.17	0.0	0.00	0.00	0.22	0.06	40	
50	15.41	15.40	33.336	24.604	334.2	0.189	5.98	261.0	104.9	1.5	0.22	0.0	0.00	0.00	0.46	0.21	50	
62	13.80	13.79	33.333	24.945	301.9	0.228	5.88	256.9	99.9	2.5	0.30	0.4	0.05	0.00	0.51	0.30	62	
75	ISL	12.74 D	12.73	33.444 D	25.244	273.7	0.263	5.37	D234.0 D 89.3	4.1	0.46	3.4	0.07	0.00	0.26	0.23	76	
76	12.64	12.63	33.447	25.265	271.8	0.268	5.39	235.2	89.4	4.3	0.47	3.7	0.07	0.00	0.24	0.23	77	
87	11.81	11.80	33.424	25.406	258.5	0.297	4.89	213.4	79.7	7.4	0.78	8.4	0.05	0.08	0.15	0.15	88	
100	10.88	10.87	33.518	25.647	235.7	0.329	4.55	198.5	72.7	11.1	1.02	12.6	0.00	0.00	0.09	0.07	101	
112	10.20	10.18	33.542	25.785	222.8	0.357	4.04	176.5	63.6	15.6	1.32	17.0	0.00	0.00	0.04	0.06	113	
125	9.85	9.84	33.618	25.903	211.8	0.385	3.69	161.1	57.7	19.1	1.51	19.7	0.00	0.00	0.02	0.03	126	
140	9.31	9.30	33.731	26.080	195.2	0.415	3.33	145.4	51.5	23.1	1.69	22.6	0.00	0.00	0.01	0.02	141	
150	ISL	9.11 D	9.09	33.794 D	26.163	187.5	0.433	3.32	D144.4 D 51.1	24.9	1.74	23.3	0.00	0.00	0.01	0.02	151	
171	8.79	8.77	33.888	26.287	176.0	0.473	3.10	135.2	47.4	28.7	1.83	24.9	0.00	0.00	0.00	0.02	172	
200	ISL	8.63 D	8.61	34.020 D	26.416	164.4	0.521	2.45	D106.5 D 37.3	33.8	2.06	27.2	0.00	0.00	0.00	0.02	202	
201	8.48	8.46	34.017	26.437	162.3	0.524	2.43	105.9	36.9	34.0	2.07	27.3	0.00	0.06	0.00	0.02	203	
230	8.31	8.28	34.099	26.528	154.3	0.570	1.83	79.7	27.7	39.5	2.29	29.3	0.00	0.09		232	06	
250	ISL	7.85 D	7.83	34.072 D	26.574	150.0	0.599	1.85	D 80.7 D 27.8	43.0	2.43	30.4	0.00	0.00		252		
270	7.99	7.96	34.175	26.636	144.6	0.629	1.26	54.9	18.9	46.6	2.56	31.4	0.00	0.00		272	05	
300	ISL	7.72 D	7.69	34.189 D	26.687	140.2	0.672	1.11	D 48.1 D 16.5	50.6	2.64	32.7	0.00	0.00		302		
321	7.50	7.47	34.204	26.731	136.3	0.700	0.94	41.0	14.0	53.5	2.70	33.6	0.00	0.00		324	04	
380	7.14	7.10	34.243	26.814	129.3	0.779	0.64	27.8	9.4	58.7	2.86	35.4	0.00	0.00		383	03	
400	ISL	7.02 D	6.98	34.265 D	26.847	126.3	0.806	0.57	D 24.8 D 8.4	61.1	2.90	35.9	0.00	0.00		403		
440	6.85	6.80	34.297	26.898	122.1	0.854	0.45	19.6	6.6	65.9	2.99	36.8	0.03	0.18		444	02	
500	ISL	6.42 D	6.37	34.296 D	26.955	117.2	0.929	0.35	D 15.3 D 5.1	71.3	3.06	38.2	0.00	0.00		504		
515	6.28	6.23	34.296	26.973	115.5	0.943	0.31	13.6	4.5	72.7	3.08	38.5	0.00	0.00		519	01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD			
31 10.8 N	120 55.2 W	11/11/2017	1855	UTC	3816 m	330 11 kn	350 03 11	1	1018.2 mb	20.0 C	18.0 C	24 m	2/8	ST	013			
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA		ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	18.48	18.48	33.493	24.001	389.9	0.000	5.49	239.9	102.5	1.3	0.18	0.0	0.02	0.02	0.17	0.06	0	
2 A	18.48	18.48	33.493	24.001	390.0	0.008	5.49	239.9	102.5	1.3	0.18	0.0	0.00	0.00	0.17	0.06	2	
9	18.45	18.45	33.484	24.002	390.2	0.035	5.50	240.2	102.5	0.9	0.17	0.0	0.00	0.00	0.17	0.06	9	
9	18.45	18.45	33.484	24.002	390.2	0.035											23	
10	ISL	18.44 D	18.44	33.485 D	24.006	389.9	0.036	5.50	D239.9 D102.5	0.8	0.17	0.0	0.00	0.00	0.17	0.06	10	
16	A	18.39	18.39	33.484	24.018	389.0	0.062	5.48	239.4	102.1	0.7	0.18	0.0	0.00	0.00	0.19	0.07	21
20	A	18.22	18.21	33.462	24.044	386.6	0.078	5.54	241.6	102.7	0.6	0.18	0.0	0.00	0.00	0.25	0.09	20
29	17.69	17.68	33.422	24.143	377.5	0.112	5.68	247.8	104.2	0.8	0.19	0.0	0.00	0.00	0.35	0.17	29	
30	ISL	17.66 D	17.65	33.428 D	24.155	376.4	0.113	5.71	D249.0 D104.7	0.8	0.19	0.0	0.00	0.00	0.36	0.18	30	
39	A	16.54	16.54	33.364	24.369	356.2	0.149	5.88	256.5	105.4	1.1	0.22	0.0	0.00	0.00	0.43	0.22	39
48	14.12	14.11	33.320	24.866	308.8	0.179	5.85	255.4	100.0	2.2	0.33	0.0	0.05	0.21	0.62	0.44	48	
48	14.12	14.11	33.324 D	24.866	309.1	0.183	5.83	D254.2 D 99.8	2.3	0.34	0.1	0.06	0.18	0.59	0.43	50		
57	13.83	13.82	33.331	24.936	302.6	0.207	5.75	250.8	97.6	2.6	0.36	0.6	0.12	0.09	0.47	0.37	57	
67	A	12.84	12.83	33.324	25.131	284.3	0.236	5.45	238.0	90.7	3.9	0.51	3.5	0.19	0.00	0.29	0.28	68
75	12.41	12.40	33.358	25.240	274.0	0.258	5.24	228.8	86.4	5.3	0.64	5.9	0.05	0.00	0.19	0.20	76	
84	A	11.95	11.94	33.397	25.359	262.9	0.282	4.82	210.3	78.7	7.4	0.83	8.6	0.04	0.00	0.14	0.14	85
100	ISL	11.07 D	11.06	33.471 D	25.577	242.4	0.321	4.44	D193.2 D 71.2	11.3	1.08	12.8	0.00	0.00	0.07	0.10	101	
101	10.95	10.93	33.466	25.595	240.7	0.325	4.48	195.6	71.7	11.5	1.10	13.0	0.00	0.00	0.07	0.10	11	
121	10.23	10.22	33.544	25.781	223.4	0.372	4.04	176.4	63.7	15.8	1.35	16.9	0.00	0.00	0.03	0.06	122	
125	ISL	10.09 D	10.08	33.575 D	25.829	218.9	0.379	3.97	D173.0 D 62.4	16.7	1.39	17.6	0.00	0.00	0.03	0.06	126	
141	9.71	9.69	33.650	25.953	207.4	0.415	3.66	159.5	57.0	20.3	1.57	20.3	0.00	0.00	0.01	0.04	142	
150	ISL	9.57 D	9.55	33.714 D	26.025	200.7	0.432	3.49	D151.7 D 54.2	21.8	1.63	21.1	0.00	0.00	0.01	0.03	151	
171	9.23	9.22																

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD		
30 50.8 N	121 35.3 W	12/11/2017	0035	UTC	4082 m	340 13 kn	320 04 08	1	1016.4 mb	18.5 C	17.0 C	3/8	ST	014				
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	μmol/Kg	PCT	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	19.03	19.03	33.475	23.849	404.5	0.000	5.39	235.4	101.6	1.3	0.20	0.0	0.01	0.02	0.11	0.03	0	
2	19.03	19.03	33.475	23.849	404.5	0.008	5.39	235.4	101.6	1.3	0.20	0.0	0.00	0.00	0.11	0.03	2	
10	19.03	19.03	33.475	23.851	404.6	0.041	5.38	235.0	101.4	1.3	0.21	0.0	0.00	0.00	0.14	0.01	10	
20	ISL	19.00 D	18.99	33.475 D	23.860	404.2	0.077	5.42	D236.5	D102.1	1.3	0.21	0.0	0.00	0.00	0.14	0.01	20
25	18.79	18.79	33.475	23.912	399.5	0.101	5.38	235.0	101.0	1.3	0.21	0.0	0.00	0.00	0.13	0.01	25	
30	ISL	18.63 D	18.62	33.452 D	23.936	397.3	0.118	5.40	235.7	101.0	1.4	0.22	0.0	0.00	0.00	0.16	0.04	30
40	18.50	18.49	33.444	23.962	395.3	0.161	5.44	237.6	101.5	1.5	0.23	0.0	0.00	0.00	0.21	0.09	40	
50	17.98	17.97	33.429	24.079	384.4	0.200	5.54	241.8	102.3	1.7	0.21	0.0	0.00	0.00	0.31	0.10	50	
62	16.26	16.25	33.368	24.440	350.3	0.244	5.90	257.6	105.3	1.8	0.23	0.0	0.00	0.00	0.32	0.24	62	
75	14.96	14.95	33.472	24.808	315.6	0.287	5.87	256.5	102.2	2.1	0.23	0.0	0.00	0.00	0.32	0.33	76	
87	14.06	14.04	33.457	24.989	298.6	0.324	5.70	249.0	97.4	2.6	0.32	0.9	0.12	0.00	0.26	0.25	88	
100	12.70	12.69	33.380	25.203	278.4	0.361	5.45	237.9	90.4	3.8	0.48	3.5	0.06	0.00	0.16	0.22	101	
112	12.20	12.18	33.468	25.368	262.9	0.394	5.24	228.9	86.2	5.2	0.57	5.3	0.00	0.00	0.10	0.14	113	
125	11.58	11.57	33.479	25.492	251.3	0.427	4.86	212.1	78.8	8.2	0.83	9.5	0.00	0.12	0.07	0.11	126	
140	10.59	10.57	33.530	25.710	230.7	0.463	4.41	192.4	70.0	12.9	1.14	14.2	0.00	0.00	0.03	0.05	141	
150	ISL	10.34 D	10.33	33.576 D	25.788	223.4	0.485	4.52	D196.9 D	71.4	14.4	1.21	15.3	0.00	0.00	0.02	0.04	151
170	9.69	9.67	33.659	25.964	207.0	0.529	4.16	181.8	64.9	17.3	1.34	17.6	0.00	0.00	0.01	0.03	171	
200	8.95	8.93	33.854	26.235	181.7	0.587	3.56	155.3	54.6	26.0	1.67	22.6	0.00	0.00	0.00	0.03	202	
231	8.43	8.41	33.939	26.383	168.0	0.642	3.18	138.7	48.2	31.8	1.86	25.2	0.00	0.06		233		
250	ISL	8.19 D	8.17	33.995 D	26.464	160.6	0.673	2.60	D112.9 D	39.2	36.0	2.05	27.4	0.00		252		
271	7.88	7.85	34.025	26.535	154.1	0.706	2.20	95.8	32.9	40.6	2.26	29.9	0.00		273			
300	ISL	7.56 D	7.53	34.052 D	26.602	148.1	0.750	1.95 D	84.7 D	29.0	45.9	2.40	31.8	0.00		302		
320	7.31	7.28	34.066	26.649	143.9	0.779	1.59	69.4	23.5	49.6	2.50	33.2	0.00	0.07		323		
380	6.67	6.63	34.094	26.759	133.9	0.863	1.13	49.4	16.5	60.0	2.71	35.9	0.00		383			
400	ISL	6.48 D	6.45	34.108 D	26.795	130.7	0.890	1.03 D	44.9 D	15.0	63.5	2.79	36.8	0.00		403		
441	6.11	6.07	34.149	26.877	123.2	0.941	0.69	29.9	9.9	70.7	2.94	38.6	0.00		445			
500	ISL	5.77 D	5.73	34.206 D	26.965	115.4	1.014	0.48 D	20.7 D	6.8	77.5	3.06	39.9	0.00		504		
516		5.72	5.67	34.222	26.984	113.8	1.030	0.42	18.3	6.0	79.3	3.09	40.2	0.00		520		

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD	AMT	TYPE	ORD		
30 30.8 N	122 15.6 W	12/11/2017	0620	UTC	4156 m	330 05 kn	330 05	1	1018.9 mb	18.1 C	16.4 C	3/8	ST	015				
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SWA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	μmol/Kg	PCT	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	18.53	18.53	33.452	23.956	394.2	0.000	5.46	238.2	101.8	1.7	0.20	0.0	0.02	0.03	0.11	0.03	0	
2	18.53	18.53	33.452	23.956	394.3	0.008	5.46	238.2	101.8	1.7	0.20	0.0	0.00	0.00	0.11	0.03	2	
10	18.53	18.53	33.454	23.959	394.3	0.039	5.43	236.8	101.2	1.6	0.20	0.0	0.00	0.00	0.11	0.03	19	
20	ISL	18.48 D	18.48	33.450 D	23.970	393.7	0.075	5.48	D238.8	D102.1	1.5	0.21	0.0	0.00	0.00	0.13	0.03	20
25	18.35	18.35	33.451	24.003	390.7	0.098	5.44	237.3	101.1	1.4	0.21	0.0	0.00	0.00	0.14	0.04	25	
30	ISL	18.23 D	18.22	33.463 D	24.043	387.1	0.115	5.52	D240.6	D102.3	1.3	0.21	0.0	0.00	0.00	0.16	0.05	30
40	17.88	17.87	33.474	24.137	378.6	0.156	5.51	240.7	101.6	1.2	0.20	0.0	0.00	0.07	0.19	0.07	40	
50	17.12	17.11	33.408	24.269	366.2	0.193	5.72	249.5	103.8	1.4	0.21	0.0	0.00	0.06	0.23	0.12	50	
62	16.10	16.09	33.577	24.636	331.6	0.235	5.86	256.0	104.4	1.7	0.19	0.0	0.00	0.00	0.26	0.17	62	
75	14.32	14.30	33.443	24.923	304.5	0.277	5.77	251.9	99.1	2.2	0.30	0.2	0.07	0.00	0.34	0.25	76	
87	13.58	13.56	33.450	25.082	289.6	0.312	5.64	246.0	95.3	2.8	0.35	1.2	0.15	0.00	0.23	0.20	88	
100	12.68	12.66	33.424	25.242	274.7	0.349	5.34	233.3	88.6	4.2	0.51	3.9	0.04	0.05	0.14	0.15	101	
112	11.68	11.66	33.428	25.434	256.5	0.381	5.13	224.2	83.4	5.8	0.65	6.5	0.03	0.00	0.10	0.11	113	
125	10.94	10.92	33.434	25.573	243.4	0.413	4.79	209.1	76.6	9.0	0.90	10.3	0.00	0.00	0.06	0.08	126	
140	10.30	10.28	33.529	25.758	226.0	0.449	4.29	187.4	67.7	14.1	1.21	15.1	0.00	0.00	0.03	0.04	141	
150	ISL	10.17 D	10.15	33.573 D	25.816	220.7	0.470	4.14	D180.0 D	65.1	17.3	1.37	17.4	0.00	0.00	0.02	0.03	151
170	9.42	9.40	33.738	26.069	196.9	0.512	3.36	146.9	52.1	23.6	1.70	22.2	0.00	0.00	0.00	0.02	171	
200	8.76	8.74	33.876	26.282	177.1	0.568	3.35	146.1	51.2	27.6	1.76	23.8	0.00	0.00	0.00	0.02	202	
230	8.27	8.24	33.939	26.408	165.5	0.620	3.30	144.2	49.9	32.8	1.84	25.2	0.00			232		
250	ISL	8.01 D	7.99	33.976 D	26.475	159.4	0.653	2.99	D129.9 D	44.9	36.6	1.99	27.0	0.00		252		
271	7.72	7.69	33.997	26.536	153.9	0.685	2.55	111.1	38.0	40.5	2.14	28.9	0.00		273			
300	ISL	7.41 D	7.38	34.035 D	26.611	147.2	0.730	1.99 D	86.7 D	29.5	45.8	2.29	31.0	0.00		302		
321	7.04	7.01	34.023	26.653	143.3	0.760	1.98	86.5	29.1	49.6	2.39	32.5	0.00		324			
381	6.77	6.73	34.161	26.800	130.2	0.842	0.83	36.3	12.2	62.2	2.84	36.8	0.00	0.00		384		
400	ISL	6.61 D	6.57	34.171 D														

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 110.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	WEA		BAROMETER 1018.0 mb	DRY 19.0 C	WET 18.0 C	SECCHI	CLD AMT	TYPE	ORD 016
										SI03*	P04*							
0	18.77	18.77	33.432	23.883	401.2	0.000	5.40	235.9	101.3	1.8	0.18	0.0	0.02	0.06	0.13	0.03	0	
2	18.77	18.77	33.432	23.883	401.3	0.008	5.40	235.9	101.3	1.8	0.18	0.0	0.00	0.06	0.13	0.03	2	
10	18.76	18.76	33.427	23.881	401.8	0.040	5.41	236.1	101.4	1.8	0.17	0.0	0.00	0.00	0.12	0.04	10	
20	ISL	18.71 D	18.71	33.432 D	23.898	400.5	0.077	5.45	D237.9	D102.1	1.8	0.17	0.0	0.00	0.14	0.03	20	
25	18.66	18.65	33.429	23.911	399.6	0.100	5.43	237.0	101.5	1.8	0.17	0.0	0.00	0.15	0.03	25		
30	ISL	18.63 D	18.63	33.435 D	23.921	398.8	0.117	5.46	D238.1	D102.0	1.8	0.17	0.0	0.00	0.17	0.04	30	
40	18.49	18.48	33.445	23.965	395.0	0.160	5.41	236.2	100.8	1.8	0.17	0.0	0.00	0.05	0.21	0.06	40	
50	18.27	18.26	33.445	24.022	389.9	0.199	5.47	238.9	101.6	1.8	0.18	0.0	0.00	0.00	0.32	0.16	50	
62	17.17	17.16	33.422	24.268	366.8	0.245	5.60	244.7	101.8	1.7	0.18	0.0	0.00	0.27	0.12	62		
75	14.90	14.89	33.386	24.755	320.6	0.289	5.87	256.5	102.0	2.3	0.23	0.0	0.03	0.00	0.29	0.19	76	
88	13.87	13.86	33.392	24.976	299.8	0.330	5.70	249.1	97.0	2.9	0.32	1.1	0.14	0.00	0.25	0.19	89	
100	13.23	13.22	33.397	25.112	287.1	0.365	5.57	243.2	93.5	3.5	0.38	2.3	0.12	0.00	0.18	0.16	101	
112	12.55	12.53	33.425	25.268	272.5	0.398	5.39	235.5	89.3	4.4	0.46	3.8	0.03	0.00	0.12	0.10	113	
125	ISL	12.06 D	12.04	33.495 D	25.417	258.6	0.432	5.09	D221.7	D83.4	6.6	0.66	7.1	0.03	0.00	0.11	0.07	126
126	11.84	11.82	33.493	25.456	254.8	0.436	5.08	221.9	82.9	6.8	0.67	7.4	0.03	0.09	0.11	0.07	127	
142	10.67	10.65	33.501	25.674	234.2	0.475	4.67	203.9	74.3	10.6	0.94	11.7	0.00	0.00	0.05	0.06	143	
150	ISL	10.29 D	10.27	33.555 D	25.781	224.1	0.492	4.32	D187.9	D68.1	13.2	1.09	14.0	0.00	0.00	0.04	0.05	151
171	9.56	9.54	33.648	25.977	205.7	0.538	3.73	162.9	58.0	20.1	1.50	20.1	0.00	0.00	0.01	0.02	172	
200	ISL	8.99 D	8.97	33.851 D	26.227	182.5	0.593	3.07	D133.5	D47.1	27.1	1.81	24.4	0.00	0.00	0.00	0.02	202
201	9.08	9.05	33.847	26.210	184.1	0.596	3.05	133.2	46.9	27.4	1.82	24.5	0.00	0.00	0.00	0.02	203	
230	8.55	8.53	33.958	26.380	168.4	0.648	2.73	119.0	41.5	32.8	1.96	26.7	0.00	0.11			232	
250	ISL	8.37 D	8.35	34.026 D	26.461	161.1	0.680	2.40	D104.6	D36.4	36.7	2.11	28.5	0.00	0.19			252
271	7.96	7.94	34.046	26.539	153.8	0.714	2.05	89.5	30.8	40.9	2.26	30.4	0.03	0.27			273	
300	ISL	7.61 D	7.58	34.079 D	26.616	146.8	0.757	1.71	D174.2	D25.4	45.5	2.38	32.0	0.00	0.00			302
321	7.36	7.32	34.075	26.650	143.8	0.788	1.58	68.7	23.3	48.9	2.46	33.2	0.00	0.00			324	
381	6.64	6.61	34.114	26.779	132.1	0.871	1.02	44.6	14.9	61.5	2.78	36.7	0.00	0.00			384	
400	ISL	6.49 D	6.45	34.129 D	26.811	129.1	0.896	0.86	D37.6	D12.5	64.0	2.83	37.3	0.00	0.00			403
440	6.28	6.24	34.176	26.876	123.4	0.946	0.60	26.3	8.7	69.4	2.94	38.5	0.00	0.00			444	
500	ISL	5.97 D	5.93	34.236 D	26.964	115.8	1.019	0.39	D17.0	D5.6	76.2	3.06	39.7	0.00	0.00			504
516	5.92	5.87	34.247	26.980	114.4	1.037	0.35	15.1	4.9	78.1	3.09	40.0	0.00	0.00			520	
																	01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	WEA		BAROMETER 1020.8 mb	DRY 21.0 C	WET 19.0 C	SECCHI	CLD AMT	TYPE	ORD 017
										SI03*	P04*							
0	19.31	19.31	33.573	23.854	404.0	0.000	5.39	235.4	102.2	1.5	0.16	0.0	0.02	0.11	0.12	0.03	0	
2	A	19.31	19.30	33.573	23.854	404.0	0.008	5.39	235.4	102.2	1.5	0.16	0.0	0.00	0.11	0.12	0.03	2
10	ISL	19.29 D	19.29	33.569 D	23.857	404.1	0.037	5.38	D234.9	D102.0	1.5	0.16	0.0	0.00	0.14	0.01	0.01	10
11	19.29	19.29	33.570	23.856	404.2	0.044	5.35	233.4	101.3	1.5	0.16	0.0	0.00	0.14	0.01	0.01	11	
11	19.29	19.29	33.567	23.854	404.5	0.044											23	
20	A	19.28	19.28	33.572	23.861	404.1	0.081	5.34	233.0	101.1	1.5	0.16	0.0	0.00	0.13	0.02	0.01	21
26	A	19.32	19.31	33.591	23.868	403.8	0.105	5.35	233.5	101.4	1.5	0.16	0.0	0.00	0.15	0.01	0.01	26
30	ISL	19.32 D	19.32	33.609 D	23.880	402.7	0.118	5.38	D234.8	D102.1	1.6	0.16	0.0	0.00	0.16	0.02	0.01	30
38	19.33	19.33	33.655	23.913	399.9	0.153	5.35	233.3	101.4	1.6	0.16	0.0	0.00	0.18	0.03	0.01	38	
50	A	18.50	18.49	33.669	24.134	379.2	0.200	5.50	240.2	102.7	1.7	0.16	0.0	0.00	0.24	0.05	0.01	50
62	16.57	16.56	33.570	24.523	342.5	0.243	5.87	256.4	105.6	2.0	0.15	0.0	0.00	0.15	0.25	0.07	0.17	17
74	15.56	15.55	33.599	24.774	318.9	0.283	5.83	254.6	102.8	2.2	0.15	0.0	0.00	0.00	0.22	0.16	0.16	16
75	ISL	15.52 D	15.50	33.590 D	24.778	318.5	0.284	5.85	D254.9	D103.0	2.3	0.16	0.0	0.00	0.23	0.16	0.16	76
86	A	14.74	14.73	33.526	24.898	307.4	0.321	5.78	252.1	100.1	2.5	0.21	0.1	0.06	0.32	0.15	0.01	87
86	14.74	14.73	33.531	24.901	307.0	0.320												15
97	14.19	14.17	33.499	24.994	298.4	0.354	5.70	248.8	97.6	2.7	0.27	0.7	0.19	0.00	0.23	0.20	0.01	98
100	ISL	14.14 D	14.12	33.503 D	25.009	297.1	0.361	5.66	D246.8	D96.9	2.9	0.29	1.0	0.19	0.00	0.21	0.19	101
108	A	13.39	13.38	33.482	25.145	284.2	0.386	5.53	241.4	93.2	3.4	0.35	1.8	0.18	0.00	0.17	0.16	109
116	13.05	13.03	33.463	25.199	279.2	0.409	5.35	233.7	89.5	4.3	0.47	3.7	0.06	0.00	0.16	0.13	117	
125	ISL	12.73	12.72	33.474 D	25.270	272.7	0.432	5.40	D235.1	D89.7	4.3	0.47	3.8	0.03	0.00	0.11	0.11	126
126	12.68	12.66	33.481	25.287	271.1	0.436	5.41	236.2	89.8	4.3	0.47	3.8	0.03	0.00	0.10	0.11	127	
140	11.76	11.75	33.466	25.449	255.9	0.473	5.14	224.6	83.7	6.8	0.71	7.7	0.00	0.00	0.07	0.07	141	
150	ISL	10.88 D	10.86	33.484 D	25.623	239.3	0.497	4.73	D206.1	D75.6	10.7	0.95	11.4	0.00	0.00			

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.4 26.4

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD			
32 57.0 N	117 16.6 W	09/11/2017	2058	UTC	61 m	300 04 kn	290 01 04	1	1016.8 mb	19.6 C	17.9 C	15 m	2/8	SC	002			
DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	17.19	17.19	33.429	24.266	364.7	0.000	5.68	247.9	103.2	3.1	0.36	0.4	0.06	0.34	1.92	0.64	0	
1	17.19	17.19	33.429	24.266	364.7	0.004	5.68	247.9	103.2	3.1	0.36	0.4	0.06	0.34	1.92	0.64	1 03	
6	17.18	17.18	33.419	24.261	365.4	0.022	5.49	239.9	99.9	3.9	0.40	0.7	0.11	0.13	2.44	0.86	6 02	
10 ISL	16.54 D	16.54	33.415 D	24.406	351.7	0.035	5.39 D	234.9 D	96.7	4.1	0.40	0.8	0.13	0.36	2.52	0.95	10	
11	16.44	16.43	33.418	24.433	349.2	0.040	5.43	237.1	97.3	4.2	0.40	0.8	0.13	0.42	2.54	0.98	11 01	

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

A) INCUBATION LIGHT INTENSITIES WERE PERCENT RESPECTIVELY.

## PRIMARY PRODUCTIVITY CASTS

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 76.7 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD									
DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXY mL/L	OXY PCT	SIO3* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEOL μg/L	LIGHT PCT	1	UPTAKE (mg C/m3)	2	MEAN	DARK
2	16.85	33.491	24.392	5.57	100.6	1.4	0.24	0.0	0.03	0.00	0.37	0.16	85. A	3.6	4.1	3.8	0.16	
12	16.84	33.491	24.396	5.58	100.7	1.3	0.23	0.0	0.00	0.00	0.37	0.16	38.	6.5	6.3	6.4	0.10	
15	16.84	33.490	24.396	5.57	100.6	1.3	0.23	0.0	0.00	0.00	0.36	0.16	30.	6.6	6.8	6.7	0.12	
22	16.83	33.490	24.398	5.56	100.4	1.3	0.23	0.0	0.00	0.00	0.37	0.15						
30	16.83	33.493	24.400	5.56	100.5	1.3	0.23	0.0	0.00	0.00	0.37	0.17	8.9	5.7	5.4	5.5	0.20	
41	16.74	33.485	24.416	5.56	100.2	1.3	0.24	0.1	0.04	0.00	0.36	0.17						
52	15.90	33.454	24.586	5.28	93.6	2.5	0.42	2.4	0.21	0.13	0.32	0.18	1.5	1.2	1.0	1.1	0.09	
59	13.06	33.416	25.158	4.67	78.2	7.2	0.93	10.5	0.04	0.00	0.18	0.16						
66	11.58	33.478	25.489	4.15	67.3	11.7	1.21	14.7	0.05	0.00	0.11	0.12	0.48	0.16	0.15	0.16	0.05	

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 76.7 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD									
DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXY mL/L	OXY PCT	SIO3* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEOL μg/L	LIGHT PCT	1	UPTAKE (mg C/m3)	2	MEAN	DARK
2	16.71	33.452	24.395	5.78	104.2	1.4	0.20	0.0	0.00	0.00	0.43	0.15	83. A	6.6	7.4	7.0	0.26	
10	16.67	33.450	24.404	5.77	103.9	1.4	0.20	0.0	0.00	0.00	0.48	0.15	38.	9.9	8.7	9.3	0.25	
13	16.67	33.451	24.406	5.78	104.0	1.3	0.21	0.0	0.00	0.00	0.44	0.15	29.	9.2	9.7	9.5	0.20	
26	16.43	33.450	24.461	5.77	103.3	1.4	0.21	0.0	0.00	0.00	0.60	0.25	8.3	9.4	7.9	8.7	0.16	
35	14.96	33.386	24.739	5.49	95.5	2.3	0.34	0.5	0.37	0.08	0.64	0.30						
45	13.22	33.336	25.064	5.16	86.5	4.7	0.60	4.8	0.04	0.00	0.25	0.18	1.3	0.74	0.63	0.69	0.11	
56	11.84	33.376	25.361	4.54	74.0	8.9	0.99	11.3	0.04	0.00	0.11	0.12	0.46	0.12	0.12	0.12	0.06	

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 80.0 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD									
DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXY mL/L	OXY PCT	SIO3* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEOL μg/L	LIGHT PCT	1	UPTAKE (mg C/m3)	2	MEAN	DARK
3	16.95	33.337	24.250	5.70	103.8	1.7	0.22	0.0	0.04	0.05	0.30	0.07	79. A	4.6	4.8	4.7	0.15	
13	16.94	33.337D	24.255	5.70	103.1	1.8	0.21	0.0	0.03	0.00	0.30	0.07	37.	5.0	4.7	4.8	0.15	
17	16.94	33.336	24.254	5.68	102.8	1.8	0.20	0.0	0.00	0.00	0.30	0.08	27.	4.3	4.5	4.4	0.13	
25	16.92	33.333	24.258	5.69	102.8	1.8	0.20	0.0	0.00	0.00	0.32	0.07						
32	16.65	33.322	24.312	5.74	103.2	1.7	0.25	0.1	0.00	0.38	0.39	0.12	8.6	3.2	3.2	3.2	0.12	
44	15.17	33.324	24.646	5.83	101.4	2.0	0.26	0.0	0.00	0.05	0.76	0.37						
56	13.71	33.268	24.913	5.64	98.7	3.4	0.39	0.7	0.48	0.09	0.56	0.31	1.4	0.86	0.83	0.85	0.15	
70	11.68	33.266	25.305	5.45	91.5	5.3	0.61	5.4	0.05	0.00	0.16	0.14	0.46	0.04	0.04	0.04	0.07	

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 83.3 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD									
DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXY mL/L	OXY PCT	SIO3* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEOL μg/L	LIGHT PCT	1	UPTAKE (mg C/m3)	2	MEAN	DARK
2	16.87	33.481	24.381	5.69	102.8	1.3	0.20	0.1	0.03	0.00	1.17	0.35	80. A	21.4	21.7	21.6	0.19	
10	16.43	33.478	24.481	5.73	102.7	1.0	0.20	0.0	0.00	0.00	1.19	0.39	33.	22.2	20.7	21.5	0.21	
12	15.81	33.466	24.614	5.63D	99.6	2.0	0.31	1.3	0.13	0.13	1.22	0.48	27.	14.3	13.3	13.8	0.21	
23	14.75	33.452	24.834	5.14	89.1	4.2	0.51	3.6	0.29	0.15	1.05	0.53	8.0	8.2	6.6	7.4	0.17	

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 83.3 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD									
DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXY mL/L	OXY PCT	SIO3* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEOL μg/L	LIGHT PCT	1	UPTAKE (mg C/m3)	2	MEAN	DARK
3	14.7	33.476	24.481	5.83	104.1	1.7	0.18	0.0	0.00	0.00	0.35	0.19						
11	17.48	33.426	24.195	5.56	101.6	1.5	0.18	0.0	0.00	0.00	0.14	0.05						
18	17.44	33.425	24.204	5.56	101.5	1.4	0.18	0.0	0.00	0.00	0.15	0.05	37.	1.4	1.1	1.2	0.15	
23	17.42	33.435	24.218	5.61	102.4	1.4	0.18	0.0	0.00	0.00	0.15	0.05	28.	1.2	0.82	1.0	0.09	
34	17.40	33.424	24.214	5.58	101.8	1.4	0.18	0.0	0.00	0.00	0.15	0.06						
45	17.05	33.411	24.287	5.64	102.2	1.4	0.19	0.0	0.00	0.00	0.24	0.10	8.5	1.0	1.2	1.1	0.11	
56	16.03	33.485	24.581	5.85	104.1	1.7	0.18	0.0	0.00	0.00	0.35	0.19						
67	15.02	33.590	24.886	5.92	103.3	2.2	0.18	0.0	0.06	0.00	0.44	0.32						
78	14.02	33.576	25.088	5.83	99.7	2.6	0.23	0.7	0.13	0.00	0.26	0.21	1.4	0.27	0.32	0.29	0.05	
88	13.68	33.641	25.209	5.72	97.0	2.6	0.22	0.5	0.19	0.00	0.18	0.16						
98	13.02	33.588	25.301	5.51	92.2	3.7	0.36	2.6	0.06	0.00	0.11	0.12	0.46	0.05	0.04	0.05	0.03	

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 83.3 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL	TWILIGHT	INTEGRATED VALUE	ORD
31 54.7 N	124 10.2 W	22/11/2017	1820 UTC	34 m	1203 - 1742 PST	1203 PST	1740 PST		168.3 mg C/m <sup>2</sup>	068

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	chl-a	phaeo	light	UPTAKE (mg C/m <sup>3</sup> )			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	mean	dark
2	18.65	33.457	23.932	5.46	102.1	2.4	0.20	0.2	0.03	0.07	0.12	0.05	91. A	2.2	2.2	2.2	0.11
13	18.57	33.465	23.957	5.41	101.0	1.8	0.19	0.0	0.00	0.00	0.13	0.04					
22	18.34	33.532	24.068	5.45	101.4	1.8	0.17	0.0	0.00	0.00	0.12	0.06	37.	1.9	1.9	1.9	0.11
28	18.21	33.553	24.117	5.48	101.7	1.8	0.17	0.0	0.00	0.00	0.14	0.06	28.	1.8	2.1	1.9	0.14
37	17.38	33.458	24.245	5.60	102.2	1.8	0.19	0.0	0.00	0.00	0.23	0.10					
54	15.40	33.405	24.660	5.92	103.8	1.9	0.21	0.0	0.00	0.00	0.26	0.20	8.7	2.8	1.6	2.2	0.05
67	14.74	33.404	24.803	5.82	100.7	2.4	0.23	0.0	0.03	0.00	0.31	0.22					
80	13.93	33.414	24.981	5.69	97.0	2.4	0.30	0.8	0.16	0.00	0.24	0.19					
94	13.22	33.397	25.113	5.51	92.5	3.6	0.41	2.7	0.13	0.00	0.15	0.15	1.4	0.40	0.31	0.35	0.03
101	12.79	33.394	25.196	5.38	89.5	4.3	0.49	4.1	0.05	0.00	0.13	0.13					
110	12.21	33.404	25.316	5.28	86.7	5.0	0.55	5.2	0.04	0.00	0.11	0.12					
119	11.82	33.386	25.376	5.00	81.4	7.1	0.75	8.3	0.03	0.00	0.09	0.11	0.46	0.07	0.10	0.08	0.03

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 86.7 50.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL	TWILIGHT	INTEGRATED VALUE	ORD
33 19.4 N	119 39.9 W	16/11/2017	1743 UTC	15 m	1134 - 1740 PST	1144 PST	1723 PST		461.1 mg C/m <sup>2</sup>	038

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	chl-a	phaeo	light	UPTAKE (mg C/m <sup>3</sup> )			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	mean	dark
2	16.91	33.488	24.377	5.65	102.1	2.4	0.21	0.3	0.04	0.00	0.93	0.08	81. A	14.9	15.2	15.1	0.14
10	16.73	33.485	24.415	5.66D	102.1	2.0	0.21	0.1	0.00	0.00	1.14	0.03	36.	16.8	16.9	16.9	0.18
13	16.58	33.474	24.444	5.66	101.8	2.0	0.22	0.0	0.00	0.00	1.15	0.14	26.	18.0	18.8	18.4	0.16
25	16.26	33.459	24.507	5.63	100.6	2.2	0.25	0.3	0.04	0.00	1.08	0.19	7.7	8.1	9.8	9.0	0.21
33	15.94	33.446	24.569	5.54	98.3	2.5	0.32	1.0	0.09	0.06	0.81	0.27					
41	15.13	33.424	24.732	5.42	94.6	3.2	0.40	2.1	0.17	0.06	0.77	0.22	1.5	0.87	1.1	0.97	0.09
53	12.01	33.387	25.338	5.02	82.1	6.8	0.75	7.2	0.25	0.00	0.30	0.19	0.44	0.18	0.15	0.16	0.05

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 86.7 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL	TWILIGHT	INTEGRATED VALUE	ORD
32 19.4 N	121 43.0 W	23/11/2017	1651 UTC	24 m	1154 - 1810 PST	1153 PST	1729 PST		126.6 mg C/m <sup>2</sup>	072

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	chl-a	phaeo	light	UPTAKE (mg C/m <sup>3</sup> )			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	mean	dark
2	17.87	33.484	24.144	5.48	101.0	1.8	0.18	0.0	0.00	0.00	0.16	0.04	88. A	1.4	1.6	1.5	0.11
10	17.87	33.483	24.145	5.50	101.4	1.6	0.18	0.0	0.00	0.00	0.16	0.03					
15	17.87	33.485	24.147	5.48	101.0	1.4	0.17	0.0	0.00	0.00	0.18	0.03	38.	2.3	2.3	2.3	0.08
19	17.87	33.482	24.145	5.53	101.8	1.5	0.16	0.0	0.00	0.00	0.17	0.03	30.	2.4	2.4	2.4	0.08
28	17.87	33.482	24.146	5.49	101.2	1.4	0.17	0.0	0.00	0.00	0.17	0.04					
38	17.77	33.476	24.166	5.50	101.1	1.4	0.17	0.0	0.00	0.00	0.23	0.06	8.8	2.0	2.1	2.0	0.09
47	17.75	33.474	24.170	5.49	100.9	1.4	0.17	0.0	0.00	0.00	0.32	0.07					
56	17.42	33.442	24.224	5.57	101.7	1.4	0.18	0.0	0.00	0.00	0.29	0.13					
66	16.28	33.412	24.470	5.73	102.3	1.3	0.21	0.0	0.00	0.00	0.24	0.22	1.5	0.89	0.68	0.79	0.05
75	15.57	33.500	24.695	5.81	102.3	1.8	0.22	0.0	0.00	0.11	0.21	0.22					
84	15.32	33.617	24.842	5.75	100.9	2.2	0.20	0.0	0.06	0.07	0.17	0.16	0.46	0.20	0.20	0.20	0.06

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 90.0 28.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL	TWILIGHT	INTEGRATED VALUE	ORD
33 29.1 N	117 46.1 W	15/11/2017	1652 UTC	15 m	1125 - 1725 PST	1136 PST	1717 PST		438.9 mg C/m <sup>2</sup>	030

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	chl-a	phaeo	light	UPTAKE (mg C/m <sup>3</sup> )			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	mean	dark
2	17.97	33.479	24.115	5.76	106.4	1.5	0.18	0.1	0.00	0.11	0.98	0.29	81. A	22.8	20.7	21.8	0.30
10	16.36	33.400	24.437	5.88	105.1	2.2	0.23	0.0	0.00	0.00	0.75	0.28	36.	15.0	16.8	15.9	0.53
13	15.36	33.352	24.625	5.80	101.6	3.2	0.32	0.0	0.04	0.00	0.78	0.31	26.	14.1	17.2	15.6	0.20
16	14.71	33.345	24.760	94.3	94.3	4.6	0.44	1.0	0.21	0.00	1.15	0.52					
25	13.33	33.372	25.068	4.65	78.2	7.3	0.74	5.3	0.09	0.00	0.59	0.39	7.7	7.0	6.7	6.9	0.15
32	12.78	33.393	25.194	4.26	70.9	9.3	0.93	8.4	0.18	0.00	0.37	0.32					
42	12.06	33.441	25.370	3.97	65.0	11.7	1.14	12.7	0.04	0.00	0.13	0.19	1.4	0.30	0.29	0.29	0.09
52	11.51	33.509	25.526	3.52	57.0	15.1	1.36	15.8	0.04	0.00	0.06	0.14	0.49	0.03	0.07	0.05	0.09

RV SALLY RIDE CALCOFI CRUISE 1711 STATION 90.0 53.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL	TWILIGHT	INTEGRATED VALUE	ORD
32 39.0 N	119 28.9 W	14/11/2017	1736 UTC	17 m	1134 - 1730 PST	1142 PST	1718 PST		227.1 mg C/m <sup>2</sup>	025

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	chl-a	phaeo	light	UPTAKE (mg C/m <sup>3</sup> )			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	mean	dark
3	16.96	33.466	24.348	5.60	101.4	1.3	0.23	0.0	0.00	0.00	0.38	0.07	76. A	4.5	4.8	4.7	0.17
11	16.96	33.467	24.348	5.62	101.7	1.3	0.23	0.0	0.00	0.00	0.36	0.10	37.	5.7	5.6	5.7	0.15
15	16.95	33.479	24.362	5.61	101.6	1.2	0.23	0.0	0.00	0.00	0.40	0.07	26.	6.0	5.9	6.0	0.14
21	16.94	33.466	24.354	5.61	101.6	1.3	0.23	0.0	0.00	0.00	0.35	0.11					
28	16.93	33.473	24.362	5.59	101.2	1.3	0.23	0.0	0.00	0.00	0.35	0.12	8.0	4.6	4.9	4.7	0.11
38	16.88	33.466	24.370	5.60	101.2	1.2	0.23	0.0	0.00	0.06	0.41	0.11					
48	15.98	33.406	24.530	5.66	100.4	1.6	0.27	0.2	0.05	0.20	0.45	0.27	1.3	1.9	1.5	1.7	0.05
60	13.86	33.308	24.912	5.76	97.9	2.5	0.34	0.7	0.10	0.14	0.42	0.23	0.44	0.92	0.56	0.74	0.07

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 90.0 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL	TWILIGHT	INTEGRATED VALUE	ORD
31 25.1 N	121 59.3 W	13/11/2017	1800 UTC	26 m	1155 - 1737 PST	1152 PST	1733 PST		193.2 mg C/m <sup>2</sup>	021

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAE0	LIGHT	UPTAKE (mg C/m <sup>3</sup> )			
m	DEG C	THETA	mL/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	MEAN	DARK
2	18.95	33.547	23.924	5.38	101.3	1.3	0.19	0.0	0.00	0.07	0.17	0.06	89. A	2.3	2.1	2.2	0.10
8	18.94	33.545	23.928	5.39	101.3	1.2	0.20	0.0	0.00	0.06	0.16	0.06					
16	18.93	33.546	23.930	5.38	101.1	1.2	0.19	0.0	0.00	0.07	0.17	0.06	39.	2.9	3.0	2.9	0.10
21	18.93	33.555	23.938	5.38	101.2	1.2	0.18	0.0	0.00	0.07	0.17	0.06	29.	3.1	3.1	3.1	0.11
31	18.91	33.553	23.943	5.38	101.2	1.2	0.19	0.0	0.00	0.00	0.17	0.07					
42	17.96	33.490	24.131	5.47	101.0	1.3	0.19	0.0	0.00	0.00	0.01	0.30	8.4	3.0	2.8	2.9	0.09
56	14.82	33.334	24.732	6.05	104.9	2.1	0.29	0.0	0.00	0.00	0.36	0.24					
71	13.11	33.351	25.099	5.31	88.9	4.7	0.57	3.8	0.20	0.00	0.33	0.26	1.5	1.3	1.1	1.2	0.02
78	12.73	33.385	25.199	5.01	83.3	6.0	0.67	5.5	0.05	0.00	0.24	0.22					
91	12.46	33.483	25.328	5.25	86.8	5.3	0.55	5.3	0.03	0.00	0.13	0.14	0.46	0.34	0.30	0.32	0.02

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL	TWILIGHT	INTEGRATED VALUE	ORD
32 57.4 N	117 18.3 W	09/11/2017	1919 UTC	15 m	1210 - 1733 PST	1133 PST	1717 PST		441.1 mg C/m <sup>2</sup>	001

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAE0	LIGHT	UPTAKE (mg C/m <sup>3</sup> )			
m	DEG C	THETA	mL/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	MEAN	DARK
2	18.33	33.460	24.013	5.67	105.4	2.1	0.22	0.7	0.00	0.42	0.95	0.21	81. A	20.8	19.9	20.4	0.25
10	17.73	33.443	24.147	5.80	106.6	1.9	0.26	0.2	0.00	0.85	0.76	0.20	36.	14.2	14.1	14.2	0.23
13	16.75	33.405	24.350	5.92	106.6	1.9	0.26	0.2	0.00	0.25	0.59	0.17	26.	9.6	9.8	9.7	0.18
25	14.23	33.347	24.864	5.44d	93.2	4.6	0.45	0.8	0.09	0.05	1.10	0.43	7.7	12.2	10.5	11.4	0.17
33	13.13	33.390	25.123	4.54	76.0	8.2	0.87	7.1	0.24	0.30	0.45	0.35					
42	12.33	33.460	25.334	3.97	65.4	11.3	1.16	11.6	0.03	0.13	0.22	0.22	1.4	0.35	0.04	0.20	0.03
52	12.30	33.462	25.341	3.94	64.9	11.7	1.15	12.1	0.06	0.09	0.18	0.21	0.49	0.11	0.15	0.13	0.02

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL	TWILIGHT	INTEGRATED VALUE	ORD
32 20.8 N	118 33.2 W	10/11/2017	1800 UTC	23 m	1138 - 1739 PST	1138 PST	1726 PST		313.8 mg C/m <sup>2</sup>	008

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAE0	LIGHT	UPTAKE (mg C/m <sup>3</sup> )			
m	DEG C	THETA	mL/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	MEAN	DARK
2	18.93	33.585	23.959	5.45	102.6	1.1	0.16	0.0	0.00	0.00	0.21	0.07	88. A	5.5	5.4	5.5	0.14
9	18.92	33.584	23.960	5.44	102.4	0.8	0.16	0.0	0.00	0.00	0.21	0.07					
15	18.92	33.584	23.963	5.44	102.3	0.6	0.15	0.0	0.00	0.00	0.22	0.08	37.	4.8	4.9	4.9	0.11
19	18.84	33.583	23.982	5.44	102.2	0.5	0.16	0.0	0.00	0.00	0.24	0.06	28.	5.3	5.0	5.2	0.10
28	14.91	33.351	24.722	5.94	103.2	2.1	0.32	0.0	0.00	0.00	0.48	0.26					
37	13.33	33.358	25.057	5.18	87.0	5.0	0.63	3.7	0.21	0.00	0.77	0.40	8.5	7.2	7.5	7.3	0.08
46	12.53	33.380	25.234	4.71	77.8	7.3	0.85	7.9	0.09	0.17	0.43	0.36					
55	12.20	33.397	25.311	4.57	75.1	8.2	0.93	9.2	0.05	0.00	0.35	0.30					
64	11.75	33.428	25.419	4.38	71.2	10.2	1.08	11.8	0.04	0.00	0.23	0.23	1.4	0.38	0.02	0.20	0.07
73	11.19	33.477	25.560	4.01	64.4	13.1	1.27	14.5	0.03	0.05	0.14	0.18					
81	10.69	33.534	25.692	3.73	59.3	15.7	1.42	17.0	0.00	0.00	0.08	0.15	0.45	0.01	0.02	0.02	0.06

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL	TWILIGHT	INTEGRATED VALUE	ORD
31 10.8 N	120 55.2 W	11/11/2017	1855 UTC	24 m	1200 - 1750 PST	1148 PST	1736 PST		205.9 mg C/m <sup>2</sup>	013

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAE0	LIGHT	UPTAKE (mg C/m <sup>3</sup> )			
m	DEG C	THETA	mL/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	MEAN	DARK
2	18.48	33.493	24.001	5.49	102.5	1.3	0.18	0.0	0.00	0.00	0.17	0.06	88. A	3.7	3.2	3.4	0.19
9	18.45	33.484	24.002	5.50	102.5	0.9	0.17	0.0	0.00	0.00	0.17	0.06					
16	18.39	33.484	24.018	5.48	102.1	0.7	0.18	0.0	0.00	0.00	0.19	0.07	36.	3.4	3.5	3.4	0.24
20	18.22	33.462	24.044	5.54	102.7	0.6	0.18	0.0	0.00	0.00	0.25	0.09	28.	3.9	3.9	3.9	0.21
29	17.69	33.422	24.143	5.68	104.2	0.8	0.19	0.0	0.00	0.00	0.35	0.17					
39	16.54	33.364	24.369	5.88	105.4	1.1	0.22	0.0	0.00	0.00	0.43	0.22	8.3	3.9	3.6	3.8	0.12
48	14.12	33.320	24.872	5.85	100.0	2.2	0.33	0.0	0.05	0.21	0.62	0.44					
57	13.83	33.331	24.928	5.75	97.6	2.6	0.36	0.6	0.12	0.09	0.47	0.37					
67	12.84	33.324	25.139	5.45	90.7	3.9	0.51	3.5	0.19	0.00	0.29	0.28	1.4	0.63	0.25	0.44	0.02
75	12.41	33.358	25.240	5.24	86.4	5.3	0.64	5.9	0.05	0.00	0.19	0.20					
84	11.95	33.397	25.359	4.82	78.7	7.4	0.83	8.6	0.04	0.00	0.14	0.14	0.46	0.09	0.11	0.10	0.00

RV SALLY RIDE

CALCOFI CRUISE 1711

STATION 93.3 120.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL	TWILIGHT	INTEGRATED VALUE	ORD
29 50.8 N	123 35.2 W	12/11/2017	1810 UTC	31 m	1200 - 1750 PST	1159 PST	1746 PST		117.6 mg C/m <sup>2</sup>	017

DEPTH m	TEMP DEG C	SALINITY THETA	SIGMA	OXYGEN ml/L	OXY	SIO3*	P04*	N03*	N02*	NH4*	CHL-A µg/L	PHAE0 µg/L	LIGHT PCT	UPTAKE (mg C/m <sup>3</sup> )				
					µM	µM	µM	µM	µg/L	µg/L	1	2	MEAN	DARK				
2	19.31	33.573	23.854	5.39	102.2	1.5	0.16	0.0	0.00	0.11	0.12	0.03	91.	A	2.2	2.1	2.1	0.12
11	19.29	33.570	23.856	5.35	101.3	1.5	0.16	0.0	0.00	0.00	0.14	0.01						
20	19.28	33.572	23.861	5.34	101.1	1.5	0.16	0.0	0.00	0.00	0.13	0.02	37.		1.3	1.9	1.6	0.12
26	19.32	33.591	23.868	5.35	101.4	1.5	0.16	0.0	0.00	0.00	0.15	0.01	28.		1.7	1.4	1.6	0.13
38	19.33	33.655	23.913	5.35	101.4	1.6	0.16	0.0	0.00	0.00	0.18	0.03						
50	18.50	33.669	24.134	5.50	102.7	1.7	0.16	0.0	0.00	0.00	0.24	0.05	8.4		1.6	1.4	1.5	0.09
62	16.57	33.570	24.523	5.87	105.6	2.0	0.15	0.0	0.00	0.15	0.25	0.07						
74	15.56	33.599	24.774	5.83	102.8	2.2	0.15	0.0	0.00	0.00	0.22	0.16						
86	14.74	33.526	24.898	5.78	100.1	2.5	0.21	0.1	0.06	0.00	0.32	0.15	1.4		0.37	0.03	0.20	0.02
97	14.19	33.499	24.994	5.70	97.6	2.7	0.27	0.7	0.19	0.00	0.23	0.20						
108	13.39	33.482	25.145	5.53	93.2	3.4	0.35	1.8	0.18	0.00	0.17	0.16	0.48		0.06	0.07	0.06	0.06

A) INCUBATION LIGHT INTENSITIES WERE 65.8, 38.8, 29.3, 9.00, 1.47, 0.49 PERCENT RESPECTIVELY.