

data report

CalCOFI Cruise 1504
4 - 19 April 2015

CC Reference 16 - 02
11 Oct 2016

**UNIVERSITY OF CALIFORNIA, SAN DIEGO
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PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

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INTRODUCTION

The data presented in this report were collected during cruise 1504* of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the RV New Horizon. 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. Occasional 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 P155. 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 KIO₃ 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.

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

Nutrient samples were analyzed at sea using a QuAAstro 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 30ml 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) 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. 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.

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

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

Primary Productivity Sampling

Primary productivity samples were taken each day shortly before local apparent noon (LAN). Primary production was estimated from ^{14}C uptake using a simulated *in situ* technique. Light penetration was estimated from the Secchi depth (assuming that the 1% light level is three times the Secchi depth). The depths with ambient light intensities corresponding to light levels simulated by the on-deck incubators were identified and sampled on the rosette 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 12.18 μCi of ^{14}C as NaHCO_3 (200 μl of stock solution) prepared in a 0.3 g/liter solution of sodium carbonate (Fitzwater et al., 1982), the specific activity decreased throughout the cruise. 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).

Avifauna Observations (Farallon Institute of Advanced Ecosystem Research)

Sea birds were counted within a 300-meter wide strip off to one side of the ship. Counts were made while underway between stations during periods of daylight. These counts were summed over 20 nautical mile (nm) intervals, or the distance between consecutive stations, whichever was less.

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 3 meters. The data were logged in one-minute averages using a Sea-Bird Electronics, Inc., SBE 45 MicroTSG Thermosalinograph and a Wetlabs Wetstar fluorometer.
- 2) *ADCP:* Continuous profiles of ocean currents and acoustic backscatter between 20 and 500 meters deep were measured along the shiptrack from a hull-mounted 150 kHz Acoustic Doppler Current Profiler (ADCP). The ADCP 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/sadcp/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).
- 3) *Underway Sea Surface pCO₂ and pH measurements:* Automated shipboard analysis of the partial pressure of CO₂ and pH were made from the ship's underway flow-through system. pCO₂ measurements were taken with the Shipboard Underway pCO₂ Environmental Recorder (SUPER-CO₂) sold by Sunburst Sensors designed with a showered equilibrator and a LI-COR 840A CO₂/H₂O 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. pCO₂ 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 9 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 pCO₂. 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) *APEX Profiling Float:* NAVOCEANO (Naval Oceanographic Office) maintains operational ocean circulation models worldwide. Ocean conditions in the Southern California region can be extracted from the global HYCOM (Hybrid Coordinate Model) or the RNCOM-SOCAL (Regional Navy Coastal Ocean Model for the Southern California area). Output from public domain versions of the various NAVOCEANO models are available at http://www.opc.ncep.noaa.gov/newNCOM/NCOM_currents.shtml. NAVOCEANO uses real-time temperature and temperature-salinity profile data in various ways: Profiles are 1) assimilated into model nowcasts to make them more realistic, 2) used to assess ocean model forecasts, 3) stored in historical observation databases such as the Master Oceanographic Observation Data Set (MOODS), and 4) used in the construction of ocean climatologies such as the Generalized Digital Environmental Model (GDEM). Profiling float data has become a primary source of profile data because it is so well-distributed spatially around the world, provides data on a continuing basis, provides salinity as well as temperature data, and is of high quality. Profiling float trajectories are used to assess the depiction of fronts and eddies in ocean models (e.g., positioning, size, and associated current velocities). NAVOCEANO provided three APEX profiling floats for deployment on this cruise at stations 90.0 45, 86.7 45, and 86.7 55.

11) The Global Drifter Program (GDP) is the principal component of the Global Surface Drifting Buoy Array, a branch of NOAA's Global Ocean Observing System (GOOS) and a scientific project of the Data Buoy Cooperation Panel (DBCP). The DBCP is an international program coordinating the use of autonomous data buoys to observe atmospheric and oceanographic conditions, over ocean areas where few other measurements are taken and a joint body of the World Meteorological Organization (WMO) and Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO). The overall objectives of the GDP are to: 1) maintain a near-operational ocean-observing network of at least 1250 Lagrangian drifters that, through the Argos and Iridium satellite systems, returns data of meteo-marine variables including near-surface ocean currents, sea surface temperature (SST), sea surface salinity (SSS), sea-level atmospheric pressure (SLP), sea-level winds (SLW) and subsurface temperature (Tz) and 2) to provide a data processing system for the scientific use of the data. The GDP provides Surface Velocity Program (SVP) drifters drogued at 15 m depth to partners that have ongoing deployment opportunities such as CALCOFI. Data is available at <http://gdp.ucsd.edu/calcofi> and <http://www.aoml.noaa.gov/phod/dac/dacdata.php>. Ten drifters (ID # 139491,

139492, 139494, 139496, 139497, 139498, i62411660, i62410700, 300234062410710, 300234062411610) were deployed on this cruise. (L.Centurioni, SIO)

12) *Cesium-134 survey:* Collaboration between Scripps Intuition of Oceanography and Woods Hole Oceanographic has led to samples being collected for radioactive isotopes of cesium-137 and -134 analysis using the ratio of the two isotopes to distinguish cesium from the more recent Fukushima source over fallout from weapons testing. Twenty liters of unfiltered seawater was collected primarily from the surface, but also one 5 point vertical profile into two 10L plastic sample containers and shipped to the Center for Marine and Environmental Radioactivity at the Woods Hole Oceanographic for analysis. Final radioactive cesium concentrations are reported in units of Bq per cubic meter where one Becquerel equals one disintegration per second.
<http://ourradioactiveocean.org/results.html> (Mitchell SIO, Buesseler WHOI)

TABULATED DATA

CTD/Rosette Cast Data

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

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

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

Primary Productivity Data

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

Macrozooplankton Data

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

FOOTNOTES

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

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

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

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

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FIGURES

Cruise 1504

1. CalCOFI Cruise 1504 track and station positions.
2. Horizontal distribution of dynamic height anomaly (0 over 500m). In areas shallower than 500 m, the dynamic heights were extrapolated on the basis of the offshore deeper steric height as described in Reid and Mantyla (1976).
3. Horizontal distributions at 10 meters: A) chlorophyll-*a*; B) potential density; C) temperature; and D) salinity.
4. Horizontal distributions at 200 meters: A) dynamic height anomaly (200 over 500 m); B) potential density; C) temperature; and D) salinity.
5. Sections along CalCOFI line 90 (vertical exaggeration, 1000): A) potential density; B) temperature; C) salinity; D) silicate; E) nitrate; F) phosphate; G) chlorophyll-*a*; H) oxygen saturation; I) oxygen; J) nitrite; and K) phaeopigments.

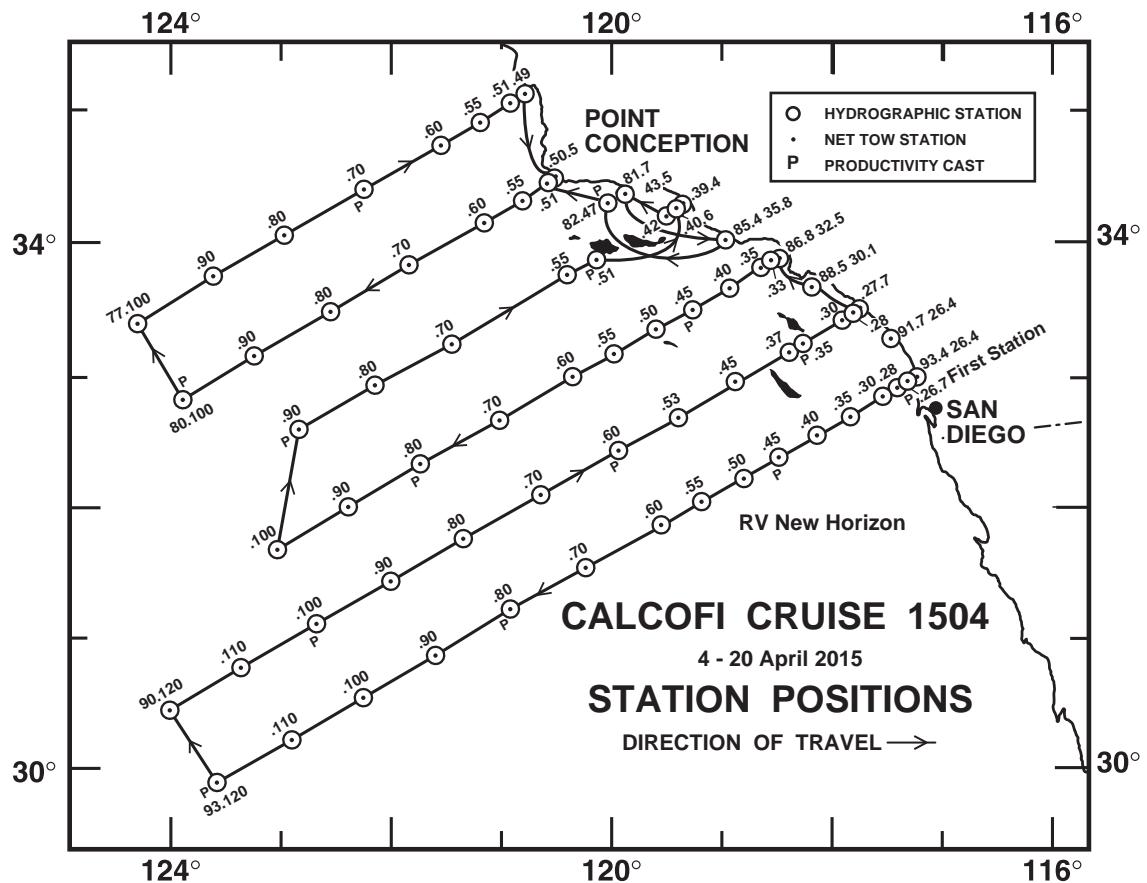


FIGURE 1

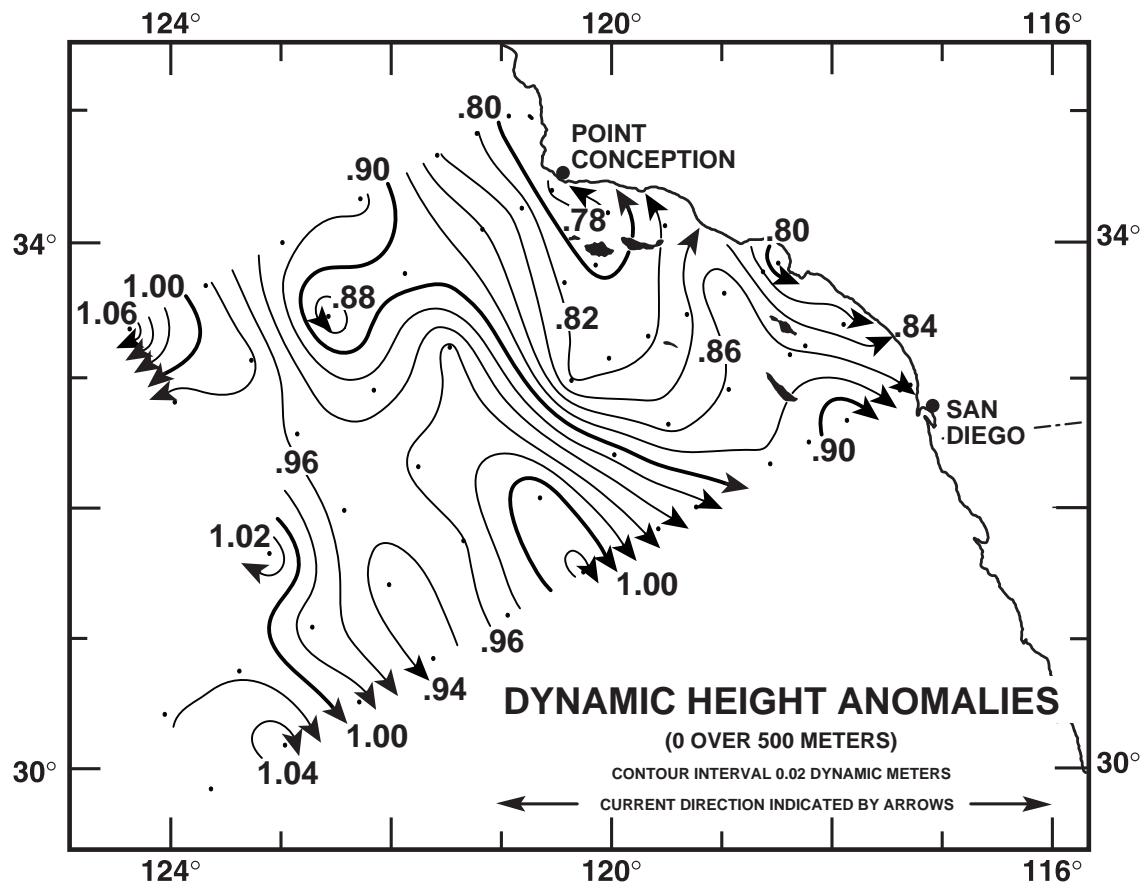


FIGURE 2

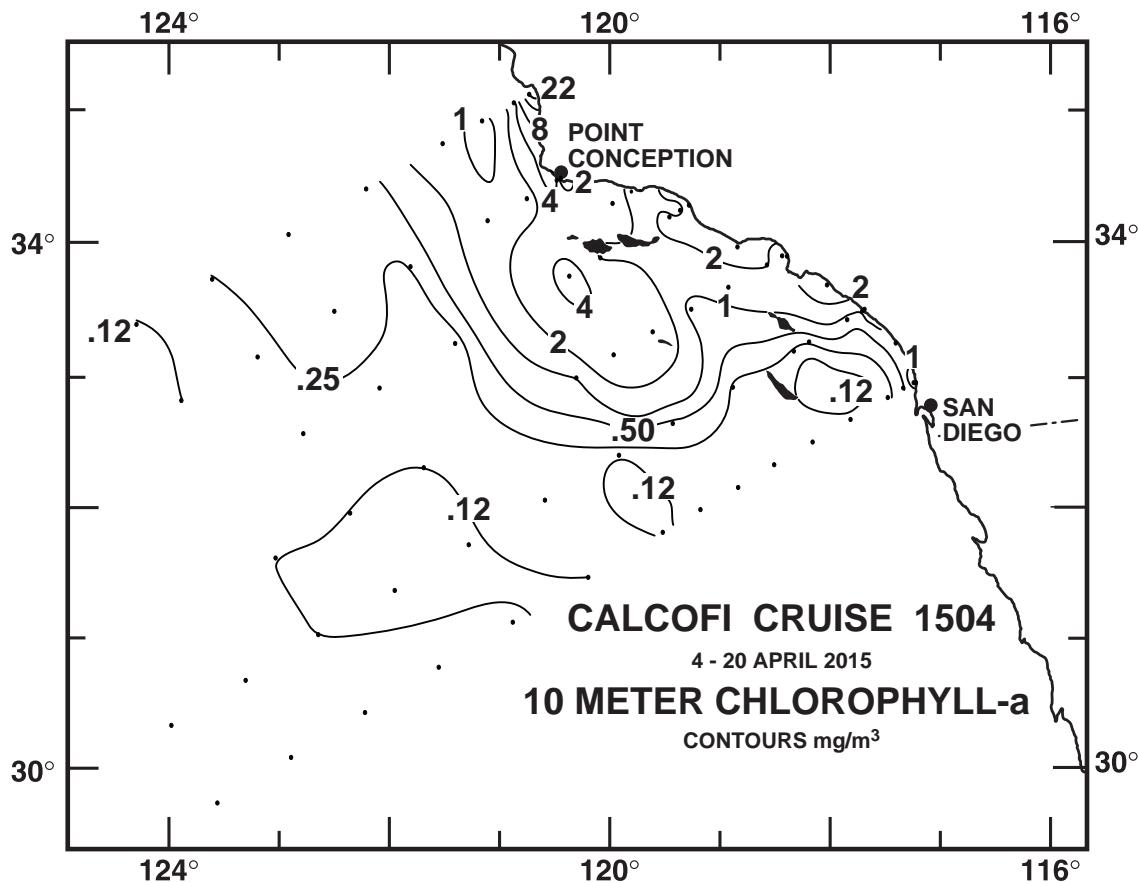


FIGURE 3A

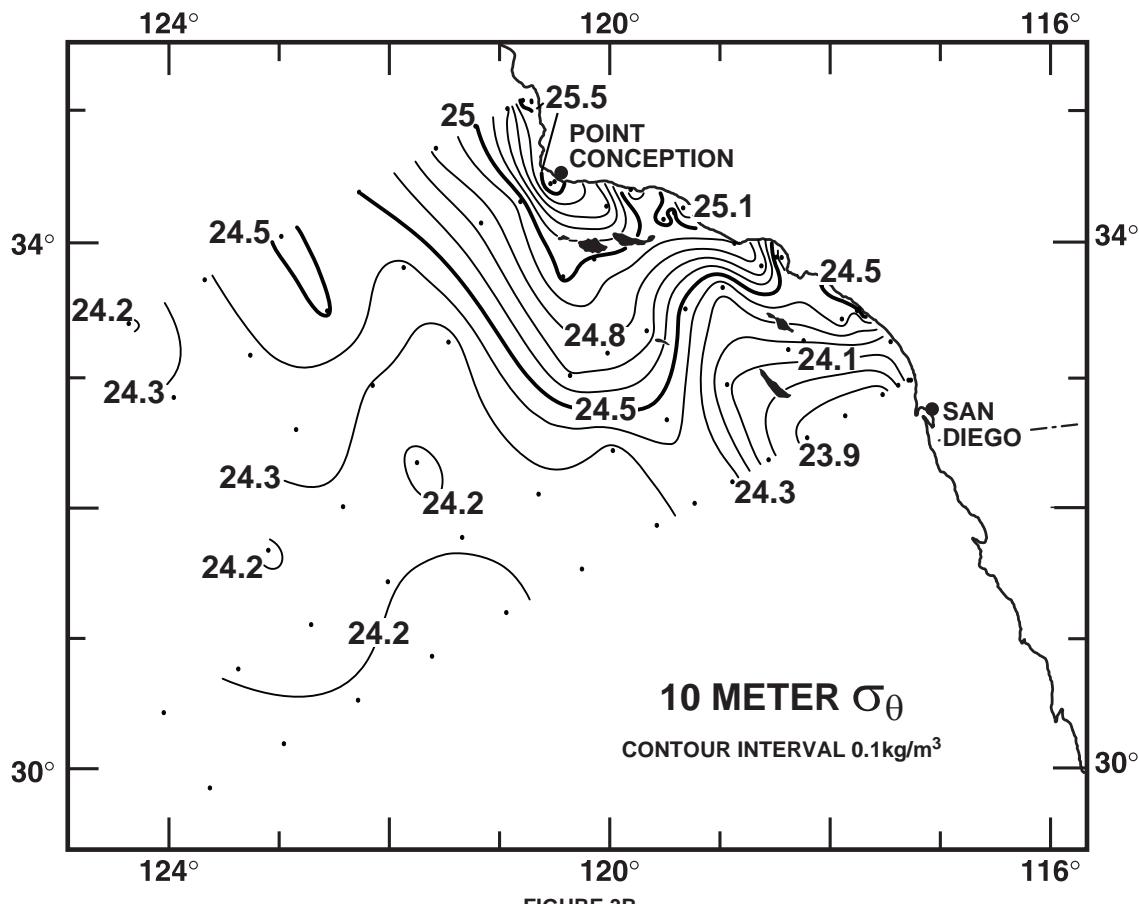


FIGURE 3B

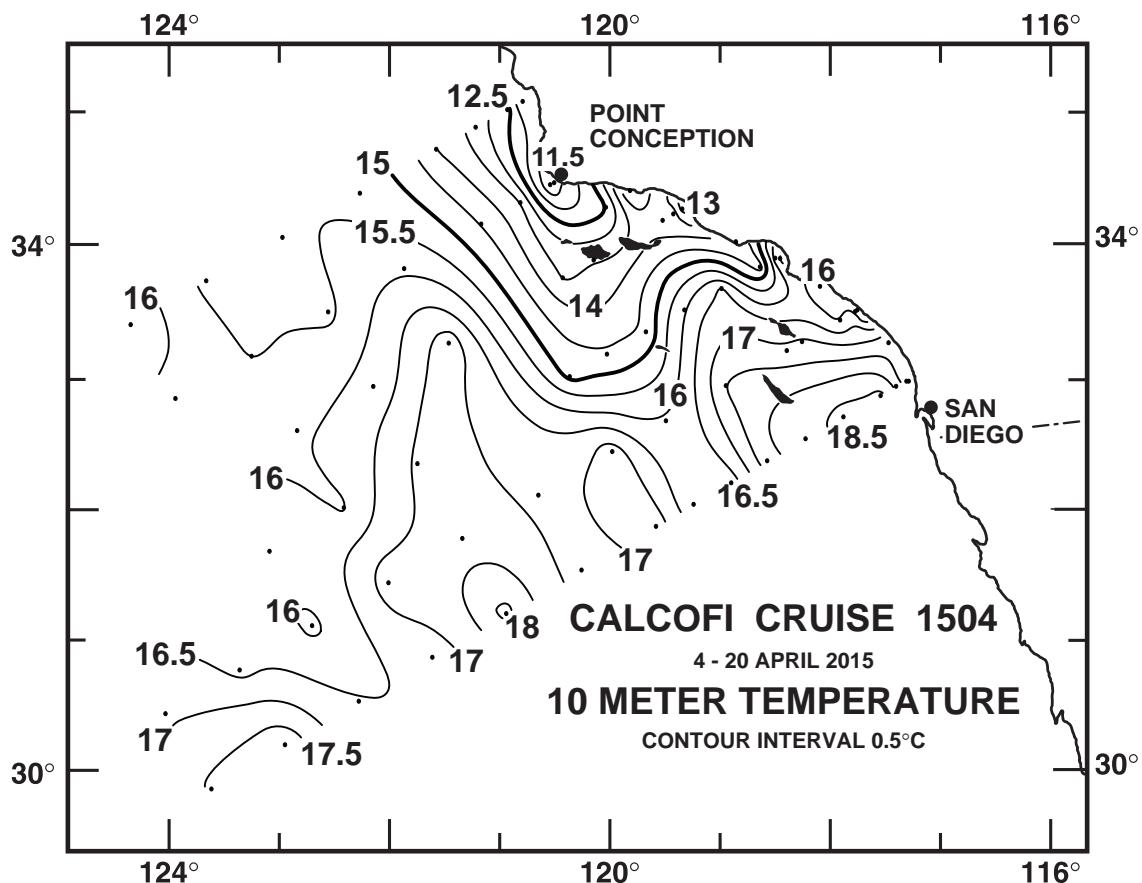


FIGURE 3C

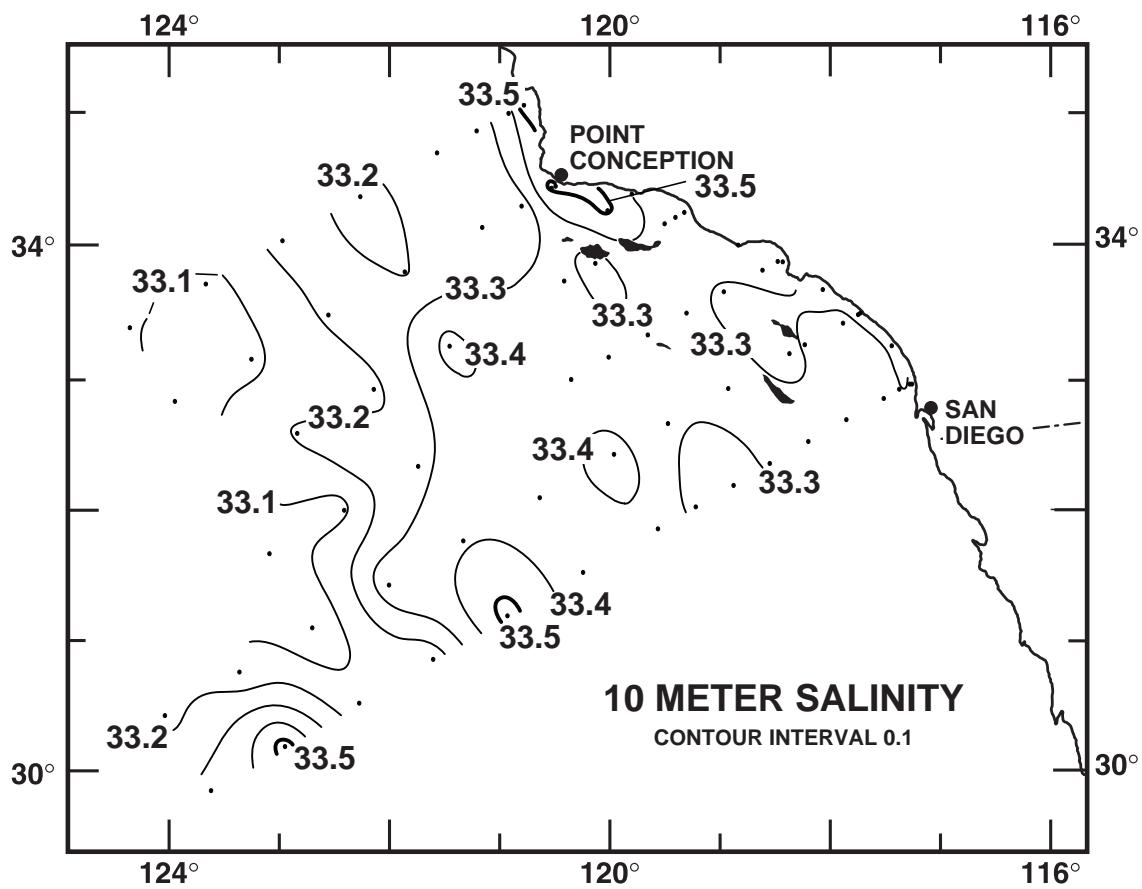


FIGURE 3D

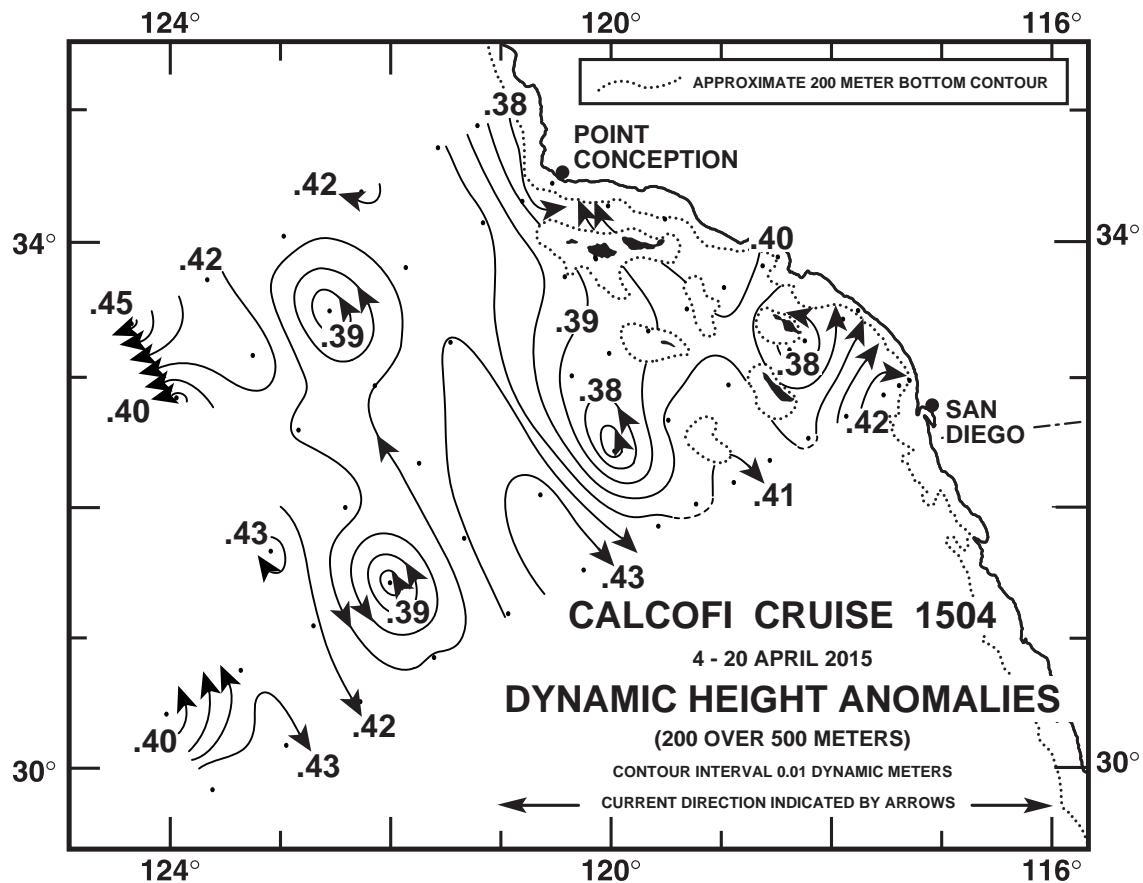


FIGURE 4A

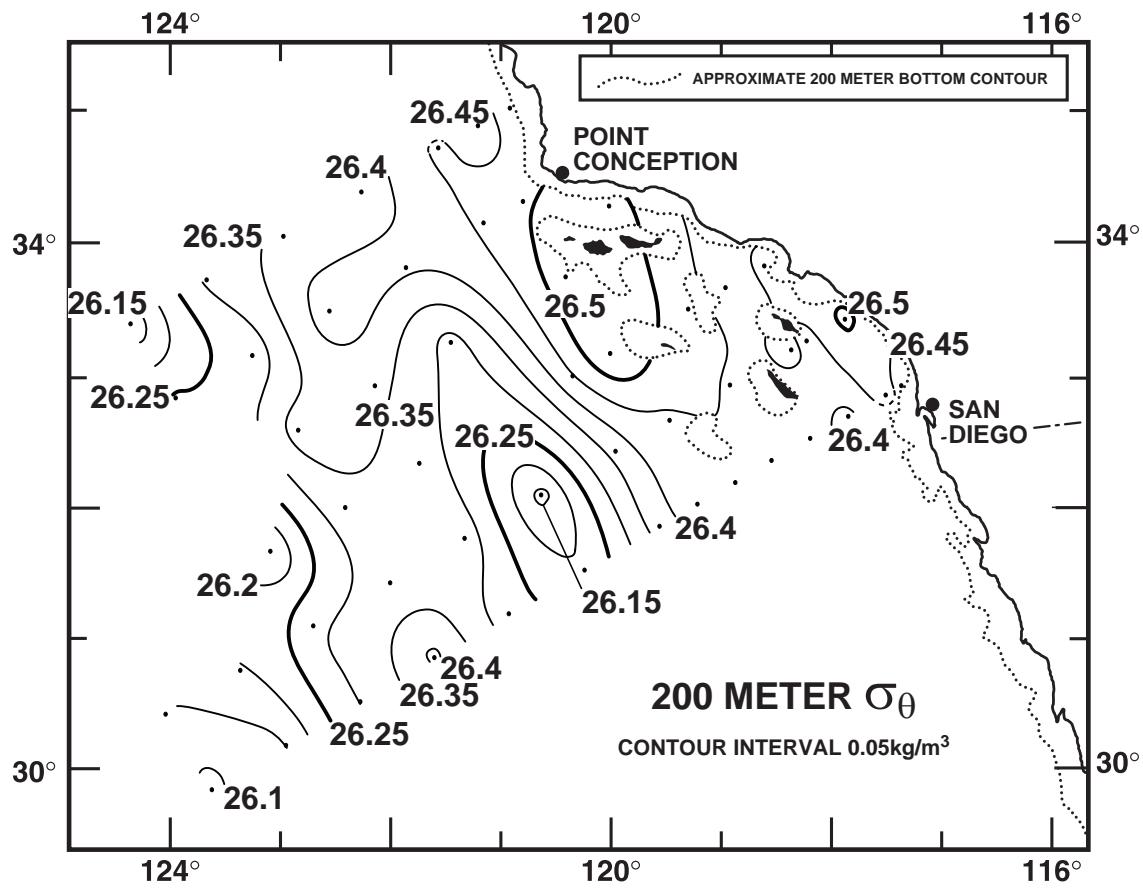


FIGURE 4B

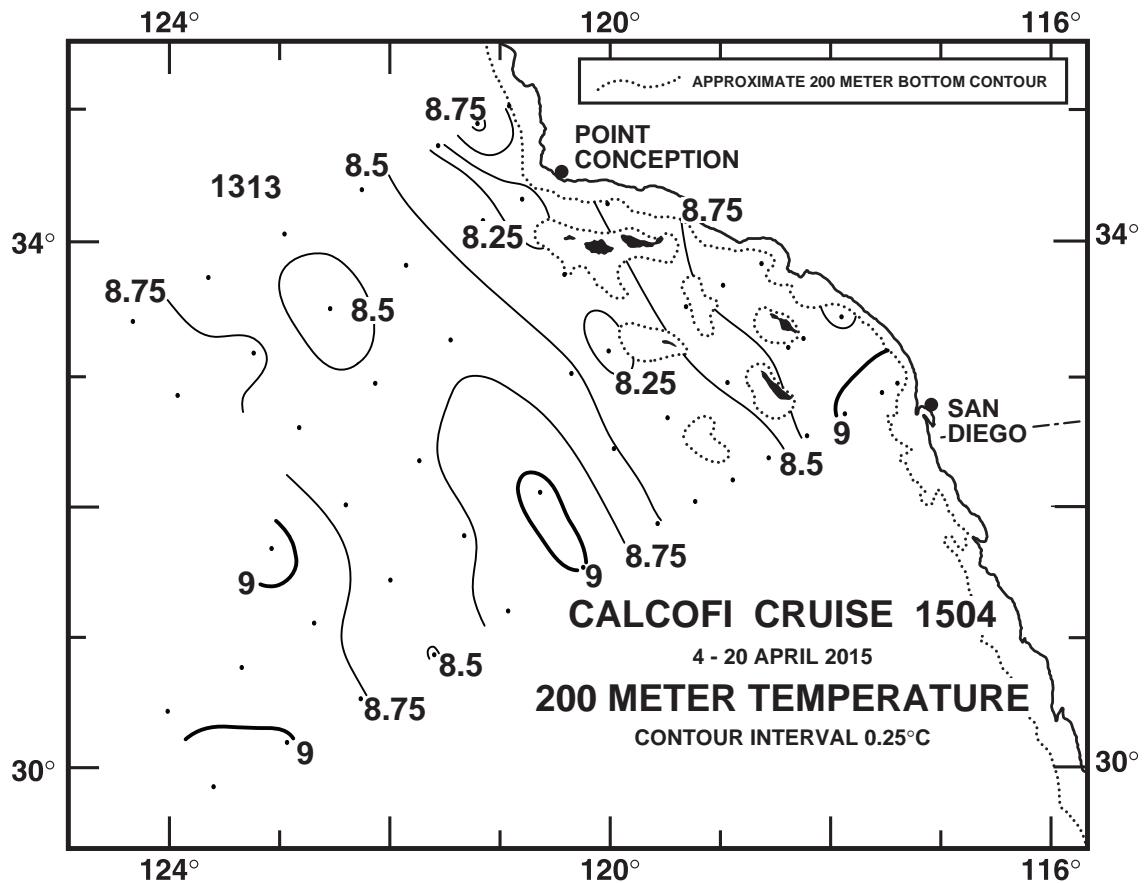


FIGURE 4C

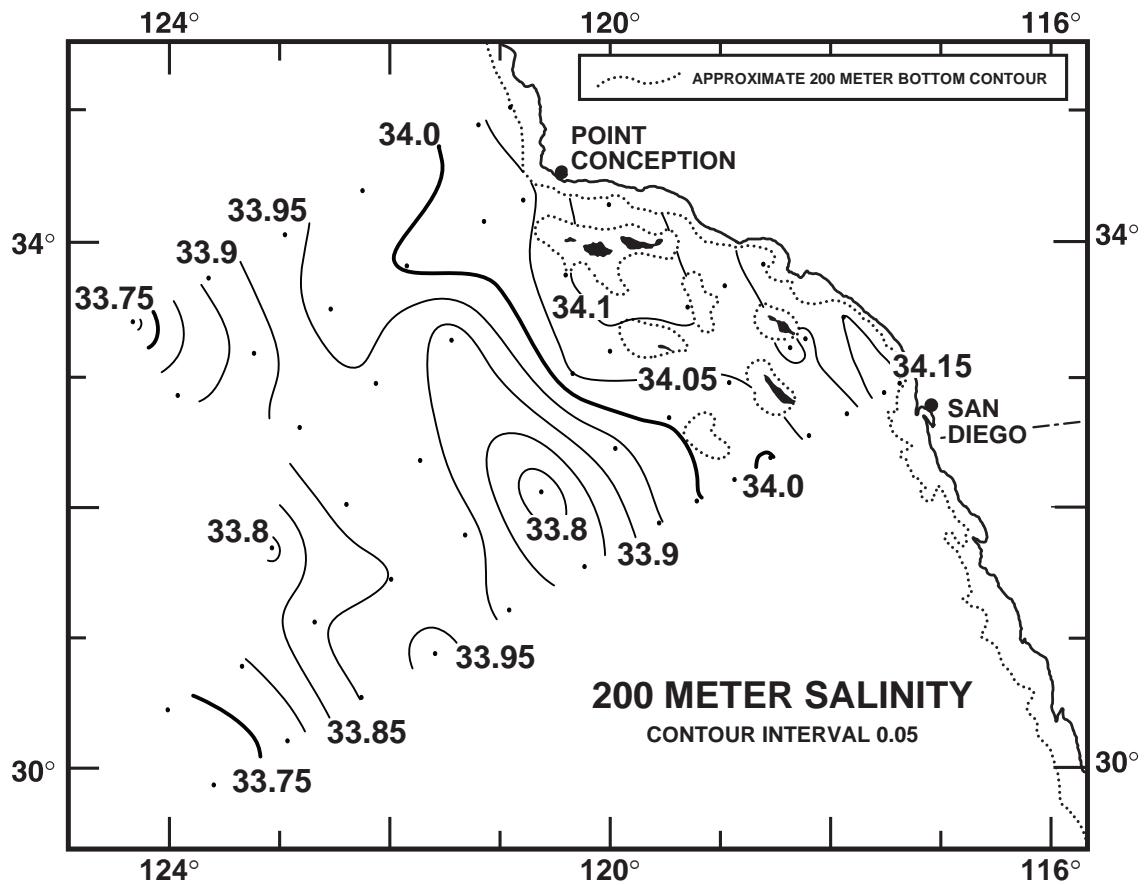
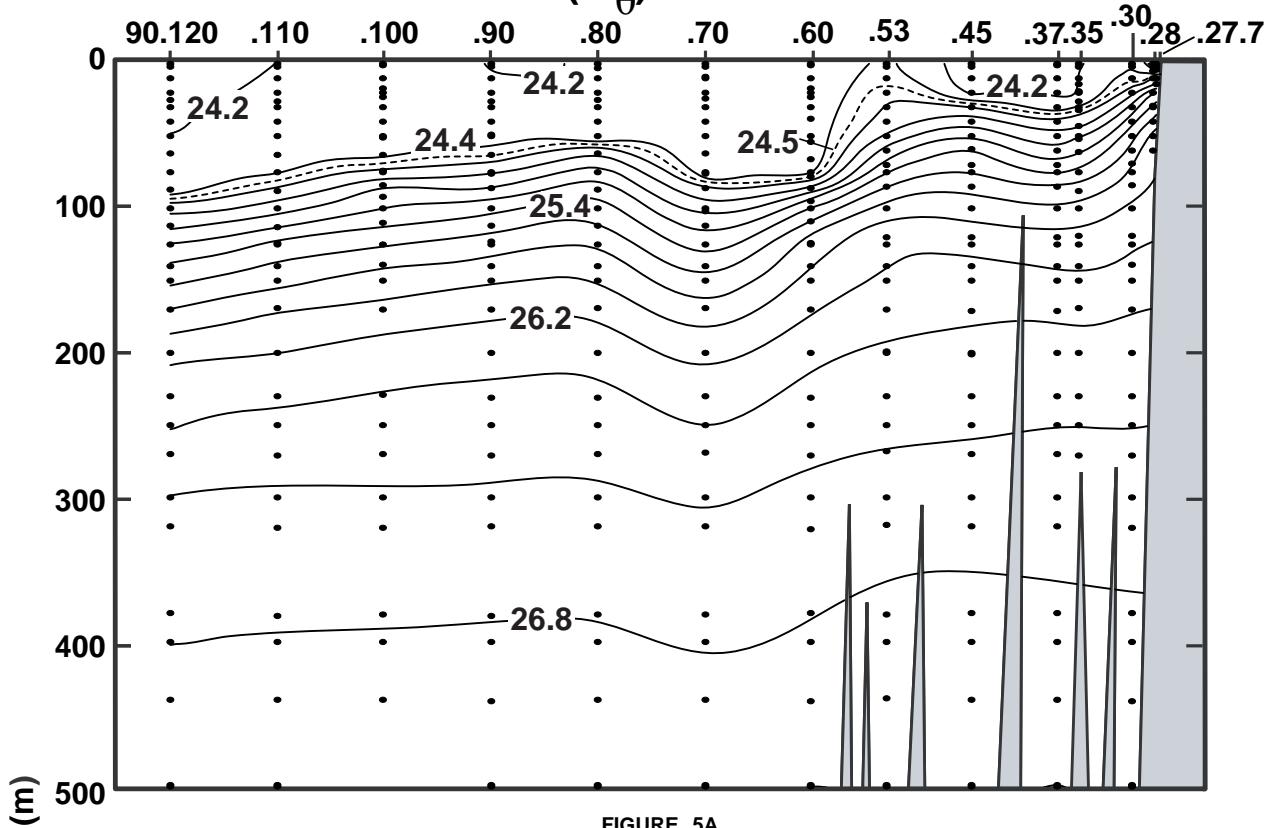


FIGURE 4D

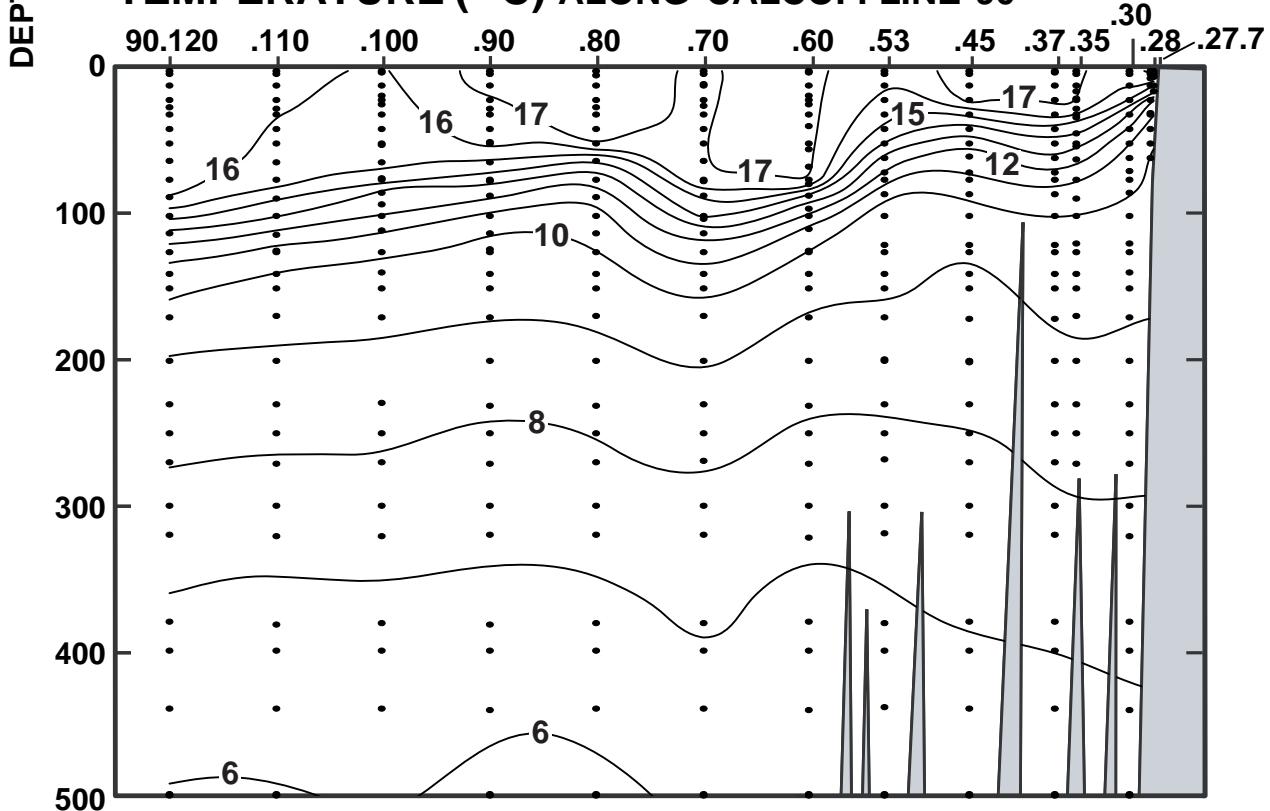
CALCOFI CRUISE 1504

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POTENTIAL DENSITY (σ_0) ALONG CALCOFI LINE 90



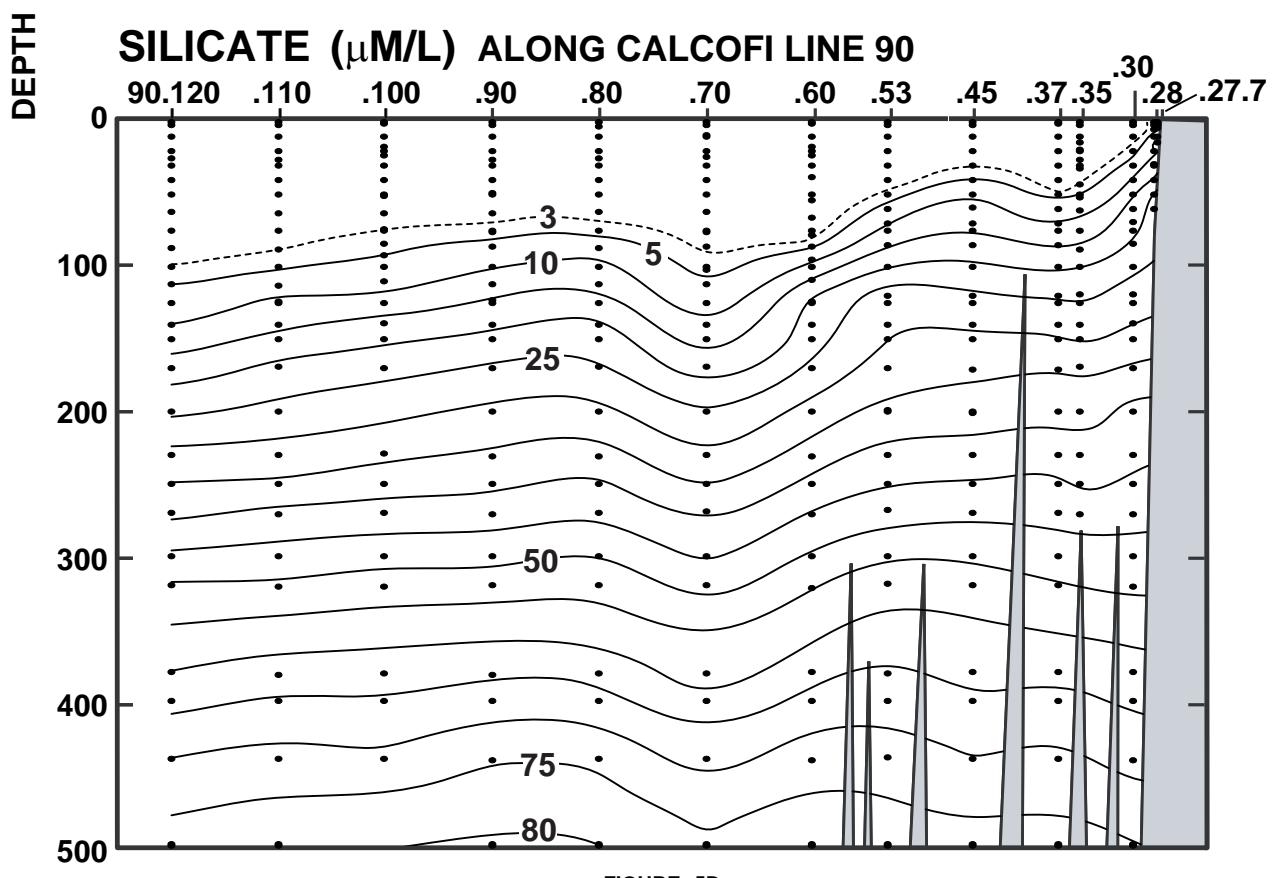
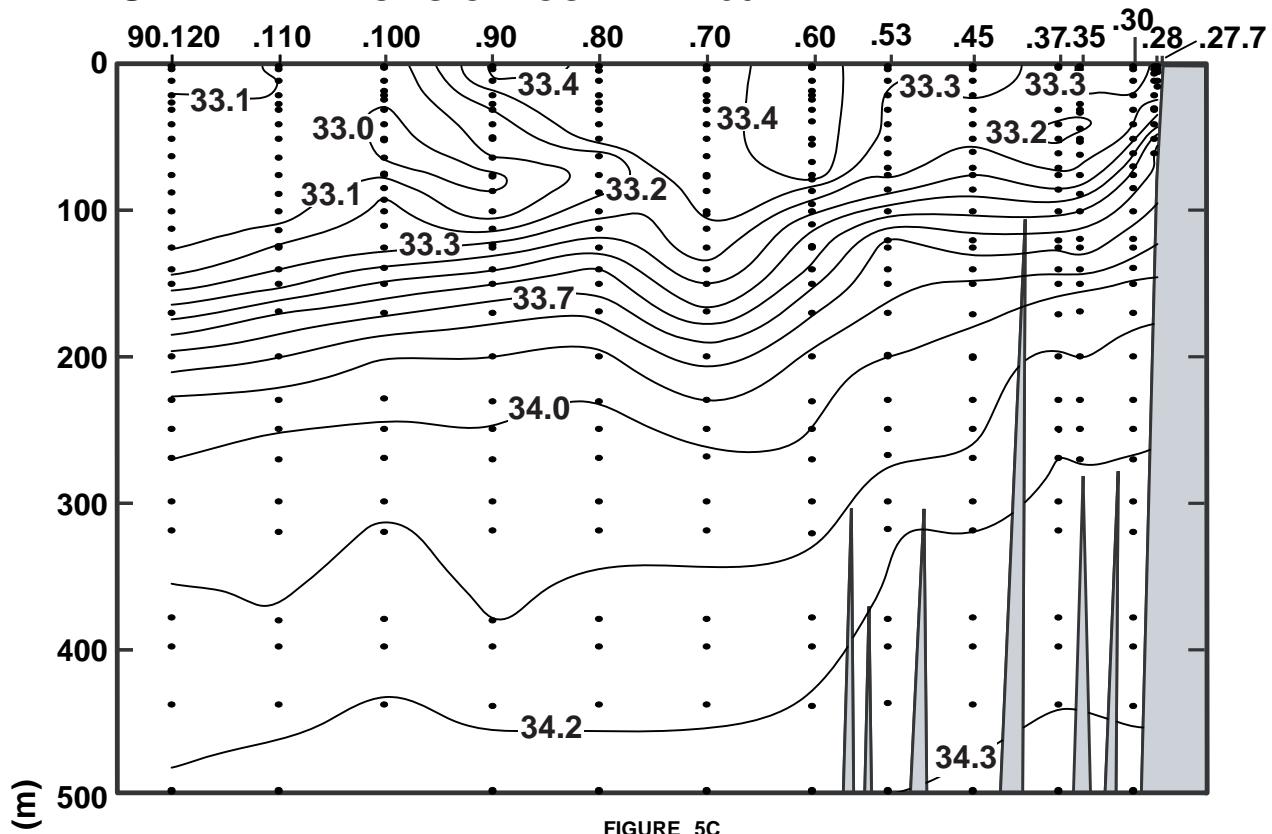
TEMPERATURE (°C) ALONG CALCOFI LINE 90



CALCOFI CRUISE 1504

7- 10 April 2015

SALINITY ALONG CALCOFI LINE 90



CALCOFI CRUISE 1504

7 - 10 April 2015

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

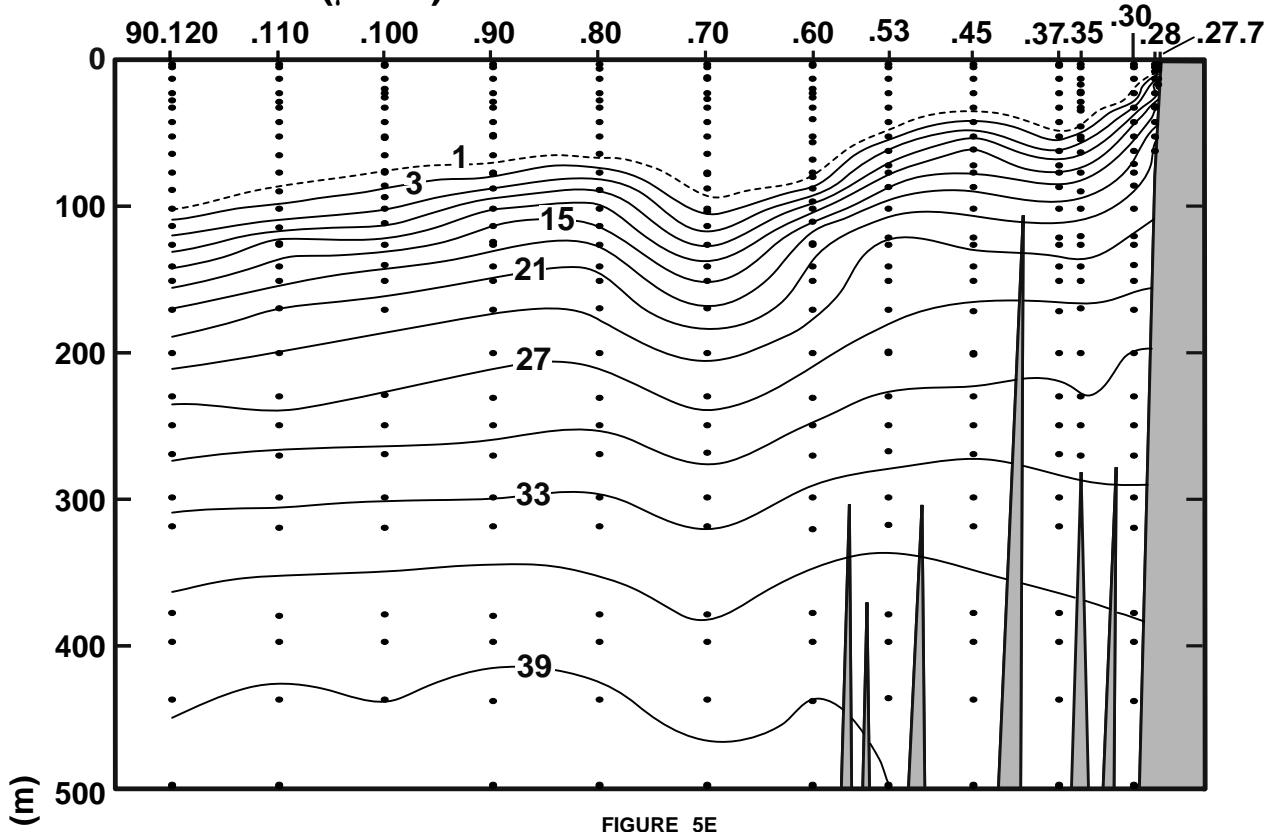


FIGURE 5E

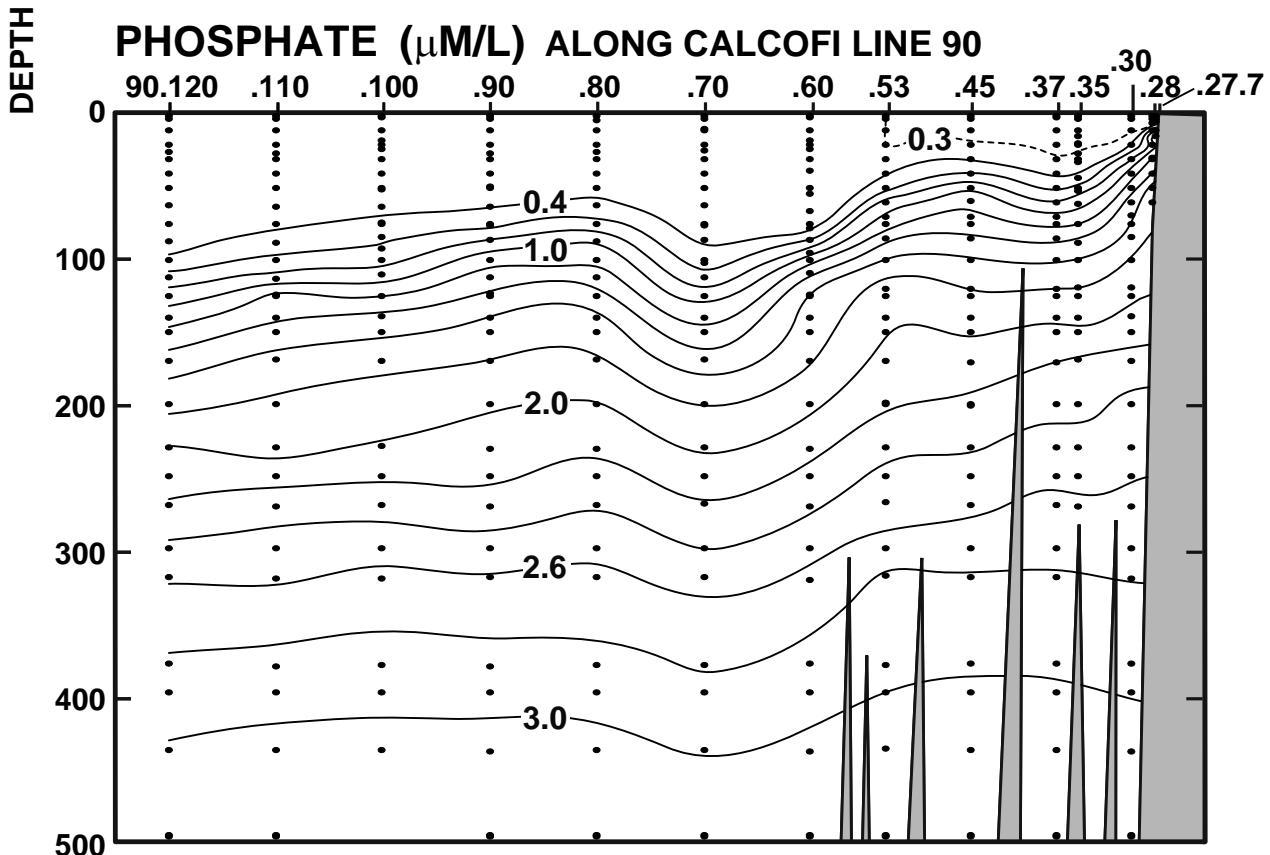


FIGURE 5F

CALCOFI CRUISE 1504

7 - 10 April 2015

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

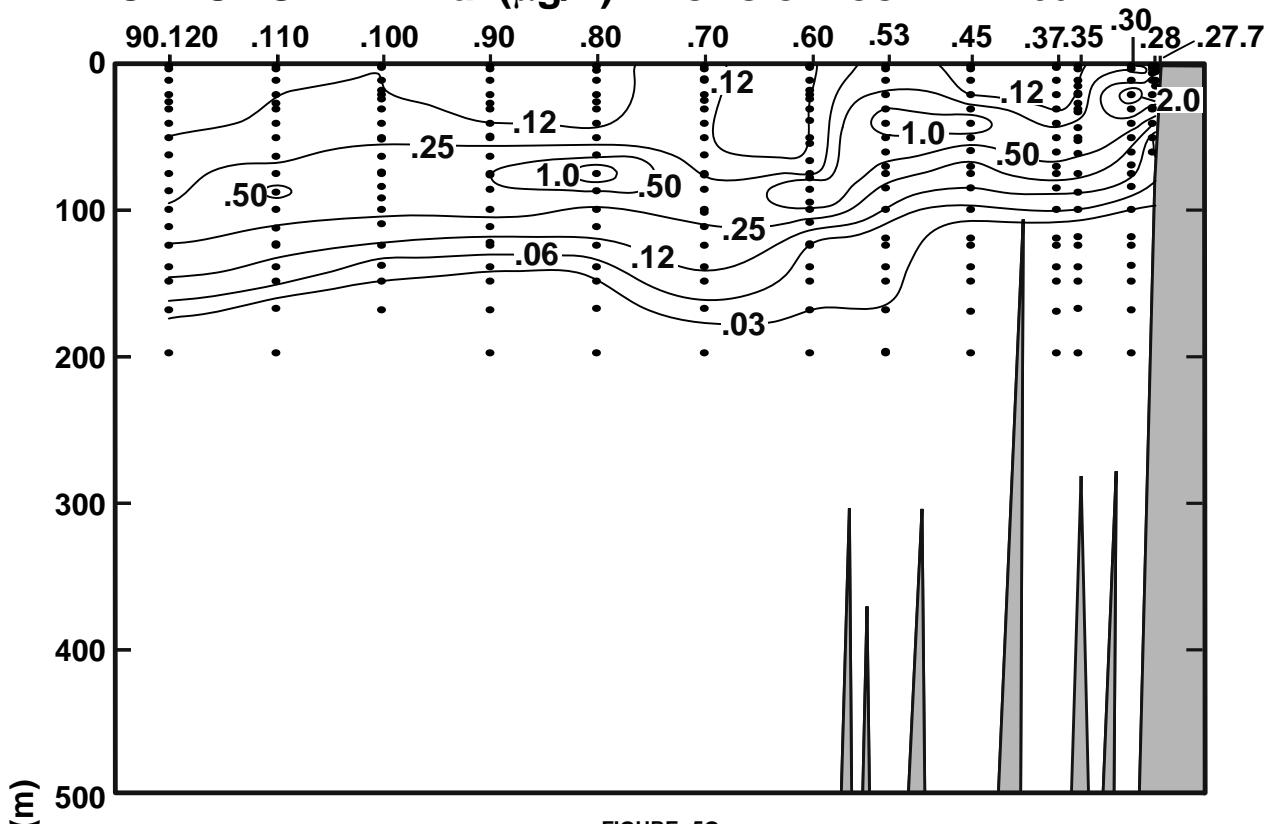


FIGURE 5G

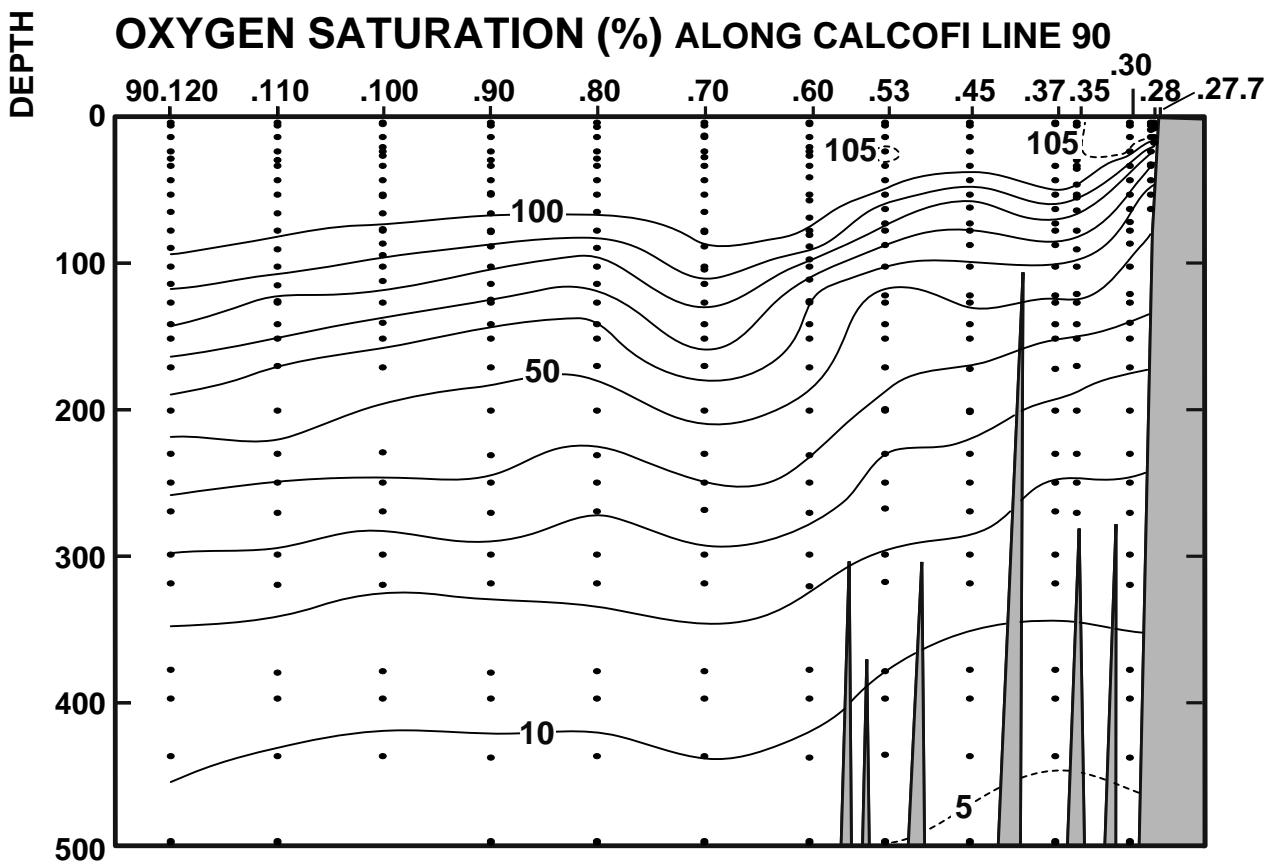
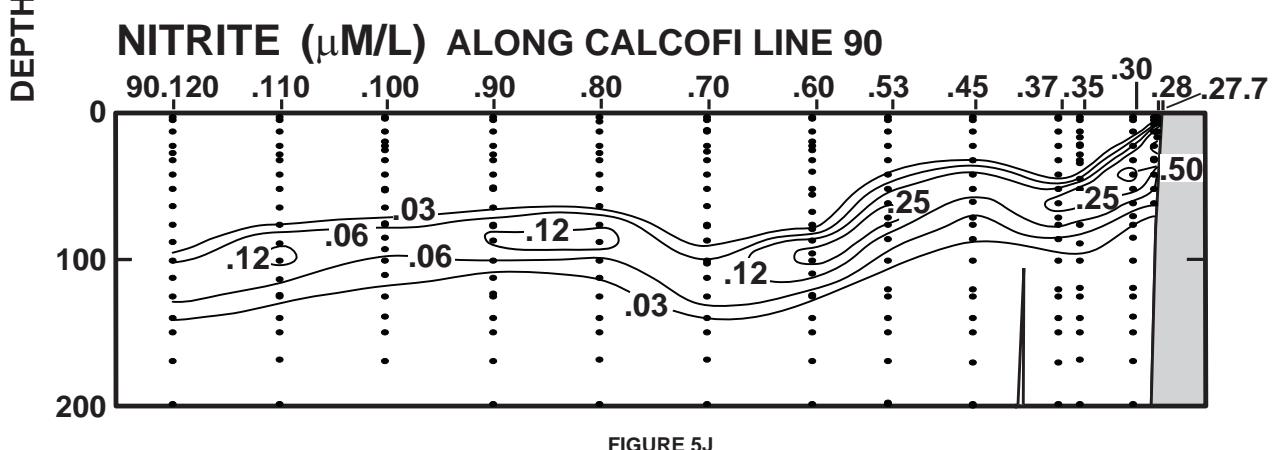
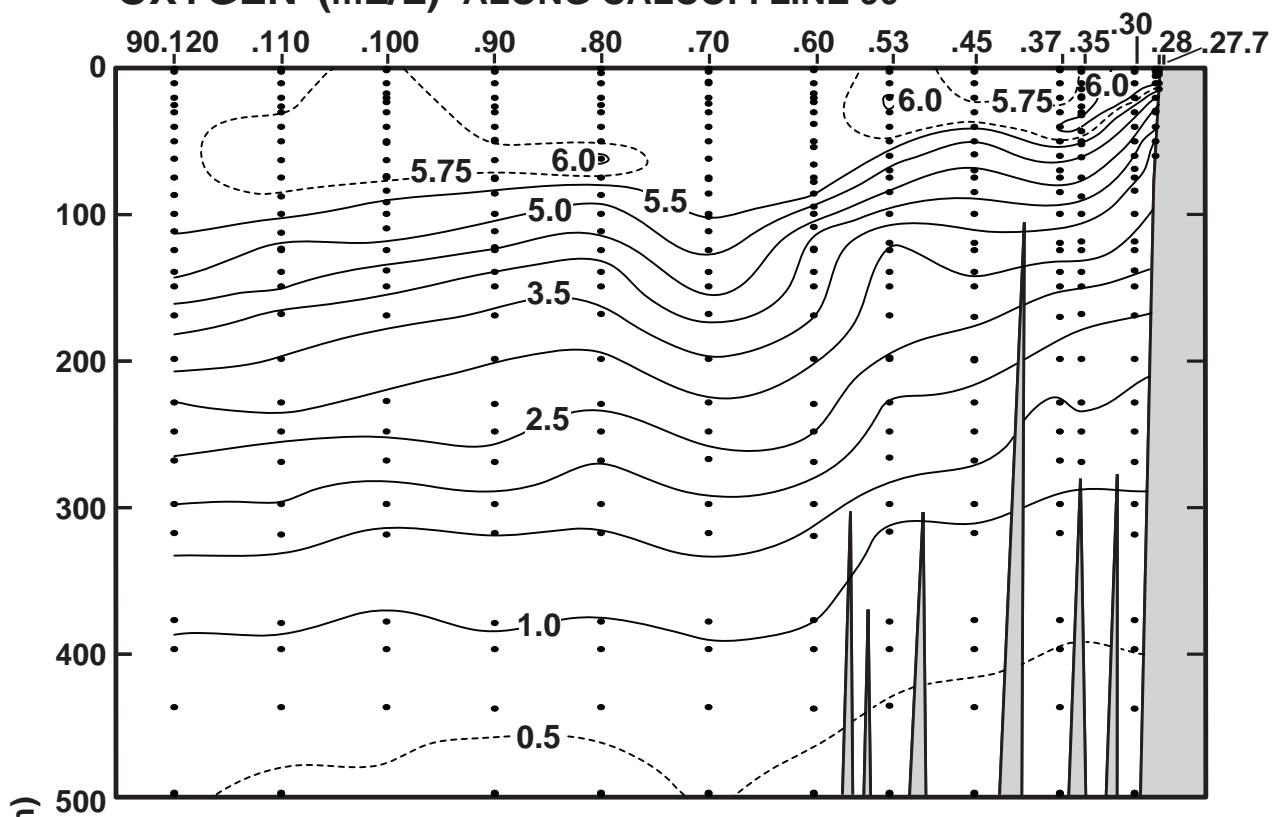


FIGURE 5H

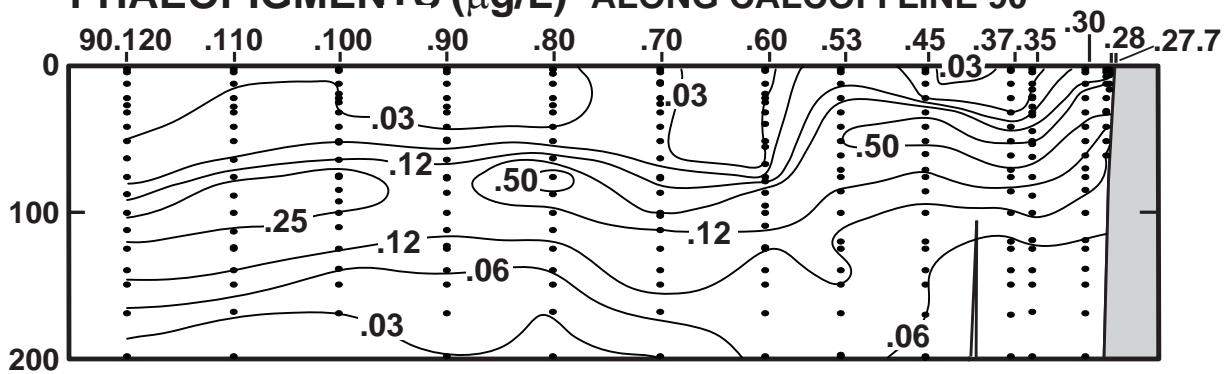
CALCOFI CRUISE 1504

7 - 10 April 2015

OXYGEN (mL/L) ALONG CALCOFI LINE 90



PHAEOPIGMENTS (μg/L) ALONG CALCOFI LINE 90



PERSONNEL

CalCOFI Cruise 1504

SHIP'S CAPTAIN

Ian Lawrence, RV *New Horizon*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participating (Legs)
Hays, Amy (Chief Scientist)	Fisheries Biologist, NMFS	1,2
Chang, Kylee	Graduate Student, SIO	1
Dovel, Shonna	Staff Research Associate, SIO	1,2
Ekern, Lindsey	Staff Research Associate, SIO	1,2
Faber, David	Staff Research Associate, SIO	1,2
Johnson, Zachariah	Volunteer	1,2
Klemmedson, Angela	Scientific Aid, CDFW	1,2
Manion, Sue	Fishery Biologist, NMFS	1,2
Miller, Kelsey	Volunteer	1,2
Rodgers-Wolgast, Jennifer	Staff Research Associate, SIO	1,2
Taylor, Katlyn	Marine Mammal Observer, MPL	1,2
Trickey, Jennifer	Acoustic Technician, SIO	1,2
Webb, Sophie	Bird Observer, FAIER	1,2
Whitaker, Katherine	Marine Mammal Observer, MPL	1,2
Wilkinson, James	Programmer Analyst, SIO	1,2
Wolgast, David	Staff Research Associate, SIO	1,2
Yu, Symphony	Volunteer	1,2

Leg 1: San Diego to Dana Point, California, 4-10 April, 2015

Leg 2: Dana Point to San Diego, California, 10-19 April, 2015

RV NEW HORIZON

CALCOFI CRUISE 1504

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 5.1 N	120 46.3 W	19/04/2015	1147	UTC	68 m	010 03 kn			1013.8 mb	11.3 C	10.8 C					069	
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	μmol/Kg	PCT	μM	μM	μM	μM	μM	μg/L	μg/L	db
0	11.51	11.51	33.560 D	25.562	241.3	0.000	7.11	309.8	115.3	1.4	0.39	1.7	0.07	0.01	22.63	2.54	0
2	11.51	11.51	33.561	25.564	241.2	0.005	7.11	309.8	115.3	1.4	0.39	1.7	0.07	0.01	22.63	2.54	2 09
4	11.48	11.48	33.562	25.570	240.7	0.010	7.12	310.0	115.3	1.4	0.39	1.8	0.07	0.01	22.38	2.56	4 08
10	11.50	11.50	33.569	25.571	240.7	0.024	7.15	311.4	115.9	1.0	0.38	1.4	0.06	0.02	23.71	1.62	10 06
10	11.50	11.50	33.560	25.565	241.3	0.023											10 07
20	11.44	11.44	33.569	25.583	239.9	0.048	6.93	301.9	112.2	1.4	0.44	2.3	0.09	0.03	24.09	1.10	20 05
30	11.16	11.15	33.566	25.633	235.4	0.072	6.12	266.3	98.3	4.2	0.75	6.9	0.15	0.15	21.75	1.16	30 04
40	10.97	10.96	33.567	25.668	232.3	0.095	5.86	254.9	93.8	6.7	0.88	8.8	0.13	0.15	20.90	0.99	40 03
50	9.80	9.79	33.570	25.871	213.1	0.118	3.94	171.4	61.5	20.0	1.61	19.5	0.12	0.10	2.74	0.72	50 02
59	9.65	9.64	33.691	25.991	201.9	0.136	3.25	141.5	50.6	25.7	1.85	22.2	0.19	0.08	0.61	0.62	59 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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 54.6 W	19/04/2015	0908	UTC	220 m	320 04 kn			1014.2 mb	12.1 C	11.9 C					068	
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	μmol/Kg	PCT	μM	μM	μM	μM	μM	μg/L	μg/L	db
0	12.68	12.68	33.354 D	25.182	277.4	0.000	6.65	289.6	110.3	0.5	0.56	3.0	0.16	0.55	2.52	1.04	0
2	12.68	12.67	33.355	25.183	277.4	0.006	6.65	289.6	110.3	0.5	0.56	3.0	0.16	0.55	2.52	1.04	2 16
9	12.67	12.67	33.355	25.184	277.6	0.026											9 15
10	12.67	12.67	33.355	25.185	277.5	0.028	6.59	287.1	109.3	0.5	0.57	3.0	0.16	0.56	2.49	1.09	10 14
20	11.69	11.68	33.277	25.311	265.7	0.055	6.06	264.1	98.5	4.6	0.86	7.4	0.19	0.35	7.09	1.78	20 13
30	11.55	11.55	33.320	25.369	260.5	0.081	6.01	261.9	97.4	6.3	0.91	7.9	0.19	0.60	6.97	1.93	30 12
40	11.47	11.47	33.323	25.387	259.0	0.107	5.81	253.1	93.9	7.5	1.01	8.9	0.20	0.65	6.34A	1.92A	40 11
50	11.14	11.13	33.397	25.505	248.0	0.133	5.79	252.2	93.0	6.3	1.00	8.7	0.18	1.31	7.59	2.64	50 10
60	10.58	10.57	33.405	25.611	238.2	0.157	5.43	236.5	86.2	8.7	1.17	10.8	0.19	1.31	10.24	3.01	60 09
70	10.01	10.00	33.499	25.781	222.1	0.180	4.07	177.1	63.8	18.7	1.59	18.6	0.18	0.22	4.67	2.19	71 08
75 ISL	10.00 D	9.99	33.594 D	25.858	214.9	0.181	3.62	0157.7 D	56.8	21.1	1.68	20.0	0.15	0.00	3.19	1.60	76
85	9.57	9.56	33.735	26.039	197.9	0.212	3.02	131.5	47.0	25.8	1.86	22.9	0.09	0.00	0.21	0.42	86 07
100	9.17	9.15	33.804	26.159	186.7	0.241	3.02	131.5	46.6	27.8	1.91	24.5	0.04	0.00	0.10	0.33	101 06
120	9.05	9.04	33.976	26.313	172.6	0.276	2.07	90.1	31.9	36.9	2.24	27.4	0.16	0.04	0.07	0.43	121 05
125 ISL	9.04 D	9.02	33.977 D	26.316	172.4	0.274	2.11	091.7 D	32.4	37.0	2.25	27.5	0.16	0.05	0.07	0.42	126
140	9.01	9.00	33.987	26.329	171.6	0.311	2.02	88.0	31.1	37.5	2.26	27.6	0.15	0.07	0.07	0.39	141 04
150 ISL	8.88 D	8.87	34.018 D	26.373	167.5	0.318	1.97	085.8 D	30.2	38.7	2.30	28.1	0.15	0.09	0.06	0.35	151
171	8.73	8.72	34.049	26.421	163.3	0.363	1.79	77.9	27.4	41.1	2.37	29.1	0.14	0.12	0.04	0.28	172 03
200	8.45	8.43	34.093	26.500	156.3	0.409	1.61	69.9	24.4	44.3	2.45	30.2	0.11	0.12	0.02	0.25	202 02
216	8.47	8.45	34.098	26.501	156.6	0.434	1.51	65.6	22.9	45.8	2.52	30.2	0.15	0.31			218 01

A) FIRST 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 STA-CORRECTED 02;

RV NEW HORIZON

CALCOFI CRUISE 1504

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 11.8 W	19/04/2015	0510	UTC	571 m	320 13 kn			1014.4 mb	13.9 C	11.9 C					067	
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	μmol/Kg	PCT	μM	μM	μM	μM	μM	μg/L	μg/L	db
0	13.67	13.67	33.247 D	24.901	304.2	0.000	6.21	270.6	105.1	3.5	0.61	3.6	0.13	0.11	0.72	0.25	0
2	13.67	13.67	33.249	24.903	304.1	0.006	6.21	270.6	105.1	3.5	0.61	3.6	0.13	0.11	0.72	0.25	2 22
10	13.23	13.23	33.250	24.992	295.8	0.030	6.22	270.9	104.3	3.5	0.64	3.8	0.14	0.23	0.66	0.29	10 20
10	13.23	13.23	33.249	24.992	295.9	0.030											21
20	12.84	12.84	33.273	25.089	286.9	0.059	6.09	265.4	101.3	4.0	0.70	4.8	0.18	0.18	1.64	0.77	20 19
30	12.19	12.19	33.327	25.256	271.2	0.087	5.78	251.8	94.9	6.5	0.88	7.2	0.22	0.57	2.77	1.28	30 18
40	11.82	11.81	33.348	25.344	263.2	0.114	5.88	255.9	95.7	6.4	0.91	7.6	0.21	0.86	3.95	1.61	40 16
50	11.44	11.44	33.381	25.438	254.4	0.140	5.42	236.2	87.7	9.4	1.09	10.0	0.23	0.96	4.06	1.65	50 15
60	10.86	10.85	33.421	25.574	241.6	0.165	4.86	211.4	77.5	13.2	1.28	13.3	0.25	0.64	2.61	1.38	60 14
70	10.25	10.24	33.476	25.722	227.7	0.188	4.15	180.7	65.4	18.1	1.52	17.9	0.22	0.02	0.43	0.49	71 13
75 ISL	10.00 D	9.99	33.599 D	25.862	214.6	0.173	3.72	0162.0 D	58.4	19.7	1.59	19.0	0.19	0.00	0.36	0.46	76
85	9.89	9.88	33.656	25.925	208.8	0.221	3.38	147.1	52.9	23.1	1.74	21.2	0.11	0.00	0.23	0.41	86 12
100	9.51	9.49	33.797	26.099	192.6	0.251	2.81	122.3	43.6	27.9	1.94	24.1	0.04	0.00	0.11	0.32	101 11
120	9.25	9.23	33.899	26.221	181.3	0.288	2.51	109.1	38.7	31.6	2.07	25.9	0.03	0.00	0.05	0.22	121 10
125 ISL	9.20 D	9.18	33.903 D	26.232	180.4	0.271	2.52	0109.8 D	39.0	32.3	2.09	26.2	0.03	0.00	0.05	0.21	126
140	9.00	8.99	33.954	26.304	173.9	0.324	2.34	101.8	36.0	34.1	2.14	26.9	0.02	0.00	0.04	0.19	1

RV NEW HORIZON

CALCOFI CRUISE 1504

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		
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	μM	μM	μg/L	μg/L	db	
0	14.15	14.15	33.248 D	24.802	313.6	0.000	6.32	275.4	108.0	1.7	0.52	2.0	0.11	0.09	1.54	0.32	0		
2	14.15	14.15	33.252	24.806	313.3	0.006	6.32	275.4	108.0	1.7	0.52	2.0	0.11	0.09	1.54	0.32	2	20	
10	14.00	14.00	33.252	24.837	310.6	0.031	6.29	274.1	107.2	1.8		2.2	0.12		1.53	0.48	10	19	
20	12.76	12.76	33.282	25.111	284.8	0.061	6.50	283.0	107.9	1.4	0.64	4.2	0.17	0.18	2.28	0.93	20	18	
30	12.58	12.58	33.267	25.135	282.8	0.090	6.03	262.7	99.8	3.7	0.76	5.8	0.17	0.28	3.58	1.47	30	17	
40	12.53	12.53	33.264 D	25.142	282.4	0.119	5.93	D258.4	98.0								40	16	
50	11.83	11.82	33.300	25.304	267.2	0.145	5.20	226.5	84.7	9.3	1.06	9.9	0.23	0.41	1.83	1.10	50	15	
60	10.59	10.58	33.455	25.648	234.6	0.170	4.24	184.8	67.3	17.0	1.46	16.5	0.28	0.14	0.36	0.50	60	14	
71	9.97	9.97	33.559	25.834	217.1	0.195	3.82	166.4	59.9	20.3	1.63	19.0	0.31	0.10	0.41	0.56	72	13	
75 ISL	9.93 D	9.92	33.626 D	25.894	211.5	0.205	3.51	D152.6	D54.9	21.2	1.67	19.7	0.27	0.00	0.37	0.53	76		
85	9.72	9.71	33.667	25.961	205.3	0.225	3.37	146.6	52.5	23.6	1.78	21.6	0.17	0.00	0.28	0.45	86	12	
100	9.20	9.19	33.730	26.096	192.8	0.255	3.40	148.0	52.4	25.2	1.82	23.2	0.05	0.01	0.22	0.33	101	11	
120	8.91	8.90	33.827	26.218	181.5	0.292	3.23	140.5	49.5	28.1	1.89	24.6	0.03	0.04	0.17	0.23	121	10	
125 ISL	8.88 D	8.87	33.836 D	26.230	180.5	0.303	3.26	D142.0	D50.0	28.5	1.90	24.8	0.03	0.00	0.17	0.23	126		
139	8.75	8.74	33.877	26.282	175.8	0.326	3.13	136.3	47.9	29.8	1.93	25.3	0.03	0.00	0.17	0.24	140	09	
150 ISL	8.59 D	8.57	33.921 D	26.343	170.2	0.347	3.06	D133.1	D46.6	31.9	2.00	26.2	0.02	0.00	0.15	0.23	151		
170	8.35	8.33	33.977	26.424	162.9	0.379	2.65	115.1	40.1	35.9	2.12	27.9	0.02	0.00	0.12	0.21	171	08	
200	8.21	8.19	34.000	26.463	159.7	0.427	2.48	107.8	37.4	38.2	2.20	28.9	0.02	0.00	0.11	0.23	202	07	
232	7.88	7.86	34.032	26.538	153.1	0.477	2.17	94.3	32.5	42.7	2.33	30.5	0.02	0.00		234	06		
250 ISL	7.69 D	7.67	34.063 D	26.590	149.4	0.507	1.89	D82.3	D28.2	45.5	2.42	31.5	0.02	0.00		252			
270	7.56	7.54	34.073	26.617	146.2	0.534	1.71	74.4	25.4	48.6	2.52	32.7	0.01	0.00		272	05		
300 ISL	7.40 D	7.37	34.081 D	26.648	143.6	0.581	1.58	D68.7	D23.4	52.0	2.60	33.8	0.01	0.00		302			
320	7.13	7.10	34.090	26.693	139.6	0.605	1.42	61.8	20.9	54.2	2.65	34.5	0.01	0.00		323	04		
380	6.72	6.69	34.137	26.786	131.4	0.687	0.94	41.0	13.8	62.9	2.86	37.0	0.01	0.00		383	03		
400 ISL	6.66 D	6.63	34.177 D	26.826	128.0	0.718	0.79	D34.2	D11.5	65.8	2.92	37.5	0.01	0.00		403			
440	6.35	6.31	34.206	26.890	122.2	0.763	0.57	25.0	8.3	71.4	3.04	38.6	0.01	0.00		444	02		
500 ISL	5.95 D	5.91	34.249 D	26.976	114.6	0.840	0.38	D16.5	D5.4	79.5	3.15	39.9	0.01	0.00		504			
515	5.85	5.80	34.261	26.999	112.5	0.851	0.35	15.2	5.0	81.5	3.18	40.2	0.01	0.00		519	01		

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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		
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	μM	μM	μg/L	μg/L	db	
0	15.32	15.32	33.174 D	24.496	342.8	0.000	5.88	256.2	102.8	2.3	0.38	0.0	0.01	0.03	0.27	0.08	0		
2 A	15.32	15.32	33.176	24.498	342.7	0.007	5.88	256.2	102.8	2.3	0.38	0.0	0.01	0.03	0.27	0.08	2	24	
10 ISL	15.30 D	15.30	33.174 D	24.500	342.7	0.035	5.89	D256.5	D102.9	2.3	0.38	0.0	0.01	0.02	0.26	0.07	10		
12	15.29	15.29	33.176	24.504	342.5	0.042											12	23	
13 A	15.29	15.29	33.176	24.504	342.5	0.045	5.87	256.0	102.7	2.3	0.38	0.0	0.01	0.02	0.26	0.07	13	22	
17 A	15.29	15.29	33.176	24.506	342.4	0.058	5.88	256.2	102.8	2.3	0.37	0.0	0.01	0.02	0.26	0.08	17	21	
20 ISL	15.28 D	15.28	33.175 D	24.505	342.5	0.064	5.87	D255.7	D102.6	2.3	0.37	0.0	0.01	0.02	0.29	0.09	20		
25	15.11	15.11	33.188	24.554	338.1	0.086	5.90	257.4	102.9	2.2	0.38	0.0	0.01	0.02	0.33	0.11	25	20	
30 A	15.04	15.04	33.187	24.568	336.9	0.102	5.92	258.1	103.0	2.3	0.37	0.0	0.01	0.02	0.38	0.12	30	19	
40	15.02	15.01	33.187	24.574	336.7	0.136	5.90	257.2	102.6	2.3	0.38	0.0	0.01	0.01	0.48	0.14	40	17	
49	15.01	15.00	33.190	24.579	336.5	0.166	5.90	257.1	102.6	2.3	0.40	0.0	0.01	0.02	0.53	0.18	49	15	
50 ISL	15.01 D	15.00	33.188 D	24.578	336.6	0.151	5.88	D256.1	D102.2	2.3	0.40	0.0	0.01	0.02	0.54	0.18	50		
56 A	15.00	14.99	33.191	24.583	336.3	0.190	5.89	256.7	102.4	2.3	0.37	0.0	0.01	0.02	0.58	0.18	56	16	
62	14.99	14.98	33.193	24.585	336.3	0.210	5.89	256.7	102.3	2.3	0.38	0.0	0.01	0.04	0.62	0.20	63	14	
69 A	14.74	14.73	33.168	24.621	333.1	0.234	5.82	253.5	100.5	2.6	0.41	0.4	0.04	0.11	0.51	0.23	70	13	
75 ISL	13.40 D	13.38	33.110 D	24.855	310.8	0.235	5.81	D253.0	D97.6	5.0	0.64	4.0	0.05	0.08	0.42	0.26	76		
85	11.51	11.50	33.083	25.196	278.3	0.282	5.06	220.3	81.7	8.9	1.02	9.9	0.07	0.02	0.27	0.30	86	12	
100	10.26	10.25	33.129	25.452	254.1	0.322	4.88	212.7	76.8	12.2	1.24	13.6	0.04	0.02	0.16	0.16	101	11	
119	9.44	9.43	33.341	25.753	225.7	0.368	4.33	188.5	66.9	18.3	1.56	18.9	0.02	0.01	0.04	0.05	120	10	
125 ISL	9.31 D	9.29	33.470 D	25.876	214.1	0.363	3.90	D172.3	D61.1	20.0	2.04	20.0	0.02	0.01	0.03	0.05	126		
140	9.12	9.11	33.611	26.016	201.1	0.413	3.55	154.3	54.5	24.3	1.80	22.9	0.01	0.01	0.04	0.04	141	09	
150 ISL	9.10 D	9.08	33.690 D	26.082	195.1	0.414	3.39	D147.6	D52.1	25.7	1.85	23.8	0.01	0.00	0.01	0.04	151		
170	8.90	8.88	33.792	26.193	184.9	0.471	3.06	133.4	46.9	28.5	1.95	25.5	0.02	0.00	0.00	0.03	171	08	
199	8.61	8.59	33.943	26.359	169.7	0.522	2.66	115.7	40.5	33.4	2.09	27.6	0.02	0.01	0.00	0.03	201	07	
200 ISL	8.59 D	8.57	33.958																

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 76.7 80.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	WIND m/L μmol/Kg	OXYGEN 350	OXYGEN 16 kn	WAVES	WEA	BAROMETER 1017.8 mb	DRY 14.0 C	WET 12.5 C	SECCHI	CLD	AMT	TYPE	ORD 064
0	15.42	15.42	33.225	D 24.512	341.2	0.000	5.84	254.6	102.4	2.2	0.36	0.0	0.01	0.02	0.27	0.10	0		
2	15.42	15.42	33.226	24.514	341.2	0.007	5.84	254.6	102.4	2.2	0.36	0.0	0.01	0.02	0.27	0.10	2	20	
10	15.42	15.42	33.227	24.514	341.4	0.034	5.84	254.6	102.4	2.2	0.36	0.0	0.01	0.02	0.27	0.09	10	19	
20	15.42	15.42	33.226	24.515	341.6	0.068	5.84	254.7	102.5	2.2	0.36	0.0	0.01	0.02	0.26	0.09	20	18	
30	15.25	15.24	33.220	24.549	338.7	0.102	5.88	256.4	102.8	2.3	0.37	0.0	0.01	0.00	0.37	0.10	30	17	
39	15.22	15.21	33.224	24.559	338.1	0.133	5.89	256.9	102.9	2.3	0.37	0.0	0.01	0.00	0.52	0.16	39	16	
50	15.20	15.19	33.222	24.562	338.1	0.170	5.85	254.8	102.1	2.3	0.38	0.1	0.02	0.04	0.59	0.21	50	15	
60	15.11	15.10	33.224	24.584	336.4	0.204	5.84	254.6	101.8	2.4	0.39	0.2	0.03	0.07	0.56	0.19	60	14	
71	12.93	12.92	33.231	25.041	293.0	0.238	5.77	251.4	96.2	3.9	0.60	2.8	0.15	0.21	0.58	0.35	72	13	
75	ISL 12.43	D 12.42	33.196	D 25.111	286.4	0.252	5.49	d239.0	D 90.4	5.7	0.75	5.0	0.19	0.24	0.51	0.34	76		
85	11.70	11.69	33.215	25.264	271.9	0.278	5.09	221.9	82.7	10.1	1.11	10.4	0.29	0.31	0.36	0.31	86	12	
100	10.41	10.40	33.322	25.577	242.3	0.316	4.32	188.2	68.3	14.4	1.41	15.6	0.18	0.00	0.21	0.31	101	11	
120	9.76	9.75	33.457	25.792	222.2	0.363	4.06	176.7	63.3	18.3	1.57	18.8	0.06	0.00	0.17	0.19	121	10	
125	ISL 9.75	D 9.74	33.522	D 25.844	217.4	0.376	4.01	d174.4	D 62.5	19.4	1.62	19.6	0.05	0.00	0.14	0.18	126		
140	9.25	9.23	33.624	26.006	202.2	0.405	3.56	154.9	54.9	22.8	1.76	21.9	0.02	0.00	0.05	0.12	141	09	
150	ISL 9.21	D 9.19	33.727	D 26.093	194.1	0.427	3.27	d142.2	D 50.4	24.9	1.84	23.1	0.02	0.00	0.03	0.10	151		
170	8.94	8.92	33.817	26.208	183.6	0.463	3.01	130.9	46.1	29.0	1.99	25.6	0.01	0.00	0.01	0.06	171	08	
200	8.59	8.57	33.935	26.356	170.1	0.516	2.69	117.1	41.0	33.4	2.12	27.3	0.01	0.00	0.01	0.06	202	07	
230	8.18	8.15	34.002	26.471	159.6	0.566	2.40	104.4	36.2	38.7	2.25	29.6	0.01	0.00			232	06	
250	ISL 7.92	D 7.89	34.016	D 26.521	155.0	0.600	2.27	98.6	D 34.0	42.0	2.33	30.5	0.01	0.00			252		
270	7.62	7.59	34.025	26.572	150.4	0.628	2.10	91.3	31.3	45.4	2.41	31.4	0.01	0.00			272	05	
300	ISL 7.22	D 7.20	34.044	D 26.643	144.0	0.676	1.75	d76.0	D 25.8	51.1	2.58	33.5	0.01	0.00			302		
320	7.04	7.01	34.060	26.681	140.6	0.700	1.48	64.5	21.8	54.9	2.69	34.8	0.01	0.00			323	04	
380	6.60	6.56	34.142	26.807	129.4	0.781	0.85	37.1	12.4	65.1	2.95	37.7	0.00	0.00			383	03	
400	ISL 6.46	D 6.43	34.159	D 26.838	126.6	0.812	0.74	d32.2	D 10.7	67.7	3.00	38.0	0.01	0.00			403		
440	6.26	6.22	34.193	26.893	121.9	0.857	0.56	24.3	8.1	72.9	3.10	38.5	0.01	0.00			444	02	
500	ISL 5.75	D 5.71	34.221	D 26.979	114.0	0.933	0.40	D 17.5	D 5.7	81.3	3.20	40.2	0.01	0.00			504		
516	5.69	5.65	34.240	27.001	112.1	0.945	0.37	16.0	5.3	83.6	3.23	40.6	0.01	0.00			520	01	

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

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	WIND m/L μmol/Kg	OXYGEN 350	OXYGEN 15 kn	WAVES	WEA	BAROMETER 1018.2 mb	DRY 15.0 C	WET 13.3 C	SECCHI	CLD	AMT	TYPE	ORD 063
0	15.44	15.44	33.052	D 24.375	354.3	0.000	5.86	255.3	102.6	2.4	0.37	0.0	0.01	0.01	0.17	0.04	0		
2	15.44	15.44	33.053	24.376	354.3	0.007	5.86	255.3	102.6	2.4	0.37	0.0	0.01	0.01	0.17	0.04	2	20	
10	15.39	15.39	33.055	24.388	353.4	0.035	5.87	255.7	102.7	2.4	0.37	0.0	0.01	0.01	0.22	0.05	10	19	
20	ISL 15.27	D 15.27	33.056	D 24.417	350.9	0.071	5.87	d255.8	D 102.5	2.4	0.38	0.0	0.01	0.02	0.19	0.04	20		
25	15.24	15.23	33.066	24.432	349.7	0.088	5.90	257.0	102.9	2.5	0.38	0.0	0.01	0.02	0.17	0.04	25	18	
30	ISL 15.17	D 15.16	33.081	D 24.459	347.3	0.106	5.90	d257.2	D 102.8	2.5	0.39	0.0	0.01	0.03	0.20	0.05	30		
40	15.04	15.03	33.090	24.496	344.1	0.140	5.92	258.2	103.0						0.28	0.08	40	17	
50	ISL 14.70	D 14.69	33.055	D 24.542	340.0	0.176	5.95	d259.2	D 102.7	2.8	0.41	0.2	0.03	0.05	0.40	0.12	50		
50	14.70	14.69	33.055	D 24.542	340.0	0.176	5.95	d259.2	D 102.7								50	16	
62	14.16	14.15	33.044	24.648	330.2	0.215	5.90	257.1	100.7	3.0	0.42	0.3	0.04	0.06	0.56	0.18	63	15	
75	13.79	13.78	33.046	24.726	323.1	0.257	5.80	252.7	98.2	3.5	0.48	1.1	0.09	0.08	0.47	0.20	76	14	
87	13.31	13.30	33.044	24.821	314.4	0.295	5.63	245.3	94.4	4.4	0.61	2.9	0.19	0.04	0.26	0.18	88	13	
100	12.19	12.18	32.986	24.994	298.1	0.335	5.48	238.6	89.7	5.7	0.77	5.4	0.13	0.00	0.21	0.21	101	12	
112	11.16	11.14	33.020	25.211	277.5	0.370	5.26	229.2	84.3	8.6	1.01	9.5	0.07	0.02	0.15	0.15	113	11	
125	10.33	10.32	33.067	25.393	260.4	0.405	5.11	222.7	80.5	11.1	1.20	12.5	0.04	0.00	0.11	0.11	126	10	
140	9.53	9.51	33.219	25.644	236.6	0.442	4.80	208.8	74.3	15.2	1.42	16.0	0.03	0.00	0.04	0.05	141	09	
150	ISL 9.26	D 9.25	33.338	D 25.780	223.8	0.468	4.51	d196.5	D 69.5	18.3	1.55	18.3	0.02	0.00	0.03	0.04	151		
169	8.94	8.92	33.557	26.004	202.9	0.505	3.83	166.6	58.6	24.1	1.81	22.6	0.01	0.00	0.00	0.03	170	08	
200	8.51	8.49	33.863	26.311	174.2	0.564	3.21	139.7	48.8	30.8	1.98	25.7	0.01	0.00	0.00	0.03	202	07	
230	8.34	8.32	33.981	26.430	163.6	0.615	2.62	114.1	39.7	36.7	2.17	28.3	0.01	0.00			232	06	
270	7.66	7.63	34.015	26.558	151.8	0.677	2.19	95.1	32.6	44.6	2.39	31.3	0.02	0.00			272	05	
300	ISL 7.16	D 7.13	34.016	D 26.630	145.2	0.727	2.07	d90.0	D 30.5	49.9	2.51	32.9	0.01	0.00			302		
320	6.90	6.87	34.028	26.675	141.0	0.750	1.78	77.4	26.1	53.5	2.59</td								

RV NEW HORIZON

CALCOFI CRUISE 1504

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		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SiO3* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEAO μg/L	PRES db
0	16.52	16.52	33.103 D	24.170	373.8	0.000	5.76	251.0	103.1	1.9	0.32	0.0	0.01	0.00	0.10	0.02	0
3	16.52	16.52	33.105	24.172	373.8	0.011	5.76	251.0	103.1	1.9	0.32	0.0	0.01	0.00	0.10	0.02	3 20
10	16.46	16.46	33.104	24.187	372.5	0.037	5.70	248.7	102.0	1.9	0.32	0.0	0.01	0.00	0.09	0.02	10 19
20	16.31	16.31	33.091	24.211	370.7	0.075	5.72	249.3	102.0	1.9	0.33	0.0	0.01	0.00	0.10	0.02	20 18
30	16.30	16.29	33.088	24.214	370.8	0.112	5.72	249.5	102.0	1.9	0.34	0.0	0.01	0.00	0.11	0.03	30 17
39	16.28	16.27	33.092	24.221	370.3	0.145	5.73	249.8	102.1	1.9	0.33	0.0	0.01	0.00	0.12	0.03	39 16
50	16.27	16.26	33.091	24.224	370.5	0.186	5.72	249.2	101.9	1.8	0.32	0.0	0.01	0.00	0.13	0.04	50 15
60	16.29	16.28	33.098	24.226	370.6	0.223	5.70	248.7	101.7	1.8	0.32	0.0	0.01	0.00	0.16	0.04	60 14
70	16.29	16.28	33.100	24.226	371.0	0.260	5.71	248.9	101.8	1.8	0.33	0.0	0.01	0.00	0.17	0.04	71 13
75 ISL	16.30 D	16.28	33.100 D	24.226	371.1	0.280	5.69	d248.1	d101.4	1.8	0.33	0.0	0.01	0.00	0.18	0.05	76
84	16.38	16.37	33.141	24.239	370.3	0.312	5.71	249.2	102.1	1.9	0.32	0.0	0.01	0.00	0.22	0.06	85 12
100	14.88	14.87	33.170	24.593	336.8	0.368	5.74	250.1	99.5	2.6	0.36	0.2	0.02	0.01	0.38	0.27	101 11
120	12.99	12.97	33.060	24.900	307.8	0.433	5.63	245.3	93.8	4.3	0.60	3.0	0.12	0.04	0.26	0.27	121 10
125 ISL	12.21 D	12.19	33.051 D	25.043	294.1	0.452	5.52	d240.4	d90.5	5.6	0.72	5.0	0.10	0.00	0.23	0.24	126
140	10.96	10.94	33.109	25.317	268.1	0.490	5.03	219.8	80.5	9.5	1.09	11.0	0.05	0.00	0.15	0.17	141 09
150 ISL	10.34 D	10.32	33.234 D	25.522	248.7	0.520	4.83	d210.3 D	76.1	12.2	1.24	13.5	0.04	0.00	0.11	0.13	151
170	9.45	9.43	33.364	25.772	225.1	0.563	4.37	190.4	67.6	17.5	1.53	18.6	0.02	0.00	0.03	0.06	171 08
200	8.92	8.90	33.681	26.105	194.0	0.626	3.54	154.3	54.3	25.5	1.84	23.8	0.01	0.00	0.02	0.02	202 07
230	8.65	8.62	33.878	26.302	175.8	0.682	3.03	132.0	46.2	30.7	1.99	26.4	0.01	0.00		232 06	
250 ISL	8.46 D	8.43	33.942 D	26.383	168.5	0.721	2.88	d125.1 D	43.7	33.5	2.06	27.6	0.01	0.00		252	
272	8.20	8.17	33.973	26.447	162.7	0.753	2.65	115.4	40.0	36.5	2.14	28.9	0.01	0.00		274 05	
300 ISL	7.84 D	7.81	34.004 D	26.525	155.6	0.803	2.37	d102.9 D	35.4	41.7	2.29	30.5	0.01	0.00		302	
320	7.59	7.56	34.020	26.574	151.2	0.828	2.10	91.5	31.3	45.4	2.39	31.7	0.01	0.00		323 04	
381	6.93	6.89	34.069	26.705	139.3	0.917	1.38	60.0	20.2	56.6	2.71	35.8	0.01	0.00		384 03	
400 ISL	6.79 D	6.75	34.077 D	26.731	137.0	0.950	1.28	d55.5 D	18.7	59.7	2.77	36.6	0.01	0.00		403	
441	6.31	6.27	34.089	26.804	130.3	0.998	1.03	44.6	14.8	66.2	2.91	38.2	0.01	0.00		445 02	
500 ISL	5.82 D	5.78	34.147 D	26.911	120.5	1.080	0.65	d28.4 D	9.3	75.8	3.06	40.0	0.01	0.00		504	
515	5.75	5.71	34.157	26.928	119.0	1.090	0.61	26.7	8.8	78.2	3.10	40.5	0.01	0.00		519 01	

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SiO3* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEAO μg/L	PRES db
0	12.38	12.38	33.479 D	25.337	262.7	0.000	5.03	219.0	82.9	10.5	1.05	8.9	0.29	0.84	0.51	0.39	0
1	12.38	12.38	33.483	25.340	262.4	0.003	5.03	219.0	82.9	10.5	1.05	8.9	0.29	0.84	0.51	0.39	1 05
5	11.75	11.75	33.487	25.462	251.0	0.013	4.53	197.1	73.7	11.9	1.22	11.3	0.33	1.00	0.61	0.31	5 04
10	11.30	11.30	33.496	25.552	242.5	0.025	4.05	176.4	65.3	13.6	1.39	13.7	0.38	1.03	0.45	0.29	10 02
10	11.30	11.30	33.496	25.552	242.5	0.025											10 03
19	10.97	10.97	33.518	25.627	235.6	0.047	3.77	164.2	60.4	15.2	1.51	15.1	0.39	1.00	0.48	0.74	19 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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		
DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SiO3* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEAO μg/L	PRES db
0	10.84	10.84	33.529 D	25.660	232.0	0.000	5.12	223.1	81.8	14.0	1.25	13.6	0.26	0.27	5.30	0.96	0
2	10.84	10.84	33.533	25.663	231.7	0.005	5.12	223.1	81.8	14.0	1.25	13.6	0.26	0.27	5.30	0.96	2 10
5	10.91	10.90	33.533	25.651	233.0	0.012	5.12	223.0	81.9	13.9	1.27	13.5	0.27	0.27	5.05	1.44	5 09
10	10.96	10.95	33.529	25.639	234.2	0.023	5.19	226.2	83.2	13.7	1.23	13.4	0.27	0.26	5.64	1.12	10 07
10	10.96	10.95	33.530	25.640	234.2	0.023											10 08
19	10.81	10.80	33.532	25.668	231.7	0.044	5.02	218.5	80.1	14.0	1.26	13.9	0.27	0.26	5.59	1.53	19 06
20 ISL	10.74 D	10.73	33.539 D	25.686	230.0	0.036	4.88	d212.3 D	77.7	14.8	1.30	14.4	0.27	0.26	5.13	1.45	20
29	10.19	10.18	33.614	25.840	215.6	0.067	3.58	155.9	56.4	21.1	1.66	19.3	0.28	0.25	1.03	0.70	29 05
30 ISL	10.16 D	10.16	33.621 D	25.849	214.8	0.059	3.54	d154.0 D	55.7	21.4	1.67	19.5	0.27	0.23	0.97	0.68	30
40	9.90	9.90	33.674	25.935	206.8	0.090	3.20	139.2	50.1	24.1	1.80	21.7	0.22	0.06	0.32	0.56	40 04
50	9.82	9.81	33.696	25.967	204.0	0.111	3.12	135.8	48.8	24.8	1.82	22.2	0.21	0.03	0.32	0.54	50 03
61	9.80	9.80	33.697	25.970	204.0	0.133	3.15	137.2	49.2	24.9	1.83	22.2	0.18	0.12	0.31	0.69	62 02
66	9.81	9.80	33.698	25.971	204.0	0.143	3.14	136.6	49.1	24.9	1.83	22.1	0.19	0.10	0.29	0.60	67 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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	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	
34	18.8 N	120 47.6 W	16/04/2015	1002	UTC	766 m	340	16 kn									056	
0	13.57	13.57	33.242 D	24.919	302.5	0.000	6.05	263.6	102.2	1.6	0.51	2.1	0.11	0.22	1.19	0.56	0	
2	13.57	13.56	33.243	24.920	302.5	0.006	6.05	263.6	102.2	1.6	0.51	2.1	0.11	0.22	1.19	0.56	2 23	
9	13.57	13.57	33.242	24.919	302.8	0.028											9 22	
9	13.57	13.57	33.243	24.920	302.7	0.028											9 21	
10	ISL	13.57 D	33.241 D	24.918	302.9	0.018	6.12	D266.6	D103.4	1.6	0.51	2.1	0.11	0.22	1.11	0.58	10	
11	13.57	13.57	33.245	24.921	302.6	0.033	6.15	D267.8	D103.8	1.6	0.51	2.1	0.11	0.22	1.10	0.58	11 20	
15	13.57	13.57	33.246	24.922	302.7	0.045	6.07	264.4	102.5	1.6	0.50	2.1	0.11	0.21	1.27	0.44	15 19	
20	13.57	13.57	33.243	24.919	303.1	0.060	6.07	264.3	102.5	1.6	0.50	2.1	0.11	0.23	1.29	0.41	20 18	
30	ISL	13.15 D	13.14	33.260 D	25.018	293.9	0.079	6.02	D262.4	D100.9	1.9	0.55	2.4	0.12	0.53	0.85	0.66	30
31	13.24	13.24	33.262	25.001	295.6	0.093	6.08	264.8	102.0	1.9	0.56	2.4	0.12	0.56	0.81	0.69	31 17	
40	12.15	12.14	33.249	25.204	276.5	0.119	5.47	238.4	89.7	6.6	0.88	6.8	0.20	0.68	0.56	0.57	40 16	
50	11.57	11.57	33.250	25.312	266.4	0.146	5.06	220.4	82.0	9.7	1.09	10.1	0.22	0.52	0.65	0.54	50 15	
60	11.14	11.13	33.296	25.428	255.6	0.172	4.64	202.0	74.4	12.2	1.24	12.6	0.20	0.27	0.48	0.46	60 14	
70	10.88	10.87	33.365	25.527	246.4	0.197	4.25	185.1	67.9	14.6	1.38	15.4	0.11	0.07	0.38	0.49	71 13	
75	ISL	10.64 D	10.63	33.380 D	25.582	241.3	0.199	4.20	D183.0	D66.8	15.3	1.42	16.2	0.09	0.05	0.32	0.41	76
85	10.03	10.02	33.403	25.703	229.9	0.233	4.16	181.2	65.2	16.8	1.51	17.9	0.06	0.02	0.19	0.27	86 12	
100	9.53	9.52	33.524	25.881	213.2	0.266	3.84	167.3	59.6	20.2	20.4	0.03	0.01	0.09	0.16	101 11		
121	8.85	8.84	33.813	26.216	181.7	0.308	3.10	134.9	47.4	28.4	1.95	25.5	0.02	0.01	0.02	0.14	122 10	
125	ISL	8.82 D	8.81	33.859	26.257	177.9	0.304	3.04	D132.4	D46.6	29.2	1.98	25.8	0.02	0.01	0.02	0.13	126
140	8.66	8.65	33.926	26.335	170.8	0.331	2.75	119.7	41.9	32.3	2.07	27.3	0.01	0.01	0.01	0.08	141 09	
150	ISL	8.58 D	8.56	33.950	26.367	168.0	0.348	2.73	D118.6	D41.5	33.5	2.10	27.8	0.01	0.01	0.01	0.08	151
170	8.31	8.29	33.983	26.435	161.8	0.396	2.51	109.3	38.0	36.1	2.17	28.8	0.01	0.01	0.01	0.08	171 08	
200	8.13	8.11	34.024	26.495	156.7	0.444	2.27	98.9	34.3	40.0	2.28	30.0	0.01	0.02	0.01	0.06	202 07	
230	7.77	7.75	34.051	26.569	150.0	0.490	1.96	85.1	29.3	44.9	2.43	31.7	0.01	0.01			232 06	
250	ISL	7.65 D	7.63	34.076 D	26.607	146.8	0.505	1.75	D76.2	D26.1	47.2	2.49	32.6	0.01	0.01			252
271	7.42	7.39	34.071	26.636	144.3	0.551	1.66	72.3	24.6	49.5	2.56	33.5	0.01	0.01			273 05	
300	ISL	7.12 D	7.09	34.084 D	26.689	139.6	0.578	1.42	D61.9	D21.0	54.1	2.68	34.8	0.01	0.01			302
320	6.99	6.96	34.106	26.725	136.5	0.619	1.22	52.9	17.9	57.4	2.76	35.6	0.01	0.01			323 04	
380	6.60	6.56	34.155	26.817	128.4	0.699	0.83	35.9	12.0	65.5	2.95	38.0	0.01	0.01			383 03	
400	ISL	6.46 D	6.42	34.162 D	26.841	126.3	0.711	0.76	D32.8	D11.0	67.7	3.00	38.4	0.01	0.01			403
440	6.30	6.26	34.198	26.891	122.1	0.774	0.58	25.3	8.4	72.1	3.09	39.3	0.01	0.02			444 02	
500	ISL	6.01 D	5.96	34.236 D	26.959	116.2	0.833	0.43	D18.6	D6.2	78.2	3.16	39.8	0.01	0.01			504
514	5.91	5.86	34.240	26.975	114.8	0.862	0.39	17.0	5.6	79.6	3.18	40.0	0.01	0.01			518 01	

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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	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	
34	9.0 N	121 8.8 W	16/04/2015	1433	UTC	2158 m	010	11 kn	360	04 06	0	1013.3	mb	15.1	C	13.1	C	0/8 057
0	14.48	14.48	33.242 D	24.729	320.6	0.000	6.09	265.4	104.8	0.8	0.38	0.3	0.05	0.08	1.42	0.33	0	
2	14.48	14.48	33.244	24.731	320.5	0.006	6.09	265.4	104.8	0.8	0.38	0.3	0.05	0.08	1.42	0.33	2 21	
10	14.48	14.47	33.244	24.732	320.6	0.032	6.09	265.5	104.8	0.8	0.38	0.3	0.04	0.08	1.30	0.39	10 19	
10	14.48	14.47	33.246	24.734	320.4	0.030											10 20	
20	14.37	14.37	33.246	24.756	318.7	0.064	6.10	265.7	104.7	0.8	0.38	0.4	0.05	0.08	1.38	0.52	20 18	
30	ISL	13.54 D	13.54	33.238 D	24.922	303.1	0.080	6.22	D270.8	D104.9	1.0	0.48	1.7	0.10	0.25	2.44	1.18	30
31	13.52	13.52	33.241	24.928	302.5	0.098	6.20	270.1	104.6	1.0	0.49	1.9	0.10	0.27	2.55	1.24	31 17	
40	13.44	13.44	33.240	24.944	301.3	0.125	6.22	270.9	104.7	1.1	0.51	2.1	0.11	0.33			40 16	
50	13.16	13.15	33.262	25.018	295.4	0.155	6.26	272.8	104.9	1.1	0.53	2.2	0.11	0.49	2.51	1.25	50 15	
60	11.92	11.92	33.227	25.230	274.6	0.184	5.32	231.7	86.8	7.7	0.97	8.7	0.19	0.41	3.48	1.91	60 14	
69	10.87	10.86	33.332	25.503	248.7	0.207	4.33	188.4	69.0	14.0	1.34	14.9	0.15	0.02	1.81	1.52	70 13	
75	ISL	10.83 D	10.82	33.350 D	25.525	246.7	0.208	4.28	D186.2	D68.2	15.3	1.41	16.0	0.12	0.02	1.24	1.13	76
84	10.43	10.42	33.463	25.682	231.9	0.243	3.90	169.6	61.6	17.2	1.51	17.6	0.07	0.01	0.39	0.56	85 12	
100	10.02	10.01	33.604	25.863	215.0	0.279	3.47	151.0	54.4	21.4	1.70	20.8	0.04	0.01	0.21	0.35	101 11	
120	9.44	9.43	33.663	26.005	201.9	0.321	3.45	150.0	53.4	22.9	1.76	22.1	0.03	0.00	0.09	0.27	121 10	
125	ISL	9.29 D	9.27	33.686 D	26.049	197.8	0.317	3.51	D152.6	D54.1	24.1	1.80	22.9	0.03	0.00	0.08	0.23	126
140	8.97	8.95	33.812	26.198	183.9	0.359	3.16	137.6	48.5	27.8	1.92	25.2	0.02	0.00	0.02	0.11	141 09	
150	ISL	8.87 D	8.86	33.856 D	26.248	179.3	0.364	3.06	D133.0	D46.8	29.5	1.98	25.9	0.02	0.00	0.01	0.10	151
170	8.64	8.62	33.948	26.358	169.3	0.413	2.69	117.1	41.0	33.0	2.09	27.5	0.01	0.00	0.01	0.07	171 08	
199	8.29																	

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 80.0 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	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	μM	μg/L	μg/L	db		
33	48.6 N	121 50.6 W	16/04/2015	2106	UTC	3626 m	010	12 kn	360	05	06	0	1015.3	mb	18.1	C	15.9	C	0/8	058
0	16.07	16.07	33.184 D	24.335	358.1	0.000	5.78	252.1	102.7	2.2	0.35	0.0	0.01	0.00	0.29	0.08	0			
3	16.07	16.07	33.186	24.337	358.1	0.011	5.78	252.1	102.7	2.2	0.35	0.0	0.01	0.00	0.29	0.08	3	22		
10	15.90	15.90	33.189	24.380	354.2	0.036	5.81	253.3	102.8	2.2	0.37	0.0	0.01	0.01	0.25	0.05	10	20		
10	15.90	15.90	33.189	24.380	354.2	0.036											10	21		
20	ISL	15.84	15.84	33.196 D	24.397	352.9	0.054	5.79	252.5	102.4	2.2	0.36	0.0	0.01	0.00	0.31	0.07	20		
21	15.84	15.84	33.198	24.399	352.7	0.075	5.79	252.4	102.4	2.2	0.36	0.0	0.01	0.00	0.31	0.07	21	19		
30	15.83	15.82	33.200	24.404	352.5	0.106	5.78	252.1	102.2	2.3	0.36	0.0	0.01	0.00	0.35	0.09	30	18		
40	15.70	15.69	33.197	24.432	350.3	0.141	5.79	252.5	102.1	2.2	0.38	0.0	0.01	0.00	0.39	0.11	40	17		
50	15.47	15.46	33.187	24.476	346.4	0.176	5.82	253.5	102.0	2.2	0.38	0.2	0.02	0.00	0.57	0.16	50	16		
58	14.01	14.00	33.184	24.787	316.9	0.203											58	15		
59	13.52	13.51	33.188	24.888	307.2	0.206	5.73	249.9	96.7	3.5	0.55	2.2	0.11	0.05	0.91	0.43	59	14		
69	11.83	11.82	33.155	25.192	278.4	0.235	5.10	0222.0	82.9	7.3	0.89	7.6	0.25	0.02	0.74	0.57	70	13		
75	ISL	11.04	11.03	33.190 D	25.363	262.1	0.222	4.96	0216.2	79.4	9.2	1.03	10.0	0.20	0.00	0.60	0.45	76		
86	10.50	10.49	33.251	25.506	248.7	0.279	4.46	0194.2	70.6	12.7	1.29	14.5	0.11	0.00	0.33	0.24	87	12		
99	10.11	10.10	33.444	25.723	228.4	0.310	4.05	176.3	63.6	17.3	1.50	17.9	0.04	0.00	0.10	0.12	100	11		
100	ISL	10.08	10.07	33.475 D	25.752	225.6	0.283	3.90	0169.6	61.2	17.5	1.51	18.1	0.04	0.00	0.10	0.12	101		
120	9.69	9.67	33.660	25.962	206.0	0.356	3.37	146.6	52.5	23.1	1.78	22.1	0.03	0.00	0.05	0.11	121	10		
125	ISL	9.57	9.56	33.702 D	26.014	201.1	0.337	3.22	0140.2	50.1	24.2	1.83	22.8	0.03	0.00	0.04	0.11	126		
138	9.41	9.39	33.811	26.127	190.7	0.392	2.91	126.5	45.0	27.3	1.95	24.6	0.03	0.00	0.03	0.10	139	09		
150	ISL	9.18	9.16	33.854 D	26.198	184.2	0.385	2.80	0121.6	43.1	29.0	1.99	25.4	0.02	0.00	0.02	0.09	151		
168	8.94	8.92	33.919	26.287	176.0	0.447	2.67	116.1	40.9	31.5	2.06	26.5	0.02	0.00	0.01	0.08	169	08		
200	ISL	8.66	8.64	34.013 D	26.405	165.5	0.473	2.17	094.4	33.1	36.5	2.23	28.6	0.02	0.00	0.02	0.08	202		
201	8.65	8.62	34.017	26.411	164.9	0.503	2.22	96.4	33.8	36.6	2.24	28.6	0.02	0.00	0.02	0.08	203	07		
232	8.08	8.06	34.014	26.495	157.3	0.553	2.37	102.9	35.6	39.4	2.23	29.6	0.02	0.00		234	06			
250	ISL	7.98	7.95	34.053 D	26.541	153.2	0.553	2.04	088.7	30.6	42.5	2.33	30.6	0.02	0.00		252			
270	7.74	7.71	34.059	26.581	149.7	0.611	1.88	81.9	28.1	45.9	2.44	31.7	0.02	0.00		272	05			
300	ISL	7.51	7.48	34.110 D	26.655	143.1	0.628	1.43	62.3	21.3	51.3	2.61	33.4	0.01	0.00		302			
320	7.37	7.33	34.135	26.696	139.5	0.684	1.20	52.2	17.8	54.8	2.72	34.6	0.01	0.00		323	04			
381	6.88	6.85	34.192	26.808	129.5	0.766	0.75	32.8	11.0	64.5	2.94	37.0	0.01	0.00		384	03			
400	ISL	6.72	6.68	34.194 D	26.832	127.5	0.764	0.69	29.9	10.0	66.7	2.98	37.6	0.01	0.00		403			
442	6.33	6.29	34.217	26.902	121.1	0.842	0.55	24.0	8.0	71.6	3.06	38.8	0.01	0.00		446	02			
500	ISL	6.02	5.98	34.264 D	26.979	114.3	0.886	0.36	15.5	5.1	78.9	3.15	40.0	0.01	0.00		504			
516		5.89	5.84	34.262	26.995	113.0	0.929	0.35	15.3	5.0	81.0	3.18	40.4	0.01	0.00		520	01		

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

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 80.0 80.0

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	μM	μg/L	μg/L	db	
33	28.8 N	122 31.8 W	17/04/2015	0322	UTC	3987 m	340	12 kn			1014.7	mb	16.0	C	14.8	C	059		
0	15.37	15.37	33.206 D	24.510	341.5	0.000	5.90	257.2	103.4	2.0	0.37	0.1	0.02	0.01	0.45	0.12	0		
2	15.36	15.36	33.208 D	24.512	341.3	0.007	5.88	256.5	103.1	2.1	0.39	0.1	0.02	0.10	0.43	0.11	2	22	
10	15.37	15.37	33.212	24.515	341.3	0.034	5.90	257.2	103.4	2.0	0.37	0.1	0.02	0.01	0.45	0.12	10	20	
10	15.37	15.37	33.208	24.512	341.6	0.036				2.1	0.36	0.1	0.02	0.01			10	21	
20	15.30	15.29	33.204	24.526	340.6	0.068	5.87	255.7	102.6	2.1	0.36	0.1	0.02	0.02	0.48	0.14	20	19	
30	15.20	15.19	33.210	24.551	338.5	0.102	5.88	256.2	102.6	2.1	0.37	0.1	0.01	0.01	0.57	0.17	30	18	
40	15.16	15.15	33.218	24.567	337.3	0.136	5.90	257.1	102.9	2.0	0.37	0.1	0.02	0.01	0.58	0.15	40	16	
40	15.16	15.15	33.222	24.570	337.1	0.136											40	17	
50	12.53	12.52	32.990 D	24.931	302.7	0.135	5.81	253.2	95.9	2.8	0.45	1.1	0.05	0.04	0.54	0.26	50	15	
60	11.70	11.69	32.979	25.079	288.9	0.198	5.45	237.4	88.3	6.5	0.84	6.8	0.10	0.01	0.63	0.47	60	14	
70	10.89	10.88	33.048	25.279	269.9	0.226	5.10	222.0	81.2	9.8	1.11	11.3	0.05	0.00	0.35	0.37	71	13	
75	ISL	10.66	10.65	33.122 D	25.377	260.7	0.206	5.00	0217.6	79.3	11.3	1.20	12.8	0.04	0.00	0.28	0.30	76	
85	10.04	10.03	33.213	25.554	244.0	0.264	4.63	201.5	72.5	14.3	1.38	15.8	0.03	0.00	0.14	0.17	86	12	
100	9.72	9.71	33.472	25.809	220.1	0.299	3.93	171.2	61.3	18.5	1.58	19.4	0.02	0.00	0.05	0.08	101	11	
120	9.32	9.30	33.628	25.998	202.6	0.341	3.53	153.7	54.6	23.0	1.75	22.3	0.01	0.00	0.01	0.05	121	10	
125	ISL	9.26	9.25	33.704 D	26.066	196.2	0.318	3.48	0151.6	53.8	24.1	1.79	22.9	0.01	0.00	0.01	0.05	126	
140	8.98	8.97	33.782	26.172	186.4	0.380	3.13	136.1	48.0	27.4	1.91	24.8	0.02	0.00	0.01	0.04	141	09	
150	ISL	8.81	8.79	33.865 D	26.265	177.7	0.365	3.05	0132.8	46.7	29.1	1.95	25						

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 80.0 90.0

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	μg/L	μg/L	db	
33	8.5 N	123 13.3 W	17/04/2015	0938	UTC	4219 m	360	11 kn		1016.9	mb	15.0	C	14.0	C		060	
0	15.47	15.47	33.067	D	24.380	353.8	0.000	5.86	255.5	102.8	2.1	0.35	0.0	0.01	0.17	0.06	0	
2	15.47	15.47	33.069	24.381		353.7	0.007	5.86	255.5	102.8	2.1	0.35	0.0	0.01	0.17	0.06	2	
10	15.48	15.48	33.068	24.380		354.2	0.035	5.82	253.8	102.1	2.1	0.35	0.0	0.01	0.00	0.17	0.04	
20	ISL	15.47	15.47	33.067	D	24.381	354.4	0.071	5.80	d253.0	d101.8	2.1	0.34	0.0	0.01	0.00	0.18	
25	15.42	15.42	33.074	24.398		352.9	0.089	5.83	254.0	102.1	2.1	0.34	0.0	0.01	0.00	0.19	0.05	
30	ISL	15.39	15.39	33.067	D	24.399	353.0	0.107	5.83	d254.3	d102.1	2.1	0.34	0.0	0.01	0.00	0.21	
40	15.31	15.31	33.077	24.425		350.9	0.141	5.85	254.9	102.2	2.1	0.35	0.0	0.01	0.00	0.25	0.08	
50	15.31	15.31	33.075	24.424		351.3	0.176	5.84	254.6	102.1	2.1	0.35	0.0	0.01	0.00	0.19	0.06	
63	15.17	15.16	33.081	24.461		348.2	0.222	5.84	254.7	101.8	2.2	0.35	0.0	0.01	0.00	0.27	0.10	
75	14.43	14.42	33.092	24.629		332.5	0.263	5.83	254.1	100.1	2.5	0.40	0.3	0.04	0.02	0.52	0.24	
87	12.26	12.24	33.008	24.998		297.3	0.301	5.40	235.2	88.6	6.3	0.80	6.4	0.08	0.00	0.28	0.44	
100	11.05	11.04	33.007	25.220		276.3	0.338	5.22	227.4	83.5	8.9	1.04	10.2	0.04	0.00	0.17	0.30	
112	10.12	10.11	33.086	25.441		255.4	0.370	5.00	217.6	78.3	12.4	1.26	14.0	0.02	0.00	0.10	0.10	
125	9.56	9.55	33.207	25.629		237.6	0.402	4.70	206.2	73.4	15.6	1.42	16.7	0.02	0.00	0.04	0.06	
140	9.28	9.27	33.341	25.780		223.6	0.436	4.41	191.9	67.9	18.4	1.55	18.9	0.02	0.00	0.02	0.04	
150	ISL	9.09	D	9.08	33.553	D	25.976	205.2	0.461	3.95	d172.0	d60.7	20.7	1.64	20.4	0.02	0.00	0.01
171	9.00	8.98	33.662	26.077		196.1	0.501	3.46	150.8	53.1	25.5	1.84	23.6	0.01	0.00	0.00	0.03	
200	8.84	8.82	33.862	26.259		179.4	0.556	2.84	123.4	43.4	30.6	2.02	26.4	0.01	0.00	0.00	0.03	
231	8.52	8.49	33.973	26.397		166.8	0.609	2.45	106.7	37.3	35.6	2.17	28.4	0.01	0.00		233	
250	ISL	8.01	D	7.99	33.981	D	26.479	159.1	0.643	2.72	d118.2	d40.8	38.6	2.21	29.3	0.01	0.00	252
270	7.76	7.73	33.999	26.531		154.4	0.671	2.45	106.8	36.7	41.7	2.26	30.2	0.02	0.00		272	
300	ISL	7.48	D	7.45	34.024	D	26.592	149.0	0.721	2.08	d90.5	d30.9	46.7	2.41	32.1	0.01	0.00	302
320	7.31	7.28	34.047	26.634		145.2	0.746	1.81	78.5	26.7	49.9	2.51	33.4	0.01	0.00		323	
381	6.78	6.74	34.114	26.761		133.9	0.831	1.05	45.5	15.3	61.0	2.82	36.8	0.01	0.00		384	
400	ISL	6.65	D	6.61	34.127	D	26.789	131.4	0.862	0.93	d40.5	d13.6	63.9	2.88	37.4	0.01	0.00	403
440	6.30	6.26	34.152	26.855		125.5	0.908	0.73	31.7	10.5	69.9	3.00	38.8	0.01	0.00		444	
500	ISL	5.76	D	5.72	34.191	D	26.954	116.4	0.987	0.51	d22.2	d7.3	79.6	3.12	40.3	0.01	0.00	504
515	5.66	5.63	34.204	26.975		114.5	0.998	0.46	20.0	6.5	82.0	3.15	40.6	0.01	0.00		519	

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

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 80.0 100.0

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	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	μg/L	μg/L	db	
32	49.2 N	123 54.6 W	17/04/2015	1719	UTC	4350 m	360	16 kn	020	03	06	1	1018.2	mb	17.0	C	15.0	C
0	15.80	15.80	33.075	D	24.312	360.3	0.000	5.79	252.4	102.2	2.1	0.34	0.0	0.01	0.14	0.03	0	
3 A	15.80	15.80	33.078	24.315		360.1	0.011	5.79	252.4	102.2	2.1	0.34	0.0	0.01	0.14	0.03	23	
10	15.79	15.79	33.077	24.317		360.2	0.036	5.83	254.1	102.9	2.0	0.35	0.0	0.01	0.00	0.12	0.04	
10	15.79	15.79	33.078	24.317		360.1	0.037										10	
16 A	15.77	15.77	33.081	24.326		359.5	0.058	5.78	252.1	102.0	2.0	0.34	0.0	0.01	0.00	0.15	0.02	
20	ISL	15.77	D	15.77	33.075	D	24.321	360.1	0.062	5.81	d253.2	d102.5	2.0	0.33	0.0	0.01	0.00	0.14
21 A	15.77	15.76	33.078	24.325		359.8	0.076	5.79	252.5	102.2	2.0	0.33	0.0	0.01	0.00	0.14	0.05	
30	ISL	15.75	D	15.75	33.075	D	24.326	360.0	0.098	5.80	d252.9	d102.3	2.0	0.34	0.0	0.01	0.00	0.14
38 A	15.70	15.70	33.080	24.341		358.9	0.137	5.89	256.8	103.8	2.0	0.34	0.0	0.01	0.00	0.15	0.04	
48	14.89	14.88	33.123	24.552		339.0	0.173										48	
49	14.89	14.88	33.121	24.551		339.1	0.175	5.92	d258.1	d102.7	2.2	0.36	0.0	0.01	0.00	0.34	0.15	
50	ISL	14.89	D	14.88	33.125	D	24.555	358.8	0.150	5.94	d258.8	d103.0	2.2	0.36	0.0	0.01	0.00	0.36
60	14.83	14.82	33.140	24.580		336.8	0.212	5.90	257.0	102.1	2.2	0.37	0.0	0.01	0.05	0.54	0.28	
70 A	14.73	14.72	33.144	24.604		334.8	0.246	5.83	254.3	100.8	2.2	0.38	0.0	0.02	0.16	0.41	0.23	
75 ISL	14.67	D	14.66	33.135	D	24.611	334.3	0.235	5.83	d253.9	d100.6	2.4	0.42	0.4	0.07	0.21	0.31	0.21
77	14.49	14.48	33.125	24.641		331.4	0.269	5.77	251.5	99.2	2.5	0.43	0.5	0.09	0.23	0.27	0.21	
85 A	14.30	14.29	33.115	24.675		328.5	0.296	5.72	249.3	98.0	2.8	0.47	0.9	0.13	0.23	0.22	0.17	
95	13.29	13.27	33.076	24.852		311.7	0.328	5.59	243.4	93.7	4.1	0.59	3.0	0.26	0.07	0.16	0.19	
100	ISL	12.08	D	12.06	33.018	D	25.041	293.6	0.316	5.57	d242.7	d91.0	5.9	0.74	5.5	0.19	0.00	0.16
110	10.63	10.62	33.015	25.300		268.9	0.371	5.23	227.7	82.8	9.3	1.05	10.5	0.05	0.00	0.14	0.13	
125	ISL	9.78	D	9.77	33.201	D	25.589	241.6	0.383	4.92	d214.2	d76.6	13.9	1.32	15.0	0.03	0.00	0.06
126	9.76	9.74	33.198	25.590		241.5	0.412	4.83	210.1	75.1	14.2	1.34	15.4	0.03	0.00	0.05	0.06	
140	9.27	9.25	33.348	25.788		222.8	0.444	4.41	192.1	68.0	18.5	1.56	18.9	0.02	0.00	0.02	0.03	
150	ISL	9.17	D	9.15	33.433	D	25.871	215.2	0.440	4.27	d185.7	d65.6	20.7	1.64	20.4	0.02	0.00	0.01
170	9.03	9.01	33.696	26.098		194.0	0.507	3.60	156.6	55.3	25.0	1.81	23.3	0.02	0.00	0.00	0.03	
200	8.78	8.76	33.848</															

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 81.8 46.9

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	SIO3* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEAO μg/L	PRES db
34 16.7 N	120 1.2 W	15/04/2015	1745	UTC	583 m	220 06 kn	290 03 07	0	1015.4 mb	15.1 C	13.2 C	10 m	0/8	054			
0	13.49	13.49	33.470 D	25.110	284.3	0.000	6.47	282.0	109.3	1.4	0.23	0.3	0.04	0.02	2.78	0.47	0
2 A	13.49	13.49	33.472	25.112	284.2	0.006	6.47	282.0	109.3	1.4	0.23	0.3	0.04	0.02	2.78	0.47	2 24
6 A	13.30	13.30	33.471	25.150	280.7	0.017	6.48	282.4	109.0	1.4	0.22	0.3	0.05	0.03	3.10	0.46	6 23
8 A	13.08	13.07	33.474	25.197	276.2	0.023	6.45	281.1	108.0	2.0	0.28	0.8	0.06	0.06	3.38	0.66	8 22
10 ISL	12.42 D	12.42	33.526 D	25.365	260.3	0.028	6.31	274.9	104.3	5.5	0.56	4.6	0.11	0.11	2.89	0.58	10
14 A	11.14	11.14	33.550	25.622	236.0	0.038	4.53	197.4	72.9	12.4	1.13	12.3	0.20	0.20	1.89	0.41	14 21
20 ISL	10.09 D	10.08	33.626 D	25.866	212.9	0.052	3.51	2152.7 D	55.1	16.7	1.42	16.4	0.16	0.12	1.14	0.31	20
27 A	9.97	9.97	33.655	25.909	209.0	0.066	3.25	141.3	50.9	21.6	1.75	21.2	0.11	0.02	0.26	0.19	27 20
30 ISL	9.94 D	9.94	33.681 D	25.934	206.7	0.073	3.22	2140.0 D	50.4	22.0	1.78	21.5	0.12	0.02	0.26	0.20	30
33 A	9.89	9.89	33.688	25.947	205.5	0.079	3.16	137.7	49.5	22.4	1.80	21.8	0.14	0.02	0.26	0.21	33 19
50	9.66	9.66	33.764	26.045	196.5	0.113	2.95	128.5	46.0	24.9	1.90	23.2	0.13	0.00	0.23	0.23	50 18
60	9.57	9.57	33.800	26.088	192.7	0.132	2.88	125.3	44.8	26.2	1.94	23.9	0.10	0.07	0.20	0.22	60 17
75 ISL	9.38 D	9.37	33.899 D	26.198	182.5	0.161	2.60	2113.0 D	40.2	29.7	2.08	25.7	0.08	0.08	0.21	0.22	76
76	9.37	9.36	33.904 D	26.204	182.0	0.163	2.50	2112.7 D	40.1								77 16
85	9.22	9.21	33.970	26.279	175.1	0.178	2.26	98.2	34.9	32.1	2.18	26.9	0.06	0.08	0.22	0.23	86 15
99	9.19	9.18	34.007	26.314	172.1	0.203	2.13	92.7	32.9	33.8	2.23	27.5	0.05	0.02	0.11	0.16	100 14
100 ISL	9.19 D	9.17	34.010 D	26.317	171.8	0.205	2.16	94.1 D	33.4	34.0	2.24	27.5	0.04	0.00	0.11	0.16	101
120	9.07	9.06	34.060	26.375	166.7	0.238	1.66	71.5	25.3	38.4	2.39	29.1	0.02	0.00	0.07	0.16	121 13
125 ISL	9.05 D	9.04	34.075 D	26.390	165.4	0.248	1.58	68.8 D	24.4	38.8	2.40	29.2	0.02	0.00	0.07	0.16	126
139	8.94	8.93	34.097	26.425	162.3	0.270	1.61	70.2	24.8	39.8	2.42	29.6	0.02	0.00	0.07	0.17	140 12
150 ISL	8.85 D	8.83	34.110 D	26.451	160.1	0.289	1.70	73.8 D	26.0	41.0	2.46	30.0	0.02	0.00	0.07	0.16	151
170	8.78	8.76	34.125	26.474	158.3	0.319	1.36	59.4	20.9	43.1	2.53	30.6	0.02	0.00	0.07	0.15	171 11
200	8.56	8.54	34.156	26.533	153.3	0.366	0.92	39.9	14.0	49.0	2.69	32.0	0.02	0.00	0.06	0.16	202 10
230	8.32	8.29	34.175	26.586	148.8	0.411	0.79	34.4	12.0	52.7	2.78	32.9	0.01	0.00			232 09
250 ISL	8.18 D	8.16	34.183 D	26.613	146.5	0.443	0.73	31.9 D	11.1	55.4	2.84	33.2	0.01	0.00			252
270	7.99	7.96	34.195	26.652	143.1	0.470	0.58	25.4	8.8	58.2	2.89	33.5	0.01	0.00			272 08
300 ISL	7.78 D	7.75	34.206 D	26.691	139.9	0.515	0.50	21.8 D	7.5	61.8	2.95	33.7	0.01	0.00			302
320	7.69	7.66	34.208	26.706	138.7	0.540	0.45	19.5	6.7	64.2	2.99	33.8	0.01	0.00			323 07
380	7.22	7.18	34.222	26.786	132.0	0.621	0.35	15.2	5.2	73.0	3.11	33.7	0.01	0.00			383 06
400 ISL	7.01 D	6.97	34.227 D	26.819	129.0	0.652	0.29	12.4 D	4.2	78.5	3.19	32.6	0.01	0.00			403
442	6.74	6.70	34.239	26.866	125.0	0.701	0.16	6.7	2.3	90.1	3.37	30.4	0.01	0.00			446 05
500 ISL	6.66 D	6.62	34.245 D	26.883	124.3	0.778	0.07	3.1 D	1.0	98.8	3.56	26.0	0.00	0.00			504
515	6.64	6.60	34.250	26.889	123.9	0.792	0.06	2.8	0.9	101.1	3.61	24.9	0.00	0.00			519 04
541	6.63	6.58	34.249	26.891	124.1	0.824	0.03	1.3	0.4	108.4	3.84	19.8	0.01	0.00			546 03
564	6.62	6.56	34.247	26.892	124.4	0.852	0.02	0.7	0.2	116.8	4.07	13.1	0.01	0.02			569 02
571	6.62	6.56	34.249	26.893	124.4	0.861	0.01	0.4	0.2	117.2	4.06	12.9	0.01	0.02			576 01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

B) SANTA BARBARA BASIN STATION.

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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	SVA	DYN HT	OXYGEN ml/L	OXYGEN μmol/Kg	OXY PCT	SIO3* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEAO μg/L	PRES db
34 15.9 N	119 19.8 W	15/04/2015	0420	UTC	21 m	150 03 kn	290 03 06	1	1013.7 mb	16.3 C	13.9 C	051					
0	15.68	15.68	33.388 D	24.580	334.7	0.000	6.52	284.3	115.1	0.7	0.22	0.0	0.02	0.00	0.94	0.29	0
2	15.68	15.68	33.393	24.585	334.4	0.007	6.52	284.3	115.1	0.7	0.22	0.0	0.02	0.00	0.94	0.29	2 05
5	14.41	14.40	33.393	24.862	308.1	0.016	6.53	284.6	112.3	0.9	0.24	0.0	0.03	0.00	1.07	0.41	5 04
10	12.64	12.64	33.398	25.224	273.7	0.031	6.81	296.8	113.0	2.5	0.38	0.8	0.07	0.09	4.41	0.84	10 02
10	12.64	12.64	33.403	25.228	273.4	0.030											10 03
16	12.13	12.12	33.386	25.313	265.1	0.047	4.85	211.3	79.6	8.1	1.11	7.5	0.41	1.10	7.91	1.96	16 01
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY STA-CORRECTED O2;																	
0	14.83	14.83	33.403 D	24.778	315.9	0.000	6.61	288.0	114.7	0.7	0.23	0.0	0.01	0.03	1.07	0.16	0
2	14.83	14.83	33.405	24.780	315.8	0.006	6.61	288.0	114.7	0.7	0.23	0.0	0.01	0.03	1.07	0.16	2 10
5	14.60	14.60	33.408	24.831	311.1	0.016	6.60	287.7	114.0	0.6	0.23	0.0	0.01	0.03	1.27	0.15	5 09
10	13.90	13.90	33.398	24.971	297.9	0.031	6.69	291.5	113.9	0.7	0.25	0.0	0.01	0.07	1.02	0.17	10 03
10	13.90	13.90	33.399	24.971	297.9	0.031											10 04
20	12.77	12.77	33.395	25.197	276.6	0.060	5.98	260.5	99.4	3.7	0.63	2.6	0.10	1.22	2.50	0.62	20 02
29	12.15	12.15	33.422	25.336	263.6	0.084	5.25	228.8	86.2	6.8	0.92	6.7	0.18	1.38	2.58	0.46	29 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 83.3 42.0

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
34 10.7 N	119 30.4 W	15/04/2015	0025	UTC	146 m	260 09 kn	250 03 06	0	1014.0 mb	16.0 C	13.9 C	10 m	0/8	0/49			
0	14.26	14.26	33.391 D	24.890	305.2	0.000	6.80	296.2	116.6	1.1	0.28	0.1	0.02	0.04	2.02	0.39	0
1	14.26	14.26	33.403	24.899	304.4	0.003	6.80	296.2	116.6	1.1	0.28	0.1	0.02	0.04	2.02	0.39	1 13
9	13.57	13.56	33.393	25.036	291.6	0.027	6.80	296.4	115.0	1.2	0.32	0.1	0.02	0.03	2.57	0.75	9 11
10 ISL	13.50 D	13.50	33.386 D	25.044	290.9	0.030	6.69	D291.7	D113.0	1.3	0.32	0.1	0.02	0.06	2.59	0.74	10
10	13.50	13.50	33.394	25.050	290.3	0.028											10 12
19	13.41	13.41	33.394	25.068	288.9	0.056	6.51	283.6	109.7	1.7	0.36	0.4	0.03	0.32	2.74	0.71	19 10
20 ISL	13.35 D	13.35	33.386 D	25.074	288.3	0.046	6.40	D278.7	D107.6	2.0	0.39	0.7	0.03	0.41	2.65	0.73	20
29	12.47	12.46	33.382	25.246	272.1	0.084	5.76	250.7	95.1	5.0	0.69	3.6	0.09	1.26	1.84	0.90	29 09
30 ISL	12.45 D	12.45	33.375 D	25.244	272.4	0.074	5.60	D243.8	D92.4	5.8	0.74	4.4	0.10	1.19	1.71	0.87	30
39	11.43	11.42	33.400	25.455	252.5	0.110	4.65	202.4	75.1	12.6	1.19	11.9	0.16	0.55	0.54	0.67	39 08
50	10.98	10.97	33.482	25.600	239.0	0.137	4.14	180.4	66.3	14.6	1.42	14.6	0.30	1.05	0.83	0.85	50 07
60	10.75	10.75	33.500	25.654	234.0	0.161	3.94	171.4	62.7	16.5	1.52	16.7	0.33	0.41	0.65	0.70	60 06
70	10.58	10.57	33.563	25.735	226.6	0.184	3.53	153.7	56.1	18.3	1.64	18.6	0.32	0.25	0.61	0.66	71 05
75 ISL	10.16 D	10.15	33.637 D	25.864	214.4	0.184	3.34	D145.5 D	D52.6	20.3	1.72	19.9	0.29	0.18	0.59	0.67	76
84	9.90	9.89	33.712	25.967	204.8	0.214	3.00	130.6	47.0	24.0	1.85	22.1	0.22	0.05	0.56	0.69	85 04
100	9.45	9.44	33.860	26.157	187.0	0.245	2.69	116.9	41.7	28.5	2.01	24.9	0.10	0.06	0.34	0.57	101 03
119	9.32	9.30	33.944 D	26.245	179.1	0.269	2.36	D102.6 D	D36.5								120 02
125 ISL	9.29 D	9.27	33.958 D	26.261	177.7	0.280	2.34	D101.7 D	D36.1	32.2	2.16	26.6	0.09	0.02	0.35	0.84	126
132	9.21	9.20	33.985	26.295	174.7	0.303	2.26	98.1	34.8	33.2	2.20	27.1	0.08	0.01	0.35	0.91	133 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 83.3 51.0

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
33 52.5 N	120 7.8 W	14/04/2015	1854	UTC	105 m	310 27 kn	320 05 04	0	1018.7 mb	11.0 C	9.1 C	08 m	0/8	0/48			
0	15.22	15.22	33.276 D	24.596	333.2	0.000	6.04	263.2	105.5	1.1	0.31	0.1	0.02	0.00	1.56	0.44	0
2 A	15.22	15.22	33.278	24.598	333.1	0.007	6.04	263.2	105.5	1.1	0.31	0.1	0.02	0.00	1.56	0.44	2 15
4 A	15.22	15.22	33.277	24.598	333.2	0.013	6.03	262.9	105.4	1.1	0.31	0.2	0.03	0.01	1.70	0.36	4 14
8 A	14.28	14.27	33.276	24.799	314.2	0.026	6.02	262.4	103.2	1.2	0.32	0.2	0.03	0.00	1.47	0.42	8 13
10 ISL	13.49 D	13.49	33.240 D	24.933	301.5	0.033	5.98	D260.7	D100.9	2.3	0.43	1.3	0.06	0.00	1.83	0.51	10
12 A	13.35	13.35	33.241	24.962	298.8	0.038	5.90	256.9	99.1	3.5	0.54	2.3	0.09	0.08	2.19	0.60	12 11
12	13.35	13.35	33.241	24.962	298.8	0.039											12 12
20 A	13.21	13.21	33.351	25.075	288.2	0.062	5.77	251.4	96.8	4.5	0.61	3.4	0.08	0.33	3.67	1.22	20 10
26 A	12.60	12.59	33.320	25.172	279.1	0.079	5.44	237.2	90.2	6.5	0.77	5.8	0.14	0.46	3.86	1.14	26 08
26	12.60	12.59	33.324	25.175	278.9	0.079											26 09
30 ISL	12.18 D	12.17	33.320 D	25.253	271.6	0.073	5.29	D230.4 D	D86.8	8.1	0.90	7.6	0.16	0.40	2.64	0.94	30
33	11.92	11.92	33.312	25.295	267.6	0.098	5.03	219.2	82.1	9.3	0.99	9.0	0.18	0.36	1.73	0.79	33 07
40	10.28	10.27	33.529	25.759	223.6	0.115	3.89	169.2	61.3	18.6	1.52	18.2	0.11	0.08	0.64	0.56	40 06
49	10.01	10.01	33.595	25.855	214.6	0.135	3.67	160.0	57.6	20.6	1.62	19.6	0.10	0.06	0.46	0.50	49 05
50 ISL	10.00 D	10.00	33.620 D	25.877	212.6	0.120	3.67	D159.6 D	D57.5	20.8	1.63	19.8	0.09	0.06	0.44	0.49	50
61 A	9.80	9.79	33.682	25.959	205.0	0.160	3.39	147.7	53.0	23.2	1.74	21.5	0.07	0.05	0.30	0.47	61 04
69	9.78	9.77	33.692	25.970	204.1	0.176	3.39	147.4	52.9	23.3	1.74	21.6	0.07	0.05	0.30	0.49	70 03
75 ISL	9.74 D	9.74	33.694 D	25.978	203.5	0.172	3.38	D147.0 D	D52.7	23.5	1.75	21.7	0.06	0.05	0.29	0.51	76
87	9.72	9.71	33.706	25.992	202.4	0.213	3.32	144.6	51.8	24.0	1.77	22.0	0.06	0.04	0.27	0.54	88 02
95	9.71	9.70	33.711	25.998	202.1	0.229	3.31	144.1	51.6	24.0	1.76	21.9	0.06	0.04	0.22	0.40	96 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 STA-CORRECTED O2;

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 83.3 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	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
33 44.4 N	120 24.6 W	14/04/2015	1511	UTC	951 m	320 30 kn	320 07 07	0	1019.0 mb	14.2 C	13.0 C	07 m	0/8	0/47			
0	13.48	13.48	33.337 D	25.010	293.8	0.000	6.33	275.8	106.8	1.5	0.35	0.4	0.04	0.05	4.89	1.97	0
2	13.48	13.48	33.339	25.012	293.7	0.006	6.33	275.8	106.8	1.5	0.35	0.4	0.04	0.05	4.89	1.97	2 21
9	13.47	13.47	33.338	25.012	293.9	0.027											9 20
10	13.47	13.46	33.346	25.020	293.2	0.029	6.32	275.4	106.6	1.5	0.37	0.5	0.04	0.05	5.10	1.80	10 19
19	13.02	13.01	33.336	25.103	285.6	0.055	6.23	271.5	104.1	1.9	0.41	1.1	0.05	0.13	5.24	1.95	19 18
20 ISL	13.09 D	13.0															

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 83.3 70.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	WIND SPEED ml/L μmol/Kg	WAVES PCT	WEA	BAROMETER 1019.8 mb	DRY 15.2 C	WET 12.8 C	SECCHI	CLD AMT	TYPE	ORD 046	
0	17.28	17.28	33.443 D	24.255	365.7	0.000	5.58	243.1	101.6	2.1	0.31	0.0	0.01	0.02	0.11	0.03	0
2	17.28	17.28	33.457	24.266	364.8	0.007	5.58	243.1	101.6	2.1	0.31	0.0	0.01	0.02	0.11	0.03	2 23
10	17.29	17.29	33.444	24.253	366.3	0.037	5.60	244.1	102.0	2.1	0.31	0.0	0.01	0.01	0.11	0.02	10 19
10	17.29	17.29	33.444	24.253	366.3	0.035											10 20
20	ISL	17.29 D	17.29	33.443 D	24.253	366.7	0.055	5.60 D244.1	D102.0	2.1	0.32	0.0	0.01	0.01	0.11	0.02	20
25	17.29	17.29	33.449	24.258	366.4	0.092	5.58	243.5	101.7	2.1	0.32	0.0	0.01	0.01	0.11	0.02	25 18
30	ISL	17.29 D	17.29	33.443 D	24.253	367.0	0.092	5.58 D243.3	D101.7	2.1	0.32	0.0	0.01	0.00	0.11	0.02	30
40	17.29	17.28	33.442	24.255	367.3	0.147	5.57	243.0	101.5	2.0	0.31	0.0	0.01	0.00	0.11	0.02	40 17
50	17.29	17.28	33.444	24.257	367.4	0.183	5.59	243.7	101.8	2.1	0.32	0.0	0.00	0.01	0.11	0.02	50 16
62	17.27	17.26	33.449	24.266	367.0	0.227	5.59	243.9	101.9	2.1	0.31	0.0	0.00	0.00	0.11	0.02	63 15
75	14.43	14.42	33.093	24.630	332.4	0.273	5.97	260.0	102.4	2.5	0.39	0.0	0.01	0.01	0.40	0.15	76 14
87	12.64	12.62	33.000	24.920	304.9	0.311	5.67	247.1	93.8	5.0	0.68	3.9	0.09	0.03	0.95	0.38	88 13
100	10.87	10.86	33.020	25.261	272.4	0.349	5.15	224.4	82.0	9.7	1.11	11.2	0.06	0.01	0.42	0.28	101 12
111	10.08	10.07	33.203	25.540	246.0	0.377	4.74	206.6	74.3	13.6	1.35	15.4	0.02	0.01	0.18	0.14	112 11
125	9.81	9.79	33.354	25.704	230.6	0.410	4.35	189.5	67.9	16.4	1.48	17.8	0.02	0.00	0.08	0.09	126 10
140	9.54	9.52	33.517	25.876	214.6	0.444	3.89	169.2	60.3	20.0	1.65	20.5	0.01	0.01	0.03	0.05	141 09
150	ISL	9.35 D	9.33	33.626 D	25.993	203.7	0.450	3.66 D159.4	D 56.6	22.0	1.72	21.7	0.01	0.00	0.02	0.05	151
170	9.02	9.00	33.746	26.139	190.1	0.504	3.37	146.5	51.7	26.1	1.85	24.2	0.01	0.00	0.00	0.03	171 08
200	ISL	8.72 D	8.70	33.865 D	26.280	177.3	0.545	3.18 D138.3	D 48.5	29.4	1.94	25.8	0.01	0.00	0.00	0.02	202
201	8.72	8.70	33.863	26.279	177.4	0.561	3.16	137.6	48.3	29.5	1.94	25.8	0.01	0.00	0.00	0.02	203 07
230	8.28	8.25	33.991	26.447	161.9	0.611	2.59	112.6	39.1	36.7	2.14	28.5	0.01	0.02			232 06
250	ISL	8.17 D	8.14	34.024 D	26.490	158.1	0.628	2.27 D 98.6	D 34.2	40.2	2.27	30.0	0.01	0.02			252
271	7.79	7.77	34.050	26.566	151.1	0.675	1.97	85.5	29.4	43.8	2.40	31.6	0.01	0.01			273 05
300	ISL	7.49 D	7.46	34.092 D	26.643	144.2	0.704	1.62 D 70.6	D 24.1	49.4	2.56	33.3	0.01	0.01			302
320	7.41	7.38	34.125	26.682	140.9	0.746	1.28	55.8	19.0	53.2	2.67	34.5	0.01	0.01			323 04
379	6.91	6.87	34.154	26.775	132.7	0.827	0.93	40.4	13.6	60.6	2.84	36.4	0.01	0.00			382 03
400	ISL	6.75 D	6.71	34.173 D	26.812	129.3	0.842	0.77 D 33.5	D 11.3	64.2	2.90	37.3	0.01	0.00			403
440	6.32	6.28	34.180	26.874	123.7	0.906	0.63	27.5	9.2	71.0	3.02	38.9	0.01	0.00			444 02
500	ISL	5.73 D	5.68	34.187 D	26.955	116.2	0.966	0.50 D 21.6	D 7.1	80.2	3.11	40.7	0.01	0.00			504
515	5.63	5.59	34.197	26.975	114.5	0.995	0.46	19.8	6.5	82.5	3.13	41.2	0.01	0.00			519 01

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

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	WIND SPEED ml/L μmol/Kg	WAVES PCT	WEA	BAROMETER 1019.8 mb	DRY 16.5 C	WET 13.9 C	SECCHI	CLD AMT	TYPE	ORD 045	
0	16.24	16.24	33.171 D	24.289	362.5	0.000	5.74	250.3	102.3	2.1	0.36	0.0	0.01	0.00	0.13	0.03	0
2	16.24	16.24	33.173	24.290	362.4	0.007	5.74	250.3	102.3	2.1	0.36	0.0	0.01	0.00	0.13	0.03	2 21
10	16.24	16.23	33.173	24.291	362.7	0.036	5.74	250.4	102.3	2.1	0.35	0.0	0.01	0.00	0.13	0.03	10 19
10	16.24	16.23	33.173	24.290	362.7	0.034											10 20
20	ISL	16.22 D	16.22	33.175 D	24.296	362.5	0.055	5.76 D251.1	D 102.6	2.1	0.35	0.0	0.01	0.00	0.15	0.03	20
26	16.21	16.21	33.175 D	24.298	362.5	0.077	5.73	250.0	102.1	2.1	0.35	0.0	0.01	0.00	0.16	0.03	26 18
30	ISL	16.21 D	16.21	33.175 D	24.299	362.6	0.091	5.75 D250.9	D 102.5	2.1	0.35	0.0	0.01	0.00	0.17	0.04	30
39	16.17	16.16	33.172	24.306	362.2	0.141	5.75	250.7	102.3	2.1	0.35	0.0	0.01	0.00	0.19	0.05	39 17
49	15.91	15.91	33.163	24.359	357.6	0.177	5.78	251.8	102.2	2.2	0.36	0.0	0.01	0.00	0.35	0.09	49 16
50	ISL	15.92 D	15.91	33.176 D	24.368	356.7	0.164	5.78 D252.1	D 102.4	2.2	0.37	0.0	0.01	0.00	0.37	0.10	50
61	14.78	14.77	33.135	24.587	336.1	0.219	5.85	255.0	101.2	2.8	0.44	0.4	0.03	0.05	0.67	0.19	61 15
75	12.27	12.26	33.064	25.040	293.1	0.263	5.44	236.9	89.2	6.3	0.84	6.4	0.20	0.07	0.59	0.28	76 14
86	11.12	11.11	33.120	25.295	268.9	0.294	4.98	217.0	79.8	9.7	1.13	11.2	0.14	0.01	0.53	0.40	87 13
100	10.62	10.61	33.196	25.442	255.1	0.331	4.74	206.5	75.2	11.9	1.27	13.8	0.07	0.00	0.30	0.24	101 12
112	10.01	10.00	33.308	25.634	237.1	0.360	4.45	193.6	69.6	15.2	1.45	16.7	0.03	0.00	0.17	0.23	113 11
125	9.67	9.66	33.467	25.815	220.1	0.390	4.02	175.1	62.6	18.8	1.59	19.5	0.02	0.00	0.07	0.11	126 10
139	9.56	9.54	33.594	25.932	209.2	0.420	3.62	157.8	56.3	21.6	1.72	21.5	0.02	0.00	0.03	0.08	140 09
150	ISL	9.41 D	9.39	33.647 D	25.999	203.1	0.427	3.55 D154.4	D 54.9	23.9	1.80	22.9	0.02	0.00	0.02	0.06	151
170	9.05	9.03	33.807	26.182	186.1	0.481	3.05	132.7	46.9	28.0	1.95	25.4	0.01	0.00	0.01	0.04	171 08
200	ISL	8.58 D	8.56	33.943 D	26.363	169.4	0.520	2.66 D115.8	D 40.5	33.7	2.12	27.9	0.01	0.00	0.01	0.04	202
202	8.53	8.51	33.948	26.375	168.3	0.538	2.62	113.8	39.8	34.1	2.13	28.0	0.01	0.00	0.01	0.04	204 07
231	8.06	8.03	34.003	26.489	157.8	0.585	2.40	104.2	36.0	39.3	2.24	30.0	0.01	0.00			233 06
250	ISL	7.86 D	7.83	34.016 D	26.530	154.2	0.601	2.24 D 97.3	D 33.5	42.7	2.32	31.1	0.01	0.00			252
272																	

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 83.3 90.0

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
32 34.5 N	122 48.6 W	13/04/2015	1657	UTC	4195 m	350 14 kn	360 04 06	2	1019.6 mb	15.9 C	13.2 C	24 m	8/8	SC	044		
0	15.97	15.97	33.213 D	24.382	353.6	0.000	5.79	252.4	102.7	1.9	0.35	0.1	0.01	0.00	0.17	0.03	0
2 A	15.97	15.97	33.215	24.383	353.6	0.007	5.79	252.4	102.7	1.9	0.35	0.1	0.01	0.00	0.17	0.03	2 24
10	15.97	15.97	33.214	24.383	353.9	0.035	5.77	251.3	102.2	1.9	0.35	0.0	0.01	0.00	0.17	0.04	10 22
10	15.97	15.97	33.214	24.383	353.9	0.035											10 23
15 A	15.97	15.96	33.214	24.384	354.0	0.053	5.77	251.7	102.4	1.9	0.35	0.0	0.01	0.00	0.18	0.04	15 21
20 A	15.96	15.95	33.212	24.385	354.0	0.071	5.77	251.7	102.3	1.9	0.35	0.0	0.01	0.00	0.19	0.04	20 20
30 ISL	15.95	15.95	33.211 D	24.386	354.3	0.098	5.75	250.8	102.0	1.9	0.35	0.0	0.01	0.00	0.19	0.04	30
34 A	15.95	15.94	33.213	24.388	354.2	0.120	5.76	251.3	102.1	1.9	0.35	0.0	0.01	0.00	0.19	0.04	34 19
45	15.92	15.92	33.210	24.392	354.2	0.159	5.76	251.1	102.0	1.9	0.34	0.0	0.01	0.00	0.20	0.04	45 18
50 ISL	15.89	15.89	33.203 D	24.395	354.1	0.170	5.73	250.0	101.5	1.9	0.35	0.0	0.01	0.00	0.22	0.06	50
55	15.58	15.57	33.178	24.446	349.4	0.195	5.82	253.8	102.4	1.9	0.35	0.0	0.01	0.00	0.24	0.07	55 17
64 A	15.53	15.52	33.193	24.467	347.7	0.226	5.85	254.9	102.7	2.0	0.35	0.0	0.01	0.00	0.27	0.08	65 16
72	15.48	15.47	33.193	24.480	346.7	0.254	5.81	253.1	101.9	2.0	0.36	0.0	0.01	0.00	0.30	0.12	73 15
75 ISL	15.47	15.47	33.190 D	24.481	346.7	0.257	5.81	253.1	101.9	2.1	0.38	0.2	0.02	0.00	0.36	0.15	76
80 A	14.83	14.81	33.164	24.600	335.4	0.281	5.72	249.4	99.1	2.3	0.41	0.4	0.04	0.07	0.45	0.20	81 14
88	12.53	12.52	33.053	24.981	299.1	0.307	5.36	233.5	88.5	5.9	0.79	6.0	0.16	0.00	0.46	0.39	89 13
96	10.93	10.91	33.078	25.296	269.0	0.330	5.08	221.2	81.0	10.0	1.11	11.5	0.07	0.00	0.29	0.28	97 12
100 ISL	10.79	10.78	33.066 D	25.312	267.6	0.334	5.10	222.0	81.1	11.1	1.17	12.5	0.06	0.00	0.25	0.25	101
110	10.06	10.05	33.136 D	25.491	250.6	0.360	4.91	213.7	76.9	10.4							111 11
124	9.44	9.42	33.298	25.721	229.0	0.400	4.49	195.5	69.4	17.3	1.50	18.2	0.02	0.00	0.04	0.05	125 10
125 ISL	9.39	9.38	33.334 D	25.757	225.5	0.396	4.47	194.7	69.1	17.5	1.51	18.4	0.02	0.00	0.04	0.05	126
142	9.14	9.12	33.551	25.967	205.9	0.439	3.87	168.2	59.4	22.3	1.70	21.9	0.01	0.00	0.01	0.03	143 09
150 ISL	9.06	9.05	33.662 D	26.066	196.7	0.450	3.58	155.9	55.0	24.2	1.77	23.0	0.01	0.00	0.01	0.03	151
167	8.91	8.89	33.809	26.206	183.7	0.487	3.14	136.6	48.1	28.2	1.92	25.4	0.01	0.00	0.00	0.03	168 08
200	8.49	8.47	33.942	26.376	168.1	0.545	2.85	124.2	43.4	33.1	2.03	27.4	0.01	0.00	0.00	0.03	202 07
232	8.04	8.01	34.007	26.496	157.2	0.598	2.44	105.9	36.6	38.9	2.21	29.7	0.01	0.00			234 06
250 ISL	7.71	7.68	34.014 D	26.550	152.2	0.621	2.37	103.2	35.4	42.7	2.30	31.0	0.01	0.00			252
273	7.42	7.40	34.029	26.602	147.5	0.660	2.07	87.4	29.8	47.5	2.42	32.6	0.01	0.00			275 05
300 ISL	7.12	7.09	34.040 D	26.654	142.8	0.695	1.79	77.7	26.3	51.5	2.51	34.0	0.01	0.00			302
319	6.94	6.91	34.041	26.680	140.6	0.726	1.68	72.9	24.6	54.3	2.58	35.0	0.01	0.00			322 04
383	6.26	6.22	34.086	26.807	129.1	0.812	1.08	47.1	15.6	66.4	2.85	38.3	0.01	0.00			386 03
400 ISL	6.13	6.09	34.099 D	26.833	126.7	0.831	0.96	41.7	13.8	69.0	2.90	38.8	0.01	0.00			403
440	5.85	5.82	34.125	26.889	121.7	0.884	0.76	33.2	10.9	75.2	3.01	40.2	0.01	0.00			444 02
500 ISL	5.61	5.56	34.207 D	26.985	113.2	0.953	0.46	19.8	6.5	82.2	3.15	41.2	0.01	0.00			504
514	5.59	5.55	34.212	26.992	112.8	0.970	0.43	18.7	6.1	83.8	3.18	41.5	0.01	0.00			518 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 STA-CORRECTED O2;

RV NEW HORIZON

CALCOFI CRUISE 1504

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		
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
34 0.9 N	118 50.7 W	15/04/2015	0817	UTC	36 m	090 04 kn											052
0	15.26	15.26	33.324 D	24.624	330.6	0.000	6.20	270.2	108.4	5.7	0.36	0.2	0.06	0.06	1.48	0.48	0
2	15.26	15.26	33.326	24.626	330.5	0.007	6.20	270.2	108.4	5.7	0.36	0.2	0.06	0.06	1.48	0.48	2 06
5	15.02	15.01	33.325	24.678	325.6	0.016	6.19	269.7	107.7	5.7	0.37	0.2	0.06	0.06	1.43	0.46	5 05
10	14.00	14.00	33.361	24.922	302.5	0.032	6.14	267.6	104.7	3.2	0.48	1.3	0.09	0.18	2.62	1.44	10 03
10	14.00	14.00	33.358	24.920	302.8	0.031											10 04
20	12.69	12.69	33.321	25.154	280.7	0.061	4.91	213.7	81.4	8.7	0.92	7.7	0.70	0.26	1.21	0.71	20 02
24	12.48	12.47	33.326	25.200	276.5	0.072	4.69	204.3	77.5	9.9	1.03	9.4	0.65	0.38	0.89	0.59	24 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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		
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	μM	μg/L	μg/L	db	
0	14.74	14.74	33.330	D 24.743	319.3	0.000	6.69	291.7	115.9	0.6	0.27	0.0	0.01	0.00	1.21	0.37	0	
2	14.74	14.73	33.331	D 24.744	319.2	0.006	6.69	291.7	115.9	0.6	0.27	0.0	0.01	0.00	1.21	0.37	2 21	
9	14.42	14.42	33.306	24.791	315.0	0.030											9 20	
10	14.33	14.33	33.307	D 24.811	313.1	0.032	6.62	288.3	113.6	0.9	0.29	0.0	0.02	0.00	2.05	0.74	10 19	
20	14.00	14.00	33.309	D 24.883	306.6	0.063	6.01	261.8	102.4	2.3	0.47	1.0	0.05	0.35	5.78	1.52	20 18	
30	13.68	13.67	33.312	D 24.952	300.3	0.093	5.71	248.9	96.7	4.0	0.59	2.7	0.10	0.43	5.20	1.39	30 17	
40	11.69	11.69	33.349	25.367	260.9	0.121	4.77	207.8	77.5	10.5	1.08	10.2	0.25	0.27	1.77	0.97	40 16	
50	10.31	10.31	33.447	D 25.689	230.5	0.146	4.14	180.2	65.3	16.1	1.43	16.6	0.06	0.00	0.36	0.31	50 15	
61	10.11	10.11	33.550	D 25.804	219.8	0.171	3.82	166.3	60.0	18.8	1.57	18.8	0.04	0.00	0.15	0.22	61 14	
70	9.95	9.94	33.589	D 25.862	214.5	0.190	3.70	161.0	57.9	19.9	1.63	19.6	0.04	0.00	0.13	0.19	71 13	
75 ISL	9.89	D 9.88	33.649	D 25.918	209.2	0.189	3.58	D 156.0	D 56.1	21.6	1.72	20.8	0.03	0.00	0.12	0.17	76	
85	9.80	9.79	33.797	D 26.051	196.9	0.221	2.95	128.4	46.1	24.9	1.89	23.0	0.03	0.00	0.10	0.14	86 12	
100	9.53	9.52	33.870	D 26.152	187.5	0.250	2.79	121.5	43.4	27.3	1.97	24.2	0.03	0.00	0.05	0.10	101 11	
120	9.51	9.49	33.956	D 26.224	181.2	0.287	2.48	D 107.8	38.5	29.7	2.08	25.3	0.02	0.00	0.04	0.09	121 10	
125 ISL	9.46	D 9.44	33.986	D 26.255	178.3	0.285	2.43	D 105.7	D 37.7	30.4	2.10	25.6	0.03	0.00	0.04	0.09	126	
140	9.31	9.29	34.030	D 26.314	173.0	0.322	2.27	98.6	35.1	32.3	2.17	26.4	0.03	0.00	0.03	0.09	141 09	
150 ISL	9.18	D 9.16	34.046	D 26.348	169.9	0.329	2.11	D 91.7	D 32.5	33.7	2.22	26.9	0.05	0.00	0.03	0.09	151	
170	9.11	9.09	34.102	D 26.404	165.1	0.373	1.85	80.4	28.5	36.5	2.33	28.0	0.08	0.00	0.02	0.09	171 08	
200	8.95	8.92	34.143	D 26.463	160.1	0.422	1.68	73.1	25.8	39.1	2.41	29.0	0.03	0.00	0.01	0.06	202 07	
230	8.79	8.76	34.181	D 26.518	155.5	0.469	1.47	64.1	22.6	41.5	2.50	29.8	0.02	0.00			232 06	
250 ISL	8.59	D 8.56	34.187	D 26.555	152.3	0.490	1.37	D 59.4	D 20.8	44.1	2.59	30.6	0.02	0.00			252	
270	8.45	8.42	34.240	D 26.618	146.7	0.529	1.06	46.2	16.2	46.8	2.68	31.4	0.02	0.00			272 05	
300 ISL	8.02	D 7.99	34.214	D 26.663	142.7	0.564	1.06	D 46.2	D 16.0	50.9	2.75	32.8	0.02	0.00			302	
320	7.71	7.68	34.220	D 26.713	138.1	0.600	0.93	40.6	14.0	53.7	2.80	33.7	0.01	0.00			323 04	
380	7.34	7.30	34.269	D 26.806	130.2	0.681	0.57	24.7	8.4	61.4	2.99	35.5	0.02	0.00			383 03	
400 ISL	7.16	D 7.12	34.282	D 26.842	127.0	0.700	0.48	D 20.9	D 7.1	64.3	3.04	36.2	0.02	0.00			403	
440	6.78	6.74	34.298	D 26.907	121.1	0.756	0.35	15.4	5.2	70.1	3.14	37.5	0.01	0.00			444 02	
500 ISL	6.42	D 6.37	34.320	D 26.974	115.4	0.821	0.25	D 11.1	D 3.7	76.7	3.20	38.2	0.01	0.00			504	
514	6.34	6.29	34.324	D 26.988	114.2	0.843	0.24	10.6	3.5	78.2	3.22	38.3	0.01	0.00			518 01	

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

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 86.7 40.0

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	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	16.58	16.58	33.287	D 24.297	361.7	0.000	5.77	251.4	103.5	1.5	0.32	0.0	0.01	0.00	0.23	0.05	0	
2	16.58	16.58	33.295	D 24.304	361.1	0.007	5.77	251.4	103.5	1.5	0.32	0.0	0.01	0.00	0.23	0.05	2 24	
10	16.58	16.57	33.286	D 24.300	361.8	0.037	5.78	D 252.2	D 103.8								10 23	
20	16.52	16.51	33.286	D 24.314	360.8	0.072	5.80	252.8	103.9	1.6	0.32	0.0	0.01	0.00	0.25	0.07	20 22	
30	16.11	16.10	33.275	D 24.400	353.0	0.108	5.83	254.3	103.7	1.7	0.33	0.0	0.01	0.00	0.32	0.12	30 21	
40	13.30	13.29	33.254	D 24.984	297.5	0.140	5.80	252.5	97.3	4.2	0.52	1.6	0.08	0.01	1.75	0.86	40 20	
50	11.56	11.55	33.246	D 25.312	266.4	0.169	4.92	214.4	79.7	9.3	0.02	9.7	0.19	0.02	0.48	0.43	50 19	
60	11.10	11.10	33.294	D 25.432	255.2	0.195	4.69	204.2	75.2	11.5	1.17	12.3	0.13	0.00	0.34	0.36	60 18	
71	10.68	10.67	33.407	D 25.595	240.0	0.222	4.33	188.5	68.8	14.2	1.33	14.8	0.07	0.00	0.19	0.25	72 17	
75 ISL	10.57	D 10.56	33.455	D 25.652	234.6	0.233	4.20	D 182.8	D 66.6	15.8	1.41	16.0	0.06	0.00	0.16	0.21	76	
85	10.07	10.06	33.586	D 25.841	216.8	0.254	3.73	162.4	58.6	19.7	1.60	19.2	0.04	0.00	0.07	0.12	86 16	
100	9.77	9.76	33.687	D 25.969	204.9	0.286	3.41	148.6	53.3	22.7	1.73	21.2	0.03	0.00	0.04	0.09	101 15	
120	9.51	9.49	33.785	D 26.090	193.9	0.326	3.09	134.3	47.9	26.1	1.87	23.1	0.02	0.00	0.02	0.08	121 14	
125 ISL	9.47	D 9.46	33.805	D 26.111	192.0	0.337	3.07	D 133.6	D 47.6	26.4	1.88	23.2	0.02	0.00	0.02	0.08	126	
140	9.42	9.41	33.827	D 26.137	189.9	0.364	2.96	128.7	45.8	27.4	1.92	23.8	0.02	0.00	0.02	0.07	141 13	
150 ISL	9.32	D 9.31	33.878	D 26.194	184.7	0.385	2.83	D 123.0	D 43.7	28.6	1.97	24.4	0.02	0.00	0.02	0.07	151	
170	9.20	9.19	33.926	D 26.251	179.6	0.419	2.62	113.8	40.4	30.9	2.06	25.6	0.02	0.00	0.01	0.06	171 12	
199	8.85	8.83	34.045	D 26.401	165.9	0.469	2.13	92.7	32.6	36.0	2.25	28.0	0.01	0.00	0.01	0.07	201 11	
200 ISL	8.82	D 8.79	34.056	D 26.415	164.6	0.474	2.09	D 91.0	D 32.0	36.2	2.26	28.1	0.01	0.00			202	
230	8.48	8.45	34.125	D 26.522	154.9	0.519	1.62	70.5	24.7	42.2	2.47	30.3	0.01	0.00			232 10	
250 ISL	8.36	D 8.34	34.176	D 26.580	149.8	0.553	1.32	D 57.2	D 20.0	45.4	2.57	31.2	0.01	0.00			252	
270	8.24	8.21	34.200	D 26.619	146.5	0.579	1.12	48.7	16.9	48.5	2.67	32.1	0.01	0.00			272 09	
300 ISL	8.05	D 8.02	34.233	D 26.673	141.8	0.626	0.94	D 40.8	D 14.1	51.5	2.76	33.0	0.01	0.00			302	
320	7.88	7.85	34.244	D 26.707	138.9	0.651	0.81	35.1	12.1	53.4	2.82	33.6	0.01	0.00			323 08	
381	7.31	7.27	34.274	D 26.815	129.3	0.733	0.54	23.4	8.0									

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 86.7 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	SVA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES SAMP	
m	DEG C	DEG C	THETA			ml/L $\mu\text{mol/Kg}$	ml/L $\mu\text{mol/Kg}$	PCT	μM	μM	μM	μM	μM	$\mu\text{g/L}$	$\mu\text{g/L}$	db		
33	29.7 N	119 18.6 W	11/04/2015	1840	UTC	1653 m	010 01	kn 320 02	05	1	1014.3	mb	17.5	C 14.1	C	12 m	1/8	CS 037
0	16.83	16.83	33.314	D 24.262	365.1	0.000	5.85	255.3	105.6							0.34	0.11	0
2 A	16.83	16.83	33.314	24.262	365.1	0.007	5.85	255.3	105.6						0.34	0.11	2	24
7 A	16.41	16.41	33.316	24.361	355.9	0.025	5.93	258.4	106.1						0.61	0.28	7	23
9	16.38	16.38	33.317	24.369	355.2	0.034										9	22	
10 A	16.06	16.06	33.329	24.450	347.5	0.036	6.01	261.9	106.8	0.5	0.25	0.0	0.01	0.00	0.72	0.36	10	21
16 A	15.61	15.60	33.323	24.549	338.3	0.057	6.38	278.2	112.4	0.2	0.22	0.0	0.01	0.00	1.54	1.37	16	20
20 ISL	14.86	D 14.86	33.322	D 24.712	322.9	0.065	6.34	D 276.2	D 110.0	0.2	0.25	0.0	0.01	0.00	2.51	1.62	20	
24	14.65	14.64	33.324	24.758	318.6	0.083	6.23	271.5	107.6	0.3	0.27	0.1	0.01	0.00	3.48	1.86	24	18
24	14.65	14.64	33.326	24.759	318.5	0.081										24	19	
30 ISL	14.01	D 14.00	33.331	D 24.899	305.4	0.087	5.57	D 242.8	D 95.0	2.9	0.52	2.5	0.10	0.00	2.66	1.10	30	
32 A	13.54	13.53	33.334	24.996	296.1	0.107	5.54	241.2	93.5	3.7	0.60	3.3	0.12	0.47	2.38	0.85	32	17
40 A	13.08	13.07	33.362	25.112	285.3	0.131	5.12	222.9	85.6	7.9	0.86	7.1	0.19	0.43	0.71	0.51	40	16
50	11.96	11.95	33.405	25.361	261.8	0.158	4.64	202.0	75.8	11.6	1.09	11.0	0.21	0.23	0.43	0.45	50	15
60	10.99	10.98	33.444	25.569	242.2	0.183	4.27	185.7	68.3	15.0	1.32	14.8	0.19	0.06	0.17	0.39	60	14
71	10.23	10.22	33.519	25.759	224.2	0.209	4.05	176.4	63.8	17.6	1.48	17.5	0.12	0.00	0.16	0.27	72	13
75 ISL	10.11	D 10.11	33.527	D 25.786	221.8	0.204	3.99	D 173.9	D 62.8	18.6	1.52	18.1	0.12	0.00	0.14	0.26	76	
84	9.58	9.57	33.664	D 25.981	203.4	0.224	3.50	D 152.2	D 54.4							85	12	
100 ISL	9.37	D 9.36	33.731	D 26.069	195.3	0.256	3.35	D 145.7	D 51.8	24.6	1.77	21.9	0.07	0.00	0.08	0.16	101	
101	9.36	9.35	33.732	D 26.072	195.1	0.258	3.35	D 145.9	D 51.9							102	11	
120	9.11	9.10	33.860	26.213	182.1	0.309	2.89	125.9	44.6	29.4	1.97	24.9	0.04	0.00	0.02	0.08	121	10
125 ISL	9.07	D 9.06	33.900	D 26.250	178.6	0.303	2.83	D 123.2	D 43.6	29.8	1.98	25.2	0.03	0.00	0.02	0.07	126	
140	8.88	8.87	33.930	26.304	173.9	0.345	2.78	120.8	42.5	31.2	2.02	26.0	0.02	0.00	0.01	0.05	141	09
150 ISL	8.93	D 8.91	33.958	D 26.320	172.6	0.347	2.63	D 117.2	D 41.3	33.1	2.10	26.8	0.02	0.00	0.01	0.05	151	
170	8.76	8.74	34.066	26.430	162.5	0.395	2.12	92.2	32.4	36.7	2.25	28.3	0.02	0.00	0.00	0.05	171	08
200	8.70	8.68	34.119	26.482	158.1	0.443	1.77	77.2	27.1	39.6	2.41	29.4	0.02	0.00	0.00	0.05	202	07
231	8.48	8.45	34.171	26.558	151.5	0.491	1.33	58.0	20.3	44.5	2.55	31.1	0.02	0.00		233	06	
250 ISL	8.40	D 8.37	34.194	D 26.589	148.9	0.506	1.21	D 52.6	D 18.4	46.0	2.60	31.6	0.02	0.00		252		
269	8.28	8.26	34.208	26.618	146.6	0.548	1.10	47.7	16.6	47.6	2.65	32.1	0.02	0.00		271	05	
300 ISL	8.00	D 7.97	34.242	D 26.688	140.3	0.579	0.84	D 36.5	D 12.6	51.7	2.74	33.2	0.01	0.00		302		
321	7.84	7.81	34.257	26.723	137.3	0.622	0.76	33.2	11.5	54.5	2.80	33.9	0.01	0.00		324	04	
380	7.30	7.26	34.277	26.818	129.0	0.700	0.52	22.6	7.7	62.5	2.96	35.8	0.02	0.00		383	03	
400 ISL	7.10	D 7.06	34.288	D 26.855	125.7	0.714	0.45	D 19.4	D 6.6	65.4	3.00	36.3	0.02	0.00		403		
444	6.72	6.68	34.304	26.920	119.9	0.780	0.33	14.4	4.8	71.9	3.09	37.4	0.02	0.00		448	02	
500 ISL	6.31	D 6.26	34.327	D 26.994	113.4	0.834	0.24	D 10.4	D 3.4	79.9	3.16	38.2	0.02	0.00		504		
513	6.20	6.16	34.331	27.010	111.9	0.860	0.22	9.6	3.2	81.7	3.18	38.4	0.02	0.00		517	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 NEW HORIZON

CALCOFI CRUISE 1504

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	SVA	DYN HT	OXYGEN	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	PRES SAMP	
m	DEG C	DEG C	THETA			ml/L $\mu\text{mol/Kg}$	ml/L $\mu\text{mol/Kg}$	PCT	μM	μM	μM	μM	μM	$\mu\text{g/L}$	$\mu\text{g/L}$	db		
33	19.7 N	119 39.5 W	11/04/2015	2307	UTC	77 m	310 14	kn 300 03	06	1	1012.3	mb	16.9	C 13.8	C	08 m	1/8	CS 038
0	14.87	14.87	33.317	D 24.704	323.0	0.000	6.33	275.8	109.8	0.1	0.24	0.0	0.02	0.00	2.68	0.88	0	
5	14.87	14.87	33.321	24.707	322.8	0.016	6.33	275.8	109.8	0.1	0.24	0.0	0.02	0.00	2.68	0.88	5	09
10	14.60	14.60	33.317	24.762	317.8	0.032	6.38	278.0	110.1	0.2	0.25	0.0	0.02	0.00	3.57	0.85	10	07
10	14.60	14.60	33.318	24.763	317.7	0.032											10	08
20	14.18	14.17	33.319	24.854	309.3	0.064	5.96	259.7	102.0	1.2	0.40	1.2	0.07	0.22	3.52	0.92	20	06
30	12.82	12.82	33.318	25.127	283.6	0.093	5.34	232.8	88.9	5.9	0.73	5.3	0.18	0.41	1.84	1.07	30	05
41	11.54	11.53	33.329	25.380	259.7	0.123	4.69	204.2	75.9	11.4	1.12	11.7	0.20	0.08	0.66	0.48	41	04
50	10.63	10.62	33.399	25.597	239.2	0.146	4.32	188.1	68.6	14.8	1.34	15.3	0.12	0.01	0.31	0.41	50	03
60	9.89	9.88	33.541	25.833	216.9	0.168	3.86	167.9	60.3	19.4	1.57	19.3	0.05	0.00	0.13	0.17	60	02
64	9.89	9.88	33.552	25.843	216.1	0.177	3.83	166.5	59.8	19.8	1.58	19.4	0.06	0.02	0.10	0.16	65	01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 86.7 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER</th
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RV NEW HORIZON

CALCOFI CRUISE 1504

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	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	μg/L	μg/L	db
0	14.87	14.87	33.304 D	24.693	324.0	0.000	6.21	270.7	107.8	0.3	0.26	0.0	0.01	0.00	1.06	0.50	0
2	14.87	14.87	33.305	24.694	324.0	0.007	6.21	270.7	107.8	0.3	0.26	0.0	0.01	0.00	1.06	0.50	2 21
10	14.86	14.86	33.310	24.701	323.6	0.032	6.22	271.1	107.9	0.2	0.27	0.0	0.01	0.00	0.95	0.56	10 19
10	14.86	14.86	33.306	24.698	323.9	0.032											10 20
20	14.77	14.77	33.300	24.712	322.8	0.065	6.26	272.7	108.4	0.3	0.28	0.0	0.01	0.00	1.14	0.70	20 18
30	13.00	12.99	33.282	25.064	289.5	0.095	6.14	267.4	102.5	1.7	0.52	2.3	0.08	0.38	3.08	1.35	30 17
40	11.68	11.68	33.300	25.330	264.4	0.123	5.11	222.4	82.9	9.6	1.06	10.2	0.18	0.37	2.74	1.38	40 16
50	10.83	10.82	33.387	25.553	243.4	0.149	4.44	193.3	70.8	13.1	1.28	14.4	0.19	0.13	2.38	1.77	50 15
60	10.30	10.29	33.491	25.726	227.2	0.172	3.99	173.8	63.0	17.5	1.48	17.9	0.11	0.00	0.80	0.89	60 14
71	9.87	9.86	33.605	25.888	212.0	0.196	3.61	157.1	56.4	21.0	1.63	20.5	0.08	0.01	0.35	0.70	72 13
75 ISL	9.81 D	9.81	33.633 D	25.919	209.1	0.189	3.59	156.1 D	56.0	21.7	1.66	20.9	0.07	0.00	0.31	0.63	76
85	9.67	9.66	33.686	25.985	203.1	0.225	3.36	146.3	52.3	23.6	1.74	21.9	0.05	0.00	0.21	0.46	86 12
100	9.54	9.53	33.735	26.045	197.6	0.255	3.18	138.5	49.5	25.3	1.81	23.1	0.04	0.00	0.17	0.34	101 11
120	9.30	9.29	33.834	26.162	187.0	0.294	2.84	123.4	43.8	28.7	1.95	25.0	0.03	0.00	0.06	0.16	121 10
125 ISL	9.24 D	9.23	33.877 D	26.204	183.1	0.288	2.74	119.4 D	42.4	29.4	1.98	25.4	0.02	0.00	0.05	0.16	126
141	9.06	9.04	33.926	26.273	176.9	0.332	2.55	111.1	39.3	31.9	2.06	26.6	0.02	0.00	0.04	0.16	142 09
150 ISL	8.99 D	8.97	33.954 D	26.306	173.9	0.333	2.53	109.9 D	38.8	32.7	2.09	27.0	0.02	0.00	0.04	0.16	151
171	8.77	8.75	33.985	26.366	168.6	0.384	2.39	103.8	36.5	34.6	2.15	28.1	0.02	0.00	0.04	0.15	172 08
200	8.58	8.56	34.053	26.449	161.3	0.432	2.06	89.6	31.4	38.4	2.27	29.5	0.02	0.00	0.02	0.11	202 07
230	8.04	8.01	34.095	26.565	150.6	0.478	1.74	75.7	26.2	44.6	2.42	31.8	0.02	0.00			232 06
250 ISL	7.77 D	7.74	34.103 D	26.611	146.4	0.494	1.58	68.6 D	23.6	48.0	2.52	32.9	0.02	0.00			252
270	7.63	7.60	34.133	26.656	142.5	0.537	1.40	60.7	20.8	51.3	2.61	34.0	0.02	0.00			272 05
300 ISL	7.26 D	7.23	34.161 D	26.730	135.8	0.565	1.11 D	48.3 D	16.4	56.2	2.73	35.4	0.02	0.00			302
320	7.11	7.08	34.173	26.761	133.1	0.606	0.96	41.8	14.2	59.5	2.81	36.4	0.02	0.00			323 04
379	6.89	6.86	34.208	26.820	128.4	0.683	0.76	33.0	11.1	63.9	2.89	37.2	0.02	0.00			382 03
400 ISL	6.69 D	6.65	34.227 D	26.863	124.5	0.697	0.64	28.0 D	9.4	67.1	2.95	37.9	0.02	0.00			403
440	6.33	6.29	34.242	26.921	119.3	0.758	0.50	21.7	7.2	73.2	3.06	39.3	0.02	0.00			444 02
500 ISL	5.95 D	5.90	34.267 D	26.992	113.1	0.816	0.37 D	16.0 D	5.3	80.0	3.13	40.3	0.01	0.00			504
516	5.88	5.84	34.284	27.013	111.2	0.846	0.34	14.6	4.8	81.8	3.15	40.5	0.01	0.00			520 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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	
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	μg/L	μg/L	db
0	17.08	17.08	33.278 D	24.175	373.3	0.000	5.62	244.9	101.8	1.9	0.32	0.0	0.01	0.02	0.11	0.02	0
3 A	17.08	17.08	33.281	24.178	373.2	0.011	5.62	244.9	101.8	1.9	0.32	0.0	0.01	0.02	0.11	0.02	3 24
9	17.09	17.09	33.278	24.174	373.8	0.034	5.63	245.6	102.1	1.9	0.31	0.0	0.01	0.00	0.12B	0.01B	9 22
10 ISL	17.09 D	17.09	33.278 D	24.173	373.9	0.038	5.62 D	245.0 D	101.9	1.9	0.31	0.0	0.01	0.00	0.12	0.01	10
11	17.09	17.09	33.279	24.174	373.8	0.039											10 23
14 A	17.07	17.07	33.279	24.179	373.5	0.052	5.61	244.5	101.6	1.9	0.32	0.0	0.01	0.00	0.13	0.01	14 21
20 A	17.08	17.07	33.287	24.184	373.2	0.075	5.62	244.9	101.8	1.9	0.32	0.0	0.01	0.00	0.14C	0.01C	20 20
30 ISL	17.08 D	17.08	33.279 D	24.177	374.3	0.105	5.61 D	244.7 D	101.7	1.9	0.32	0.0	0.01	0.00	0.13	0.01	30
33 A	17.07	17.06	33.280	24.182	373.9	0.123	5.61	244.6	101.6	1.9	0.32	0.0	0.01	0.00	0.12	0.01	33 19
44	17.05	17.04	33.282	24.188	373.7	0.164	5.62	245.2	101.9	1.9	0.33	0.0	0.01	0.01	0.14	0.00	44 18
50 ISL	17.05 D	17.04	33.278 D	24.187	374.1	0.181	5.61 D	244.4 D	101.5	1.9	0.33	0.0	0.01	0.00	0.16	0.00	50
52	17.05	17.04	33.279	24.188	374.1	0.194	5.62	244.9	101.7	1.9	0.33	0.0	0.01	0.00	0.16	0.00	52 17
62 A	16.81	16.80	33.275	24.240	369.4	0.232	5.63	245.7	101.6	1.9	0.33	0.0	0.01	0.00	0.20	0.03	62 16
69	14.55	14.54	33.117	24.622	333.0	0.256	5.90	257.1	101.6	2.7	0.40	0.1	0.02	0.00	0.56	0.05	70 15
75 ISL	13.76 D	13.75	33.115 D	24.785	317.5	0.270	5.89	256.5 D	99.7	3.3	0.48	1.1	0.05	0.00	0.63	0.14	76
79 A	13.18	13.17	33.118	24.904	306.2	0.288	5.76	251.1	96.5	3.7	0.54	1.7	0.07	0.04	0.68	0.20	80 14
85	12.70	12.69	33.167	25.036	293.8	0.306	5.55	241.7	92.0	4.8	0.63	3.6	0.09	0.02	0.59	0.23	86 13
95	11.90	11.88	33.232	25.241	274.4	0.335	5.28	229.9	86.0	6.6	0.80	6.9	0.08	0.00	0.34	0.32	96 12
100 ISL	11.49 D	11.48	33.226 D	25.311	267.8	0.343	5.26 D	229.3 D	85.1	7.9	0.90	8.6	0.07	0.00	0.31	0.27	101
111	10.77	10.76	33.283	25.484	251.5	0.377	4.83	210.3	76.9	10.7	1.12	12.3	0.05	0.00	0.24	0.17	112 11
125	10.23	10.22	33.386	25.658	235.2	0.411	4.51	196.6	71.1	14.1	1.32	15.6	0.03	0.00	0.19	0.11	126 10
140	9.68	9.66	33.543	25.873	214.9	0.444	3.98	173.4	62.0	18.8	1.54	19.4	0.02	0.00	0.06	0.06	141 09
150 ISL	9.52 D	9.50	33.635 D	25.971	205.8	0.461	3.88	168.8 D	60.2	21.1	1.62	20.8	0.02	0.00	0.04	0.05	151
170	9.12	9.10	33.773	26.145	189.6	0.505	3.42	149.0	52.7	25.6	1.78	23.6	0.01	0.00	0.01	0.03	171 08
197	8.72	8.70	33.920	26.323	173.2	0.554	2.93	127.5	44.7	31.3	1.99						

RV NEW HORIZON

CALCOFI CRUISE 1504

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		
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	μM	μg/L	μg/L	db
31	59.2 N	122 23.3 W	13/04/2015	0209	UTC	4112 m	330	19 kn	340 06 06	1	1016.6 mb	15.8 C	13.4 C	7/8	SC	042	
0	15.95	15.95	33.067	D 24.273	364.0	0.000	5.80	253.0	102.7	2.0	0.36	0.0	0.01	0.00	0.12	0.02	0
2	15.95	15.95	33.072	D 24.277	363.7	0.007	5.80	253.0	102.7	2.0	0.36	0.0	0.01	0.00	0.12	0.02	2 21
10	15.95	15.95	33.069	D 24.276	364.1	0.036	5.80	252.8	102.7	2.0	0.36	0.0	0.01	0.00	0.12	0.02	10 19
10	15.95	15.95	33.067	D 24.274	364.2	0.036											10 20
20	ISL	15.92 D	15.92	33.068 D 24.282	363.8	0.055	5.80	D 252.8	D 102.6	2.0	0.36	0.0	0.01	0.00	0.12	0.02	20
25	15.90	15.89	33.068	D 24.287	363.5	0.091	5.78	252.2	102.3	2.0	0.36	0.0	0.01	0.00	0.12	0.03	25 18
30	ISL	15.80 D	15.80	33.053 D 24.298	362.7	0.092	5.80	D 253.1	D 102.5	2.0	0.36	0.0	0.01	0.00	0.14	0.03	30
40	15.56	15.56	33.032	D 24.335	359.4	0.145	5.83	254.2	102.4	2.0	0.36	0.0	0.01	0.00	0.18	0.04	40 17
50	15.73	15.72	33.113	D 24.361	357.3	0.181	5.81	253.5	102.5	2.1	0.36	0.0	0.01	0.01	0.26	0.07	50 16
61	15.74	15.73	33.129	D 24.372	356.7	0.220	5.79	252.6	102.2	2.0	0.36	0.0	0.01	0.00	0.32	0.10	61 15
75	13.14	13.13	32.990	D 24.812	314.8	0.267	5.82	253.5	97.2	3.6	0.54	1.6	0.06	0.06	0.59	0.27	76 14
87	11.50	11.49	32.989	D 25.124	285.2	0.303	5.34	232.6	86.2	7.4	0.93	8.3	0.09	0.00	0.44	0.40	88 13
100	10.30	10.28	33.135	D 25.450	254.3	0.338	4.88	212.5	76.8	11.0	1.20	12.9	0.03	0.01	0.23	0.27	101 12
112	9.84	9.83	33.148	D 25.538	246.1	0.368	4.86	211.7	75.7	13.0	1.31	14.9	0.02	0.00	0.14	0.13	113 11
125	ISL	9.46 D	9.45	33.269 D 25.694	231.5	0.384	4.60	D 200.1	D 71.1	16.5	1.47	17.5	0.01	0.00	0.07	0.10	126
126	9.44	9.42	33.270	D 25.699	231.1	0.402	4.59	199.9	71.0	16.8	1.48	17.8	0.01	0.00	0.06	0.10	127 10
140	9.25	9.23	33.451	D 25.871	215.0	0.433	4.18	181.9	64.4	19.6	1.59	20.0	0.01	0.01	0.02	0.06	141 09
150	ISL	9.20 D	9.18	33.574 D 25.976	205.2	0.439	3.91	D 170.2	D 60.2	22.1	1.68	21.5	0.01	0.00	0.02	0.05	151
170	8.95	8.93	33.783	D 26.180	186.3	0.493	3.32	144.4	50.9	27.0	1.86	24.5	0.01	0.00	0.00	0.03	171 08
198	8.70	8.68	33.913	D 26.320	173.4	0.544	2.85	124.0	43.5	31.6	2.02	26.9	0.01	0.00	0.00	0.03	200 07
200	ISL	8.68 D	8.66	33.921 D 26.331	172.5	0.533	2.85	D 124.2	D 43.5	31.8	2.02	27.0	0.01	0.00			202
229	8.35	8.33	33.968	D 26.418	164.6	0.596	2.74	119.2	41.5	34.8	2.08	27.9	0.01	0.00			231 06
250	ISL	8.01 D	7.98	34.008 D 26.502	156.9	0.616	2.45	D 106.6	D 36.8	39.1	2.22	29.7	0.01	0.00			252
269	7.88	7.85	34.038	D 26.544	153.2	0.659	2.08	90.5	31.2	43.0	2.35	31.3	0.01	0.01			271 05
300	ISL	7.51 D	7.48	34.071 D 26.624	146.0	0.692	1.69	D 73.4	D 25.1	48.9	2.51	33.2	0.01	0.00			302
320	7.27	7.24	34.086	D 26.671	141.8	0.735	1.47	64.0	21.8	52.7	2.62	34.5	0.01	0.00			323 04
378	6.66	6.63	34.146	D 26.801	129.9	0.813	0.94	40.8	13.7	63.5	2.87	37.7	0.01	0.01			381 03
400	ISL	6.44 D	6.40	34.153 D 26.837	126.7	0.830	0.81	D 35.0	D 11.7	67.1	2.94	38.3	0.01	0.00			403
440	6.16	6.12	34.194	D 26.905	120.6	0.891	0.56	24.1	8.0	73.6	3.07	39.6	0.01	0.00			444 02
500	ISL	5.86 D	5.82	34.253 D 26.991	113.0	0.950	0.36	D 15.7	D 5.2	80.7	3.15	40.4	0.00	0.00			504
518	5.78	5.73	34.263	D 27.009	111.5	0.981	0.33	14.4	4.7	82.8	3.18	40.6	0.00	0.00			522 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 86.7 100.0

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	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	μM	μg/L	μg/L	db
31	39.3 N	123 3.6 W	13/04/2015	0817	UTC	4134 m	330	16 kn									043
0	16.31	16.31	33.052 D 24.180	372.9	0.000	5.70	248.6	101.7	1.8	0.33	0.0	0.01	0.00	0.10	0.02	0	
2	16.31	16.31	33.052 D 24.180	372.9	0.008	5.70	248.6	101.7	1.8	0.33	0.0	0.01	0.00	0.10	0.02	2 21	
9	16.32	16.32	33.053 D 24.180	373.2	0.034											9 20	
10	ISL	16.32 D	16.32	33.051 D 24.178	373.4	0.023	5.73	D 250.0	D 102.2	1.8	0.33	0.0	0.01	0.00	0.10	0.03	10
11	16.32	16.32	33.052 D 24.179	373.3	0.041	5.71	248.8	101.8	1.8	0.33	0.0	0.01	0.00	0.10	0.04	11 19	
20	ISL	16.32 D	16.32	33.051 D 24.179	373.7	0.060	5.72	D 249.5	D 102.0	1.8	0.34	0.0	0.01	0.00	0.10	0.02	20
24	16.32	16.32	33.053 D 24.180	373.7	0.090	5.71	249.0	101.8	1.8	0.34	0.0	0.01	0.00	0.10	0.02	24 18	
30	ISL	16.32 D	16.31	33.052 D 24.180	373.9	0.098	5.72	D 249.3	D 102.0	1.8	0.34	0.0	0.01	0.00	0.12	0.02	30
40	15.97	15.96	33.016 D 24.233	369.3	0.149	5.76	251.0	101.9	1.9	0.33	0.0	0.01	0.00	0.15	0.03	40 17	
50	15.90	15.89	33.010 D 24.244	368.5	0.186	5.78	252.0	102.2	1.9	0.34	0.0	0.01	0.00	0.19	0.04	50 16	
62	15.73	15.72	33.002 D 24.277	365.7	0.230	5.78	252.1	101.9	1.9	0.34	0.0	0.01	0.00	0.24	0.06	62 15	
75	15.67	15.66	33.000 D 24.290	365.0	0.278	5.80	252.7	102.0	2.0	0.34	0.0	0.01	0.00	0.28	0.08	76 14	
87	15.29	15.28	33.013 D 24.383	356.4	0.321	5.83	254.0	101.7	2.2	0.36	0.0	0.01	0.00	0.44	0.16	88 13	
100	13.36	13.35	32.984 D 24.766	320.0	0.353	5.64	D 245.9	D 94.7								101 12	
112	11.94	11.92	32.967 D 25.028	295.1	0.402	5.47	238.1	89.0	5.8	0.78	5.9	0.11	0.01	0.33	0.38	113 11	
125	ISL	11.52 D	11.50	33.143 D 25.243	274.9	0.427	5.28	D 230.1	D 85.4	7.1	0.86	7.7	0.06	0.00	0.18	0.19	126
126	11.50	11.49	33.137 D 25.241	275.2	0.442	5.28	230.0	85.3	7.2	0.87	7.9	0.06	0.00	0.17	0.17	127 10	
141	10.38	10.37	33.182 D 25.474	253.0	0.481	5.00	217.9	78.9	10.2	1.11	11.8	0.03	0.00	0.14	0.13	142 09	
150	ISL	9.99 D	9.77	33.324 D 25.652	236.2	0.491	4.74	D 206.4	D 74.2	12.8	1.24	14.1	0.03	0.00	0.10	0.10	151
170	9.60	9.58	33.516 D 25.867	216.2	0.549	4.16	181.1	64.6	18.5	1.52	19.0	0.02	0.00	0.02	0.04	171 08	
200	9.18	9.16	33.781 D 26.142	190.6	0.610	4.24	184.5	65.3	21.2	1.47	19.5	0.01	0.00	0.00	0.02	202 07	
230	8.77	8.74	33.860 D 26.270</														

RV NEW HORIZON

CALCOFI CRUISE 1504

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	15.86	15.86	33.279	D 24.457	346.5	0.000	6.40	279.2	113.3	5.5	0.26	0.0	0.03	0.00	3.08	0.94	0
2	15.86	15.86	33.283	24.461	346.2	0.007	6.40	279.2	113.3	5.5	0.26	0.0	0.03	0.00	3.08	0.94	2 04
4	15.84	15.84	33.279	24.460	346.3	0.014	6.42	279.7	113.5	5.5	0.26	0.0	0.03	0.00	3.13	0.69	4 03
10	15.61	15.61	33.273	24.508	342.0	0.034	6.48	282.3	114.0	5.7	0.27	0.1	0.05	0.00	3.89	0.85	10 02
15	13.59	13.59	33.263	24.930	301.9	0.051	5.33	232.3	90.1	8.8	0.72	5.6	1.34	0.08	5.13	1.21	15 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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	17.24	17.24	33.286	D 24.143	376.4	0.000	6.13	267.1	111.4	3.9	0.25	0.0	0.01	0.00	0.71	0.16	0
2	17.24	17.24	33.288	24.144	376.4	0.008	6.13	267.1	111.4	3.9	0.25	0.0	0.01	0.00	0.71	0.16	2 04
4	17.01	17.01	33.289	24.199	371.2	0.015	6.13	267.4	111.0	4.0	0.26	0.0	0.01	0.00	0.80	0.17	4 03
10	14.63	14.63	33.294	24.735	320.1	0.036	6.00	261.4	103.6	8.5	0.83	7.1	0.67	0.00	2.17	0.70	10 02
14	14.54	14.54	33.289	24.735	318.7	0.049	5.65	246.2	97.4	13.0	1.27	15.1	0.38	0.00	1.92	0.98	14 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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	17.45	17.45	33.294	D 24.099	380.6	0.000	6.03	263.1	110.2	3.9	0.25	0.0	0.02	0.04	0.61	0.12	0
2	17.45	17.45	33.295	24.100	380.6	0.008	6.03	263.1	110.2	3.9	0.25	0.0	0.02	0.04	0.61	0.12	2 08
5	17.05	17.05	33.289	24.190	372.1	0.019	6.06	264.2	109.8	3.9	0.25	0.0	0.01	0.00	0.53	0.11	5 07
10	16.49	16.49	33.286	24.319	360.0	0.037	6.15	268.2	110.3	4.0	0.26	0.0	0.02	0.00	0.82	0.21	10 06
20	12.06	12.05	33.267	25.235	273.0	0.069	4.81	0209.4	0 78.7	8.5	0.83	7.1	0.68	0.01	1.50	0.97	20 05
29	11.29	11.29	33.336	25.430	254.7	0.093	4.24	184.6	68.3	13.0	1.27	15.2	0.38	0.00	0.78	0.64	29 04
30 ISL	11.16	11.16	33.363	D 25.474	250.5	0.096	4.21	0183.4	D 67.6	13.2	1.28	15.3	0.36	0.00	0.73	0.60	30
40	10.43	10.42	33.448	25.669	232.1	0.119	4.13	179.9	65.4	15.7	1.40	16.6	0.09	0.00	0.24	0.24	40 03
50	10.15	10.15	33.662	25.884	211.9	0.142	3.31	144.1	52.1	21.3	1.71	20.8	0.08	0.06	0.05	0.13	50 02
60	9.96	9.95	33.730	25.970	204.0	0.162	3.17	138.0	49.7	23.3	1.79	21.7	0.08	0.02	0.06	0.10	60 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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	16.16	16.16	33.323	D 24.422	349.9	0.000	6.08	265.1	108.3	1.8	0.27	0.0	0.01	0.02	0.51	0.15	0
2	16.16	16.16	33.323	24.422	349.9	0.007	6.08	265.1	108.3	1.8	0.27	0.0	0.01	0.02	0.51	0.15	2 21
10	15.90	15.90	33.321	24.481	344.6	0.035	6.11	266.4	108.3	2.0	0.29	0.0	0.01	0.00	0.71	0.22	10 19
10	15.90	15.90	33.321	24.481	344.6	0.033											10 20
20	14.94	14.94	33.307	24.682	325.7	0.068	6.15	267.9	106.8	3.8	0.36	0.1	0.03	0.01	2.40	0.77	20 18
30	13.06	13.05	33.280	25.052	290.7	0.099	5.28	229.8	88.2	6.7	0.77	5.3	0.37	0.06	1.51	0.62	30 17
40	11.69	11.68	33.279	25.313	266.1	0.127	4.65	202.3	75.4	10.6	1.11	11.6	0.72	0.02	0.77	0.51	40 16
50	10.84	10.83	33.346	25.519	246.7	0.153	4.41	191.8	70.3	13.2	1.28	14.4	0.31	0.14	0.34	0.35	50 15
60	10.52	10.51	33.455	25.661	233.4	0.177	4.11	178.8	65.1	15.6	1.42	16.5	0.06	0.01			60 14
69	10.37	10.36	33.550	25.760	224.1	0.197	3.76	163.5	59.4	17.8	1.54	18.3	0.04	0.00	0.16	0.20	70 13
75 ISL	10.23	D 10.22	33.626	D 25.844	216.3	0.194	3.60	0156.6	D 56.7	19.2	1.61	19.3	0.03	0.00	0.13	0.17	76
84	10.06	10.05	33.681	25.916	209.7	0.230	3.35	145.9	52.7	21.3	1.71	20.7	0.02	0.00	0.08	0.13	85 12
100	9.69	9.67	33.757	26.038	198.4	0.262	3.14	136.7	49.0	24.1	1.82	22.5	0.02	0.00	0.03	0.08	101 11
119	9.46	9.44	33.849	26.148	188.3	0.299	2.88	125.5	44.8	27.1	1.93	24.2	0.02	0.00	0.01	0.06	120 10
125 ISL	9.36	D 9.35	33.878	D 26.186	184.8	0.295	2.81	0122.4	D 43.6	28.0	1.97	24.6	0.02	0.00	0.01	0.05	126
139	9.36	9.34	33.937	26.234	180.6	0.336	2.57	112.0	39.9	29.9	2.05	25.5	0.02	0.00	0.01	0.05	140 09
150 ISL	9.28	D 9.26	34.022	D 26.314	173.3	0.340	2.28	099.2	D 35.3	31.9	2.12	26.4	0.02	0.00	0.01	0.05	151
170	9.04	9.02	34.073	26.392	166.2	0.390	2.02	87.7	31.0	35.7	2.26	27.9	0.02	0.00	0.01	0.05	171 08
200	8.66	8.63	34.153	26.516	154.9	0.438	1.55	67.4	23.6	41.8	2.47	30.2	0.02	0.03	0.00	0.06	202 07
230	8.45	8.43	34.172	26.563	151.0	0.484	1.41	61.2	21.4	43							

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 90.0 35.0

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	SIO3* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEAO μg/L	PRES db
33 15.2 N	118 14.8 W	10/04/2015	1630	UTC	286 m	220 02 kn	280 01 06	1	1015.7 mb	17.2 C	14.0 C	23 m	1/8	AC	028		
0	17.14	17.14	33.304 D	24.180	372.8	0.000	5.73	250.0	104.1	1.3	0.29	0.0	0.01	0.00	0.21	0.04	0
2 A	17.14	17.14	33.304	24.181	372.9	0.008	5.73	250.0	104.1	1.3	0.29	0.0	0.01	0.00	0.21	0.04	2 21
10	17.09	17.09	33.305	24.194	371.9	0.037	5.75	250.8	104.3	1.2	0.29	0.0	0.01	0.00	0.23	0.06	10 18
10	17.09	17.09	33.305	24.194	371.9	0.037											10 20
10	17.09	17.09	33.305	24.195	371.9	0.036											10 19
14 A	17.07	17.07	33.304	24.198	371.7	0.052	5.75	250.9	104.3	1.2	0.29	0.0	0.01	0.00	0.24	0.06	14 17
19 A	17.06	17.05	33.304	24.202	371.5	0.071	5.77	251.4	104.5	1.2	0.29	0.0	0.01	0.00	0.24	0.06	19 16
20 ISL	17.05 D	17.04	33.303 D	24.203	371.4	0.052	5.76	251.0	104.3	1.2	0.29	0.0	0.01	0.00	0.25	0.06	20
26	16.78	16.78	33.283	24.251	367.1	0.097	5.82	253.6	104.8	1.3	0.30	0.0	0.01	0.00	0.30	0.08	26 15
30 ISL	15.86 D	15.86	33.239 D	24.428	350.3	0.089	5.97	260.4	105.7	1.7	0.34	0.0	0.01	0.00	0.31	0.11	30
32 A	15.29	15.29	33.206 D	24.529	340.7	0.096	6.01	262.0	105.1	2.0	0.36	0.0	0.01	0.00	0.32	0.13	32 14
43	14.18	14.17	33.187	24.753	319.6	0.154	6.00	261.3	102.5	2.5	0.41	0.0	0.01	0.00	0.71	0.31	43 12
43	14.18	14.17	33.187	24.753	319.6	0.154											43 13
50 ISL	13.15 D	13.15	33.230 D	24.995	296.8	0.143	5.54	241.5	92.8	5.7	0.69	4.4	0.29	0.00	0.85	0.50	50
52	13.09	13.08	33.256	25.028	293.6	0.181	5.22	227.5	87.3	6.6	0.77	5.6	0.38	0.01	0.89	0.55	52 11
61 A	12.39	12.38	33.264	25.170	280.3	0.207	4.97	216.4	81.9	8.4	0.92	8.2	0.26	0.00	0.52	0.53	61 10
75 A	10.98	10.97	33.315	25.471	251.8	0.244	4.60	200.5	73.6	12.0	1.18	12.9	0.08	0.00	0.25	0.30	76 09
88	10.35	10.34	33.463	25.696	230.6	0.276	4.13	179.8	65.2	16.1	1.42	16.8	0.04	0.00	0.13	0.19	89 08
100	10.00	9.99	33.599	25.862	215.1	0.302	3.71	161.5	58.2	19.8	1.60	19.5	0.03	0.00	0.06	0.14	101 07
119	9.60	9.59	33.737	26.037	198.9	0.342	3.28	142.6	51.0	24.2	1.79	22.5	0.02	0.00	0.01	0.07	120 06
125 ISL	9.54 D	9.53	33.760 D	26.066	196.3	0.322	3.25	141.6	50.6	25.0	1.83	22.9	0.02	0.00	0.01	0.06	126
140	9.50	9.48	33.853	26.145	189.1	0.382	2.89	125.7	44.9	27.1	1.93	24.2	0.02	0.00	0.01	0.05	141 05
150 ISL	9.36 D	9.35	33.969 D	26.258	178.6	0.370	2.53	110.1 D	39.2	29.3	2.03	25.2	0.02	0.00	0.01	0.05	151
169	9.37	9.35	34.055	26.325	172.6	0.435	2.08	90.5	32.2	33.4	2.23	27.2	0.02	0.00	0.00	0.05	170 04
200	8.87	8.84	34.088	26.432	163.0	0.487	1.98	86.2	30.4	37.1	2.30	28.6	0.01	0.00	0.00	0.05	202 03
230	8.66	8.63	34.134	26.502	156.9	0.535	1.67	72.6	25.5	40.5	2.42	29.8	0.02	0.00			232 02
250 ISL	8.28 D	8.26	34.184 D	26.599	148.0	0.535	1.31 D	56.8 D	19.8	43.9	2.52	30.8	0.02	0.00			252
271	8.20	8.18	34.191	26.617	146.6	0.596	1.20	52.1	18.1	47.4	2.62	31.9	0.02	0.00			273 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 STA-CORRECTED 02;

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 90.0 37.0

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	SIO3* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A μg/L	PHAEAO μg/L	PRES db
33 11.1 N	118 23.1 W	10/04/2015	1227	UTC	1175 m	340 05 kn											027
0	17.10	17.10	33.287 D	24.178	373.1	0.000	5.72	249.6	103.8	1.6	0.31	0.0	0.01	0.00	0.22	0.04	0
1	17.10	17.10	33.286	24.177	373.2	0.004	5.72	249.6	103.8	1.6	0.31	0.0	0.01	0.00	0.22	0.04	1 22
10	17.11	17.11	33.286	24.175	373.8	0.037	5.76	251.3	104.6	1.5	0.30	0.0	0.01	0.00	0.21	0.05	10 20
10	17.11	17.11	33.287	24.175	373.7	0.036											10 21
20	17.08	17.08	33.283	24.181	373.5	0.075	5.73	249.9	103.9	1.6	0.30	0.0	0.01	0.00	0.23	0.05	20 19
30	16.57	16.56	33.279	24.297	362.8	0.112	5.75	250.8	103.2	1.6	0.30	0.0	0.01	0.00	0.25	0.06	30 18
40	14.48	14.48	33.185 D	24.687	325.9	0.128	6.06	264.1	104.2	2.6	0.37	0.0	0.01	0.04	0.32	0.16	40 17
50	13.51	13.50	33.178	24.884	307.3	0.178	5.79	252.1	97.6	2.9	0.53	1.6	0.09	0.07	0.91	0.47	50 15
50	13.51	13.50	33.171	24.879	307.8	0.178											50 16
60	12.86	12.85	33.239	25.061	290.7	0.208	5.23	227.9	87.0	6.9	0.81	6.0	0.35	0.06	0.79	0.66	60 14
70	11.90	11.89	33.297	25.289	269.2	0.236	4.73	205.9	77.1	10.2	1.06	10.5	0.18	0.00	0.37	0.47	71 13
75 ISL	11.53 D	11.52	33.312 D	25.370	261.5	0.217	4.68	203.9	75.8	11.7	1.16	12.2	0.14	0.00	0.30	0.38	76
85	10.45	10.44	33.407	25.636	236.3	0.274	4.31	187.5	68.1	14.6	1.35	15.6	0.05	0.02	0.15	0.20	86 12
100	10.06	10.05	33.571	25.831	218.1	0.308	3.78	164.7	59.4	19.1	1.57	19.1	0.02	0.00	0.06	0.10	101 11
120	9.58	9.56	33.755	26.055	197.2	0.349	3.24	141.1	50.4	24.6	1.81	22.6	0.02	0.00	0.01	0.05	121 10
125 ISL	9.54 D	9.52	33.792 D	26.091	193.9	0.328	3.14	136.8	48.8	25.6	1.85	23.2	0.02	0.00	0.01	0.05	126
140	9.37	9.36	33.878	26.185	185.3	0.387	2.80	122.0	43.4	28.5	1.97	24.8	0.02	0.00	0.01	0.06	141 09
150 ISL	9.29 D	9.28	33.948 D	26.253	179.0	0.375	2.57	111.7 D	39.7	30.5	2.05	25.7	0.02	0.00	0.01	0.06	151
171	9.02	9.00	34.054	26.380	167.3	0.442	2.13	92.5	32.7	34.7	2.22	27.6	0.01	0.00	0.04	0.04	172 08
200	8.78	8.76	34.116	26.467	159.6	0.490	1.82	79.3	27.9	38.9	2.36	29.2	0.01	0.00	0.01	0.04	202 07
230	8.60	8.57	34.180	26.547	152.6	0.536	1.39	60.4	21.2	43.4	2.53	30.8	0.01	0.00			232 06
250 ISL	8.40 D	8.37	34.203 D	26.596	148.3	0.536	1.23 D	53.5 D	18.7	46.0	2.59	31.7	0.01	0.00			252
270	8.14	8.12	34.203	26.635	144.9	0.596	1.13	49.3	17.1	48.6	2.65	32.5	0.01	0.00			272 05
300 ISL	7.95 D	7.92	34.234 D	26.689	140.3	0.609	0.91 D	39.4 D	13.6	52.6	2.75	33.7	0.01	0.00			302
320	7.72	7.69	34.240	26.727	136.8	0.667	0.79	34.4	11.8	55.2	2.82	34.4	0.01	0.00			323 04
380	7.11	7.07	34.268	26.837	127.0	0.746	0.54	23.4	7.9	63.9	2.98	36.5	0.01	0.00			383 03
400 ISL	7.00 D	6.96	34.280 D	26.862	124.9	0.742	0.48 D	20.9 D	7.1	66.4	3.02						

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 90.0 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	SVA	DYN HT	OXYGEN	OXYGEN	OXY	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	17.52	17.52	33.321	D 24.103	380.2	0.000	5.63	245.5	103.0	1.8	0.29	0.0	0.01	0.00	0.19	0.04	0
2	17.52	17.52	33.321	24.103	380.3	0.008	5.63	245.5	102.9	1.8	0.29	0.0	0.01	0.00	0.19	0.04	2 21
10	17.52	17.52	33.320	24.103	380.6	0.038	5.64	245.9	103.1	1.7	0.29	0.0	0.01	0.00	0.19	0.04	10 19
10	17.52	17.52	33.321	24.104	380.5	0.037											10 20
20	17.39	17.38	33.321	24.137	377.8	0.076	5.65	246.3	103.0	1.7	0.30	0.0	0.01	0.00	0.20	0.04	20 18
30	14.96	14.95	33.256	24.640	330.0	0.111	5.97	260.0	103.7	2.4	0.38	0.0	0.01	0.02	0.62	0.31	30 17
40	13.63	13.62	33.230	24.899	305.6	0.143	5.63	245.2	95.1	5.1	0.60	2.9	0.15	0.00	1.52	0.84	40 16
50	12.37	12.36	33.260	25.171	279.9	0.172	4.96	216.0	81.7	9.0	0.95	8.7	0.21	0.00	0.78	0.54	50 15
59	11.30	11.29	33.334	25.427	255.7	0.197	4.56	198.6	73.5	12.5	1.18	12.7	0.07	0.00	0.28	0.28	59 14
70	11.05	11.05	33.343	25.479	250.9	0.224	4.49	195.5	71.9	13.2	1.23	13.7	0.05	0.00	0.23	0.26	71 13
75 ISL	10.64	D 10.63	33.408	D 25.602	239.3	0.219	4.35	0189.4	D 69.1	14.6	1.30	14.9	0.05	0.00	0.19	0.23	76
85	10.18	10.17	33.475	25.735	226.9	0.260	4.10	178.3	64.4	17.3	1.45	17.4	0.03	0.00	0.12	0.16	86 12
100	9.69	9.68	33.591	25.908	210.7	0.293	3.75	163.2	58.4	21.1	1.62	20.3	0.02	0.00	0.05	0.09	101 11
120	9.30	9.28	33.727	26.078	194.9	0.334	3.35	146.0	51.8	25.4	1.79	22.8	0.01	0.00	0.02	0.08	121 10
125 ISL	9.20 D	9.19	33.761	D 26.120	191.0	0.326	3.33	0144.8	D 51.3	26.4	1.83	23.5	0.01	0.00	0.02	0.07	126
140	8.87	8.86	33.858	26.249	179.0	0.371	3.04	132.3	46.6	29.4	1.93	25.4	0.01	0.00	0.01	0.06	141 09
150 ISL	8.84 D	8.82	33.910	D 26.295	174.9	0.372	2.93	0127.7	D 44.9	30.8	1.98	26.0	0.01	0.00	0.01	0.06	151
171	8.69	8.67	33.971	26.367	168.4	0.425	2.62	114.1	40.0	33.8	2.09	27.3	0.01	0.00	0.00	0.06	172 08
200 ISL	8.55 D	8.53	34.043	D 26.445	161.6	0.456	2.24	097.6	D 34.2	37.5	2.23	28.8	0.01	0.00	0.00	0.05	202
201	8.54	8.52	34.037	26.442	161.9	0.474	2.24	97.6	34.1	37.7	2.23	28.8	0.01	0.00	0.00	0.04	203 07
230	8.28	8.26	34.078	26.516	155.4	0.520	1.92	83.4	29.0	41.6	2.37	30.3	0.00	0.00			232 06
250 ISL	7.89 D	7.86	34.077	D 26.573	150.2	0.535	1.85	080.5	D 27.7	45.4	2.46	31.6	0.00	0.00			252
270	7.68	7.65	34.105	26.626	145.4	0.580	1.56	68.0	23.3	49.1	2.55	32.9	0.00	0.00			272 05
300 ISL	7.51 D	7.48	34.142	D 26.680	140.8	0.608	1.29	56.0	D 19.2	54.0	2.71	34.3	0.00	0.00			302
320	7.36	7.33	34.197	26.745	134.8	0.650	0.92	40.0	13.6	57.2	2.81	35.2	0.00	0.00			323 04
380	7.14	7.11	34.261	26.827	128.0	0.729	0.56	24.4	8.3	63.4	2.98	36.5	0.00	0.00			383 03
400 ISL	6.83 D	6.79	34.234	D 26.849	125.9	0.741	0.63	027.2	D 9.2	65.6	3.02	37.0	0.00	0.00			403
440	6.68	6.64	34.277	26.904	121.3	0.803	0.43	18.7	6.3	70.1	3.10	37.9	0.00	0.00			444 02
500 ISL	6.34 D	6.29	34.312	D 26.977	115.0	0.862	0.31	D 13.6	D 4.5	76.1	3.16	38.7	0.00	0.00			504
517	6.25	6.21	34.316	26.992	113.7	0.894	0.28	12.1	4.0	77.8	3.18	39.0	0.00	0.00			521 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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	TEMP	POTTEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXYGEN	OXY	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	16.06	16.06	33.311	D 24.437	348.4	0.000	5.84	254.7	103.8	1.1	0.31	0.0	0.01	0.00	0.34	0.11	0
2	16.06	16.06	33.311	24.437	348.5	0.007	5.84	254.7	103.8	1.1	0.31	0.0	0.01	0.00	0.34	0.11	2 22
10	16.04	16.04	33.310	24.440	348.4	0.035	5.85	255.1	104.0	1.1	0.30	0.0	0.01	0.00	0.36	0.11	10 20
10	16.04	16.04	33.310	24.440	348.5	0.034											10 21
20	15.37	15.37	33.290	24.576	335.9	0.069	6.02	262.4	105.5	0.5	0.30	0.0	0.01	0.00	0.51	0.20	20 19
30	15.22	15.21	33.289	24.608	333.1	0.103	6.00	261.7	104.9	0.6	0.31	0.0	0.01	0.00	1.02	0.37	30 18
40	14.87	14.86	33.286	24.683	326.2	0.136	5.92	258.1	102.7	1.1	0.36	0.2	0.03	0.04	1.25	0.45	40 16
40	14.87	14.86	33.286	24.683	326.3	0.135											40 17
50	14.22	14.21	33.282	24.817	313.8	0.168	5.74	250.1	98.2	2.7	0.52	1.7	0.09	0.34	0.94	0.52	50 15
60	12.66	12.66	33.241	25.100	287.0	0.198	5.16	224.9	85.5	7.6	0.90	7.2	0.26	0.38	0.57	0.41	60 14
70	11.93	11.92	33.259	25.254	272.5	0.226	4.92	214.3	80.3	9.6	1.04	9.6	0.30	0.18	0.48	0.33	71 13
75 ISL	11.03 D	11.02	33.291	D 25.444	254.4	0.206	4.83	0210.5	D 77.4	11.2	1.14	11.5	0.22	0.00	0.38	0.30	76
85	10.21	10.20	33.352	25.634	236.5	0.263	4.46	194.3	70.2	14.4	1.35	15.4	0.07	0.00	0.20	0.24	86 12
100	9.74	9.72	33.557	25.873	214.0	0.297	3.82	166.3	59.5	20.2	1.62	19.8	0.04	0.00	0.09	0.15	101 11
120	9.30	9.29	33.814	26.146	188.5	0.337	2.99	130.0	46.2	27.5	1.92	24.2	0.02	0.01	0.04	0.10	121 10
125 ISL	9.29 D	9.28	33.827	D 26.158	187.5	0.315	2.98	0129.7	D 46.1	27.9	1.94	24.4	0.02	0.00	0.04	0.11	126
140	9.21	9.19	33.861	26.198	184.0	0.375	2.86	124.6	44.2	29.1	1.98	25.1	0.02	0.00	0.04	0.13	141 09
150 ISL	9.18 D	9.16	33.866	D 26.207	183.3	0.361	2.86	0124.6	D 44.2	30.0	2.00	25.5	0.02	0.00	0.04	0.12	151
170	8.81	8.79	33.923	26.310	173.8	0.429	2.71	118.0	41.5	32.0	2.05	26.4	0.02	0.00	0.03	0.09	171 08
199	8.44	8.42	33.990	26.421	163.8	0.478	2.47	107.6	37.5	36.4	2.17	28.3	0.02	0.00	0.01	0.08	201 07
200 ISL	8.39 D	8.37	34.003	D 26.438	162.2	0.448	2.47	0107.3	D 37.4	36.5	2.18	28.3	0.02	0.00			202
230	8.21	8.18	34.072	26.522	154.8	0.527	1.94	84.2	29.3	41.8	2.37	30.3	0.02	0.00			232 06
250 ISL	7.95 D	7.92	34.084	D 26.570	150.5	0.527	1.82	079.0	D 27.3	44.7	2.44	31.3	0.01	0.00			252
268	7.81	7.78	34.097	26.601	147.7	0.584	1.66	72.1	24.8	47.4	2.50	32.2	0.01	0.00			270 05
300 ISL	7.34 D	7.31	34.142	D 26.705	138.2												

RV NEW HORIZON

CALCOFI CRUISE 1504

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	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	μM	μg/L	μg/L	db		
32	32 42.9 N	119 57.7 W	09/04/2015	1914	UTC	875 m	300	16 kn	300 04 08	1	1015.3	mb	17.5	C	14.5	C	29 m	1/8	ST 024
0	17.29	17.29	33.451	D	24.259	365.4	0.000	5.57	243.0	101.6	2.1	0.32	0.0	0.01	0.00	0.10	0.02	0	
1 A	17.29	17.29	33.458	24.264		364.9	0.004	5.57	243.0	101.6	2.1	0.32	0.0	0.01	0.00	0.10	0.02	1 24	
8	17.28	17.28	33.455	24.264		365.1	0.030											8 23	
10	17.29	17.29	33.453	24.259		365.7	0.036	5.56	242.4	101.3	2.1	0.32	0.0	0.01	0.00	0.10	0.02	10 22	
17 A	17.25	17.24	33.452	24.271		364.9	0.062	5.56	242.4	101.2	2.1	0.31	0.0	0.01	0.00	0.11	0.02	17 21	
20 ISL	17.23	D	17.23	33.453	D	24.275	364.6	0.057	5.59	D243.5	D101.7	2.1	0.32	0.0	0.01	0.00	0.11	0.03	20
23 A	17.23	17.23	33.452	24.275		364.7	0.084	5.55	242.1	101.1	2.1	0.32	0.0	0.01	0.00	0.11	0.03	23 20	
30 ISL	17.22	D	17.22	33.453	D	24.278	364.7	0.094	5.60	D244.0	D101.8	2.1	0.32	0.0	0.01	0.00	0.11	0.03	30
38 A	17.21	17.21	33.453	24.281		364.7	0.139	5.56	242.4	101.2	2.1	0.31	0.0	0.01	0.00	0.11	0.03	38 18	
50 ISL	17.21	D	17.20	33.453	D	24.283	365.0	0.145	5.59	D243.9	D101.8	2.1	0.32	0.0	0.01	0.00	0.12	0.03	50
54	17.21	17.20	33.454	24.284		365.0	0.197	5.56	242.5	101.2	2.1	0.32	0.0	0.01	0.00	0.12	0.03	54 17	
66	17.20	17.19	33.453	24.287		365.2	0.241	5.55	242.1	101.0	2.1	0.33	0.0	0.00	0.00	0.13	0.03	67 16	
75 ISL	17.00	D	16.99	33.434	D	24.319	362.4	0.237	5.62	D244.9	D101.7	2.1	0.33	0.0	0.01	0.00	0.20	0.06	76
78 A	16.33	16.32	33.433	24.473		347.7	0.284	5.58	243.3	99.8	2.2	0.33	0.0	0.01	0.00	0.22	0.06	79 14	
86	13.70	13.69	33.211	24.872		309.6	0.310	5.67	246.9	95.9	4.3	0.60	3.0	0.11	0.18	1.16	0.49	87 13	
95 A	12.23	12.22	33.349	25.269		271.8	0.337	4.87	212.0	80.0	9.2	0.96	8.4	0.38	0.32	0.64	0.42	96 12	
100 ISL	11.64	D	11.62	33.396	D	25.417	257.8	0.300	4.89	D213.1	D 79.4	11.4	1.10	10.9	0.30	0.00	0.47	0.37	101
109	10.81	10.79	33.438	25.599		240.5	0.372	4.15	180.6	66.1	15.4	1.36	15.5	0.15	0.00	0.17	0.29	110 11	
124	9.50	9.49	33.576	25.927		209.4	0.406	3.81	165.7	59.0	20.9	1.66	20.8	0.03	0.00	0.05	0.12	125 10	
125 ISL	9.56	D	9.55	33.567	D	25.911	211.0	0.358	3.86	D168.1	D 60.0	20.9	1.66	20.8	0.03	0.00	0.05	0.12	126
140	9.41	9.39	33.607	25.967		205.9	0.439	3.78	164.4	58.5	21.5	1.67	21.2	0.02	0.00	0.05	0.09	141 09	
150 ISL	9.22	D	9.20	33.687	D	26.060	197.3	0.410	3.72	D162.1	D 57.4	23.0	1.71	21.9	0.02	0.00	0.04	0.09	151
170	8.92	8.90	33.799	26.196		184.7	0.498	3.53	153.6	54.1	26.1	1.78	23.4	0.02	0.00	0.03	0.07	171 08	
200	8.50	8.48	33.930	26.365		169.1	0.551	3.05	132.5	46.3	32.1	1.97	26.4	0.01	0.00	0.02	0.07	202 07	
231	8.04	8.02	33.984	26.477		158.9	0.602	2.66	115.8	40.0	37.9	2.14	28.8	0.01	0.00		233 06		
250 ISL	7.82	D	7.80	33.999	D	26.522	154.9	0.583	2.55	D110.8	D 38.1	41.5	2.25	30.2	0.01	0.00		252	
271	7.52	7.50	34.020	26.581		149.5	0.664	2.22	96.6	33.0	45.5	2.38	31.8	0.01	0.00		273 05		
300 ISL	7.15	D	7.12	34.056	D	26.663	142.0	0.658	1.69	D 73.6	D 24.9	50.9	2.53	33.6	0.01	0.00		302	
322	7.00	6.96	34.070	26.695		139.2	0.737	1.45	63.2	21.3	55.1	2.65	35.1	0.01	0.00		325 04		
380	6.63	6.59	34.131	26.794		130.6	0.815	1.02	44.3	14.8	63.2	2.87	37.3	0.01	0.00		383 03		
400 ISL	6.59	D	6.55	34.158	D	26.821	128.3	0.794	0.86	D 37.5	D 12.6	66.6	2.93	37.9	0.01	0.00		403	
441	6.18	6.14	34.200	26.908		120.4	0.892	0.60	25.9	8.6	73.7	3.06	39.1	0.01	0.00		445 02		
500 ISL	6.01	D	5.96	34.289	D	27.001	112.3	0.915	0.38	D 16.5	D 5.5	79.9	3.16	39.7	0.01	0.00		504	
515	5.89	5.85	34.303	27.027		109.9	0.978	0.32	13.7	4.5	81.5	3.18	39.9	0.01	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 STA-CORRECTED O2;

RV NEW HORIZON

CALCOFI CRUISE 1504

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				
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		
31	45.2 N	121 19.0 W	09/04/2015	0551	UTC	3670 m	350	15 kn		1018.0	mb	16.1	C	12.7	C		022		
0	17.28	17.28	33.386	D	24.210	370.0	0.000	5.60	244.0	101.9	2.0	0.34	0.1	0.01	0.03	0.11	0.03	0	
3	17.28	17.28	33.386	24.210		370.1	0.011	5.60	244.0	101.9	2.0	0.34	0.1	0.01	0.03	0.11	0.03	3 20	
10	17.28	17.28	33.390	24.214		370.1	0.037	5.59	243.9	101.9	2.0	0.34	0.1	0.01	0.02	0.10	0.02	10 19	
20	ISL	17.28	17.28	33.386	D	24.213	370.5	0.074	5.61	D244.5	D102.1	2.0	0.34	0.1	0.00	0.02	0.10	0.02	20
25	17.29	17.28	33.387	24.212		370.8	0.093	5.59	243.8	101.8	2.0	0.34	0.1	0.00	0.02	0.10	0.02	25 18	
30	ISL	17.29	17.28	33.386	D	24.211	371.0	0.112	5.63	D245.5	D102.5	2.0	0.34	0.1	0.00	0.02	0.11	0.02	30
40	17.27	17.26	33.384	24.215		371.1	0.148	5.59	243.9	101.8	2.0	0.34	0.1	0.01	0.02	0.11	0.03	40 17	
50	17.23	17.22	33.382	24.223		370.6	0.185	5.59	243.8	101.7	2.0	0.34	0.1	0.01	0.02	0.15	0.04	50 16	
62	13.76	13.75	33.135	24.800		315.7	0.226	6.08	264.7	102.9	2.8	0.44	0.1	0.01	0.02	0.29	0.14	62 15	
75	12.28	12.27	33.113	25.074		289.8	0.266	5.80	252.5	95.2	3.1	0.67	4.1	0.12	0.06	1.62	0.71	76 14	
87	11.33	11.32	33.188	25.311		267.5	0.299	5.12	223.2	82.5	8.3	0.98	9.4	0.16	0.03	0.40	0.46	88 13	
100	10.60	10.59	33.270	25.504		249.3	0.333	4.79	208.7	76.0	11.4	1.18	12.9	0.04	0.01	0.23	0.22	101 12	
112	10.29	10.28	33.355	25.623		238.2	0.362	4.54	197.6	71.5	13.5	1.31	14.9	0.03	0.01	0.16	0.17	113 11	
125	9.95	9.93	33.470	25.772		224.3	0.392	4.21	183.1	65.8	16.9	1.48	17.8	0.02	0.02	0.09	0.09	126 10	
140	9.54	9.53	33.612	25.950		207.6	0.425	3.77	164.2	58.6	20.9	1.65	20.6	0.01	0.01	0.04	0.06	141 09	
150	ISL	9.47	9.46	33.643	D	25.985	204.4	0.448	3.74	D162.8	D58.0	22.6	1.71	21.6	0.01	0.01	0.03	0.05	151
169	9.12	9.10	33.779	26.150		189.1	0.482	3.38	147.0	52.0	25.9	1.83	23.4	0.01	0.01	0.03	0.03	170 08	
200	8.69	8.66	33.928	26.335		172.1	0.538	2.91	126.5	44.4	31.7	2.01	26.3	0.01	0.01	0.00	0.03	202 07	
231	8.26	8.23	33.998	26.456		161.1	0.590	2.53	110.2	38.3	37.3	2.17	28.6	0.01	0.01			233 06	
250	ISL	8.02	7.99	34.035	D	26.521	155.1	0.625	2.26	D98.1	D33.9	40.6	2.28	29.9	0.01	0.01			252
270	7.84	7.82	34.053	26.561		151.6	0.651	2.00	86.9	29.9	44.0	2.39	31.2	0.01	0.01			272 05	
300	ISL	7.49	7.46	34.078	D	26.632	145.2	0.700	1.69	D73.6	D25.1	49.9	2.55	33.3	0.01	0.00			302
320	7.21	7.18	34.084	26.676		141.2	0.724	1.46	63.3	21.5	53.8	2.65	34.6	0.01	0.00			323 04	
381	6.65	6.62	34.135	26.794		130.6	0.807	0.95	41.5	13.9	63.6	2.89	37.3	0.01	0.00			384 03	
400	ISL	6.33	6.30	34.137	D	26.838	126.5	0.837	0.83	D36.0	D12.0	67.0	2.95	38.0	0.01	0.00			403
440	6.10	6.07	34.185	26.905		120.5	0.880	0.57	24.7	8.2	74.3	3.07	39.5	0.01	0.00			444 02	
500	ISL	5.87	5.83	34.248	D	26.986	113.6	0.958	0.36	D15.7	D5.2	80.4	3.17	40.2	0.01	0.00			504
514	5.80	5.76	34.257	27.001		112.2	0.967	0.34	14.7	4.8	81.8	3.19	40.4	0.01	0.00			518 01	

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

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		
31	24.9 N	121 59.1 W	08/04/2015	2304	UTC	3932 m	350	13 kn	340	03	07	1	1019.4	mb	18.1	C	13.6	C	
0	17.44	17.44	33.416	D	24.195	371.4	0.000	5.60	244.3	102.4	2.0	0.32	0.0	0.01	0.01	0.07	0.01	0	
2	17.44	17.44	33.419	24.198		371.3	0.007	5.60	244.3	102.4	2.0	0.32	0.0	0.01	0.01	0.07	0.01	2 22	
10	17.35	17.35	33.397	24.203		371.0	0.037	5.58	243.4	101.8	2.0	0.32	0.0	0.01	0.01	0.08	0.02	10 20	
10	17.35	17.35	33.399	24.205		370.9	0.038											10 21	
20	ISL	16.74	16.74	33.248	D	24.234	368.5	0.041	5.67	D247.3	D102.1	2.0	0.33	0.0	0.01	0.00	0.09	0.02	20
26	16.61	16.61	33.241	24.258		366.4	0.096	5.67	247.1	101.8	1.9	0.33	0.0	0.01	0.00	0.09	0.02	26 19	
30	ISL	16.55	16.54	33.201	D	24.243	368.0	0.078	5.68	D247.6	D101.8	1.9	0.34	0.0	0.01	0.00	0.10	0.02	30
40	16.25	16.24	33.147	24.270		365.7	0.147	5.72	249.4	101.9	1.9	0.35	0.0	0.01	0.00	0.12	0.03	40 18	
49	16.21	16.20	33.143	24.276		365.5	0.180	5.73	249.7	102.0	1.9	0.34	0.0	0.01	0.00	0.15	0.03	49 17	
50	ISL	16.20	16.19	33.138	D	24.275	365.6	0.152	5.73	D249.6	D101.9	2.0	0.34	0.0	0.01	0.00	0.16	0.04	50
63	15.15	15.14	33.100	24.479		346.5	0.230	5.81	253.4	101.3	2.0	0.35	0.0	0.01	0.00	0.34	0.09	63 16	
75	ISL	13.34	13.33	32.985	D	24.769	319.0	0.239	5.74	D250.0	D96.3	3.7	0.53	1.7	0.09	0.00	0.51	0.22	76
76	13.19	13.18	32.969	24.787		317.2	0.273	5.79	252.4	96.9	3.8	0.55	1.8	0.10	0.04	0.52	0.23	77 14	
76	13.19	13.18	32.971	24.789		317.1	0.272											77 15	
86	12.26	12.25	33.001	24.992		297.9	0.304	5.42	236.2	88.9	6.1	0.81	6.3	0.14	0.01	0.43	0.20	87 13	
100	10.60	10.59	33.038	25.323		266.5	0.343	5.11	222.4	80.8	10.1	1.14	11.9	0.05	0.01	0.28	0.21	101 12	
112	9.98	9.97	33.171	25.532		246.8	0.374	4.81	209.4	75.2	13.5	1.33	15.2	0.02	0.00	0.15	0.13	113 11	
123	9.79	9.78	33.300	25.664		239.3	0.401	4.57	199.0	71.2	15.1	1.40	16.6	0.02	0.00	0.09	0.09	124 10	
125	ISL	9.72	9.71	33.354	D	25.718	229.3	0.359	4.46	D194.2	D69.4	15.6	1.42	17.0	0.02	0.00	0.08	0.09	126
140	9.61	9.59	33.479	25.835		218.5	0.439	4.00	174.1	62.1	19.1	1.60	19.9	0.02	0.00	0.03	0.06	141 09	
150	ISL	9.44	9.42	33.609	D	25.965	206.4	0.414	3.63	D157.8	D56.2	21.3	1.67	21.1	0.01	0.00	0.03	0.06	151
170	9.00	8.98	33.754	26.149		189.2	0.500	3.49	151.7	53.5	25.7	1.80	23.7	0.01	0.00	0.01	0.05	171 08	
200	8.66	8.64	33.896	26.314		174.0	0.555	3.02	131.3	46.0	31.0	1.98	26.4	0.01	0.00	0.00	0.03	202 07	
231	8.2																		

RV NEW HORIZON

CALCOFI CRUISE 1504

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 5.3 N	122 40.5 W	08/04/2015	1721	UTC	4000 m	020 11 kn	330 03 07	1	1021.0 mb	17.0 C	13.9 C	28 m	4/8	AC	020		
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	μM	μg/L	μg/L	db
0	15.90	15.90	33.018	D 24.248	366.4	0.000	5.77	251.6	102.1	2.0	0.35	0.0	0.01	0.00	0.12	0.03	0
1 A	15.90	15.90	33.018	24.248	366.5	0.004	5.77	251.6	102.1	2.0	0.35	0.0	0.01	0.00	0.12	0.03	1 24
10	15.88	15.88	33.018	24.251	366.4	0.037	5.80	252.7	102.4	2.0	0.34	0.0	0.01	0.00	0.12	0.03	10 22
17 A	15.86	15.86	33.019	24.257	366.1	0.062	5.79	252.2	102.2	2.0	0.34	0.0	0.01	0.00	0.12	0.03	17 21
20 ISL	15.85	D 15.84	33.017	D 24.259	366.0	0.061	5.81	D253.5	D102.7	2.0	0.35	0.0	0.01	0.00	0.12	0.03	20
23 A	15.76	15.76	33.012	24.275	364.6	0.084	5.79	252.4	102.1	2.0	0.35	0.0	0.01	0.00	0.13	0.03	23 20
30 ISL	15.60	D 15.59	32.997	D 24.300	362.4	0.098	5.86	D255.3	D102.9	2.0	0.35	0.0	0.01	0.00	0.14	0.03	30
40 A	15.58	15.58	32.997	24.305	362.4	0.146	5.80	253.1	102.0	2.0	0.35	0.0	0.01	0.00	0.16	0.04	40 18
50 ISL	15.58	D 15.57	33.001	D 24.308	362.4	0.171	5.83	D254.2	D102.4	2.0	0.35	0.0	0.01	0.00	0.21	0.06	50
51	15.58	15.57	33.003	24.311	362.1	0.186	5.80	252.8	101.9	2.0	0.35	0.0	0.01	0.00	0.21	0.06	51 17
63	15.51	15.50	32.997	24.322	361.5	0.229	5.81	253.3	101.9	2.0	0.35	0.0	0.01	0.00	0.31	0.11	63 16
74 A	14.50	14.49	33.084	24.608	334.5	0.267	5.78	252.1	99.5	2.9	0.41	0.3	0.04	0.01	0.43	0.35	75 15
75 ISL	14.52	D 14.51	33.128	D 24.637	331.7	0.260	5.72	D249.4	D 98.4	3.0	0.43	0.6	0.05	0.00	0.42	0.35	76
75	14.52	14.51	33.079	24.600	335.3	0.270											76 19
84	12.79	12.78	33.087	24.957	301.2	0.299	5.62	244.8	93.3	4.3	0.59	2.8	0.10	0.00	0.35	0.36	85 14
92 A	12.46	12.44	33.229	25.133	284.8	0.323	5.45	237.4	89.9	4.9	0.61	3.9	0.07	0.00	0.29	0.33	93 13
100	12.07	12.06	33.208	25.190	279.5	0.345	5.37	234.0	87.9	5.9	0.73	5.8	0.05	0.00	0.28	0.23	101 12
110	11.06	11.04	33.202	25.371	262.2	0.373	5.25	228.5	84.0	7.5	0.87	8.2	0.04	0.00	0.22	0.18	111 11
125	10.13	10.12	33.261	25.577	242.8	0.410	4.88	212.3	76.5	12.0	1.19	13.5	0.02	0.00	0.10	0.13	126 10
139	9.68	9.67	33.413	25.771	224.5	0.443	4.35	189.3	67.6	16.9	1.47	17.9	0.02	0.00	0.04	0.05	140 09
150 ISL	9.50	D 9.49	33.521	D 25.885	213.9	0.442	4.17	D181.4	D 64.6	19.1	1.56	19.4	0.02	0.00	0.03	0.04	151
170	9.26	9.24	33.682	26.050	198.6	0.509	3.66	159.2	56.5	23.2	1.73	22.2	0.01	0.00	0.00	0.03	171 08
200	8.79	8.77	33.899	D 26.296	175.8	0.540	3.18	D138.2	D 48.6								202 07
229	8.38	8.35	33.963	26.411	165.3	0.614	2.91	126.6	44.1	33.8	2.02	27.1	0.01	0.00			231 06
250 ISL	8.16	D 8.14	34.011	D 26.481	159.0	0.624	2.58	D112.1	D 38.9	38.0	2.18	28.9	0.01	0.00			252
270	7.94	7.91	34.042	26.538	153.8	0.680	2.13	92.8	32.0	42.0	2.33	30.7	0.01	0.00			272 05
300 ISL	7.61	D 7.58	34.081	D 26.618	146.6	0.701	1.80	D 78.1	D 26.8	48.2	2.52	32.8	0.01	0.00			302
321	7.37	7.34	34.111	26.675	141.4	0.755	1.37	59.6	20.3	52.5	2.66	34.3	0.01	0.01			324 04
381	6.80	6.76	34.149	26.786	131.5	0.837	0.92	39.9	13.4	62.8	2.90	37.2	0.01	0.14			384 03
400 ISL	6.69	D 6.65	34.174	D 26.821	128.5	0.839	0.85	D 36.8	D 12.4	65.4	2.95	37.8	0.01	0.00			403
440	6.45	6.41	34.213	26.883	123.0	0.912	0.55	24.0	8.0	70.8	3.06	38.9	0.01	0.00			444 02
500 ISL	6.07	D 6.03	34.243	D 26.957	116.5	0.962	0.51	D 22.0	D 7.3								504
515	5.99	5.95	34.257	26.978	114.6	1.001	0.38	16.3	5.4	80.4	3.19	40.5	0.01	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 STA-CORRECTED 02;

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 90.0 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD		
30 45.0 N	123 19.8 W	08/04/2015	0916	UTC	4008 m	020 10 kn			1019.5 mb	15.9 C	12.7 C					019	
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	μM	μg/L	μg/L	db
0	16.31	16.31	33.083	D 24.203	370.7	0.000	5.72	249.3	102.0	1.9	0.35	0.0	0.02	0.00	0.10	0.03	0
2	16.31	16.31	33.083	24.204	370.7	0.007	5.72	249.3	102.0	1.9	0.35	0.0	0.02	0.00	0.10	0.03	2 20
10	16.34	16.34	33.104	24.214	370.0	0.037	5.70	248.7	101.8	1.9	0.33	0.0	0.01	0.00	0.11	0.03	10 19
20 ISL	16.23	D 16.22	33.096	D 24.235	368.3	0.074	5.74	D250.1	D102.1	1.9	0.34	0.0	0.01	0.00	0.12	0.03	20
26	16.17	16.17	33.092	24.245	367.6	0.096	5.72	249.5	101.8	1.9	0.34	0.0	0.01	0.00	0.13	0.04	18
30 ISL	16.06	D 16.05	33.077	D 24.259	366.4	0.111	5.75	D250.6	D102.0	1.9	0.34	0.0	0.01	0.00	0.13	0.04	30
40	15.84	15.84	33.059	24.294	363.4	0.147	5.78	251.9	102.1	2.0	0.35	0.0	0.01	0.00	0.12	0.03	17 17
50	15.83	15.83	33.068	24.303	362.9	0.184	5.77	251.7	102.0	2.0	0.36	0.0	0.01	0.00	0.14	0.04	50 16
63	15.84	15.83	33.077	24.311	362.5	0.231	5.77	251.4	101.9	2.0	0.35	0.0	0.01	0.00	0.19	0.06	63 15
75	15.57	15.55	33.073	24.369	357.4	0.274	5.77	251.6	101.4	2.1	0.35	0.1	0.02	0.00	0.34	0.15	76 14
88	14.08	14.07	33.039	24.662	329.7	0.319	5.77	251.5	98.3	2.9	0.47	0.9	0.12	0.01	0.59	0.47	89 13
100	12.94	12.92	33.069	24.916	305.7	0.357	5.55	241.9	92.4	4.7	0.66	3.8	0.14	0.00	0.33	0.38	101 12
113	11.70	11.68	33.114	25.187	279.9	0.395	5.31	231.3	86.1	6.9	0.87	7.6	0.07	0.00	0.24	0.19	114 11
124	10.69	10.67	33.212	25.444	255.5	0.424	4.79	208.4	76.0	11.7	1.26	13.8	0.03	0.00	0.15	0.18	125 10
125 ISL	10.58	D 10.57	33.213	D 25.463	253.8	0.429	4.84	D210.9	D 76.7	11.8	1.27	13.9	0.03	0.00	0.14	0.18	126
140	9.95	9.93	33.297	25.637	237.4	0.464	4.63	201.7	72.4	13.8	1.36	15.6	0.03	0.00	0.10	0.12	141 09
150 ISL	9.76	D 9.74	33.359	D 25.717	229.9	0.489	4.57	D199.2	D 71.2	16.4	1.47	17.5	0.02	0.00	0.07	0.09	151
169	9.28	9.26	33.597	25.981	205.2	0.528	3.86	168.1	59.6	21.3	1.68	21.2	0.02	0.00	0.01	0.03	170 08
200	8.89	8.87	33.791	26.196	185.4	0.588											

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 90.0 120.0

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	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	
30	25.0 N	124 0.0 W	08/04/2015	0235	UTC	4266 m	350	11 kn	340 03 06	1	1017.8 mb	17.2 C	13.8 C	1/8	SC	018		
0	16.94	16.94	33.165	D 24.121		378.5	0.000	5.66	246.7	102.2	1.8	0.33	0.0	0.01	0.01	0.08	0.02	0
2	16.94	16.94	33.164	24.121		378.6	0.008	5.66	246.7	102.2	1.8	0.33	0.0	0.01	0.01	0.08	0.02	2 22
10	16.92	16.92	33.164	24.126		378.4	0.038	5.68	247.8	102.6	1.8	0.32	0.0	0.01	0.00	0.08	0.02	10 20
10	16.92	16.92	33.164	24.126		378.4	0.037											10 21
20	ISL	16.44	D 16.44	33.091	D 24.182	373.4	0.057	5.73	D 250.0	D 102.5	1.8	0.33	0.0	0.01	0.00	0.09	0.03	20
25	16.36	16.36	33.075	24.188		373.0	0.094	5.72	249.4	102.1	1.8	0.34	0.0	0.01	0.00	0.09	0.03	25 19
30	ISL	16.33	D 16.33	33.071	D 24.192	372.8	0.095	5.75	D 250.8	D 102.6	1.8	0.34	0.0	0.00	0.00	0.10	0.03	30
40	16.30	16.29	33.067	24.197		372.6	0.150	5.72	249.4	102.0	1.8	0.34	0.0	0.00	0.01	0.11	0.03	40 18
50	16.28	16.28	33.067	24.201		372.6	0.187	5.73	249.9	102.2	1.8	0.34	0.0	0.00	0.01	0.12	0.03	50 17
62	16.29	16.28	33.068	24.203		372.9	0.232	5.72	249.3	101.9	1.8	0.34	0.0	0.01	0.00	0.16	0.05	62 16
75	16.33	16.32	33.080	24.202		373.5	0.280	5.71	249.2	101.9	1.8	0.33	0.0	0.01	0.00	0.19	0.05	76 15
87	16.05	16.04	33.092	24.276		366.8	0.325	5.69	248.2	101.0	1.8	0.33	0.0	0.00	0.01	0.20	0.07	88 14
100	14.29	14.28	33.187	24.733		323.4	0.370	5.72	249.3	98.0	3.2	0.43	0.7	0.05	0.06	0.27	0.22	101 12
100	14.29	14.28	33.186	24.732		323.5	0.371											101 13
112	12.73	12.71	33.058	24.949		302.8	0.407	5.53	241.1	91.7	5.0	0.69	4.3	0.12	0.01	0.34	0.32	113 11
125	11.47	11.45	33.095	25.214		277.7	0.445	5.31	231.4	85.7	6.9	0.89	7.6	0.07	0.00	0.24	0.21	126 10
140	10.56	10.55	33.169	25.432		257.0	0.485	5.08	221.4	80.5	10.1	1.12	11.7	0.03	0.00	0.15	0.14	141 09
150	ISL	10.22	D 10.20	33.251	D 25.555	245.5	0.475	4.88	D 212.6	D 76.8	12.5	1.24	13.9	0.03	0.00	0.11	0.11	151
170	9.69	9.67	33.456	25.804		222.2	0.557	4.26	185.3	66.2	17.3	1.49	18.2	0.01	0.00	0.04	0.05	171 08
200	8.92	8.90	33.730	26.143		190.4	0.619	3.70	161.1	56.7	24.1	1.74	22.5	0.01	0.00			202 07
230	8.60	8.58	33.913	26.337		172.5	0.673	2.99	130.1	45.5	31.5	2.01	26.6	0.01				232 06
250	ISL	8.48	D 8.45	33.950	D 26.385	168.3	0.672	2.80	D 211.7	D 42.5	35.2	2.12	28.1	0.01	0.00			252
270	8.07	8.04	33.998	26.485		158.9	0.740	2.45	106.6	36.9	38.9	2.22	29.6	0.01	0.00			272 05
300	ISL	7.53	D 7.50	34.052	D 26.606	147.7	0.752	2.01	D 87.2	D 29.8	45.9	2.44	32.1	0.01	0.00			302
320	7.37	7.34	34.069	26.642		144.5	0.815	1.65	71.6	24.4	50.5	2.58	33.8	0.01	0.00			323 04
380	6.85	6.81	34.127	26.761		133.9	0.899	1.06	46.1	15.5	60.1	2.83	36.6	0.03	0.00			383 03
400	ISL	6.71	D 6.67	34.146	D 26.796	130.8	0.892	0.94	D 40.9	D 13.7	63.4	2.89	37.3	0.02	0.00			403
440	6.28	6.24	34.164	26.867		124.3	0.976	0.76	33.0	11.0	70.1	3.02	38.7	0.01	0.02			444 02
500	ISL	5.96	D 5.92	34.211	D 26.945	117.5	1.017	0.58	D 25.1	D 8.3	77.3	3.12	39.8	0.00	0.00			504
515		5.87	5.83	34.222		26.966	1.066	0.49	21.1	7.0	79.1	3.15	40.0	0.00				519 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 91.7 26.4

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	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	
33	14.7 N	117 27.9 W	04/04/2015	2344	UTC	26 m	350	07 kn	300 02 06	1	1010.6 mb	19.9 C	17.8 C	2/8	ST	003		
0	18.42	18.42	33.310	D 23.876		401.9	0.000	5.94	259.1	110.5	2.4	0.25	0.0	0.01	0.00	0.43	0.07	0
2	18.42	18.42	33.310	23.876		402.0	0.008	5.94	259.1	110.5	2.4	0.25	0.0	0.01	0.00	0.43	0.07	2 04
4	18.32	18.32	33.308	23.899		399.8	0.016	5.94	259.2	110.3	2.4	0.25	0.0	0.01	0.00	0.43	0.11	4 03
10	17.43	17.43	33.296	24.106		380.3	0.039	6.05	263.6	110.3	2.8	0.27	0.0	0.03	0.00	0.68	0.26	10 02
17	15.42	15.42	33.258	24.539		339.2	0.065	6.15	267.9	107.8	4.4	0.38	0.4	0.09	0.03	1.68	0.59	17 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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	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	μM	μg/L	μg/L	db	
32	57.1 N	117 18.2 W	04/04/2015	1920	UTC	61 m	240	07 kn	280 02 07	1	1013.1 mb	19.9 C	18.4 C	13 m	3/8	ST	001	
0	18.62	18.62	33.326	D 23.838		405.5	0.000	5.94	259.1	111.0	1.7	0.22	0.0	0.02	0.16	0.29	0.11	0
2 A	18.62	18.62	33.323	23.836		405.8	0.008	5.94	259.1	111.0	1.7	0.22	0.0	0.02	0.16	0.29	0.11	2 10
8 A	18.06	18.06	33.316	23.970		393.2	0.032	6.03	262.9	111.4	1.7	0.21	0.0	0.01	0.00	0.41	0.08	8 09
10 ISL	17.03	D 17.03	33.272	D 24.184		372.9	0.040	6.54	285.3	118.5	2.6	0.22	0.0	0.01	0.00	0.85	0.23	10
11 A	16.37	16.37	33.255	24.323		359.6	0.044	6.80	296.4	121.5	3.1	0.22	0.0	0.02	0.08	1.07	0.31	11 07
11	16.37	16.37	33.253	24.322		359.7	0.043										11 08	
19 A	12.96	12.96	33.255	25.050		290.5	0.070	6.36	277.0	106.0	5.3	0.44	0.1	0.03	0.09	3.09	1.32	19 05
19	12.96	12.96	33.255	25.051		290.5	0.069										19 06	
20 ISL	12.83	D 12.82	33.267	D 25.087		287.1	0.057	6.13	267.1	102.0	6.0	0.53	1.6	0.11	0.00			

RV NEW HORIZON

CALCOFI CRUISE 1504

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	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	μM	μg/L	μg/L	db	
0	19.12	19.12	33.333 D	23.718	416.9	0.000	6.12	266.9	115.4	0.5	0.13	0.1	0.00	0.00	0.36	0.13	0	
2	19.12	19.12	33.333	23.718	417.0	0.008	6.12	266.9	115.4	0.5	0.13	0.1	0.00	0.00	0.36	0.13	2 20	
10	17.92	17.92	33.314	24.003	390.1	0.041	6.37	277.6	117.3	0.4	0.15	0.1	0.02	0.05	0.45	0.17	10 19	
20	14.11	14.11	33.221	24.791	315.3	0.076	6.43	280.2	109.8	2.6	0.37	0.1	0.02	0.02	0.39	0.22	20 18	
29	11.81	11.81	33.211	25.237	273.0	0.102	5.08	221.4	82.7	8.1	0.96	8.5	0.52	0.11	0.81	0.44	29 17	
30	ISL 11.98 D	11.97	33.210 D	25.205	276.0	0.106	5.16	0224.7 D	84.2	8.4	0.98	8.8	0.48	0.00	0.78	0.43	30	
40	11.25	11.25	33.305	25.413	256.5	0.132	4.61	200.7	74.1	11.4	1.19	12.7	0.17	0.00	0.48	0.31	40 16	
50	10.88	10.88	33.340	25.506	247.8	0.157	4.52	196.7	72.1	12.6	1.27	13.9	0.10	0.03	0.32	0.26	50 15	
60	10.29	10.28	33.439	25.687	230.9	0.181	4.23	184.2	66.7	15.6	1.41	16.4	0.03	0.06	0.19	0.19	60 14	
70	10.07	10.06	33.578	25.833	217.2	0.203	3.74	163.0	58.8	19.1	1.60	19.4	0.03	0.00	0.07	0.14	71 13	
75	ISL 10.02 D	10.01	33.633 D	25.885	212.4	0.215	3.64	0158.2 D	57.0	20.3	1.66	20.2	0.02	0.00	0.06	0.12	76	
85	9.85	9.84	33.719	25.980	203.6	0.235	3.30	143.5	51.6	22.8	1.79	21.7	0.01	0.14	0.03	0.08	86 12	
100	9.74	9.73	33.820 D	26.078	194.6	0.266	2.97	129.2	46.4	25.4	1.92	23.3	0.02	0.01	0.01	0.06	101 11	
120	9.66	9.65	33.922	26.172	186.2	0.303	2.56	111.6	40.0	28.3	2.06	25.0	0.02	0.00	0.01	0.06	121 10	
125	ISL 9.61 D	9.59	33.940 D	26.195	184.1	0.313	2.58	0112.3 D	40.2	29.0	2.09	25.3	0.02	0.00	0.01	0.06	126	
140	9.47	9.45	33.985	26.253	178.8	0.339	2.34	102.0	36.4	30.9	2.16	26.3	0.02	0.01	0.01	0.07	141 09	
150	ISL 9.45 D	9.44	34.020 D	26.283	176.2	0.358	2.27	027 D	98.7	35.2	32.1	2.21	26.8	0.02	0.00	0.01	0.06	151
170	9.33	9.31	34.083	26.353	170.0	0.392	1.93	83.9	29.9	34.5	2.32	27.9	0.02	0.00	0.01	0.04	171 08	
200	9.22	9.20	34.155	26.428	163.6	0.442	1.61	69.9	24.8	37.5	2.43	29.0	0.02	0.00	0.00	0.04	202 07	
229	8.72	8.70	34.140	26.496	157.5	0.488	1.70	74.1	26.0	40.3	2.45	30.0	0.01	0.02			231 06	
250	ISL 8.85 D	8.82	34.218 D	26.539	154.0	0.524	1.39	060.4 D	21.3	42.4	2.53	30.7	0.01	0.02			252	
270	8.53	8.50	34.197	26.572	151.0	0.552	1.32	057.5 D	20.1	44.5	2.60	31.3	0.01	0.02			272 05	
300	ISL 8.36 D	8.33	34.233 D	26.627	146.4	0.599	1.13	049.1 D	17.1	47.6	2.68	32.3	0.02	0.00			302	
320	8.15	8.12	34.229	26.655	143.9	0.626	1.03	44.6	15.5	49.6	2.74	33.0	0.02	0.00			323 04	
380	7.59	7.55	34.241	26.749	135.8	0.710	0.78	33.9	11.6	56.9	2.90	35.1	0.02	0.01			383 03	
400	ISL 7.45 D	7.41	34.255 D	26.780	133.1	0.740	0.74	032.1 D	11.0	60.1	2.96	35.9	0.02	0.00			403	
440	6.91	6.87	34.272	26.869	124.8	0.789	0.50	21.6	7.3	66.4	3.08	37.5	0.02	0.00			444 02	
500	ISL 6.54 D	6.49	34.309 D	26.949	117.9	0.866	0.38	016.4 D	5.5	72.9	3.17	38.7	0.02	0.00			504	
517	6.45	6.40	34.311	26.963	116.7	0.882	0.35	15.2	5.1	74.8	3.19	39.0	0.02	0.00			521 01	

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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	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	μM	μg/L	μg/L	db	
0	18.99	18.99	33.343 D	23.757	413.2	0.000	5.68	247.8	106.9	0.7	0.24	0.0	0.01	0.02	0.18	0.05	0	
1	18.99	18.99	33.351	23.764	412.6	0.004	5.68	247.8	106.9	0.7	0.24	0.0	0.01	0.02	0.18	0.05	1 20	
10	18.67	18.67	33.341	23.837	406.0	0.041	5.72	249.6	107.0	0.7	0.24	0.0	0.01	0.01	0.18	0.05	10 19	
20	15.82	15.82	33.262	24.453	347.5	0.079	6.01	262.1	106.3	1.8	0.35	0.0	0.00	0.00	0.23	0.08	20 18	
30	14.19	14.19	33.202	24.760	318.5	0.112	6.10	265.9	104.4	1.9	0.41	0.1	0.01	0.00	0.42	0.20	30 17	
40	12.35	12.34	33.230	25.151	281.6	0.142	5.43	236.4	89.3	5.7	0.72	4.5	0.26	0.05	1.17	0.77	40 16	
50	11.42	11.41	33.322	25.396	258.4	0.169	4.67	203.3	75.4	10.9	1.14	11.9	0.09	0.01	0.43	0.50	50 15	
60	10.63	10.63	33.412	25.606	238.6	0.194	4.31	187.5	68.4	14.0	1.33	15.1	0.04	0.00	0.24	0.22	60 14	
70	10.32	10.31	33.516	25.742	225.9	0.217	3.96	172.5	62.5	17.1	1.51	17.8	0.03	0.00	0.11	0.15	71 13	
75	ISL 10.16 D	10.15	33.581 D	25.820	218.6	0.230	3.82	0166.1 D	60.0	18.9	1.60	19.1	0.03	0.00	0.08	0.13	76	
85	9.92	9.91	33.717	25.967	204.8	0.249	3.29	143.3	51.6	22.6	1.78	21.7	0.03	0.02	0.02	0.08	86 12	
100	9.76	9.75	33.837	26.087	193.7	0.279	2.84	123.7	44.4	25.8	1.94	23.6	0.08	0.00	0.01	0.06	101 11	
120	9.63	9.61	33.974	26.218	181.8	0.317	2.45	106.7	38.2	29.7	2.10	25.5	0.03	0.00	0.01	0.06	121 10	
125	ISL 9.54 D	9.53	34.050 D	26.292	174.9	0.328	2.19	095.1 D	34.0	30.6	2.14	25.9	0.05	0.00			126	
140	9.42	9.41	34.058	26.318	172.7	0.352	2.02	87.8	31.3	33.6	2.26	27.1	0.10	0.00	0.00	0.06	141 09	
150	ISL 9.35 D	9.33	34.079 D	26.346	170.2	0.371	2.08	90.5 D	32.3	34.7	2.30	27.6	0.07	0.00	0.00	0.05	151	
170	9.19	9.17	34.128	26.412	164.4	0.403	1.78	77.6	27.6	36.9	2.38	28.5	0.01	0.00	0.00	0.04	171 08	
200	9.11	9.08	34.192	26.476	158.9	0.451	1.45	62.9	22.3	39.8	2.51	29.5	0.02	0.00	0.00	0.04	202 07	
230	8.86	8.83	34.184	26.510	156.3	0.498	1.47	64.0	22.6	41.3	2.51	30.1	0.02	0.00			232 06	
250	ISL 8.76 D	8.73	34.198 D	26.537	154.1	0.533	1.41	61.1 D	21.5	42.3	2.54	30.5	0.01	0.00			252	
270	8.70	8.67	34.201	26.549	153.4	0.560	1.35	58.6 D	20.6	43.3	2.57	30.8	0.00	0.00			272 05	
300	ISL 8.53 D	8.50	34.212 D	26.585	150.5	0.610	1.27	55.2 D	19.3	45.8	2.65	31.6	0.01	0.00			302	
320	8.44	8.41	34.237	26.619	147.6	0.636	1.06	46.1	16.1	47.4	2.70	32.1	0.01	0.00			323 04	
380	7.94	7.90	34.264	26.716	139.2	0.722	0.79	34.4	11.9	53.7	2.85	34.0	0.02	0.01			383 03	
400	ISL 7.64 D	7.60	34.256 D	26.755														

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 93.3 35.0

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	μM	μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	18.68	18.68	33.314	D 23.815	407.7	0.000	5.56	242.4	103.9	1.8	0.30	0.1	0.02	0.00	0.14	0.03	0	
2	18.68	18.68	33.313	23.815	407.8	0.008	5.56	242.4	103.9	1.8	0.30	0.1	0.02	0.00	0.14	0.03	2 21	
10	18.67	18.67	33.312	23.817	407.9	0.041	5.57	243.1	104.2	1.8	0.31	0.1	0.01	0.00	0.14	0.03	10 20	
20 ISL	18.27	D 18.26	33.296	D 23.905	399.9	0.082	5.74	D 250.5	D 106.5	1.8	0.31	0.0	0.01	0.00	0.15	0.03	20	
26	17.72	17.71	33.283	24.030	388.2	0.105	5.74	250.2	105.3	1.9	0.31	0.0	0.01	0.00	0.15	0.03	26 19	
30 ISL	17.45	D 17.44	33.276	D 24.089	382.7	0.121	5.84	D 255.6	D 107.0	1.8	0.32	0.0	0.01	0.00	0.22	0.06	30	
40	15.37	15.36	33.235	24.535	340.4	0.156	6.09	265.6	106.8	1.6	0.34	0.1	0.01	0.01	0.39	0.14	40 18	
50	14.13	14.12	33.198	24.771	318.1	0.189	5.88	256.1	100.4	2.7	0.47	1.1	0.06	0.05	1.40	0.66	50 17	
61	12.49	12.48	33.273	D 25.159	281.4	0.224	5.28	D 230.1	D 87.2								61 16	
75	11.51	11.50	33.307	25.370	261.6	0.260	4.69	204.5	75.9	10.6	1.11	11.5	0.13	0.03	0.39	0.42	76 15	
87	11.09	11.08	33.367	25.492	250.2	0.291	4.42	192.6	70.9	12.5	1.23	13.6	0.08	0.00	0.26	0.32	88 14	
100	10.49	10.47	33.530	25.726	228.2	0.322	3.83	166.9	60.7	17.3	1.50	18.0	0.02	0.00	0.11	0.14	101 13	
110	10.24	10.23	33.592	25.817	219.7	0.345	3.64	158.5	57.4	19.1	1.60	19.5	0.03	0.00	0.07	0.12	111 12	
124	9.95	9.94	33.660	25.919	210.3	0.375	3.49	151.8	54.7	21.2	1.68	20.9	0.02	0.00	0.03	0.07	125 11	
125 ISL	9.92 D	9.90	33.671	D 25.933	209.0	0.379	3.47	D 151.2	D 54.4	21.5	1.69	21.1	0.02	0.00	0.03	0.07	126	
139	9.77	9.75	33.826	26.080	195.4	0.405	2.91	126.4	45.4	25.7	1.89	23.5	0.01	0.00	0.01	0.06	140 09	
150 ISL	9.48 D	9.46	33.906	D 26.191	185.0	0.418	2.86	D 124.3	D 44.4	27.5	1.96	24.4	0.01	0.00	0.01	0.05	151	
171	9.40	9.38	33.999	26.277	177.3	0.464	2.47	107.3	38.3	30.9	2.08	26.1	0.01	0.00	0.01	0.04	172 08	
200 ISL	9.05 D	9.03	34.065	D 26.385	167.5	0.506	2.17	D 94.6	D 33.5	35.0	2.23	28.0	0.01	0.00	0.00	0.05	202	
201	9.09	9.06	34.066	26.380	168.0	0.516	2.15	93.3	33.1	35.2	2.23	28.0	0.01	0.00	0.00	0.05	203 07	
229	8.86	8.84	34.116	26.456	161.3	0.562	1.89	82.3	29.0	37.7	2.33	29.0	0.01	0.00			231 06	
250 ISL	8.56 D	8.53	34.134	D 26.518	155.8	0.588	1.67	D 72.8	D 25.5	40.9	2.41	30.2	0.02	0.00			252	
269	8.30	8.27	34.138	26.561	151.9	0.625	1.59	69.2	24.1	43.8	2.48	31.3	0.03	0.00			271 05	
300 ISL	7.91 D	7.88	34.191	D 26.661	142.9	0.664	1.18	D 51.1	D 17.6	49.4	2.64	33.2	0.02	0.00			302	
320	7.73	7.70	34.202	26.697	139.7	0.699	1.00	43.6	15.0	53.1	2.75	34.4	0.01	0.00			323 04	
379	7.33	7.29	34.265	26.805	130.2	0.778	0.62	27.1	9.2	60.8	2.94	36.2	0.01	0.00			382 03	
400 ISL	7.09 D	7.05	34.257	D 26.832	127.8	0.800	0.56	D 24.5	D 8.3	63.6	2.98	36.9	0.01	0.00			403	
440	6.69	6.65	34.260	26.889	122.7	0.855	0.50	21.5	7.2	69.0	3.05	38.2	0.02	0.00			444 02	
500 ISL	6.41 D	6.36	34.308	D 26.965	116.2	0.923	0.30	D 12.9	D 4.3	74.9	3.14	39.2	0.00	0.00			504	
517	6.29	6.24	34.315	26.987	114.2	0.947	0.30	12.9	4.3	76.6	3.17	39.5	0.00	0.00			521 01	

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

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 93.3 40.0

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	μM	μM	μM	μM	μM	μM	μM	μg/L	μg/L	db	
0	18.53	18.53	33.318	D 23.855	403.9	0.000	5.62	245.2	104.8	1.5	0.29	0.0	0.02	0.00	0.22	0.05	0	
2	18.53	18.53	33.317	23.855	404.0	0.008	5.62	245.2	104.8	1.5	0.29	0.0	0.02	0.00	0.22	0.05	2 21	
9	18.54	18.54	33.320	23.854	404.3	0.037											9 20	
10	18.52	18.52	33.318	23.859	403.9	0.040	5.63	245.4	104.9	1.5	0.29	0.0	0.02	0.00	0.22	0.05	10 19	
19	16.63	16.62	33.257	24.266	365.4	0.075	6.15	268.2	110.5	1.6	0.27	0.0	0.01	0.00	0.33	0.10	19 18	
20 ISL	16.41 D	16.41	33.250	D 24.310	361.2	0.063	6.20	D 270.2	D 110.9	1.7	0.28	0.0	0.01	0.00	0.32	0.10	20	
30	14.61	14.61	33.212	24.679	326.3	0.113	6.22	271.0	107.3	2.0	0.33	0.0	0.01	0.00	0.30	0.12	30 17	
40	13.64	13.63	33.234	24.900	305.6	0.145	6.12	266.7	103.5	2.8	0.40	0.1	0.00	0.00	0.31	0.16	40 16	
50	12.85	12.84	33.246	25.068	289.7	0.174	5.28	229.9	87.8	5.9	0.74	5.2	0.29	0.08	0.74	0.63	50 15	
60	12.15	12.14	33.292	25.237	273.8	0.203	4.82	209.9	79.0	8.5	0.96	8.9	0.27	0.00	0.60	0.48	60 14	
70	11.33	11.32	33.356	25.441	254.7	0.229	4.47	194.8	72.1	11.4	1.17	12.7	0.08	0.00	0.30	0.34	71 13	
75 ISL	11.01 D	11.00	33.398	D 25.529	246.3	0.227	4.37	D 190.1	D 69.9	12.4	1.22	13.6	0.07	0.00	0.26	0.30	76	
86	10.80	10.79	33.438	25.599	240.0	0.268	4.18	182.0	66.6	14.4	1.34	15.6	0.04	0.00	0.16	0.21	87 12	
100	10.43	10.42	33.505	25.716	229.1	0.301	3.95	172.1	62.5	16.5	1.45	17.3	0.04	0.00	0.10	0.19	101 11	
120	9.95	9.93	33.656	25.917	210.4	0.345	3.49	152.1	54.7	21.2	1.67	20.8	0.04	0.00	0.03	0.10	121 10	
125 ISL	9.77 D	9.75	33.730	D 26.004	202.2	0.341	3.38	D 147.3	D 52.8	22.3	1.71	21.4	0.03	0.00	0.03	0.10	126	
141	9.59	9.58	33.810	26.096	193.8	0.387	3.05	132.9	47.5	25.6	1.85	23.5	0.01	0.00	0.02	0.09	142 09	
150 ISL	9.44 D	9.43	33.889	D 26.183	185.7	0.390	2.87	D 124.7	D 44.5	27.6	1.92	24.4	0.01	0.00	0.01	0.09	151	
170	9.13	9.11	33.968	26.297	175.3	0.441	2.52	109.7	38.8	31.8	2.08	26.6	0.02	0.00	0.01	0.09	171 08	
200	8.82	8.80	34.061	26.418	164.3	0.492	2.12	92.2	32.4	36.4	2.24	28.6	0.00	0.00	0.01	0.07	202 07	
231	8.65	8.63	34.116	26.489	158.2	0.542	1.79	77.9	27.3	40.0	2.38	29.9	0.02	0.00			233 06	
250 ISL	8.36 D	8.34	34.131	D 26.545	153.0	0.557	1.66	D 72.2	D 25.2	43.0	2.48	31.0	0.03	0.00			252	
271	8.15	8.13	34.162	26.601	148.1	0.603	1.40	60.8	21.1	46.4	2.58	32.1	0.03	0.00			273 05	
300 ISL	7.87 D	7.84	34.195	D 26.669	142.0	0.632	1.13	D										

RV NEW HORIZON

CALCOFI CRUISE 1504

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 m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN $\mu\text{mol/Kg}$	OXY PCT	SiO3* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A $\mu\text{g/L}$	PHAEAO $\mu\text{g/L}$	PRES db
32 20.7 N	118 33.7 W	05/04/2015	1730	UTC	1364 m	300 21 kn	300 05 06	0	1012.9 mb	16.1 C	14.5 C	22 m	0/8	008			
0	17.82	17.82	33.309 D	24.022	388.0	0.000	5.65	246.2	103.9	1.7	0.30	0.0	0.02	0.00	0.20	0.04	0
2 A	17.82	17.82	33.309	24.022	388.0	0.008	5.65	246.2	103.9	1.7	0.30	0.0	0.02	0.00	0.20	0.04	2 24
9	17.82	17.82	33.310	24.024	388.1	0.035	5.63	245.7	103.6	1.7	0.29	0.0	0.01	0.00	0.20	0.04	9 23
10 ISL	17.82 D	17.82	33.309 D	24.023	388.2	0.039	5.71	249.0	0105.0	1.7	0.29	0.0	0.01	0.00	0.20	0.04	10
14 A	17.81	17.81	33.308	24.025	388.2	0.054	5.65	246.3	103.9	1.7	0.29	0.1	0.00	0.00	0.20	0.03	14 21
14	17.81	17.81	33.308	24.025	388.2	0.054											14 22
19 A	17.80	17.80	33.310	24.029	388.0	0.074	5.70	248.4	104.7	1.7	0.30	0.1	0.01	0.00	0.21	0.03	19 20
20 ISL	17.80 D	17.80	33.308 D	24.027	388.2	0.068	5.69	248.3	0104.7	1.7	0.30	0.0	0.01	0.00	0.21	0.03	20
24	17.79	17.79	33.307	24.029	388.2	0.093	5.65	246.5	103.9	1.7	0.30	0.0	0.02	0.00	0.22	0.04	24 19
30 ISL	17.65 D	17.64	33.303 D	24.061	385.3	0.108	5.73	249.8	0105.0	1.7	0.31	0.0	0.02	0.00	0.22	0.05	30
32 A	17.59	17.58	33.303	24.076	384.0	0.124	5.69	248.3	104.2	1.7	0.31	0.0	0.02	0.00	0.22	0.05	32 18
41	15.16	15.15	33.233	24.579	336.2	0.157	6.00	261.5	104.6	1.6	0.36	0.0	0.01	0.00	1.12	0.40	41 17
49	14.21	14.20	33.219	24.772	318.0	0.182											49 16
50 ISL	14.32 D	14.31	33.219 D	24.748	320.3	0.163	6.06	264.0	0103.9	3.1	0.44	0.3	0.04	0.00	1.10	0.44	50
52	13.40	13.40	33.219	24.936	302.4	0.192	5.96	259.7	100.3	3.5	0.46	0.4	0.04	0.02	1.10	0.45	52 15
59 A	12.47	12.46	33.203	25.108	286.1	0.213	5.53	240.9	91.2	5.7	0.69	4.0	0.15	0.01	0.31	0.20	59 14
74 A	10.71	10.70	33.297 D	25.504	248.6	0.231	4.92	214.1	78.2	10.3	1.11	11.5	0.08	0.01	0.10	0.09	75 13
75 ISL	10.46 D	10.45	33.360 D	25.597	239.8	0.233	4.77	207.5	75.4	10.8	1.14	12.0	0.07	0.00	0.10	0.09	76
87	10.21	10.20	33.472	25.728	227.6	0.284	4.13	179.7	65.0	16.7	1.46	17.4	0.04	0.00	0.06	0.08	88 12
100	9.80	9.79	33.529	25.840	217.1	0.313	4.11	178.8	64.1	18.1	1.50	18.5	0.04	0.00	0.02	0.05	101 11
121	9.41	9.40	33.658	26.006	201.8	0.357	3.61	156.9	55.8	22.7	1.72	21.9	0.03	0.00	0.01	0.05	122 10
125 ISL	9.28 D	9.26	33.724 D	26.080	194.9	0.343	3.57	0155.4	055.1	23.4	1.75	22.3	0.03	0.00	0.01	0.05	126
142	9.13	9.11	33.781	26.148	188.7	0.398	3.27	142.2	50.3	26.5	1.87	24.2	0.02	0.00	0.00	0.05	143 09
150 ISL	9.06 D	9.05	33.822 D	26.192	184.8	0.391	3.17	0137.9	048.7	27.9	1.93	24.9	0.01	0.00	0.00	0.05	151
171	9.03	9.01	33.968	26.311	173.9	0.450	2.57	111.8	39.5	31.8	2.10	26.7	0.00	0.00	0.00	0.04	172 08
196	8.33	8.31	33.985	26.434	162.5	0.492	2.56	111.3	38.7	36.5	2.16	28.7	0.01	0.00	0.00	0.04	198 07
200 ISL	8.27 D	8.25	33.995 D	26.451	160.9	0.477	2.53	0109.9	038.2	37.3	2.18	29.0	0.01	0.00			202
231	7.93	7.91	34.042	26.539	153.0	0.547	2.10	91.5	31.6	42.8	2.36	31.0	0.01	0.00			233 06
250 ISL	7.78 D	7.75	34.055 D	26.572	150.2	0.556	1.99	086.5	029.8	45.8	2.44	32.1	0.01	0.00			252
272	7.56	7.53	34.084	26.627	145.2	0.609	1.66	72.0	24.7	49.2	2.54	33.3	0.00	0.00			274 05
300 ISL	7.28 D	7.25	34.111 D	26.688	139.8	0.629	1.37	059.5	020.2	53.7	2.69	34.6	0.01	0.00			302
318	7.24	7.21	34.149	26.724	136.7	0.673	1.11	48.2	16.4	56.6	2.78	35.5	0.02	0.00			321 04
383	6.71	6.68	34.198	26.836	126.8	0.759	0.71	30.7	10.3	65.9	2.97	37.9	0.03	0.00			386 03
400 ISL	6.61 D	6.57	34.209 D	26.858	124.8	0.761	0.62	026.8	09.0	67.4	3.00	38.2	0.02	0.00			403
442	6.56	6.52	34.244	26.894	122.1	0.832	0.51	22.0	7.4	71.1	3.09	38.9	0.00	0.00			446 02
500 ISL	6.23 D	6.19	34.286 D	26.970	115.5	0.883	0.33	014.4	4.8	77.1	3.18	39.9	0.01	0.00			504
522	6.12	6.08	34.307	27.002	112.7	0.926	0.30	13.0	4.3	79.4	3.22	40.3	0.02	0.00			526 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 STA-CORRECTED O2;

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 93.3 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	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	16.07	16.07	33.257 D	24.393	352.6	0.000	5.76	251.3	102.4	1.6	0.36	0.0	0.03	0.01	0.18	0.06	0	
2	16.07	16.07	33.257	24.393	352.7	0.007	5.76	251.3	102.4	1.6	0.36	0.0	0.03	0.01	0.18	0.06	2 20	
10	16.08	16.08	33.264	24.397	352.6	0.035	5.77	251.6	102.6						0.17	0.06	10 19	
20 ISL	16.07 D	16.06	33.256 D	24.393	353.3	0.071	5.80	253.0	0103.1	1.5	0.36	0.0	0.02	0.00	0.18	0.05	20	
25	16.06	16.05	33.261	24.400	352.8	0.088	5.76	250.9	102.2	1.5	0.36	0.0	0.02	0.00	0.18	0.05	25 18	
30 ISL	16.06 D	16.05	33.256 D	24.397	353.3	0.107	5.81	253.4	0103.3	1.5	0.36	0.0	0.02	0.00	0.18	0.06	30	
40	15.98	15.97	33.253	24.412	352.1	0.141	5.79	252.3	102.7	1.6	0.36	0.0	0.02	0.02	0.20	0.07	40 17	
50	15.89	15.88	33.266	24.443	349.6	0.176	5.79	252.3	102.5	1.6	0.36	0.0	0.03	0.02	0.22	0.07	50 16	
62	14.32	14.31	33.179	24.717	323.6	0.217	5.77	251.4	98.9	3.0	0.47	1.1	0.08	0.03	0.77	0.42	62 15	
75 ISL	13.30 D	13.29	33.220 D	24.959	300.9	0.259	5.48	235.2 D	90.6	4.1	0.60	2.7	0.21	0.33	0.58	0.36	76	
76	13.16	13.15	33.246	25.007	296.4	0.260	5.48	238.6	91.7	4.2	0.61	2.8	0.22	0.35	0.56	0.35	77 14	
87	11.74	11.73	33.213	25.254	272.9	0.291	4.95	215.8	80.5	8.9	1.01	9.4	0.15	0.01	0.25	0.24	88 13	
100	10.72	10.71	33.365 D	25.557	244.3	0.327	4.48	195.2 D	71.3								101 12	
112	10.12	10.11	33.394	25.682	232.5	0.354	4.35	189.5	68.3	15.0	1.36	16.0	0.04	0.00	0.07	0.14	113 11	
125	9.65	9.64	33.535	25.871	214.8	0.383	4.02	174.9	62.5	19.0	1.57	19.3	0.04	0.01	0.02	0.06	126 10	
140	9.48	9.47	33.626	25.970	205.7	0.414	3.85	167.7	59.7	21.1	1.64	20.7	0.02	0.01	0.02	0.05	141 09	
150 ISL	9.13 D	9.11	33.753 D	26.127	190.9	0.437	3.68	160.1 D	56.6	23.6	1.73	22.1	0.03	0.00	0.01	0.05	151	
170	8.90	8.88	33.864	26.250	179.6	0.472	3.17	137.7	48.5	28.6	1.91	24.9	0.03	0.00	0.00	0.04	171 08	
200	8.39	8.37	34.000	26.436	162.4	0.523	2.54	110.4	38.5	36.4	2.17	28.4	0.03	0.00	0.00	0.03	202 07	
230	8.09	8.07	34.041	26.514	155.5	0.571	2.22	96.5	33.4	41.1	2.30	30.3	0.02	0.01			232 06	
250 ISL	8.26 D	8.24	34.140 D	26.568	150.9	0.605	1.61	70.2 D	24.4	44.3	2.44	31.4	0.02	0.00			252	
270	7.80	7.78	34.148	26.642	144.0	0.631	1.45	62.9	21.6	47.6	2.58	32.5	0.01	0.00			272 05	
300 ISL	7.34 D	7.31	34.126 D	26.691	139.5	0.678	1.29	56.3 D	19.2	53.3	2.75	34.1	0.02	0.00			302	
321	7.46	7.43	34.238	26.763	133.2	0.701	0.76	32.9	11.3	57.2	2.87	35.2	0.03	0.00			324 04	
380	7.06	7.02	34.248	26.829	127.7	0.778	0.61	26.4	8.9	63.6	2.98	36.9	0.01	0.00			383 03	
400 ISL	6.90 D	6.86	34.267 D	26.865	124.5	0.810	0.52	22.6 D	7.6	65.8	3.02	37.3	0.02	0.00			403	
441	6.62	6.58	34.278	26.913	120.4	0.854	0.42	18.1	6.1	70.4	3.09	38.2	0.00	0.00			445 02	
500 ISL	6.26 D	6.22	34.301 D	26.979	114.7	0.930	0.33	14.4 D	4.8	76.5	3.18	39.3	0.02	0.00			504	
515	6.19	6.14	34.308	26.994	113.4	0.940	0.30	13.1	4.3	78.0	3.20	39.6	0.02	0.00			519 01	

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

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 93.3 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	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	17.28	17.28	33.389 D	24.212	369.8	0.000	5.58	243.2	101.6	1.9	0.33	0.0	0.02	0.00	0.10	0.03	0	
2	17.28	17.28	33.389	24.213	369.9	0.007	5.58	243.2	101.6	1.9	0.33	0.0	0.02	0.00	0.10	0.03	2 20	
10	17.28	17.28	33.386	24.211	370.4	0.037	5.58	243.2	101.6	1.9	0.33	0.0	0.02	0.00	0.09	0.03	10 19	
20 ISL	17.29 D	17.28	33.386 D	24.210	370.8	0.075	5.62	245.0	0102.3	1.9	0.34	0.0	0.01	0.00	0.09	0.02	20	
25	17.29	17.28	33.387	24.212	370.8	0.093	5.58	243.4	101.7	1.9	0.35	0.0	0.01	0.00	0.09	0.02	25 18	
30 ISL	17.22 D	17.22	33.378 D	24.220	370.2	0.112	5.64	245.8	0102.5	1.9	0.35	0.0	0.01	0.00	0.13	0.04	30	
41	16.07	16.06	33.265	24.401	353.3	0.151	5.76	250.9	102.3	1.8	0.36	0.0	0.02	0.00	0.20	0.06	41 17	
50	15.38	15.38	33.373	24.638	331.0	0.182	5.77	251.3	101.1	2.7	0.35	0.0	0.02	0.00	0.19	0.11	50 16	
62	14.01	14.00	33.268	24.851	310.9	0.220	5.65	246.4	96.4	3.7	0.50	1.3	0.06	0.01	0.37	0.25	62 15	
75 ISL	12.88 D	12.87	33.173 D	25.007	296.3	0.262	5.53	240.8 D	92.0	5.0	0.67	4.0	0.11	0.00	0.33	0.28	76	
76	12.82	12.81	33.172	25.017	295.3	0.263	5.45	237.6	90.6	5.1	0.68	4.2	0.12	0.00	0.32	0.29	77 14	
87	12.03	12.01	33.180	25.176	280.4	0.295	5.31	231.4	86.8	6.3	0.80	6.4	0.10	0.00	0.28	0.29	88 13	
100	11.12	11.11	33.264 D	25.407	258.6	0.332	4.83	210.3 D	77.4								101 12	
111	10.77	10.76	33.310	25.504	249.5	0.357	4.57	199.1	72.8	12.8	1.26	14.0	0.04	0.00	0.11	0.12	112 11	
124	10.04	10.02	33.443	25.735	227.7	0.388	4.20	182.9	65.9	16.7	1.46	17.5	0.02	0.00	0.05	0.10	125 10	
125 ISL	9.90 D	9.88	33.485 D	25.791	222.4	0.393	4.22	183.8 D	66.0	17.0	1.47	17.7	0.02	0.00	0.05	0.10	126	
140	9.51	9.49	33.610	25.954	207.2	0.423	3.75	163.0	58.1	21.6	1.68	21.0	0.02	0.00	0.02	0.07	141 09	
150 ISL	9.41 D	9.39	33.669 D	26.016	201.5	0.446	3.65	0159.0 D	56.6	23.8	1.76	22.3	0.03	0.00	0.02	0.08	151	
170	8.97	8.95	33.822	26.207	183.7	0.482	3.16	137.5	48.5	28.2	1.93	24.9	0.03	0.01	0.01	0.11	171 08	
200	8.51	8.48	33.946	26.377	168.0	0.535	2.87	125.0	43.7	33.0	2.04	27.0	0.02	0.00	0.00	0.03	202 07	
230	8.18	8.16	34.007	26.475	159.2	0.584	2.45	106.7	37.0	38.1	2.26	29.1	0.02	0.01			232 06	
250 ISL	7.83 D	7.80	34.049 D	26.560	151.3	0.619	2.10	91.4 D	31.4	43.3	2.40	31.1	0.02	0.00			252	
270	7.57	7.55	34.075	26.618	146.1	0.645	1.71	74.4	25.5	48.4	2.54	33.0	0.02	0.00			272 05	
300 ISL	7.29 D	7.26	34.098 D	26.676	140.9	0.692	1.43	62.1 D	21.1	52.0	2.65	34.2	0.01	0.00			302	
320	7.33	7.30	34.117	26.686	140.4	0.716	1.30	56.3	19.2	54.5	2.72	35.0	0.00	0.00				

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 93.3 70.0

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	WIND m/L μmol/Kg	OXY PCT	S103* μM	PO4* μM	NO3* μM	NO2* μM	NH4* μM	CHL-A μg/L	PHAEAO μg/L	STATION 93.3 70.0	
																014	012
0	16.77	16.77	33.341 D	24.295	361.9	0.000	5.62	245.2	101.4	2.0	0.33	0.0	0.02	0.00	0.12	0.03	0
1	16.77	16.77	33.341	24.295	362.0	0.004	5.62	245.2	101.4	2.0	0.33	0.0	0.02	0.00	0.12	0.03	1 20
10	16.78	16.78	33.338	24.292	362.6	0.036	5.63	245.6	101.5	1.9	0.33	0.0	0.01	0.00	0.12	0.03	10 19
20 ISL	16.77 D	16.77	33.336 D	24.294	362.8	0.073	5.65	246.2	101.8	1.9	0.33	0.0	0.00	0.00	0.13	0.03	20
25	16.74	16.73	33.332	24.298	362.5	0.091	5.63	245.7	101.5	1.9	0.33	0.1	0.00	0.00	0.13	0.04	25 18
30 ISL	16.68 D	16.67	33.323 D	24.306	362.0	0.110	5.63	246.2	101.6	1.9	0.33	0.0	0.01	0.00	0.14	0.04	30
40	16.61	16.61	33.314	24.314	361.5	0.145	5.66	246.7	101.7	1.9	0.33	0.0	0.02	0.01	0.16	0.04	40 17
50	16.46	16.45	33.302	24.341	359.3	0.181	5.68	247.8	101.8	1.9	0.33	0.0	0.00	0.00	0.18	0.05	50 16
62	15.90	15.89	33.258	24.436	350.6	0.224	5.77	251.6	102.2	1.8	0.36	0.0	0.00	0.01	0.27	0.10	62 15
75 ISL	15.61 D	15.60	33.246 D	24.492	345.7	0.271	5.83	254.1	102.6	1.4	0.36	0.0	0.02	0.02	0.40	0.17	76
76	15.54	15.53	33.243	24.506	344.4	0.272	5.82	253.9	102.4	1.4	0.36	0.0	0.02	0.02	0.41	0.18	77 14
87	15.04	15.03	33.218	24.596	336.2	0.310	5.80	252.8	100.9	1.9	0.40	0.2	0.04	0.15	0.57	0.35	88 13
100	14.50	14.48	33.213	24.709	325.7	0.353	5.73	249.7	98.6	2.8	0.50	1.1	0.07	0.34	0.38	0.25	101 12
111	12.95	12.93	33.193	25.010	297.1	0.387	5.49	239.0	91.4	5.1	0.68	4.0	0.15	0.42	0.24	0.25	112 11
125	11.00	10.98	33.208	25.387	261.1	0.426	4.96	215.9	79.3	9.9	1.07	11.1	0.07	0.00	0.14	0.14	126 10
140	10.14	10.12	33.383	25.672	234.1	0.463	4.50	195.9	70.7	14.1	1.31	15.4	0.03	0.02	0.08	0.11	141 09
150 ISL	9.98 D	9.96	33.483 D	25.777	224.3	0.489	4.24	184.6 D	66.4	16.5	1.41	17.2	0.03	0.00	0.06	0.09	151
171	9.47	9.45	33.697	26.029	200.8	0.531	3.75	163.1	58.1	21.7	1.63	20.9	0.02	0.00	0.02	0.04	172 08
200	9.00	8.98	33.827	26.206	184.4	0.587	3.27	142.5	50.3	27.4	1.85	24.5	0.02	0.00	0.01	0.04	202 07
230	8.63	8.61	33.922	26.340	172.2	0.640	2.98	129.5	45.4	31.5	1.98	26.4	0.01	0.00			232 06
250 ISL	8.41 D	8.39	33.984 D	26.422	164.7	0.679	2.65	115.4 D	40.2	35.0	2.10	27.9	0.00	0.00			252
270	8.20	8.17	34.015	26.479	159.6	0.706	2.37	103.0	35.7	38.6	2.22	29.4	0.00	0.00			272 05
300 ISL	7.88 D	7.85	34.068 D	26.569	151.5	0.758	1.89	82.3 D	28.4	44.4	2.39	31.6	0.00	0.00			302
320	7.53	7.50	34.073	26.623	146.5	0.783	1.72	74.7	25.6	48.3	2.51	33.1	0.00	0.00			323 04
380	7.09	7.05	34.149	26.746	135.5	0.868	1.02	44.4	15.0	58.3	2.80	36.1	0.01	0.00			383 03
400 ISL	6.92 D	6.89	34.165 D	26.782	132.4	0.901	0.88	38.3 D	12.9	61.4	2.86	36.8	0.01	0.00			403
440	6.54	6.50	34.179	26.844	126.7	0.947	0.71	30.8	10.3	67.6	2.98	38.3	0.00	0.00			444 02
500 ISL	5.93 D	5.89	34.201 D	26.941	117.9	1.027	0.53	23.1 D	7.6	76.6	3.09	39.9	0.01	0.00			504
514	5.85	5.80	34.208	26.957	116.4	1.036	0.50	21.5	7.1	78.7	3.11	40.2	0.01	0.00			518 01

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

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	WIND m/L μmol/Kg	OXY PCT	S103* μM	PO4* μM	NO3* μM	NO2* μM	NH4* μM	CHL-A μg/L	STATION 93.3 80.0		
															013	012	
0	18.33	18.33	33.550 D	24.083	382.1	0.000	5.45	237.9	101.4	2.0	0.30	0.0	0.00	0.00	0.08	0.02	0
1 A	18.33	18.33	33.551	24.083	382.1	0.004	5.45	237.9	101.4	2.0	0.30	0.0	0.00	0.00	0.08	0.02	1 23
10 ISL	18.11 D	18.11	33.545 D	24.133	377.7	0.021	5.51	240.3 D	102.1	2.0	0.29	0.0	0.01	0.00	0.08	0.02	10
11	18.11	18.11	33.544	24.133	377.8	0.043											11 22
12	18.10	18.10	33.544	24.134	377.7	0.046	5.48	238.8	101.4	2.0	0.29	0.0	0.01	0.00	0.08	0.02	12 21
20 ISL	18.09 D	18.09	33.546 D	24.138	377.6	0.055	5.49	239.2 D	101.6	2.0	0.28	0.0	0.00	0.00	0.09	0.02	20
23 A	18.09	18.09	33.556	24.147	376.9	0.087	5.51	240.4	102.1	2.0	0.28	0.0	0.00	0.00	0.09	0.02	23 20
30 A	18.09	18.09	33.547	24.141	377.8	0.113	5.47	238.6	101.3	2.0	0.31	0.0	0.00	0.00	0.09	0.02	30 19
42	18.09	18.08	33.554	24.148	377.6	0.159	5.47	238.7	101.3	2.0	0.29	0.0	0.00	0.00	0.09	0.02	42 18
50 ISL	18.09 D	18.08	33.547 D	24.143	378.3	0.169	5.46	238.1 D	101.1	2.0	0.28	0.0	0.00	0.00	0.10	0.02	50
53 A	18.08	18.07	33.550	24.148	378.1	0.200	5.48	239.1	101.5	2.0	0.28	0.0	0.00	0.00	0.10	0.02	53 17
69	17.65	17.64	33.524	24.232	370.6	0.260	5.49	239.4	100.8	2.0	0.30	0.0	0.01	0.00	0.12	0.02	70 16
75 ISL	15.60 D	15.59	33.158 D	24.427	351.9	0.263	5.93	252.8 D	104.2	2.3	0.34	0.0	0.01	0.00	0.16	0.06	76
84	14.49	14.48	33.142	24.655	330.3	0.311	5.86	255.3	100.8	2.8	0.40	0.0	0.02	0.00	0.22	0.13	85 15
100 A	12.57	12.55	33.136	25.039	293.9	0.361	5.53	241.0	91.4	5.1	0.67	4.1	0.11	0.01	0.33	0.26	101 13
100	12.57	12.55	33.142	25.044	293.4	0.362											101 14
111	11.47	11.46	33.184	25.283	270.8	0.392	5.30	231.0	85.7	6.7	0.82	7.1	0.07	0.00	0.25	0.24	112 12
123 A	10.85	10.83	33.294	25.480	252.2	0.424	4.96	216.1	79.1	9.7	1.03	10.9	0.04	0.00	0.18	0.18	124 11
125 ISL	10.78 D	10.77	33.302 D	25.497	250.6	0.396	5.01	218.1 D	79.7	10.0	1.05	11.2	0.04	0.00	0.17	0.17	126
131	10.50	10.49	33.346	25.581	242.7	0.444	4.86	211.8	77.0	11.0	1.09	12.2	0.03	0.00	0.15	0.16	132 10
141	10.14	10.12	33.415	25.697	231.8	0.467	4.70	204.6	73.8	12.7	1.17	13.7	0.03	0.00	0.10	0.09	142 09
150 ISL	10.10 D	10.08	33.571 D	25.826	219.7	0.455	4.49	195.3 D	70.5	16.0	1.34	16.3	0.03	0.00	0.07	0.07	151
170	9.29	9.27	33.715	26.072	196.6	0.530	3.58	156.0	55.3	23.5	1.72	22.3	0.02	0.00	0.01	0.03	171 08
200 ISL	8.90 D	8.88	33.879 D	26.263	179.0	0.554	3.10	134.8 D	47.5	28.7	1.91	25.1	0.02	0.00	0.00	0.03	202
201	8																

RV NEW HORIZON

CALCOFI CRUISE 1504

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				
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		
30	50.8 N	121 35.3 W	07/04/2015	0109	UTC	4125 m	260	03 kn	340	03	07	1	1015.0	mb	17.2	C	13.9	C	
0	17.52	17.52	33.143 D	23.968		393.1	0.000	5.65	246.3	103.2	1.8	0.35	0.0	0.01	0.01	0.07	0.01	0	
2	17.52	17.52	33.147	23.971		392.9	0.008	5.65	246.3	103.2	1.8	0.35	0.0	0.01	0.01	0.07	0.01	2 24	
10	16.64	16.64	33.128	24.163		374.9	0.039	5.70	248.4	102.3	1.8	0.36	0.0	0.00	0.00	0.08	0.02	10 19	
10	16.64		33.129 D	250.784		0.4	0.039											10 23	
10	16.64		33.129 D	250.784		0.4	0.039											10 22	
10	16.64		33.129 D	250.784		0.4	0.039											10 21	
10	16.64		33.129 D	250.784		0.4	0.039											10 20	
20	ISL	16.60 D	16.59	33.128 D	24.175		374.1	0.058	5.72	D249.6	D102.7	1.8	0.35	0.0	0.00	0.00	0.09	0.02	20
25		16.57	16.56	33.134	24.186		373.2	0.095	5.68	247.9	101.9	1.8	0.35	0.0	0.00	0.00	0.09	0.02	25 18
30	ISL	16.54 D	16.54	33.124 D	24.185		373.5	0.096	5.71	D248.9	D102.3	1.8	0.35	0.0	0.00	0.00	0.10	0.02	30
40		16.45	16.44	33.123	24.205		371.9	0.151	5.69	248.2	101.8	1.8	0.36	0.0	0.00	0.00	0.11	0.03	40 17
50		15.55	15.54	33.104	24.394		354.2	0.187	5.79	252.3	101.7	2.0	0.38	0.0	0.00	0.00	0.17	0.06	50 16
62		14.28	14.27	33.087	24.656		329.4	0.228	5.94	258.8	101.6	3.0	0.44	0.1	0.01	0.01	0.44	0.17	62 15
75		12.59	12.58	33.065	24.978		299.0	0.269	5.58	243.1	92.2	5.0	0.69	4.1	0.17	0.01	0.44	0.22	76 14
87		11.22	11.21	33.078	25.245		273.7	0.303	5.21	227.0	83.7	7.9	0.99	9.1	0.08	0.00	0.33	0.17	88 13
100		10.17	10.16	33.208	25.528		246.9	0.337	4.96	216.0	77.9	11.4	1.18	13.0	0.02	0.01	0.18	0.13	101 12
112		9.78	9.77	33.344	25.700		230.7	0.366	4.56	198.6	71.1	15.1	1.38	16.3	0.01	0.00	0.09	0.09	113 11
125		9.60	9.59	33.533	25.878		214.1	0.395	3.87	168.6	60.2	20.0	1.65	20.3	0.00	0.00	0.03	0.06	126 10
140		9.37	9.36	33.631	25.992		203.6	0.426	3.57	155.5	55.3	22.9	1.76	22.1	0.00	0.00	0.01	0.04	141 09
150	ISL	9.15 D	9.13	33.731 D	26.106		192.9	0.430	3.59	D156.4	D 55.4	24.7	1.82	23.2	0.00	0.00	0.01	0.04	151
169		8.86	8.84	33.839	26.237		180.7	0.481	3.20	139.4	49.1	28.3	1.92	25.1	0.00	0.00	0.00	0.03	170 08
199		8.47	8.45	33.956	26.390		166.8	0.534	2.82	122.5	42.8	33.4	2.07	27.2	0.00	0.00	0.00	0.02	201 07
200	ISL	8.47 D	8.45	33.979 D	26.408		165.1	0.519	2.69	D117.2	D 40.9	33.5	2.08	27.3	0.00	0.00			202
230		8.18	8.16	34.020	26.484		158.3	0.584	2.42	105.5	36.6	38.7	2.23	29.3	0.00	0.00			232 06
250	ISL	7.98 D	7.95	34.043 D	26.533		153.9	0.600	2.17	D 94.3	D 32.6	42.0	2.33	30.5	0.00	0.00			252
270		7.78	7.76	34.062	26.577		150.1	0.646	1.89	82.4	28.3							272 05	
300	ISL	7.45 D	7.42	34.095 D	26.651		143.4	0.675	1.56	D 67.9	D 23.2	50.3	2.58	33.5	0.00	0.00			302
320		7.24	7.21	34.095	26.682		140.7	0.718	1.40	61.0	20.7	53.6	2.68	34.7	0.00	0.00			323 04
380		6.66	6.63	34.156	26.809		129.2	0.799	0.86	37.6	12.6	63.8	2.93	37.4	0.00	0.00			383 03
400	ISL	6.51 D	6.47	34.174 D	26.844		126.1	0.811	0.75	D 32.5	D 10.9	67.1	2.98	38.1	0.00	0.00			403
440		6.20	6.16	34.208	26.911		120.1	0.874	0.52	22.7	7.5	73.7	3.09	39.4	0.00	0.00			444 02
500	ISL	5.84 D	5.79	34.242 D	26.985		113.6	0.931	0.42	D 18.4	D 6.1	80.4	3.16	40.3	0.00	0.00			504
515		5.78	5.74	34.257	27.004		111.9	0.961	0.34	14.7	4.8	82.1	3.18	40.5	0.00	0.00			519 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

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				
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		
30	30.7 N	122 15.2 W	07/04/2015	0727	UTC	4190 m	230	06 kn									015		
0	17.34	17.34	33.292 D	24.125		378.1	0.000	5.59	243.9	101.9	2.0	0.33	0.0	0.00	0.01	0.09	0.02	0	
2	17.34	17.34	33.320	24.146		376.2	0.008	5.59	243.9	101.9	2.0	0.33	0.0	0.00	0.01	0.09	0.02	2 20	
10	16.53	16.53	33.122	24.185		372.8	0.038	5.70	248.5	102.1	2.0	0.33	0.0	0.00	0.00	0.09	0.02	10 19	
20	ISL	16.50 D	16.49	33.129 D	24.198		371.9	0.075	5.71	D248.8	D102.2	2.0	0.33	0.0	0.00	0.00	0.09	0.02	20
25		16.49	16.48	33.128	24.200		371.9	0.093	5.69	248.3	101.9	2.0	0.33	0.0	0.00	0.00	0.09	0.03	18
30	ISL	16.30 D	16.30	33.081 D	24.207		371.4	0.113	5.72	D249.5	D102.0	2.0	0.33	0.0	0.00	0.00	0.11	0.03	30
40		16.30	16.29	33.078	24.205		371.9	0.149	5.72	249.2	101.9	2.0	0.34	0.0	0.00	0.00	0.13	0.03	40 17
50		16.43	16.42	33.124	24.211		371.7	0.186	5.70	248.6	101.9	2.0	0.33	0.0	0.00	0.00	0.15	0.03	50 16
62		15.20	15.19	33.036	24.420		352.1	0.230	5.91	257.4	103.0	2.2	0.36	0.0	0.00	0.00	0.23	0.08	62 15
75		14.11	14.10	33.030	24.648		330.6	0.274	5.81	253.4	99.1	3.1	0.45	0.6	0.06	0.01	0.62	0.24	76 14
87		12.60	12.58	32.994	24.923		304.6	0.312	5.50	239.8	90.9	5.3	0.73	4.9	0.15	0.01	0.58	0.23	88 13
100		11.81	11.79	33.034	25.104		287.5	0.351	5.27	229.6	85.6	7.3	0.93	8.2	0.08	0.00	0.32	0.27	101 12
112		10.75	10.74	33.169	25.399		259.5	0.383	5.03	219.0	79.9	9.9	1.09	11.5	0.04	0.00	0.20	0.13	113 11
124		10.10	10.09	33.266	25.586		241.9	0.413	4.66	202.8	73.0	13.3	1.32	15.1	0.03	0.00	0.11	0.11	126
125	ISL	10.02 D	10.01	33.301 D	25.627		238.0	0.418	4.67	D203.4	D 73.2	13.5	1.33	15.2	0.03	0.00	0.11	0.11	126
140		9.69	9.68	33.373	25.738		227.7	0.451	4.48	195.2	69.7	16.0	1.41	17.0	0.02	0.00	0.06	0.07	141 09
150	ISL	9.42 D	9.40	33.538 D	25.912		211.4	0.476	4.18	D181.9	D 64.7	18.5	1.52	18.8	0.02	0.00	0.04	0.06	151
170		9.24	9.22	33.666	26.041		199.5	0.515	3.61	157.3	55.7	23.4	1.74	22.4	0.01	0.00			

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 93.3 110.0

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	SV	DYN HT	OXYGEN ml/L	OXYGEN $\mu\text{mol/Kg}$	OXY PCT	SI03* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A $\mu\text{g/L}$	PHAE0 $\mu\text{g/L}$	PRES db
30 10.8 N	122 55.2 W	07/04/2015	1347	UTC	3863 m	230 10 kn											016
0	17.99	17.99	33.551 D	24.166	374.2	0.000	5.48	239.1	101.3	2.1	0.28	0.0	0.01	0.00	0.07	0.02	0
2	17.99	17.99	33.558	24.172	373.7	0.008	5.48	239.1	101.3	2.1	0.28	0.0	0.01	0.00	0.07	0.02	2 20
10 ISL	18.01 D	18.01	33.555 D	24.166	374.6	0.038	5.49	0239.3	0101.4	2.1	0.28	0.0	0.01	0.00	0.07	0.02	10
20	18.12	18.12	33.576	24.155	376.0	0.075	5.49	239.2	101.6	2.1	0.27	0.0	0.00	0.00	0.06	0.02	20 19
30 ISL	17.96 D	17.96	33.571 D	24.191	373.0	0.113	5.50	0239.6	0101.5	2.1	0.28	0.0	0.00	0.00	0.06	0.02	30
40	17.95	17.95	33.567	24.190	373.5	0.150	5.49	239.3	101.3	2.1	0.28	0.0	0.00	0.00	0.06	0.02	40 18
50 ISL	17.94 D	17.93	33.568 D	24.196	373.3	0.188	5.49	0239.3	0101.3	2.1	0.28	0.0	0.00	0.00	0.07	0.02	50
61	17.94	17.92	33.568	24.197	373.6	0.228	5.50	239.9	101.6	2.1	0.28	0.0	0.01	0.00	0.07	0.02	61 17
75 ISL	17.91 D	17.89	33.560 D	24.200	373.9	0.282	5.50	0239.8	0101.4	2.1	0.28	0.0	0.01	0.00	0.09	0.03	76
80	17.87	17.85	33.550	24.202	373.9	0.299	5.50	239.8	101.4	2.1	0.28	0.0	0.01	0.00	0.10	0.03	81 16
100	15.46	15.45	33.323	24.586	337.6	0.370	5.73	249.7	100.6	2.8	0.32	0.0	0.00	0.00	0.20	0.14	101 15
110	13.41	13.39	33.179	24.907	306.9	0.403	5.66	246.8	95.3	3.6	0.46	1.1	0.07	0.01	0.25	0.14	111 14
120	12.23	12.21	33.174	25.134	285.3	0.432	5.46	238.0	89.7	5.2	0.65	4.3	0.08	0.02	0.23	0.17	121 13
125 ISL	11.23 D	11.22	33.136 D	25.289	270.5	0.449	5.33	0232.2	0 D 85.6	6.5	0.78	6.5	0.06	0.00	0.20	0.15	126
130	11.12	11.11	33.134	25.307	268.9	0.460	5.27	229.6	84.5	7.8	0.91	8.7	0.04	0.00	0.18	0.13	131 12
141	10.60	10.58	33.226	25.471	253.4	0.488	5.03	218.9	79.7	9.8	1.04	11.2	0.03	0.00	0.15	0.13	142 11
150 ISL	10.18 D	10.16	33.313 D	25.611	240.2	0.514	4.79	0208.4	0 D 75.2	12.4	1.21	13.9	0.02	0.00	0.11	0.13	151
151	10.17	10.15	33.308	25.609	240.4	0.513	4.74	206.5	74.5	12.7	1.23	14.2	0.02	0.00	0.10	0.13	152 10
160	9.88	9.86	33.385	25.717	230.2	0.534	4.59	199.8	71.7	14.7	1.32	15.9	0.01	0.00	0.06	0.12	161 09
175	9.66	9.64	33.557	25.889	214.2	0.567	4.31	187.8	67.1	17.5	1.41	17.7	0.01	0.00	0.03	0.05	176 08
195	9.09	9.07	33.713	26.103	194.1	0.608	3.68	160.0	56.5	24.0	1.73	22.6	0.01	0.00	0.00	0.04	196 07
200 ISL	9.03 D	9.01	33.755 D	26.145	190.2	0.622	3.58	0155.6	0 D 54.9	24.9	1.76	23.0	0.01	0.00			202
231	8.66	8.64	33.905	26.321	174.0	0.674	3.16	137.4	48.2	30.3	1.91	25.7	0.00	0.00			233 06
250 ISL	8.49 D	8.46	33.960 D	26.392	167.6	0.711	2.96	0128.9	0 D 45.0	33.8	2.03	27.2	0.00	0.00			252
269	8.17	8.14	34.003	26.474	160.0	0.738	2.54	110.4	38.3	37.2	2.15	28.7	0.00	0.00			271 05
300 ISL	7.64 D	7.61	34.039 D	26.580	150.3	0.791	2.32	0101.0	0 D 34.6	44.1	2.33	31.2	0.00	0.00			302
321	7.33	7.30	34.054	26.636	145.1	0.817	1.88	81.9	27.9	48.7	2.46	32.9	0.00	0.00			324 04
380	6.80	6.76	34.116	26.760	133.9	0.900	1.11	48.4	16.3	59.7	2.79	36.6	0.00	0.00			383 03
400 ISL	6.66 D	6.62	34.146 D	26.802	130.2	0.931	0.91	039.4	0 D 13.2	63.0	2.86	37.3	0.00	0.00			403
441	6.35	6.31	34.179	26.869	124.2	0.979	0.68	29.4	9.8	69.8	3.00	38.8	0.00	0.00			445 02
500 ISL	5.94 D	5.90	34.237 D	26.968	115.3	1.055	0.45	019.6	0 D 6.5	78.4	3.12	40.3	0.00	0.00			504
517	5.83	5.79	34.241	26.985	113.8	1.069	0.39	17.0	5.6	80.9	3.16	40.7	0.00	0.00			521 01

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

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 93.3 120.0

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	SV	DYN HT	OXYGEN ml/L	OXYGEN $\mu\text{mol/Kg}$	OXY PCT	SI03* μM	P04* μM	N03* μM	N02* μM	NH4* μM	CHL-A $\mu\text{g/L}$	PHAE0 $\mu\text{g/L}$	PRES db
29 50.6 N	123 35.1 W	07/04/2015	2010	UTC	4071 m	280 11 kn	290 02 07	1	1018.4 mb	19.0	15.9 C	40 m	1/8	SC 017			
0	17.79	17.79	33.328 D	24.043	385.9	0.000	5.56	242.6	102.3	1.9	0.31	0.0	0.01	0.00	0.06	0.01	0
2 A	17.79	17.79	33.327	24.043	386.0	0.008	5.56	242.6	102.3	1.9	0.31	0.0	0.01	0.00	0.06	0.01	2 24
10 ISL	17.56 D	17.55	33.330 D	24.103	380.6	0.039	5.55	0242.0	0101.6	1.9	0.31	0.0	0.01	0.00	0.06	0.01	10
13	17.54	17.54	33.339	24.113	379.8	0.050	5.57	242.7	101.8	1.9	0.31	0.0	0.01	0.01	0.06	0.01	13 22
20 ISL	17.53 D	17.53	33.360 D	24.132	378.2	0.063	5.56	0242.3	0101.7	1.9	0.30	0.0	0.01	0.00	0.06	0.01	20
25 A	17.51	17.50	33.362	24.140	377.7	0.095	5.56	242.3	101.6	1.9	0.30	0.0	0.01	0.00	0.06	0.01	25 21
30 ISL	17.49 D	17.48	33.360 D	24.144	377.5	0.102	5.56	0242.4	0101.6	1.9	0.31	0.0	0.01	0.00	0.06	0.02	30
33 A	17.48	17.48	33.359	24.145	377.5	0.125	5.56	242.6	101.7	1.9	0.31	0.0	0.01	0.00	0.07	0.02	33 20
40	17.47	17.46	33.361	24.149	377.4	0.152	5.56	242.6	101.7	1.9	0.30	0.0	0.01	0.00	0.07	0.02	40 19
49	17.45	17.44	33.356	24.150	377.6	0.186	5.56	242.6	101.6	1.9	0.31	0.0	0.01	0.00	0.08	0.02	49 18
50 ISL	17.44 D	17.44	33.357 D	24.151	377.5	0.177	5.57	0242.9	0101.7	1.9	0.31	0.0	0.01	0.00	0.08	0.02	50
57 A	17.44	17.43	33.354	24.153	377.6	0.216	5.57	242.7	101.6	1.9	0.31	0.0	0.01	0.00	0.08	0.02	57 17
72	17.41	17.40	33.349 D	24.156	377.8	0.261	5.56	0242.6	0101.5	2.0	0.31	0.0	0.01	0.00			76
75 ISL	17.41 D	17.40	33.348 D	24.156	378.0	0.273	5.56	0242.5	0101.5	2.0	0.31	0.0	0.01	0.00			76
90	16.56	16.54	33.326	24.341	360.8	0.339	5.65	246.4	101.4	2.1	0.31	0.0	0.01	0.00	0.16	0.07	91 15
100 ISL	14.77 D	14.76	33.177 D	24.622	334.0	0.363	5.85	0254.9	0101.2	2.8	0.38	0.2	0.02	0.00	0.22	0.11	101
107 A	14.26	14.24	33.153	24.714	325.4	0.397	5.77	251.7	98.8	3.2	0.43	0.3	0.03	0.02	0.26	0.13	108 14
114	13.20	13.18	33.207 D	24.971	300.9	0.409	5.54	0241.4	0 D 92.8								115 12
125	12.09	12.08	33.187	25.171	282.0	0.451	5.47	238.4	89.6	5.3	0.67	4.5	0.08	0.02	0.26	0.19	126 11
133 A	11.25	11.23	33.162	25.307	269.0	0.473	5.33	232.0	85.6	7.1	0.85	7.8	0.05	0.00	0.22	0.19	134 10
150																	

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 76.7 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
34 23.1 N	122 14.6 W	18/04/2015	1745 UTC	21 m	1208 - 1908 PST	1208 PST	1909 PST	306.9 mg C/m ²	065

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	LIGHT	UPTAKE (mg C/m ³)
m	DEG C	THETA	mL/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1 2 MEAN DARK
2	15.32	33.176	24.498	5.88	102.8	2.3	0.38	0.0	0.01	0.03	0.27	0.08	86. A	7.2 7.2 7.2 0.57
13	15.29	33.176	24.504	5.87	102.7	2.3	0.38	0.0	0.01	0.02	0.26	0.07	39.	6.9 6.3 6.6 0.40
17	15.29	33.176	24.506	5.88	102.8	2.3	0.37	0.0	0.01	0.02	0.26	0.08	29.	3.7 3.7 3.7 0.51
25	15.11	33.188	24.554	5.90	102.9	2.2	0.38	0.0	0.01	0.02	0.33	0.11		
30	15.04	33.187	24.568	5.92	103.0	2.3	0.37	0.0	0.01	0.02	0.38	0.12	11.	6.1 7.8 6.9 0.46
40	15.02	33.187	24.574	5.90	102.6	2.3	0.38	0.0	0.01	0.01	0.48	0.14		
56	15.00	33.191	24.583	5.89	102.4	2.3	0.37	0.0	0.01	0.02	0.58	0.18	1.7	2.0 1.6 1.8 0.39
49	15.01	33.190	24.579	5.90	102.6	2.3	0.40	0.0	0.01	0.02	0.53	0.18		
62	14.99	33.193	24.585	5.89	102.3	2.3	0.38	0.0	0.01	0.04	0.62	0.20		
69	14.74	33.168	24.621	5.82	100.5	2.6	0.41	0.4	0.04	0.11	0.51	0.23	0.64	0.64 0.69 0.67 0.37

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 80.0 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 49.2 N	123 54.6 W	17/04/2015	1719 UTC	26 m	1215 - 1913 PST	1215 PST	1913 PST	138.2 mg C/m ²	061

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	LIGHT	UPTAKE (mg C/m ³)
m	DEG C	THETA	mL/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1 2 MEAN DARK
3	15.80	33.078	24.315	5.79	102.2	2.1	0.34	0.0	0.01	0.00	0.14	0.03	84. A	2.7 0.68 1.7 0.35
10	15.79	33.077	24.317	5.83	102.9	2.0	0.35	0.0	0.01	0.00	0.12	0.04		
16	15.77	33.081	24.326	5.78	102.0	2.0	0.34	0.0	0.01	0.00	0.15	0.02	39.	0.75 0.75 0.75 0.43
21	15.77	33.078	24.325	5.79	102.2	2.0	0.33	0.0	0.01	0.00	0.14	0.05	29.	1.6 2.0 1.8 0.44
38	15.70	33.080	24.341	5.89	103.8	2.0	0.34	0.0	0.01	0.00	0.15	0.04	11.	2.2 2.9 2.5 0.47
49	14.89	33.121	24.551	5.91D	102.5	2.2	0.36	0.0	0.01	0.00	0.34	0.15		
60	14.83	33.140	24.580	5.90	102.1	2.2	0.37	0.0	0.01	0.05	0.54	0.28		
70	14.73	33.144	24.604	5.83	100.8	2.2	0.38	0.0	0.02	0.16	0.41	0.23	1.6	1.1 1.5 1.3 0.45
77	14.49	33.125	24.641	5.77	99.2	2.5	0.43	0.5	0.09	0.23	0.27	0.21		
85	14.30	33.115	24.675	5.72	98.0	2.8	0.47	0.9	0.13	0.23	0.22	0.17	0.66	0.42 0.46 0.44 0.34

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 81.8 46.9

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
34 16.7 N	120 1.2 W	15/04/2015	1745 UTC	10 m	1202 - 1900 PST	1200 PST	1858 PST	582.3 mg C/m ²	054

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	LIGHT	UPTAKE (mg C/m ³)
m	DEG C	THETA	mL/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1 2 MEAN DARK
2	13.49	33.472	25.112	6.47	109.3	1.4	0.23	0.3	0.04	0.02	2.78	0.47	74. A	39.7 40.3 40.0 0.45
6	13.30	33.471	25.150	6.48	109.0	1.4	0.22	0.3	0.05	0.03	3.10	0.46	40.	7.9 7.9 7.9 0.73
8	13.08	33.474	25.197	6.45	108.0	2.0	0.28	0.8	0.06	0.06	3.38	0.66	29.	48.3 48.3 48.3 0.73
14	11.14	33.550	25.622	4.53	72.9	12.4	1.13	12.3	0.20	0.20	1.89	0.41	12.	21.5 21.5 21.5 0.47
27	9.97	33.655	25.909	3.25	50.9	21.6	1.75	21.2	0.11	0.02	0.26	0.19	1.6	0.14 0.11 0.13 0.32

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 83.3 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 52.5 N	120 7.8 W	14/04/2015	1854 UTC	08 m	1202 - 1854 PST	1201 PST	1857 PST	104.4 mg C/m ²	048

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	LIGHT	UPTAKE (mg C/m ³)
m	DEG C	THETA	mL/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1 2 MEAN DARK
2	15.22	33.278	24.598	6.04	105.5	1.1	0.31	0.1	0.02	0.00	1.56	0.44	68. A	30.4 30.4 30.4 0.66
4	15.22	33.277	24.598	6.03	105.4	1.1	0.31	0.2	0.03	0.01	1.70	0.36	46.	
8	14.28	33.276	24.799	6.02	103.2	1.2	0.32	0.2	0.03	0.00	1.47	0.42	22.	8.5 8.5 8.5 0.77
12	13.35	33.241	24.962	5.90	99.1	3.5	0.54	2.3	0.09	0.08	2.19	0.60	10.0	9.7 9.7 9.7 0.55
20	13.21	33.351	25.075	5.77	96.8	4.5	0.61	3.4	0.08	0.33	3.67	1.22	2.2	0.07 0.07 0.07 0.53
26	12.60	33.320	25.172	5.44	90.2	6.5	0.77	5.8	0.14	0.46	3.86	1.14	0.68	0.82 0.05 0.44 0.30

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 83.3 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 34.5 N	122 48.6 W	13/04/2015	1657 UTC	24 m	1213 - 1903 PST	1212 PST	1905 PST	154.2 mg C/m ²	044

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	LIGHT	UPTAKE (mg C/m ³)
m	DEG C	THETA	mL/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1 2 MEAN DARK
2	15.97	33.215	24.383	5.79	102.7	1.9	0.35	0.1	0.01	0.00	0.17	0.03	88. A	4.4 2.2 3.3 0.34
10	15.97	33.214	24.383	5.77	102.2	1.9	0.35	0.0	0.01	0.00	0.17	0.04		
15	15.97	33.214	24.384	5.77	102.4	1.9	0.35	0.0	0.01	0.00	0.18	0.04	38.	2.2 2.2 2.2 0.34
20	15.96	33.212	24.385	5.77	102.3	1.9	0.35	0.0	0.01	0.00	0.19	0.04	28.	4.1 4.1 4.1 0.38
34	15.95	33.213	24.388	5.76	102.1	1.9	0.35	0.0	0.01	0.00	0.19	0.04	11.	2.8 2.8 2.8 0.29
45	15.92	33.210	24.392	5.76	102.0	1.9	0.34	0.0	0.01	0.00	0.20	0.04		
55	15.58	33.178	24.446	5.82	102.4	1.9	0.35	0.0	0.01	0.00	0.24	0.07		
64	15.53	33.193	24.467	5.85	102.7	2.0	0.35	0.0	0.01	0.00	0.27	0.08	1.7	0.39 0.10 0.25 0.30
72	15.48	33.193	24.480	5.81	101.9	2.0	0.36	0.0	0.01	0.00	0.30	0.12		
80	14.83	33.164	24.600	5.72	99.1	2.3	0.41	0.4	0.04	0.07	0.45	0.20	0.60	0.37 0.35 0.36 0.31

A) INCUBATION LIGHT INTENSITIES WERE 61.6; 38.8; 28.7; 10.9; 1.6; 0.63 PERCENT RESPECTIVELY.

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 86.7 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 29.7 N	119 18.6 W	11/04/2015	1840 UTC	12 m	1159 - 1852 PST	1158 PST	1850 PST	432.0 mg C/m ²	037

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	LIGHT	UPTAKE (mg C/m ³)			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	MEAN	DARK
2	16.83	33.314	24.262	5.85	105.6						0.34	0.11	77. A	8.4	3.3	5.8	0.38
7	16.41	33.316	24.361	5.93	106.1						0.61	0.28	41.	2.8	4.3	3.6	0.69
10	16.06	33.329	24.450	6.01	106.8	0.5	0.25	0.0	0.01	0.00	0.72	0.36	28.	13.2	13.2	13.2	0.88
16	15.61	33.323	24.549	6.38	112.4	0.2	0.22	0.0	0.01	0.00	1.54	1.37	13.	23.1	23.1	23.1	0.60
24	14.65	33.324	24.758	6.23	107.6	0.3	0.27	0.1	0.01	0.00	3.48	1.86					
32	13.54	33.334	24.996	5.54	93.5	3.7	0.60	3.3	0.12	0.47	2.38	0.85	1.7	5.3	7.2	6.2	0.45
40	13.08	33.362	25.112	5.12	85.6	7.9	0.86	7.1	0.19	0.43	0.71	0.51	0.60	0.87	0.79	0.83	0.32

RV NEW HORIZON

CALCOFI CRUISE 1504

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 43.4 W	12/04/2015	1949 UTC	23 m	1307 - 1900 PST	1208 PST	1859 PST	60.0 mg C/m ²	041

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	LIGHT	UPTAKE (mg C/m ³)			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	MEAN	DARK
3	17.08	33.281	24.178	5.62	101.8	1.9	0.32	0.0	0.01	0.02	0.11	0.02	82. A	1.8	1.5	1.6	0.32
9	17.09	33.278	24.174	5.63	102.1	1.9	0.31	0.0	0.01	0.00	0.12B	0.01B					
14	17.07	33.279	24.179	5.61	101.6	1.9	0.32	0.0	0.01	0.00	0.13	0.01	39.	1.6	1.6	1.6	0.33
20	17.08	33.287	24.184	5.62	101.8	1.9	0.32	0.0	0.01	0.00	0.14C	0.01C	26.	0.95	0.95	0.95	0.41
33	17.07	33.280	24.182	5.61	101.6	1.9	0.32	0.0	0.01	0.00	0.12	0.01	11.	0.79	1.1	0.96	0.38
44	17.05	33.282	24.188	5.62	101.9	1.9	0.33	0.0	0.01	0.01	0.14	0.00					
52	17.05	33.279	24.188	5.62	101.7	1.9	0.33	0.0	0.01	0.00	0.16	0.00					
62	16.81	33.275	24.240	5.63	101.6	1.9	0.33	0.0	0.01	0.00	0.20	0.03	1.6	0.02	0.12	0.07	0.37
69	14.55	33.117	24.622	5.90	101.6	2.7	0.40	0.1	0.02	0.00	0.56	0.05					
79	13.18	33.118	24.904	5.76	96.5	3.7	0.54	1.7	0.07	0.04	0.68	0.20	0.51	0.16	0.17	0.17	0.27

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

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 90.0 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 15.2 N	118 14.8 W	10/04/2015	1630 UTC	23 m	1158 - 1845 PST	1154 PST	1845 PST	210.1 mg C/m ²	028

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	LIGHT	UPTAKE (mg C/m ³)			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	MEAN	DARK
2	17.14	33.304	24.181	5.73	104.1	1.3	0.29	0.0	0.01	0.00	0.21	0.04	88. A	6.3	5.4	5.9	0.36
10	17.09	33.305	24.194	5.75	104.3	1.2	0.29	0.0	0.01	0.00	0.23	0.06					
14	17.07	33.304	24.198	5.75	104.3	1.2	0.29	0.0	0.01	0.00	0.24	0.06	39.	4.5	3.1	3.8	0.41
19	17.06	33.304	24.202	5.77	104.5	1.2	0.29	0.0	0.01	0.00	0.24	0.06	28.				
26	16.78	33.283	24.251	5.82	104.8	1.3	0.30	0.0	0.01	0.00	0.30	0.08					
32	15.29	33.206D	24.529	6.01	105.1	2.0	0.36	0.0	0.01	0.00	0.32	0.13	12.	6.1	1.8	4.0	0.37
43	14.18	33.187	24.753	6.00	102.5	2.5	0.41	0.0	0.01	0.00	0.71	0.31					
52	13.09	33.256	25.028	5.22	87.3	6.6	0.77	5.6	0.38	0.01	0.89	0.55					
61	12.39	33.264	25.170	4.97	81.9	8.4	0.92	8.2	0.26	0.00	0.52	0.53	1.7	2.3	1.7	2.0	0.42
75	10.98	33.315	25.471	4.60	73.6	12.0	1.18	12.9	0.08	0.00	0.25	0.30	0.67	0.44	0.37	0.40	0.34

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 90.0 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 24.9 N	119 57.7 W	09/04/2015	1914 UTC	29 m	1235 - 1850 PST	1201 PST	1850 PST	94.7 mg C/m ²	024

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	LIGHT	UPTAKE (mg C/m ³)			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	MEAN	DARK
1	17.29	33.458	24.264	5.57	101.6	2.1	0.32	0.0	0.01	0.00	0.10	0.02	95. A	1.8	0.79	1.3	0.37
10	17.29	33.453	24.259	5.56	101.3	2.1	0.32	0.0	0.01	0.00	0.10	0.02					
17	17.25	33.452	24.271	5.56	101.2	2.1	0.31	0.0	0.01	0.00	0.11	0.02	41.	1.5	1.4	1.5	0.38
23	17.23	33.452	24.275	5.55	101.1	2.1	0.32	0.0	0.01	0.00	0.11	0.03	30.	1.8	0.91	1.4	0.34
38	17.21	33.453	24.281	5.56	101.2	2.1	0.31	0.0	0.01	0.00	0.11	0.03	13.	1.3	1.3	1.3	0.45
54	17.21	33.454	24.284	5.56	101.2	2.1	0.32	0.0	0.01	0.00	0.12	0.03					
66	17.20	33.453	24.287	5.55	101.0	2.1	0.33	0.0	0.00	0.00	0.13	0.03					
78	16.33	33.433	24.473	5.58	99.8	2.2	0.33	0.0	0.01	0.00	0.22	0.06	1.6	0.61	0.35	0.48	0.42
86	13.70	33.211	24.872	5.67	95.9	4.3	0.60	3.0	0.11	0.18	1.16	0.49					
95	12.23	33.349	25.269	4.87	80.0	9.2	0.96	8.4	0.38	0.32	0.64	0.42	0.65	0.63	0.18	0.40	0.26

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 90.0 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
31 5.3 N	122 40.5 W	08/04/2015	1721 UTC	28 m	1217 - 1900 PST	1212 PST	1859 PST	192.3 mg C/m ²	020

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAEAO	LIGHT	UPTAKE (mg C/m ³)			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	MEAN	DARK
1	15.90	33.018	24.248	5.77	102.1	2.0	0.35	0.0	0.01	0.00	0.12	0.03	95. A	1.6	1.6	1.6	0.23
10	15.88	33.018	24.251	5.80	102.4	2.0	0.34	0.0	0.01	0.00	0.12	0.03					
17	15.86	33.019	24.257	5.79	102.2	2.0	0.34	0.0	0.01	0.00	0.12	0.03	39.	3.0	3.0	3.0	0.23
23	15.76	33.012	24.275	5.79	102.1	2.0	0.35	0.0	0.01	0.00	0.13	0.03	28.	2.8	2.9	2.9	0.24
40	15.58	32.997	24.305	5.80	102.0	2.0	0.35	0.0	0.01	0.00	0.16	0.04	11.	2.6	2.6	2.6	0.27
51	15.58	33.003	24.311	5.80	101.9	2.0	0.35	0.0	0.01	0.00	0.21	0.06					
63	15.51	32.997	24.322	5.81	101.9	2.0	0.35	0.0	0.01	0.00	0.31	0.11					
74	14.50	33.084	24.608	5.78	99.5	2.9	0.41	0.3	0.04	0.01	0.43	0.35	1.7	1.7	1.4	1.6	0.20
84	12.79	33.087	24.957	5.62	93.3	4.3	0.59	2.8	0.10	0.00	0.35	0.36					
92	12.46	33.229	25.133	5.45	89.9	4.9	0.61	3.9	0.07	0.00	0.29	0.33	0.64	0.46	0.64	0.55	0.16

A) INCUBATION LIGHT INTENSITIES WERE 61.6; 38.8; 28.7; 10.9; 1.6; 0.63 PERCENT RESPECTIVELY.

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 93.3 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 57.1 N	117 18.2 W	04/04/2015	1920 UTC	13 m	1212 - 1837 PST	1152 PST	1836 PST	1147.3 mg C/m ²	001

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAE0	LIGHT	UPTAKE (mg C/m ³)			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	MEAN	DARK
2	18.62	33.323	23.836	5.94	111.0	1.7	0.22	0.0	0.02	0.16	0.29	0.11	79. A	17.2	17.0	17.1	0.37
8	18.06	33.316	23.970	6.03	111.4	1.7	0.21	0.0	0.01	0.00	0.41	0.08	39.	21.6	17.2	19.4	0.48
11	16.37	33.255	24.323	6.80	121.5	3.1	0.22	0.0	0.02	0.08	1.07	0.31	27.	29.2	31.5	30.4	1.0
19	12.96	33.255	25.050	6.36	106.0	5.3	0.44	0.1	0.03	0.09	3.09	1.32	11.	65.3	61.3	63.3	0.96
27	11.84	33.307	25.306	4.55	74.1	11.2	1.14	12.7	0.66	0.00	0.98	0.69					
35	11.41	33.346	25.416	4.43	71.6	11.7	1.20	13.2	0.27	0.15	0.71	0.54	1.6	3.6	3.0	3.3	0.20
45	11.01	33.470	25.584	4.10	65.7	15.7	1.44	16.9	0.07	0.02	0.41	0.38	0.49	0.75	0.81	0.78	0.19

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 93.3 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 20.7 N	118 33.7 W	05/04/2015	1730 UTC	22 m	1200 - 1845 PST	1157 PST	1842 PST	248.6 mg C/m ²	008

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAE0	LIGHT	UPTAKE (mg C/m ³)			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	MEAN	DARK
2	17.82	33.309	24.022	5.65	103.9	1.7	0.30	0.0	0.02	0.00	0.20	0.04	87. A	3.5	5.2	4.4	0.23
9	17.82	33.310	24.024	5.63	103.6	1.7	0.29	0.0	0.01	0.00	0.20	0.04					
14	17.81	33.308	24.025	5.65	103.9	1.7	0.29	0.1	0.00	0.00	0.20	0.03	38.	4.6	4.7	4.6	0.22
19	17.80	33.310	24.029	5.70	104.7	1.7	0.30	0.1	0.01	0.00	0.21	0.03	27.	4.8	3.5	4.1	0.25
24	17.79	33.307	24.029	5.65	103.9	1.7	0.30	0.0	0.02	0.00	0.22	0.04					
32	17.59	33.303	24.076	5.69	104.2	1.7	0.31	0.0	0.02	0.00	0.22	0.05	11.	4.3	2.8	3.6	0.25
41	15.16	33.233	24.579	6.00	104.6	1.6	0.36	0.0	0.01	0.00	1.12	0.40					
52	13.40	33.219	24.936	5.96	100.3	3.5	0.46	0.4	0.04	0.02	1.10	0.45					
59	12.47	33.203	25.108	5.53	91.2	5.7	0.69	4.0	0.15	0.01	0.31	0.20	1.6	3.6	2.2	2.9	0.24
74	10.71	33.297D	25.504	4.92	78.2	10.3	1.11	11.5	0.08	0.01	0.10	0.09	0.57	0.66	0.71	0.68	0.15

RV NEW HORIZON

CALCOFI CRUISE 1504

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	06/04/2015	1858 UTC	37 m	1223 - 1851 PST	1206 PST	1851 PST	161.2 mg C/m ²	013

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAE0	LIGHT	UPTAKE (mg C/m ³)			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	MEAN	DARK
1	18.33	33.551	24.083	5.45	101.4	2.0	0.30	0.0	0.00	0.00	0.08	0.02	96. A	1.8	1.1	1.4	0.18
12	18.10	33.544	24.134	5.48	101.4	2.0	0.29	0.0	0.01	0.00	0.08	0.02					
23	18.09	33.556	24.147	5.51	102.1	2.0	0.28	0.0	0.00	0.00	0.09	0.02	39.	1.3	2.0	1.6	0.21
30	18.09	33.547	24.141	5.47	101.3	2.0	0.31	0.0	0.00	0.00	0.09	0.02	29.	0.65	1.9	1.3	0.20
42	18.09	33.554	24.148	5.47	101.3	2.0	0.29	0.0	0.00	0.00	0.09	0.02					
53	18.08	33.550	24.148	5.48	101.5	2.0	0.28	0.0	0.00	0.00	0.10	0.02	11.	1.5	1.4	1.4	0.20
69	17.65	33.524	24.232	5.49	100.8	2.0	0.30	0.0	0.01	0.00	0.12	0.02					
84	14.49	33.142	24.655	5.86	100.8	2.8	0.40	0.0	0.02	0.00	0.22	0.13					
100	12.57	33.136	25.039	5.53	91.4	5.1	0.67	4.1	0.11	0.01	0.33	0.26	1.6	1.3	1.3	0.19	
111	11.47	33.184	25.283	5.30	85.7	6.7	0.82	7.1	0.07	0.00	0.25	0.24					
123	10.85	33.294	25.480	4.96	79.1	9.7	1.03	10.9	0.04	0.00	0.18	0.18	0.61	0.47	0.49	0.48	0.17

RV NEW HORIZON

CALCOFI CRUISE 1504

STATION 93.3 120.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
29 50.6 N	123 35.1 W	07/04/2015	2010 UTC	40 m	1316 - 1905 PST	1216 PST	1901 PST	108.8 mg C/m ²	017

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SI03*	P04*	N03*	N02*	NH4*	CHL-A	PHAE0	LIGHT	UPTAKE (mg C/m ³)			
m	DEG C	THETA	ml/L	PCT	μM	μM	μM	μM	μM	μM	μg/L	μg/L	PCT	1	2	MEAN	DARK
2	17.79	33.327	24.043	5.56	102.3	1.9	0.31	0.0	0.01	0.00	0.06	0.01	93. A	1.4	1.4	1.4	0.19
13	17.54	33.339	24.113	5.57	101.8	1.9	0.31	0.0	0.01	0.01	0.06	0.01					
25	17.51	33.362	24.140	5.56	101.6	1.9	0.30	0.0	0.01	0.00	0.06	0.01	38.	1.2	1.2	1.2	0.24
33	17.48	33.359	24.145	5.56	101.7	1.9	0.31	0.0	0.01	0.00	0.07	0.02	28.	1.2	0.72	0.95	0.26
40	17.47	33.361	24.149	5.56	101.7	1.9	0.30	0.0	0.01	0.00	0.07	0.02					
49	17.45	33.356	24.150	5.56	101.6	1.9	0.31	0.0	0.01	0.00	0.08	0.02					
57	17.44	33.354	24.153	5.57	101.6	1.9	0.31	0.0	0.01	0.00	0.08	0.02	11.	1.1	0.56	0.85	0.26
72	17.41	33.349D	24.156	5.56D	101.5												
90	16.56	33.326	24.341	5.65	101.4	2.1	0.31	0.0	0.01	0.00	0.16	0.07					
107	14.26	33.153	24.714	5.77	98.8	3.2	0.43	0.3	0.03	0.02	0.26	0.13	1.6	0.39	0.65	0.52	0.20
114	13.20	33.207D	24.971	5.54D	92.8												
125	12.09	33.187	25.171	5.47	89.6	5.3	0.67	4.5	0.08	0.02	0.26	0.19					
133	11.25	33.162	25.307	5.33	85.6	7.1	0.85	7.8	0.05	0.00	0.22	0.19	0.61	0.33	0.37	0.35	0.19

A) INCUBATION LIGHT INTENSITIES WERE 61.6; 38.8; 28.7; 10.9; 1.6; 0.63 PERCENT RESPECTIVELY.

CalCOFI Cruise 1504

MACROZOOPLANKTON BIOMASS

Net Mesh Size: 0.505mm

Line	Sta.	Latitude N	Longitude W	Mo/Day	Date	Time (PST)	Water Volume Strained (m ³)	Max. Tow Depth (m)	Volume per 1000 m ³ Strained	
					Start	End			Total (cm ³)	Small (cm ³)
76.7	49.0	35 05.2	120 46.3	04/19	0438	0443	97	39	1017	627
76.7	51.0	35 01.3	120 54.4	04/19	0206	0228	401	207	523	411
76.7	55.0	34 53.3	121 11.6	04/18	2217	2239	418	206	411	270
76.7	60.0	34 43.2	121 33.1	04/18	1754	1817	427	211	370	223
76.7	70.0	34 23.0	122 14.5	04/18	1059	1122	439	213	501	36
76.7	80.0	34 02.8	122 56.5	04/18	0436	0457	439	216	1398	594
76.7	90.0	33 43.0	123 37.9	04/17	2220	2243	421	213	647	100
76.7	100.0	33 23.0	124 18.8	04/17	1613	1635	429	209	14	14
80.0	50.5	34 27.9	120 29.1	04/19	0938	0940	46	12	216	216
80.0	51.0	34 27.0	120 31.4	04/19	1041	1049	147	63	211	170
80.0	55.0	34 18.8	120 47.6	04/16	0329	0354	457	210	885	392
80.0	60.0	34 08.9	121 08.8	04/16	0751	0813	454	202	478	313
80.0	70.0	33 48.5	121 50.6	04/16	1434	1457	455	212	125	59
80.0	80.0	33 28.8	122 31.9	04/16	2044	2106	432	216	268	125
80.0	90.0	33 08.4	123 13.2	04/17	0303	0326	473	208	494	95
80.0	100.0	32 49.2	123 54.6	04/17	0826	0848	433	215	90	37
81.7	43.5	34 24.3	119 48.1	04/15	0744	0746	50	14	80	80
81.8	46.9	34 16.5	120 01.4	04/15	1121	1144	443	212	95	54
83.3	39.4	34 15.9	119 19.8	04/14	2034	2036	56	11	89	89
83.3	40.6	34 13.5	119 24.6	04/14	1925	1928	66	27	181	106
83.3	42.0	34 10.6	119 30.4	04/14	1731	1741	187	91	209	182
83.3	51.0	33 52.7	120 07.8	04/19	1539	1547	164	59	195	195
83.3	55.0	33 44.4	120 24.6	04/14	0803	0825	450	207	64	64
83.3	70.0	33 14.5	121 26.4	04/13	2254	2316	458	212	109	48
83.3	80.0	32 54.7	122 07.2	04/13	1626	1649	437	209	53	53
83.3	90.0	32 34.2	122 48.5	04/13	1016	1038	443	212	284	41
85.4	35.8	34 01.0	118 52.5	04/15	0031	0034	74	18	296	296
86.7	33.0	33 53.4	118 29.4	04/11	0023	0029	113	40	141	141
86.7	35.0	33 49.4	118 37.6	04/11	0308	0332	431	203	109	109
86.7	40.0	33 39.4	118 58.6	04/11	0740	0802	419	211	72	57
86.7	45.0	33 29.4	119 18.8	04/11	1208	1231	445	199	72	72
86.7	50.0	33 19.7	119 39.4	04/11	1615	1622	133	63	181	151
86.7	55.0	33 09.4	120 00.5	04/11	2017	2040	465	210	174	99
86.7	60.0	32 59.2	120 20.8	04/12	0031	0058	589	186	110	105
86.7	80.0	32 19.1	121 42.8	04/12	1248	1311	543	199	22	22
86.7	90.0	31 59.1	122 23.3	04/12	1918	1941	460	207	368	30
86.7	100.0	31 39.3	123 03.6	04/13	0126	0150	479	214	146	83
86.8	32.5	33 53.3	118 26.8	04/10	2234	2237	60	21	167	167
88.5	30.1	33 40.5	118 05.1	04/10	1845	1847	39	14	155	155
90.0	27.7	33 29.7	117 44.8	04/10	1603	1605	41	14	48	48
90.0	28.0	33 29.0	117 46.0	04/10	1518	1523	116	36	52	52
90.0	30.0	33 25.1	117 54.2	04/10	1248	1311	440	211	45	45
90.0	35.0	33 15.2	118 14.7	04/10	0721	0743	435	211	44	44
90.0	37.0	33 11.1	118 23.2	04/10	0553	0614	415	214	63	51
90.0	45.0	32 55.2	118 56.1	04/10	0003	0026	457	209	79	79
90.0	53.0	32 39.0	119 28.5	04/09	1820	1841	424	216	425	71
90.0	60.0	32 25.0	119 57.4	04/09	1245	1310	539	202	45	45
90.0	70.0	32 05.0	120 37.7	04/09	0554	0616	448	216	65	20
90.0	80.0	31 45.1	121 18.9	04/08	2317	2340	453	216	22	22
90.0	90.0	31 24.9	121 59.0	04/08	1638	1659	436	215	28	28
90.0	100.0	31 05.1	122 39.7	04/08	0828	0850	451	207	364	40
90.0	110.0	30 44.9	123 19.6	04/08	0238	0302	466	211	225	39
90.0	120.0	30 25.0	124 00.0	04/07	1957	2020	449	213	570	58
91.7	26.4	33 14.7	117 27.9	04/04	1558	1600	39	15	51	51
93.3	26.7	32 57.3	117 18.4	04/04	1216	1221	79	37	63	63
93.3	28.0	32 54.6	117 23.7	04/04	1940	2002	435	211	55	55
93.3	30.0	32 50.6	117 32.1	04/04	2220	2242	441	212	61	50
93.3	35.0	32 40.9	117 52.4	04/05	0213	0237	478	213	33	33
93.3	40.0	32 30.8	118 12.9	04/05	0622	0645	432	216	46	46
93.3	45.0	32 20.7	118 33.0	04/05	1051	1114	432	209	42	42
93.3	50.0	32 10.6	118 53.1	04/05	1507	1533	530	203	160	87
93.3	55.0	32 00.7	119 13.5	04/05	1926	1948	442	212	719	131
93.3	60.0	31 50.6	119 33.9	04/05	2345	0008	465	210	39	39
93.3	70.0	31 30.7	120 14.3	04/06	0551	0613	434	212	97	83
93.3	80.0	31 10.7	120 54.9	04/06	1213	1236	447	210	9	9
93.3	90.0	30 50.8	121 35.3	04/06	1827	1849	422	213	246	246
93.3	100.0	30 30.6	122 15.2	04/07	0039	0104	505	206	301	44
93.3	110.0	30 10.8	122 55.4	04/07	0652	0715	440	217	9	9
93.3	120.0	29 50.7	123 35.2	04/07	1311	1337	496	211	20	20
93.4	26.4	32 57.1	117 16.4	04/04	1318	1320	44	14	90	90