

OCEANOGRAPHICAL OBSERVATIONS
IN THE INDIAN AND PACIFIC OCEANS IN 1961
H.M.A.S. *GASCOYNE*
Cruise G 2/61

OCEANOGRAPHICAL CRUISE REPORT
NO. 10

DIVISION OF FISHERIES AND OCEANOGRAPHY
COMMONWEALTH SCIENTIFIC AND INDUSTRIAL
RESEARCH ORGANIZATION, AUSTRALIA 1966

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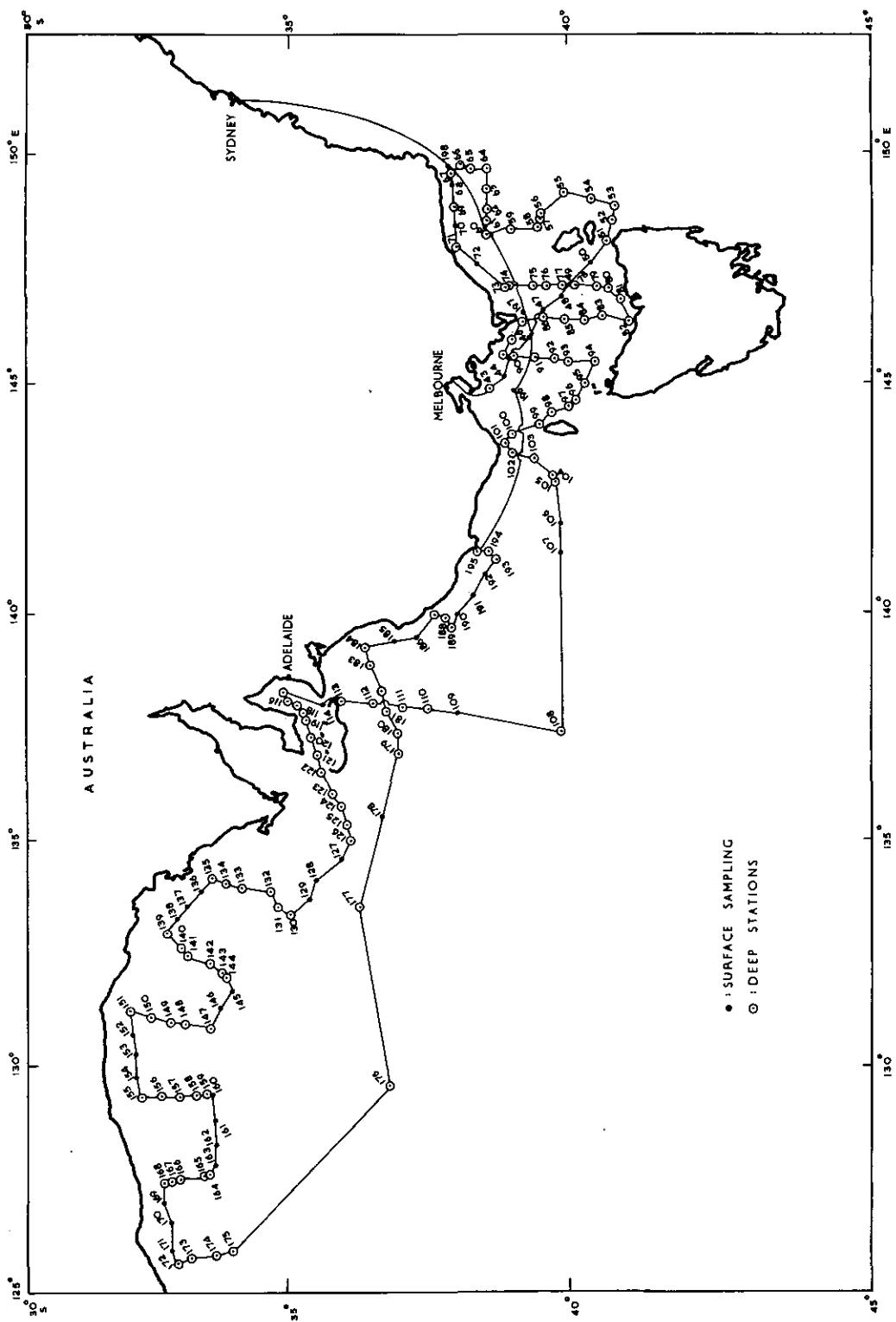
AUSTRALIA

MELBOURNE, 1966

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H.M.A.S. GASCOYNE

Cruise G2/61

February 21 - March 15, 1961

I. INTRODUCTION

This report records the data for the second cruise in 1961 of H.M.A.S. Gascoyne, Royal Australian Navy oceanographical frigate, in the Indian and Pacific Oceans.

Objectives

To make a hydrological survey of Bass Strait and its approaches and of the Great Australian Bight; to check the influence of water from the South Australian Gulfs on Bass Strait; to study the physical processes of heating, cooling and evaporation in these areas.

Itinerary

The cruise began at Melbourne on February 21, occupied a series of 156 stations in Bass Strait and its approaches, in the Great Australian Bight, and in South Australian coastal waters, and ended at Sydney on March 15.

Scientific Personnel

D. Vaux (Cruise Leader)

R.M. Davies

E.L. Deacon (CSIRO Division of Meteorological Physics)

G.C. Irving

B. Scott

J. Staniforth

J. Stevenson (CSIRO Division of Meteorological Physics)

Salinity, oxygen, and inorganic phosphate determinations were done in the ship's laboratory by J. Staniforth. The primary production samples were taken and incubated aboard by

B. Scott, who also made the counts at Cronulla. The samples for pigment determination were taken aboard by B. Scott. The data were processed under the direction of W. Hedge with computer programmes designed by A.D. Crooks. Accuracy of cruise data is the responsibility of the Cruise Leader, D. Vaux.

II. WORK ACCOMPLISHED

One hundred and fifty six stations were worked (G2/43/61 - G2/198/61). Bathythermograph casts were made at 54 stations. Surface hydrology samples were collected at 156 stations, sub-surface hydrology samples at 115 stations, primary production at 14 stations, and pigments at 13 stations.

TABLE 1
WORK DONE AT EACH STATION

Stn No.	BT	Hydrology		Primary Production	Pigments
		1	2		
43		+	+		
44		+			
45		+			
46		+			
47		+			
48		+			
49		+			
50		+			
51		+	+		
52		+	+		
53		+	+		
54		+	+		
55		+	+		
56	+	+	+		
57		+	+		
58		+	+		
59		+	+		
60		+	+		
61	+	+	+		
62		+	+		
63		+	+		
64		+	+		
65		+	+		
66		+	+		

Stn No.	BT	Hydrology		Primary Production	Pigments
		1	2		
67		+	+		
68		+			
69		+	+		
70		+			
71		+	+		
72		+			
73		+	+		
74		+	+		
75		+	+		
76		+	+		
77		+	+		
78		+	+		
79		+	+		
80		+	+		
81		+	+		
82		+	+		
83		+	+		
84		+	+		
85		+	+		
86		+	+		
87		+	+		
88		+	+		
89		+	+		
90		+	+		
91		+	+		
92		+	+		
93		+	+		
94	+	+	+		
95	+	+	+		
96	+	+	+		
97		+	+		
98		+	+		
99	+	+	+		
100	+	+	+		
101	+	+	+		
102	+	+	+		
103	+	+	+		
104	+	+	+		
105	+	+	+		
106		+			
107		+			
108	+	+	+		
109		+			

Stn No.	BT	Hydrology		Primary Production	Pigments
		1	2		
110	+	+	+		
111	+	+	+		
112	+	+	+		
113	+	+	+		
114		+			
115		+	+		
116		+	+		
117		+	+		
118		+	+		
119		+	+		
120		+	+		
121		+	+		
122		+	+		
123		+	+		
124	+	+	+		
125	+	+	+		
126	+	+	+	+	+
127		+			
128		+			
129		+			
130	+	+	+	+	+
131	+	+	+		
132	+	+	+		
133	+	+	+		
134	+	+	+		
135	+	+	+		
136		+			
137		+			
138		+			
139		+	+	+	+
140		+	+		
141		+	+		
142	+	+	+		
143	+	+	+		
144	+	+	+	+	+
145		+			
146		+			
147	+	+	+		
148	+	+	+		
149	+	+	+		
150		+	+		
151	+	+	+	+	+
152		+			

Stn No.	BT	Hydrology		Primary Production		Pigments
		1	2			
153		+				
154		+				
155	+	+	+		+	+
156		+	+			
157		+	+			
158	+	+	+			
159		+	+			
160		+				
161		+		.		
162		+				
163		+				
164	+	+	+		+	+
165	+	+	+			
166	+	+	+			
167	+	+	+		+	+
168	+	+	+			
169		+				
170		+				
171		+				
172		+	+			
173		+	+			
174		+	+			
175		+	+		+	
176	+	+	+		+	+
177	+	+	+		+	+
178		+				
179	+	+	+			
180	+	+	+		+	+
181	+	+	+			
182	+	+	+			
183	+	+	+			
184	+	+	+			
185		+				
186		+				
187	+	+	+		+	+
188	+	+	+			
189	+	+	+			
190		+				
191		+				
192		+				
193	+	+	+		+	+
194	+	+	+			
195	+	+	+			

Stn No.	BT	Hydrology		Primary Production	Pigments
		1	2		
196		+			
197		+			
198		+			

BT Bathythermograms

Hydrology	1	Surface
	2	Subsurface

III. METHOD OF COLLECTION AND ANALYSIS OF SAMPLES

1. Physics

Temperature.- Water temperatures were taken with deep-sea reversing thermometers. Two protected thermometers were used at each depth, together with an unprotected thermometer on all but the upper five Nansen water bottles. Differences between corrected protected thermometer readings were generally less than 0.04 deg C, and the mean values listed in this cruise report are considered accurate to \pm 0.03 deg C.

Thermometric Depth.- Depth calculations were made by the second method described by La Fond (1951), plotting thermometric depth against the difference between thermometric and wire depths. Depths are considered accurate to \pm 5 m at depths less than 200 m, \pm 10 m at depths between about 200 and 400 m, and about 2% at depths from 400 to 1500 m.

Bathythermograph Results.- BT slides have been processed by the N.O.D.C. Washington according to their published manual (N.O.D.C. 1964) and a listing of temperature at 5 m intervals will be included in a later report.

Sigma-t.- Values were calculated from temperature and salinity by computer using the equations of Knudsen (La Fond 1951).

2. Chemistry

Salinity.- A chlorinity-temperature meter of the conductivity type (Hamon 1956) was used on board to estimate chlorinity, subsequently converted to salinity by the relation,

$$\text{Salinity} = 0.03 + 1.805 \times \text{Chlorinity}$$

Dissolved Oxygen.- A version of the standard Winkler method was used to determine the amount of dissolved oxygen in the seawater samples. The version used is a modification of that described by Thompson and Robinson (1939) and differs in some respects from the revision by Jacobsen, Robinson and Thompson (1950). Potassium iodate was used as the iodometric standard, and the reagents necessary to fix the oxygen in solution were used at different concentrations (Rochford 1963). Duplicate titrations were made on approximately every tenth sample. Saturation values were calculated by computer using the simpler of the equations given by Richards and Corwin (1956),

$$\frac{O_2 \text{ (ml/l)} \times (33.5 + T^{\circ}\text{C}) \times 100}{332.4 - (1.854 \times S\%)}$$

Inorganic Phosphate.- The method of Atkins (1923) was used with 1 ml molybdate reagent (300 ml 10% w/v ammonium molybdate and 100 ml 50% v/v sulphuric acid) and 0.1 ml 1% stannous chloride diluted afresh from a 40% stock solution in hydrochloric acid, which was kept under paraffin. The reagents were automatically dispensed by piston dispensers.

Standard phosphate solutions were made up in distilled water. At air temperatures less than 25° analyses were carried out in batches of 10; readings were begun within 10 minutes of adding reagents, and completed within 10 minutes. At air temperatures greater than 25° batches of 6 were analysed; readings were commenced within 5 minutes of adding reagents and completed within 7 minutes. Each batch was compared with a distilled water blank and a 0.65 µg-atom/l standard in a Hilger Spekker absorptiometer using 4 cm cells and Ilford 608 filters. Each day a complete calibration was made using standards up to 3.25 µg-atom/l. Results are given as µg-atom/l without any correction for salt error and are precise to ± 10% for values less than 0.5 µg-atom/l and ± 5% for higher values. If it is wished to correct for salt effects the results given should be multiplied by 1.15.

Nitrate.- After collection, water samples were stored in plastic bottles and preserved with 2 drops of saturated HgCl₂. Nitrate was determined at Cronulla by the strychnidine method (Rochford 1947). The reagent was prepared by adding 0.64 g strychnidine to a litre of nitrate-free sulphuric acid. 5 ml of this reagent were added, with minimum agitation, to 5 ml seawater or standard nitrate solution. The standards were made up in a mixture of equal volumes of artificial seawater and nitrate-

free sulphuric acid. The standards and samples were shaken to distribute the reagent, and the colour developed for 2 hours. The solutions were read in a Unicam SP 600 spectrophotometer at a wavelength of 530 m μ using a 5 mm cell. Samples with an absorbance greater than that of the standard corresponding to 14.4 $\mu\text{g-atom/l}$ were diluted with artificial seawater-sulphuric acid mixture before reading. Results are given in $\mu\text{g-atom/l}$.

3. Primary Production

Samples were taken with twin "light" and "dark" 400 ml Perspex bottles and incubated under constant artificial light of about 1100 ft candles. The ^{14}C method described by Dyson *et al.* (1965) was used.

4. Pigments

Water samples were taken with a plastic sampler and filtered within one or two hours through HA Millipore filters. The filters were placed in glass vials and stored in metal desiccators over silica gel. The analyses were carried out at Cronulla using the method given by Humphrey (1960).

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IV. DATA SHEETS

Hydrology data were processed in a Control Data 3600 Computer and primary production and pigment data in an I.B.M. 1401 Computer. Explanations of the headings for each section are given at the beginning of the relevant part.

DATA

PART 1

HYDROLOGY

DEEP STATIONS

EXPLANATION OF HEADINGSParts 1 and 2Hydrology

STATION	Gives the station identification. For example, G2/43/61 signifies the 43rd station worked by <u>Gascoyne</u> in 1961, on her 2nd cruise for that year
DATE	Given as day/month/year
TIME	Given in Zone Time, and is the time at the beginning of the first cast. The code letter used for the time zone (Table 2) follows the time

TABLE 2CODE FOR TIME ZONES

Exceeding Longitude	Up to but not exceeding	Time Zone (hrs)	Code
07°30'E. -	22°30'E.	-1	A
22°30'E. -	37°30'E.	-2	B
37°30'E. -	52°30'E.	-3	C
52°30'E. -	67°30'E.	-4	D
67°30'E. -	82°30'E.	-5	E
82°30'E. -	97°30'E.	-6	F
97°30'E. -	112°30'E.	-7	G
112°30'E. -	127°30'E.	-8	H
127°30'E. -	142°30'E.	-9	I
142°30'E. -	157°30'E.	-10	K
157°30'E. -	172°30'E.	-11	L
172°30'E. -	180°	-12	M
180°	- 172°30'W.	+12	Y
172°30'W. -	157°30'W.	+11	X
157°30'W. -	142°30'W.	+10	W
142°30'W. -	127°30'W.	+9	V
127°30'W. -	112°30'W.	+8	U
112°30'W. -	97°30'W.	+7	T
97°30'W. -	82°30'W.	+6	S
82°30'W. -	67°30'W.	+5	R
67°30'W. -	52°30'W.	+4	Q
52°30'W. -	37°30'W.	+3	P

Longitude		Time	Code
Exceeding	Up to but not exceeding	Zone (hrs)	
37°30'W.	- 22°30'W.	+2	0
22°30'W.	- 07°30'W.	+1	N
07°30'W.	- 07°30'E.	0	Z

LATITUDE	LONGITUDE	Given in degrees and minutes
SONIC DEPTH		Given in metres, measured at standard sound velocity of 800 fm (1463 m) per second
AIR TEMP. WET DRY		Air temperatures recorded from wet and dry bulb thermometers in °C
WIND DIR. SP.		Wind direction and speed are coded using Tables 8 and 9 in U.S. Hydrogr. Office (1955)
ANEM. HEIGHT		The average height of the anemometer above sea level, given in metres
CLOUD TYPE AMT.		Cloud type and amount are coded using Tables 2 and 3 in U.S. Hydrogr. Office (1955)
VIS.		Visibility is coded using Table 4 in U.S. Hydrogr. Office (1955)
SEA DIR. AMT.		Sea direction and amount are coded using Tables 5 and 8 in U.S. Hydrogr. Office (1955)
SWELL DIR. AMT.		Sea swell direction and amount are coded using Tables 6 and 8 in U.S. Hydrogr. Office (1955)
ATMOS. PRESSURE		Atmospheric pressure given in millibars
WIRE ANGLES CAST 1 CAST 2		Wire angles are measured at the surface and expressed in degrees for each cast. An asterisk indicates that the wire angle was not measured

CAST	The cast number corresponding to the wire angle is shown
DEPTH	Actual sampling depth, given in metres
TEMP.	Sea temperatures recorded in °C
SALINITY	Given in parts per thousand
SIGMA-T	Sigma-t to 2 decimal places
OXYGEN	Given in ml/l
OXYGEN % SAT.	Oxygen percentage saturation
INORG. P, TOTAL P and NITRATE	Given in µg-atom/l
***	Indicates no data available

STATION

TIME

LONGITUDE

6 2 / 43/61 21 / 2 / 61 1700 K 38 38 S 144 55 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRES
 DEPTH WT DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

76 *** *** * * 16 * * * * * * * * * * 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1	0	19.90	35.420	25.13	5.31	106	0.14	***
1	25	17.47	35.350	25.69	5.56	106	0.10	***
1	50	13.41	35.260	26.53	4.66	82	0.39	***
1	75	13.40	35.260	26.53	4.75	83	0.38	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
6 24 51/61	22/ 2/61	0930 K	40 40 S	148 10 E					
SONIC DEPTH	AIR TEMP., WET DRY	WIND, DIR. SP.	ANEM., HEIGHT	CLOUD TYPE AMT.	VIS., DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3 WIRES ANGLES
62	20.0	21.1	1.3	2	16 *	1 *	*	1007.1	0 * *
CAST	DEPTH	TEMP.,	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.11	35.590	25.20	5.11	103	0.14	***	***
1	28	20.10	35.590	25.20	5.11	103	0.15	***	***
1	58	20.10	35.590	25.20	5.04	101	0.18	***	***

STATION DATE TIME LATITUDE LONGITUDE

6 2/ 52/61 22/ 2/61 1157 K 40 43 S 148 36 E

SONIC AIR TEMP. WIND
DEPTH WET DRY DIR. SP. ANEM. HEIGHT CLOUD
TYPE AMT.

61 20.6 22.2 0.1 2 16 2 1 7 * * 06 1 1006.5 * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGFN % SAT. INORG. P TOTAL P NITRATE

1	0	20.38	35.580	25.12	5.42	110	0.07	***
1	25	18.64	35.570	25.57	5.49	107	0.06	***
1	55	15.71	35.380	26.12	4.89	90	0.40	***

STATION	DATE	TIME	LATITUDE	LONGITUDE											
					SONIC DEPTH	AIR TEMP.	WIND WET DRY DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	swell	ATMOS. PRESSURE	CAST1 CAST2	WIRE ANGLES
6 2/ 53/61	22/ 2/61	1315 K	40 46 S	148 53 E	988	21.1	22.8	01	2	16	1	7	8	*	*
													05	1	1006.5
														0	0
														*	*
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN				OXYGEN % SAT.		INORG. P	TOTAL P	NITRATE	
2	0	19.88		35.540	25.22	5.34				107		0.09	***		
2	25	18.93		35.530	25.46	5.53				109		0.10	***		
2	50	16.56		35.440	25.97	5.25				99		0.24	***		
2	75	14.78		35.370	26.32	4.91				89		0.50	***		
2	97	13.92		35.320	26.47	4.80				85		0.59	***		
2	145	13.07		35.250	26.59	4.90				85		0.68	***		
2	193	12.35		35.150	26.66	4.88				84		0.70	***		
1	286	11.01		34.970	26.77	4.85				81		0.84	***		
1	471	8.75		34.650	26.90	5.03				79		1.09	***		
1	659	7.85		34.580	26.99	4.52				70		1.36	***		
1	837	5.60		34.480	27.21	4.20				61		1.61	***		

STATION DATE TIME LATITUDE LONGITUDE

G 2/ 54/61 22/ 2/61 1645 K 40 24 S 149 01 E

SONIC AIR TEMP. WIND ANEM. CLOUD
DEPTH DRY DIR. SP. HEIGHT TYPE AMT.

1920 21.1 23.3 02 3 16 1 2 7 02 2 02 1 1004.2 0 * *

CAST DEPTH TMP., SALINITY SIGMA-T OXYGEN OXYGEN % SAT.

CAST	DEPTH	TMP.,	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.13	35.710	25.02	5.20	107	0.12	***	***
1	24	20.61	35.710	25.16	5.14	104	0.11	***	***
1	47	18.74	35.600	25.56	5.27	103	0.19	***	***
1	70	16.84	35.520	25.97	5.24	99	0.28	***	***
1	94	15.20	35.430	26.28	4.78	87	0.62	***	***
1	142	13.74	35.310	26.50	4.91	87	0.70	***	***
1	189	12.97	35.240	26.60	4.97	86	0.72	***	***
1	284	11.39	35.010	26.73	4.85	81	0.96	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
SONIC DEPTH	AIR TEMP. WET	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL, DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
6 2/ 55/61	22/ 2/61	2025 K	39 57 S	149 12 E					
2468	21.1	22.2	35	3	16	8	6	7	02 2 1005.3 5 * *
CAS#	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1 0	20.79	35.720	25.12	5.19	106	0.12	***	***	***
1 24	20.54	35.710	25.18	4.79*	97	0.16	***	***	***
1 47	19.24	35.570	25.41	5.31	105	0.19	***	***	***
1 70	16.86	35.470	25.93	5.35	101	0.28	***	***	***
1 94	15.25	35.390	26.24	4.79	88	0.59	**	**	***
1 140	13.79	35.270	26.46	4.76	84	0.77	***	***	***
1 186	13.05	35.220	26.57	4.95	86	0.73	***	***	***
1 270	11.39	34.970	26.70	4.85	81	0.92	***	***	***
	*	PROPERTY DOUBTFUL							
	+	PROPERTY INTERPOLATED							

STATION	DATE			TIME			LATITUDE			LONGITUDE		
G 2 / 56/61	23 / 2/61			0130 K			39 31 S			148 46 E		
SONIC DEPTH	AIR TEMP. WEI DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3	WIRE ANGLES		
914	20.6	22.2	113	5	16	*	0	8	03	2	05	1
											1001.4	0
											0	0
											*	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.		INORG. P	TOTAL P	NITRATE		
2	0	20.81	35.670	25.07	5.20	106		0.10	***	***		
2	23	20.74	35.680	25.10	5.20	106		0.11	***	***		
2	46	18.01	35.530	25.69	5.50	106		0.14	***	***		
2	68	16.60	35.510	26.02	5.17	97		0.26	***	***		
2	95	15.29	35.430	26.26	4.79	88		0.52	***	***		
2	135	13.77	35.320	26.50	4.84	86		0.66	***	***		
2	190	12.78	35.210	26.62	4.85	84		0.74	***	***		
1	284	10.75	34.910	26.77	4.74	78		0.97	***	***		
1	470	8.44	34.620	26.93	4.61	72		1.29	***	***		
1	657	7.18	34.510	27.03	4.39	67		1.44	***	***		
1	844	6.02	34.460	27.15	4.24	62		1.60	***	***		

STATION	DATE	TIME	LATITUDE	LONGITUDE					
G 2/ 57/61	23/ 2/61	0300 K	39 30 S	148 41 E					
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL, DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
146	20.6	22.2	01	7	16 *	0	8	01	3 05 4 1001.3 0 * * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.64	35.660	25.11	5.20	106	0.12	***	***
1	25	20.61	35.670	25.13	5.08	103	0.13	***	***
1	50	18.67	35.600	25.58	5.37	105	0.16	***	***
1	75	14.78	35.400	26.35	4.75	86	0.54	***	***
1	100	13.75	35.290	26.48	4.88	86	0.68	***	***
1	140	12.81	35.180	26.59	4.89	85	0.75	***	***

STATION G 2/ 58/61 DATE 23/ 2/61 TIME 0410 K LATITUDE 39 28 S LONGITUDE 148 29 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

51	20.6	22.2	02	4	16	0	1	8	02	3	04	1	1001.3	0	*	*
CAST	DEPTH	TEMP.		SALINITY		SIGMA-T		OXYGEN		OXYGEN % SAT.		INORG. P		TOTAL P		NITRATE
1	0	19.75		35.560		25.27		5.38		108		0.17		***		
1	25	18.31		35.600		25.67		5.29		103		0.25		***		
1	40	16.28		35.420		26.02		4.97		93		0.50		***		

STATION	DATE			TIME			LATITUDE			LONGITUDE		
	SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2	WIRE ANGLES CAST3	
6 2/ 59/61		23 / 2/61			0625 K				39 06 S	148 28 E		
	82	19.4	21.1	32	5	16	1	2	8	34	2	02 1 1003.4 0 *
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE	
	1	0	19.95	35.520	25.19	5.32	107	107	0.18	***	***	
	1	25	17.57	35.510	25.79	5.20	100	100	0.23	***	***	
	1	50	14.48	35.310	26.34	5.05	91	91	0.63	***	***	
	1	75	13.48	35.240	26.50	4.91	86	86	0.75	***	***	

STATION G 2 / 60/61 DATE 23 / 2/61 TIME 1000 K LATITUDE 38 40 S LONGITUDE 148 19 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

155 20.0 22.8 25 4 16 8 8 25 2 25 1 1006.0 0 * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.05	35.430	25.35	5.39	106	0.22	***	***
1	25	18.90	35.410	25.38	5.48	106	0.26	***	***
1	50	17.43	35.380	25.72	5.50	105	0.30	***	***
1	75	15.30	35.390	26.22	5.30	97	0.51	***	***
1	100	14.10	35.270	26.39	5.05	90	0.66	***	***
1	130	14.06	35.270	26.40	5.07	90	0.64	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE						
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3	WIRE ANGLES
6 2/ 61/61	25/ 2/61	1135 K	38 41 S	148 33 E						
1554 20.6 24.4	25 4	16	8 7	8	25	2	25	1 1005.6	0 0 0	*
CAST	DEPTH	TFMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE	
2 0	20.88	35.710	25.09	5.21	1.06	0.20	***			
2 25	20.39	35.700	25.21	5.10	1.03	0.23	***			
2 50	18.27	35.570	25.66	5.48	1.06	0.24	***			
2 74	15.47	35.400	26.19	4.98	0.91	0.47	***			
2 98	14.38	35.340	26.39	4.91	0.88	0.68	***			
2 146	13.65	35.270	26.49	4.82	0.85	0.71	***			
2 194	12.90	35.210	26.59	4.95	0.86	0.81	***			
1 376	9.96	34.810	26.83	4.77	0.77	1.11	***			
1 561	8.25	34.620	26.96	4.73	0.74	1.35	***			
1 752	6.70	34.460	27.06	4.42	0.66	1.62	***			
1 1023	4.72	34.470	27.31	4.10	0.58	1.85	***			

STATION	DATE			TIME			LATITUDE			LONGITUDE		
6 2/ 62/61	23/ 2/61			1330 K			38 41 S			148 47 E		
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR.	ANEM. SP.	CLOUD HEIGHT	TYPE AMT.	VIS.	SEA DIR. ANG.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1	CAST2	CAST3
2560	20.0	23.9	24	3	16	1	8	8	24	2	26	1
										1005.1	0	0
CAST	DEPTH	TEMP.		SALINITY		SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE	
2	0	21.12		35.720		25.03	4.88	100	0.16	***		
2	24	20.75		35.710		25.12	4.97	101	0.18	***		
2	48	18.81		35.690		25.62	5.45	107	0.20	***		
2	72	16.43		35.470		26.03	3.83*	72	0.31	***		
2	95	15.26		35.390		26.23	4.57	84	0.56	***		
2	143	13.78		35.280		26.47	4.85	86	0.71	***		
2	191	12.91		35.190		26.58	4.93	86	0.74	***		
1	276	11.10		34.940		26.73	4.67	78	0.93	***		
1	434	8.77		34.620		26.88	5.03	79	1.20	***		
1	616	7.60		34.580		27.02	4.44	68	1.47	***		
1	798	6.03		34.460		27.14	4.34	64	1.69	***		
1	882	4.97		34.430		27.25	4.10	59	1.80	***		

* PROPERTY DOUBTFUL
 + PROPERTY INTERPOLATED

STATION	DATE			TIME			LATITUDE			LONGITUDE				
	AIR TEMP.	WIND DIR.	SP.	ANEM.	CLOUD HEIGHT	TYPE AMT.	VIS.	SEA DIR.	AMT.	SHELL DIR.	AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3	WIRE ANGLES
6 2/ 63/61				23 / 2/61			1615 K			38 39 S		1003.8	0 0 *	149 15 E
2560	18.9	22.8	24	2	16	1	6	8	24	2	25	1	1003.8	0 0 *
CAST	DEPTH	TEMP.			SALINITY		SIGMA-T	OXYGEN		OXYGEN % SAT.		INORG. P	TOTAL P	NITRATE
2	0	20.77			35.690		25.10	5.33		109		0.16	***	***
2	25	20.52			35.650		25.14	5.16		105		0.14	***	***
2	50	18.20			35.480		25.61	5.30		103		0.19	***	***
2	74	16.24			35.440		26.05	4.79		89		0.30	***	***
2	98	14.96			35.370		26.28	5.06		92		0.52	***	***
2	147	13.35			35.250		26.53	4.85		85		0.75	***	***
2	196	12.60			35.200		26.65	4.79		83		0.76	***	***
1	272	10.97			34.930		26.74	4.77		79		0.91	***	***
1	458	8.48			34.590		26.90	5.03		79		1.27	***	***
1	642	7.17			34.510		27.03	4.54		69		1.56	***	***
1	771	6.13			34.480		27.15	4.37		65		1.66	***	***
1	852	5.45			34.440		27.20	4.06		59		1.76	***	***

STATION DATE TIME LATITUDE LONGITUDE

6 2/ 64/61 23/ 2/61 1915 K 38 39 S 149 44 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRES
DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

2743 18.9 21.7 24 2 16 1 8 8 * * 25 1 1004.6 0 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	22.00	35.710	24.78	4.97	104	0.13	***	***
2	25	21.96	35.730	24.80	4.91	102	0.17	***	***
2	50	20.90	35.700	25.07	5.15	105	0.23	***	***
2	75	17.57	35.550	25.82	4.88	94	0.35	***	***
2	100	16.37	35.470	26.04	4.08	76	0.58	***	***
2	125	14.82	35.410	26.35	4.73	86	0.63	***	***
2	150	14.82	35.410	26.47	4.31	76	0.79	***	***
2	200	13.71	35.270	26.64	4.70	81	0.81	***	***
1	280	12.34	35.130	26.85	4.73	76	1.12	***	***
1	468	9.49	34.730	27.00	4.39	68	1.46	***	***
1	653	7.76	34.580	27.13	4.30	64	1.63	***	***
1	843	6.26	34.480	27.32	4.16	59	1.75	***	***
1	1030	4.52	34.460						

STATION	DATE	TIME	LATITUDE	LONGITUDE					
SONIC DEPTH	AIR TEMP. WEI DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL, DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
6 2/ 65/61	23 / 2/61	2145 K	38 19 S	149 43 E					
1097	18.9 22.2	00 0	16 *	0	8 *	*	25 1	1004.6	0 0 0 *
CAST	DEPTH	TEMP.	SALINITY	SIGNAL-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	22.19	35.760	24.76	5.09	107	0.22	***	***
2	25	20.97	35.810	25.14	5.16	106	0.22	***	***
2	50	18.62	35.600	25.60	4.30	84	0.46	***	***
2	75	17.97	35.620	25.77	4.49	87	0.51	***	***
2	100	16.17	35.420	26.05	4.19	78	0.63	***	***
2	150	14.42	35.310	26.36	4.55	82	0.76	***	***
2	200	14.00	35.360	26.48	4.89	87	0.72	***	***
1	280	12.38	35.100	26.61	4.64	80	0.89	***	***
1	468	9.97	34.800	26.82	4.61	75	1.17	***	***
1	654	8.31	34.610	26.94	4.65	72	1.41	***	***
1	935	4.63	34.490	27.34	4.07	58	1.87	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
G 2/ 66/61	23/ 2/61	2350 K	38 06 S	149 45 E					
SONIC DEPTH	AIR TEMP.	WIND DIR.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2 CAST3
996	18.9	21.7	14 0	16 *	8 7	*	25 1	1005.0	0 *

CAST.	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.68	35.450	25.21	5.44	108	0.16	***	***
1	25	18.07	35.440	25.61	5.36	104	0.21	***	***
1	50	16.16	35.430	26.06	4.58	85	0.39	***	***
1	75	14.45	35.330	26.36	4.52	81	0.61	***	***
1	100	13.73	35.250	26.45	4.53	80	0.69	***	***
1	150	10.90	34.950	26.77	4.74	79	0.92	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
SONIC DEPTH	AIR TEMP. WEI	WIND DRY DIR. SP.	ANEM, HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3 WIRE ANGLES
6 2/ 67/61	24/ 2/61	0120 K	37 55 S	149 43 E					
128 18.9 22.2	15 3	16 *	0 8 *	*	25 1	1002.6	0	*	*
CAST	DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1 0	19.98	35.520	25.18	5.36	108	0.17	***		
1 25	16.91	35.520	25.95	5.06	96	0.31	***		
1 50	15.65	35.390	26.15	4.51	83	0.56	***		
1 75	13.42	35.230	26.50	4.70	83	0.75	***		
1 100	12.94	35.210	26.59	4.94	86	0.76	***		
1 120	12.93	35.220	26.60	4.91	85	0.76	***		

STATION	DATE			TIME			LATITUDE			LONGITUDE		
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR.	SEA AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2	WIRE ANGLES CAST3		
6 2/ 69/61		24/ 2/61		0 445 K		38 01 S		148 56 E				
113 18.3 19.4	99	2	16	1 3	7	*	26	1	1002.5	0	*	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE			
1 0	18.90	35.410	25.38	5.56	109	0.14	***					
1 25	16.67	35.380	25.90	5.60	105	0.21	***					
1 50	14.65	35.330	26.32	4.98	90	0.50	***					
1 75	13.62	35.290	26.51	4.73	83	0.71	***					
1 110	13.58	35.270	26.50	4.67	82	0.75	***					

STATION	DATE	TIME	LATITUDE	LONGITUDE			
G 2/ 71/61	24 / 2/61	0900 K	38 08 S	148 00 E			
SONIC DEPTH	AIR TEMP. WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3
53	18.9 21.1	25 3	16 8 1	7 25 2	27 1	1004.0	0 * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P TOTAL P NITRATE
1	0	19.85	35.460	25.17	5.21	104	***
1	25	15.56	35.380	26.16	4.95	91	***
1	45	15.51	35.350	26.15	4.45	82	***

STATION DATE TIME LATITUDE LONGITUDE

G 2/ 73/61 24/ 2/61 1430 K 38 49 S 147 12 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
DEPTH DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

49 16.7 20.6 25 3 16 8 3 8 24 2 25 1 1003.2 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1	0	20.22	35.400	25.03	5.33	107	0.18	***
1	10	19.28	35.400	25.27	5.45	108	0.19	***
1	20	17.09	35.390	25.81	5.33	101	0.25	***
1	30	17.06	35.390	25.82	5.27	100	0.32	***
1	45	17.05	35.390	25.82	5.21	99	0.36	***

STATION		DATE		TIME		LATITUDE		LONGITUDE	
SONIC DEPTH	AIR TEMP.	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3 WIRE ANGLES
6 2/ 74/61		24 / 2/61		1640 K		39 06 S		1002.5	0 * * *
55 17.8	20.6	24	3	16 0 8	8	24 2	24 1	1002.5	0 * * *
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P NITRATE
1 0	19.99	35.510		25.17	5.45	109	0.17	***	***
1 10	19.94	35.500		25.18	5.48	110	0.15	***	***
1 20	17.79	35.470		25.70	5.27	101	0.21	***	***
1 30	17.67	35.470		25.73	5.20	100	0.20	***	***
1 50	17.60	35.470		25.75	5.27	101	0.43	***	***

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STATION	DATE		TIME		LATITUDE		LONGITUDE		
	6 2 /	75/61	24 /	2 / 61	1820	K	39	22 S	
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
58	17.8	21.1	26	4	16	1	5	8	24 * * * * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.95	35.520	25.45	5.63	111	0.25 ***	0.24 ***	***
1	10	18.78	35.530	25.50	5.48	107	0.24 ***	0.28 ***	***
1	20	18.34	35.520	25.60	5.45	106	0.28 ***	0.29 ***	39 ***
1	30	18.06	35.510	25.66	5.30	103	0.29 ***	0.31 ***	***
1	55	17.91	35.500	25.69	5.23	101			

STATION		DATE		TIME		LATITUDE		LONGITUDE	
SONIC DEPTH	AIR TEMP. WET	WIND DRY	ANEM. SP.	CLOUD HEIGHT	VIS. TYPE AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
6	2 /	76/61	24 /	2 / 61		2020 K		39 38 S	147 12 E
60	17.8	21.1	26	4	16	8	8	26	2
								24	1
								1002.0	0
								*	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INDKG. P	TOTAL P	NITRATE
1	0	19.75	35.540	25.26	5.36	107	0.18	***	***
1	10	19.74	35.530	25.25	5.17	103	0.15	***	***
1	20	19.71	35.530	25.26	5.33	106	0.18	***	***
1	30	19.25	35.520	25.37	5.23	104	0.20	***	***
1	55	18.37	35.530	25.60	5.03	98	0.28	***	***

STATION DATE TIME LATITUDE LONGITUDE

6 2/ 77/61 24/ 2/61 2200 K 39 54 S 147 12 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA WIRE ANGLES
DEPTH DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. SWELL ATMOS. CAST1 CAST2 CAST3

64 16.7 20.0 25 5 16 8 6 8 25 2 27 1 1003.3 0 * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1	0	19.72	35.520	25.25	5.03	100	0.15	***
1	10	19.68	35.510	25.25	5.34	107	0.14	***
1	20	19.57	35.510	25.28	5.39	107	0.16	***
1	30	18.80	35.500	25.47	5.15	101	0.20	***
1	60	17.49	35.430	25.74	4.48	86	0.30	***

STATION		DATE		TIME		LATITUDE		LONGITUDE	
SONIC DEPTH	AIR TEMP. WEI	WIND DRY. DIR.	ANEM. SP.	CLOUD HEIGHT	VIS. TYPE AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
G 2/ 78/61		24/ 2/61		2335 K		40 10 S		147 12 E	
68	16.7	19.4	27	5	16	8	4	8	27
									2
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.66	35.460	25.22	5.32	106	0.15	***	***
1	10	19.61	35.460	25.23	5.35	107	0.13	***	***
1	20	18.59	35.440	25.48	5.44	106	0.17	***	***
1	30	18.25	35.440	25.57	4.91	95	0.21	***	***
1	50	18.05	35.430	25.61	4.82	93	0.29	***	***
1	60	17.97	35.430	25.63	4.79	92	0.30	***	***

STATION DATE TIME LATITUDE LONGITUDE

6 2/ 79/61 25/ 2/61 0120 K 40 25 S 147 12 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
DEPTH WEI DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

64 16.7 19.4 27 4 16 8 6 8 26 3 25 1 1001.4 0 * *

CAST DEPTH TEMP. SALINITY SIGMANT OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1	0	19.81	35.440	25.17	5.29	106	0.09	***
1	10	19.77	35.440	25.18	5.29	106	0.11	***
1	20	19.63	35.450	25.22	5.27	105	0.12	***
1	30	18.35	35.430	25.53	5.27	102	0.19	***
1	60	17.45	35.400	25.73	4.58	87	0.25	***

STATION	DATE		TIME		LATITUDE		LONGITUDE	
	6 2 /	80/61	25 /	2/61	0307	K	40	42 S
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE
58	16.7	18.9	25	6	16	8	6	7
							25	4
							24	4
							1002.0	0
							*	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P NITRATE
1	0	19.80	35.540	25.25	5.29	106	0.14	***
1	10	19.72	35.530	25.26	5.40	108	0.10	***
1	20	19.73	35.510	25.24	5.41	108	0.11	***
1	30	19.07	35.490	25.40	5.53	109	0.12	***
1	55	17.24	35.400	25.78	4.70	89	0.32	***

STATION

TIME

LATITUDE

LONGITUDE

G 2/ 81/61

25 / 2/61 0500 K 40 48 S 146 55 E

SONIC AIR TEMP., WIND
DEPTH WET DRY DIR. SP.
ANEM. HEIGHT CLOUD
TYPE AMT.

66 16.1 18.3 28 4 16 8 5 7 25 2 29 1 1004.0 2 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN

1	0	19.70	35.460	25.21	5.34	107	0.15	***
1	10	19.63	35.480	25.24	5.35	107	0.12	***
1	20	19.64	35.480	25.24	5.32	106	0.17	***
1	30	19.02	35.460	25.38	5.47	108	0.16	***
1	50	18.08	35.430	25.60	5.06	98	0.24	***
1	64	15.53	35.360	26.16	4.91	90	0.42	***

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STATION	DATE			TIME			LATITUDE			LONGITUDE		
	AIR TEMP.	WIND DRY SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST 1	CAST 2	CAST 3	
6 2 / 82/61					0720 K			40 54 S		146 28 E		
									*	*	*	
SONIC DEPTH	WET DRY	DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST 1	CAST 2	CAST 3	
62 16.7 18.9	28 4	16	8 2	8	28	2	28	1 1002.1	0	*	*	
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE			
1	0	19.68	35.500	25.25	5.35	107	0.16	0.16	***	***		
1	10	19.57	35.520	25.29	5.31	106	0.12	0.12	***	***		
1	20	19.56	35.510	25.28	5.34	106	0.14	0.14	***	***		
1	30	19.01	35.490	25.41	5.44	107	0.23	0.23	***	***		
1	50	18.70	35.480	25.48	5.37	105	0.24	0.24	***	***		
1	60	17.99	35.450	25.64	4.99	96	0.31	0.31	***	***		

STATION		DATE	TIME	LATITUDE	LONGITUDE			
6 2/ 83/61		25/ 2/61	0935 K	40 35 S	146 30 E			
SONIC DEPTH	AIR TEMP. WEI DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS., SEA DIR. AMT.	SWELL, DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
76 17.2	20.0	26 4	16 8	3 8	26 2	27 4	1002.8	0 * *
CAST	DEPTH	TEMP.	SALINITY	SIGNAL-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P NITRATE
1	0	19.70	35.490	25.23	5.44	109	0.15	***
1	10	19.49	35.490	25.29	5.37	107	0.10	***
1	20	19.62	35.480	25.25	5.41	108	0.12	***
1	30	19.54	35.460	25.25	5.38	107	0.12	***
1	50	16.49	35.370	25.94	5.20	97	0.37	***
1	75	14.22	35.400	26.47	4.85	87	0.48	***

STATION		DATE		TIME		LATITUDE		LONGITUDE
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS., SEA DIR. AMT.	SWELL, DIR. AMT.	ATMOS., PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
6 2/ 84/61		25/ 2/61		1155 K		40 15 S		146 28 E
77 16.1 18.3	26 6	16	8 4	8	26 2	25 4	1003.5	2 * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P NITRATE
1 0	19.86	35.520	25.21	5.21	104	-	0.10	***
1 10	19.84	35.550	25.24	5.32	106	-	0.12	***
1 20	19.83	35.530	25.23	5.32	106	-	0.12	***
1 30	19.58	35.520	25.29	5.46	109	-	0.11	***
1 50	13.50	35.410	26.63	5.79	102	-	0.25	***
1 75	13.12	35.390	26.69	4.82	84	-	0.43	***

STATION

DATE

TIME

DEPTH

SALINITY

LATITUDE

LONGITUDE

6 2/ 85/61 25/ 2/61 1400 E 39 55 S 146 29 E

SONIC
ALH TEMP.
WHT DRY SP.
DEPTH

WIND
DIR. SP.

ANEM.
HEIGHT

CLOUD
TYPE AMT.

VIS.
HR. AMT.

SEA
DIR. AMT.

SWELL

ATMOS.
PRESSURE

WIRE ANGLES
CAST1 CAST2 CAST3

76 17.2 20.0 25 5 16 6 4 8 26 3 24 1 1005.1 5 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1	0	19.79	35.500	25.22	5.38	108	0.11	***	***
1	10	19.71	35.500	25.24	5.44	109	0.14	***	***
1	20	19.70	35.500	25.24	5.41	108	0.11	***	***
1	30	19.28	35.500	25.35	5.47	108	0.12	***	***
1	50	13.41	35.350	26.60	6.01	106	0.28	***	***
1	75	12.94	35.390	26.73	4.90	85	0.47	***	***

STATION		DATE		TIME		LATITUDE		LONGITUDE				
SONIC DEPTH	AIR TEMP. KEL	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL	ATMOS. DIR. AMT.	PRESSURE	CAST1	CAST2	CAST3
6 2 /	86/61	25 / 2/61		1622 K		39 34 S		146 30 E				
71	16.7	19.4	25	5	16	8	6	8	25	3	24	4
CAST	DEPTH	TEMP.		SALINITY		SIGMA-T		OXYGEN	OXYGEN X SAT.		INORG. P	
1	0	19.70		35.520		25.26		5.47	109		0.16	***
1	10	19.65		35.490		25.25		5.38	107		0.14	***
1	20	19.65		35.510		25.26		5.38	107		0.14	***
1	30	18.34		35.470		25.56		5.39	105		0.25	***
1	40	16.44		35.380		25.96		5.26	98		0.25	***
1	50	15.21		35.370		26.23		5.76	105		0.26	***
1	70	13.76		35.380		26.55		4.59	81		0.49	***

LONGITUDE

LATITUDE

TIME

DEPTH

STATION

G 2/ 87/61 25/ 2/61 1900 K 39 11 S 146 29 E

SONIC AIR TEMP. WIND
DEPTH DRY DIR. SP. ANEM. CLOUD
WEI HEIGHT TYPE AMT.

66 15.6 18.3 25 5 16 9 3 7 25 2 25 1 1007.0 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN X SAT.

1	0	19.07	35.400	25.33	5.46	108	0.09	***
1	10	18.93	35.410	25.37	5.49	108	0.11	***
1	20	18.89	35.420	25.39	5.49	108	0.10	***
1	30	18.28	35.410	25.53	5.35	104	0.16	***
1	40	17.81	35.420	25.66	5.28	102	0.20	***
1	50	16.74	35.400	25.90	5.06	95	0.28	***
1	65	15.26	35.390	26.23	4.64	85	0.39	***

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WIRE ANGLES
CAST1 CAST2 CAST3ATMOS. PRESSURE
DIR. AMT.

SWELL

ATMOS. PRESSURE
DIR. AMT.WIRE ANGLES
CAST1 CAST2 CAST3ATMOS. PRESSURE
DIR. AMT.

SWELL

ATMOS. PRESSURE
DIR. AMT.WIRE ANGLES
CAST1 CAST2 CAST3ATMOS. PRESSURE
DIR. AMT.

SWELL

ATMOS. PRESSURE
DIR. AMT.WIRE ANGLES
CAST1 CAST2 CAST3ATMOS. PRESSURE
DIR. AMT.

SWELL

ATMOS. PRESSURE
DIR. AMT.WIRE ANGLES
CAST1 CAST2 CAST3ATMOS. PRESSURE
DIR. AMT.

SWELL

ATMOS. PRESSURE
DIR. AMT.WIRE ANGLES
CAST1 CAST2 CAST3ATMOS. PRESSURE
DIR. AMT.

SWELL

ATMOS. PRESSURE
DIR. AMT.

STATION	DATE	TIME	LATITUDE	LONGITUDE					
6 2/ 88/61	25/ 2/61	2205 K	39 00 S	145 58 E					
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. SEA	DIR. AMT.	SWELL	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
61 16.1 18.9	22 4	16	8 5	8	22	3	21	1 1010.6	5 * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1 0	19.71	35.410	25.17	5.35	107	0.09	***	***	***
1 10	19.64	35.410	25.19	5.35	107	0.08	***	***	***
1 20	19.65	35.410	25.18	5.29	105	0.10	***	***	***
1 30	19.54	35.420	25.22	5.38	107	0.10	***	***	***
1 40	17.67	35.350	25.64	5.53	106	0.20	***	***	***
1 50	16.44	35.330	25.92	5.34	100	0.22	***	***	***
1 60	14.34	35.300	26.37	5.15	92	0.30	***	***	***

STATION

TIME

DATE

LATITUDE

LONGITUDE

G 2/ 89/61 26/ 2/61 0100 K 38 47 S 145 36 E

SONIC AIR TEMP., WIND
DEPTH WEI DRY DIR. SP. ANEM. HEIGHT CLOUD TYPE AMT.

61 16.1 18.9 25 5 16 8 5 8 26 4 25 1 1009.7 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT.

1	0	19.29	35.360	25.24	5.24	104	0.11	***
1	10	19.24	35.370	25.26	5.27	104	0.14	***
1	20	19.12	35.350	25.28	5.24	103	0.12	***
1	30	18.03	35.340	25.54	5.29	102	0.16	***
1	40	16.18	35.300	25.95	5.31	99	0.21	***
1	50	14.25	35.270	26.36	4.24	76	0.31	***
1	60	14.04	35.260	26.40	4.63	82	0.34	***

STATION

DATE

LATITUDE

TIME

LONGITUDE

G 2/ 90/61 26/ 2/61 0300 K 39 05 S 145 36 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRES
DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

71 16.1 18.9 25 6 16 8 4 8 25 4 25 4 1009.9 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1	0	19.59	35.490	25.26	5.21	104	0.09	***
1	10	19.56	35.490	25.27	5.12	102	0.12	***
1	20	19.57	35.490	25.27	5.02	100	0.11	***
1	30	19.57	35.500	25.27	5.15	103	0.12	***
1	50	13.50	35.350	26.58	4.82	85	0.40	***
1	70	13.49	35.350	26.58	4.53	80	0.41	***

STATION

LATITUDE

TIME

DATE

LONGITUDE

G 2/ 91/61

26/ 2/61

145 33 E

SONIC AIR TEMP., WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRES
 DEPTH DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

75 16.7 18.9 23 5 16 9 2 7 23 2 23 1 1010.7 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1	0	19.52	35.500	25.29	5.38	107	0.09	***
1	10	19.45	35.500	25.31	5.35	106	0.12	***
1	20	19.46	35.500	25.30	5.38	107	0.12	***
1	30	19.46	35.500	25.30	5.40	107	0.13	***
1	40	18.32	35.490	25.59	5.58	108	0.15	***
1	50	13.29	35.350	26.62	5.03	88	0.44	***
1	60	13.34	35.350	26.61	5.02	88	0.43	***
1	70	13.35	35.350	26.61	4.97	87	0.45	***

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STATION	DATE	TIME	LATITUDE	LONGITUDE					
6 2/ 92/61	26/ 2/61	0725 K	39 46 S	145 55 E					
76 15.6 17.8	21 5	16 9	5 8	21 2	21 4	1012.3	0	*	
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1 0	19.26	35.530	25.38	5.40	107	0.12	***		
1 10	19.26	35.510	25.36	5.41	107	0.13	***		
1 20	19.28	35.520	25.37	5.40	107	0.15	***		
1 30	19.28	35.520	25.36	5.38	107	0.15	***		
1 40	19.23	35.520	25.38	5.35	105	0.19	***		
1 45	15.43	35.350	26.16	5.77	106	0.23	***		
1 50	13.64	35.260	26.48	5.34	94	0.41	***		
1 60	13.23	35.230	26.54	4.96	87	0.43	***		
1 75	12.78	35.230	26.63	4.63	80	0.58	***		

STATION	DATE			TIME			LATITUDE			LONGITUDE		
G 2/ 93/61	26/ 2/61			0930 K			40 03 S			145 30 E		
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR.	ANEM. SP.	CLOUD HEIGHT	TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2	WIRE ANGLES CAST3	
71 15.6	20.0	21	5	16	8	1	8	21	2	21	4	1013.3
										0	*	*
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.		INORG. P	TOTAL P		NITRATE
1	0	19.34		35.570	25.39	5.17	103		0.14	***		***
1	10	19.31		35.400	25.27	5.34	106		0.12	***		***
1	20	19.31		35.540	25.37	5.38	107		0.15	***		***
1	30	19.31		35.530	25.36	5.33	106		0.16	***		***
1	40	19.16		35.540	25.41	5.44	107		0.20	***		***
1	50	14.95		35.340	26.26	5.41	98		0.32	***		***
1	60	14.21		35.310	26.40	5.18	93		0.35	***		***
1	70	14.19		35.310	26.40	5.18	93		0.39	***		***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
6 2/ 94/61	26/ 2/61	1240 K	40 28 S	145 29 E					
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
51 17.2	21.1	22	4	16	8	1	8	22	2 23 1 1013.0
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1 0	19.41	35.580	25.38	5.34	106	0.16	***	***	***
1 10	19.41	35.610	25.40	5.37	107	0.14	***	***	***
1 20	19.34	35.610	25.42	5.40	107	0.15	***	***	***
1 30	19.32	35.620	25.43	5.38	107	0.19	***	***	***
1 40	17.45	35.510	25.82	5.40	103	0.21	***	***	***
1 50	17.27	35.520	25.87	5.36	102	0.26	***	***	***

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STATION DATE TIME LATITUDE LONGITUDE

G 2/ 95/61 26/ 2/61 1540 K 40 15 S 145 07 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
DEPTH DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

51 15.6 17.2 23 6 16 8 1 8 23 3 23 1 1011.9 0 * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.20	35.390	25.29	5.30	105	0.20	**	***
1	10	19.14	35.390	25.30	5.34	105	0.19	**	***
1	20	19.14	35.420	25.32	5.31	105	0.17	**	***
1	30	19.13	35.420	25.33	5.18	102	0.19	**	***
1	40	19.13	35.410	25.32	5.30	105	0.20	**	***
1	50	19.11	35.410	25.32	5.28	104	0.24	**	***

STATION		DATE		TIME		LATITUDE		LONGITUDE	
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
6 2/ 96/61		26/ 2/61		1815 K		40 12 S		144 42 E	
66 13.3 16.1	20	5	16	8 6	8	22	4	1015.3	10 * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1 0	17.46	35.260	25.62	5.17	99	0.19	***	***	***
1 10	17.45	35.260	25.62	5.11	98	0.20	***	***	***
1 20	17.46	35.260	25.62	5.31	101	0.21	***	***	***
1 30	17.46	35.250	25.61	5.11	98	0.24	***	***	***
1 40	17.42	35.240	25.62	5.25	100	0.25	***	***	***
1 50	17.41	35.240	25.62	5.27	100	0.28	***	***	***
1 65	17.41	35.260	25.63	5.31	101	0.29	***	***	***

60

STATION	DATE		TIME		LATITUDE		LONGITUDE		
6 2 / 97/61	26 / 2/61		2000 K		40 00 S		144 33 E		
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
46	13.3	16.1	22	4	16	*	8	7	22 3 23 1 1016.0 10 * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.02	35.330	25.54	5.47	106	0.19	***	***
1	10	17.96	35.340	25.56	5.50	106	0.22	***	***
1	20	17.97	35.330	25.55	5.43	105	0.24	***	***
1	30	17.96	35.310	25.54	5.46	105	0.23	***	***
1	40	17.98	35.300	25.52	5.46	105	0.24	***	***
1	45	17.98	35.290	25.52	5.43	105	0.24	***	***

STATION	DATE:		TIME		LATITUDE		LONGITUDE	
	S	2 / 98/61	26 / 2/61	2135 K	39 45 S	144 22 E		
SONIC DEPTH	AIR TEMP.	WIND DRY SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA SWELL	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
42	13.3	16.1	17	4	16 *	8	8	1016.6
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P NITRATE
1	0	18.06	35.300	25.51	5.52	107	0.21	***
1	10	18.01	35.320	25.53	5.52	107	0.22	***
1	20	18.01	35.310	25.53	5.47	106	0.20	***
1	30	18.01	35.270	25.49	5.50	106	0.22	***
1	40	18.01	35.300	25.52	5.46	105	0.24	***

STATION

TIME

LONGITUDE

6 2/ 99/61

26/ 2/61 2320 K 39 29 S 144 10 E

 SONIC AIR TEMP. WIND ANEM. CLOUD
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. VIS. SEA SWELL ATMOS.
 DEPTH

76 12.8 15.6 18 4 16 * 8 7 18 3 17 1 1016.6 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

 1 0 17.90 35.310 25.55 5.46 105 0.20 ***
 1 10 17.87 35.330 25.58 5.54 107 0.26 ***
 1 20 17.68 35.320 25.61 5.55 106 0.25 ***
 1 30 17.15 35.290 25.72 5.40 102 0.27 ***
 1 40 15.97 35.260 25.97 5.15 95 0.31 ***
 1 50 14.53 35.220 26.26 4.86 87 0.40 ***
 1 60 14.02 35.210 26.36 4.56 81 0.49 ***
 1 75 13.93 35.220 26.39 5.11 91 0.48 ***

STATION	DATE			TIME			LATITUDE			LONGITUDE		
	SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3	WIRE ANGLES CAST1 CAST2 CAST3	
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE		
G 2/ 100/61	27/ 2/61			0120 K		39 08 S		1015.4	0	*	*	
	86	13.9	17.2	17	4	16	9	8	8	17	1	
	1	0	19.41	35.480	25.30	5.33	106	0.05	***	***	***	
	1	10	19.35	35.510	25.34	5.11	101	0.06	***	***	***	
	1	20	19.37	35.470	25.30	5.15	102	0.08	***	***	***	
	1	30	17.16	35.320	25.74	5.49	104	0.12	***	***	***	
	1	40	14.34	35.230	26.31	5.27	94	0.28	***	***	***	
	1	50	14.12	35.230	26.36	4.99	89	0.31	***	***	***	
	1	60	14.13	35.260	26.38	4.93	88	0.30	***	***	***	
	1	70	14.13	35.230	26.36	4.98	89	0.29	***	***	***	
	1	85	14.10	35.230	26.36	5.08	91	0.30	***	***	***	

STATION

DATE

LATITUDE

LONGITUDE

6 2/ 101/61

27/ 2/61

38 54 S

143 44 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

73 13.9 17.2 18 4 16 9 8 8 17 2 20 1 1015.4 7 * *

CAST DEPTH TEMP. SALINITY SIGMANT OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1	10	18.23	35.390	25.53	5.39	105	0.08	***
1	20	16.63	35.260	25.82	5.65	106	0.11	***
1	30	15.58	35.250	26.05	5.54	102	0.20	***
1	40	15.45	35.240	26.07	5.57	102	0.17	***
1	50	14.95	35.210	26.16	5.37	97	0.30	***
1	60	14.95	35.230	26.18	5.37	97	0.29	***
1	70	14.92	35.230	26.18	5.33	97	0.30	***

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STATION	DATE			TIME			LATITUDE			LONGITUDE		
SONIC DEPTH	AIR TEMP.	WIND DIR.	WEI DRY SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3	WIRE ANGLES	
6 2/ 102/61	27/ 2/61				0535 K				39 08 S		143 32 E	
93 12.8 16.1 18 4	16	8	7			8	22	3	10117.2	0	*	
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE				
1 0	19.16	35.460	25.55	5.36	106	0.05	***	***				
1 10	19.08	35.470	25.38	5.38	106	0.04	***	***				
1 20	19.09	35.470	25.38	5.36	106	0.04	***	***				
1 30	17.17	35.350	25.76	5.64	107	0.09	***	***				
1 40	14.83	35.220	26.20	5.58	101	0.21	***	***				
1 50	13.72	35.210	26.43	5.11	90	0.35	***	***				
1 60	13.38	35.200	26.49	4.99	88	0.46	***	***				
1 70	13.37	35.210	26.50	4.99	88	0.39	***	***				
1 80	13.24	35.210	26.52	4.99	87	0.48	***	***				
1 90	13.14	35.200	26.54	5.00	87	0.47	***	***				

LONGITUDE

LATITUDE

TIME

DATE

STATION

6 2 / 103/61

27 / 2/61

39 25 S

143 19 E

 SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

103 14.4 17.2 18 5 16 8 7 8 20 3 20 1 1017.8 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN X SAT. INORG. P TOTAL P NITRATE

	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	18.76	18.73	18.73	18.73	18.73	17.94	14.48	14.48	12.95	12.29	12.25	12.25	12.25	12.25	12.25	12.25	12.25
35.400	35.400	35.420	35.400	35.350	35.220	35.220	35.160	35.140	35.140	35.140	35.140	35.140	35.140	35.140	35.140	35.140	35.140
25.41	25.41	25.43	25.41	25.57	26.27	26.27	26.54	26.66	26.66	26.67	26.67	26.67	26.67	26.67	26.67	26.67	26.67
5.18	5.31	5.33	5.31	5.41	5.88	5.88	5.65	5.43	5.43	5.37	5.37	5.37	5.37	5.37	5.37	5.37	5.37
101	104	104	104	104	106	106	98	93	93	92	92	92	92	92	92	92	92
0.05	0.04	0.03	0.03	0.05	0.19	0.19	0.38	0.48	0.48	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50

STATION	DATE			TIME			LATITUDE			LONGITUDE					
G 2/ 104/61	27/ 2/61			1001 K			39 43 S			143 03 E					
SONIC DEPTH	AIR TEMP.	WIND DIR.	ANEM. SP.	CLoud HEIGHT	TYPE	AMT.	VIS.	SEA DIR.	AMT.	SWELL DIR.	AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
165	15.0	17.2	18	5	16	8	5	8	20	3	20	1	1017.3	0	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE						
1	0	18.58	35.400	25.45	5.31	104	0.05	***							
1	10	18.55	35.400	25.46	5.17	101	0.09	***							
1	20	18.56	35.390	25.45	5.26	103	0.12	***							
1	30	18.54	35.390	25.45	5.03	98	0.05	***							
1	40	18.55	35.250	26.06	5.69	105	0.15	***							
1	50	14.43	35.190	26.26	5.65	101	0.17	***							
1	60	14.16	35.180	26.31	5.79	103	0.19	***							
1	75	12.54	35.150	26.62	5.60	96	0.41	***							
1	100	12.40	35.140	26.64	5.59	96	0.40	***							
1	150	12.27	35.160	26.68	5.37	92	0.48	***							

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STATION	DATE			TIME			LATITUDE			LONGITUDE		
G 2 / 105/61	27 / 2/61			1130 K			39 46 S			142 56 E		
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2	WIRE ANGLES CAST3		
1426	15.0	15.6	18	5	16	8	5	8	20	3	20	1
												1017.3
												0
												*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	OXYGEN	INORG. P	TOTAL P	NITRATE		
2	0	18.30	35.370	25.50	5.29	103	0.15	***	***	***		
2	25	18.28	35.370	25.50	5.29	103	0.10	***	***	***		
2	50	14.34	35.140	26.24	6.08	109	0.27	***	***	***		69
2	74	13.08	35.090	26.47	5.97	104	0.31	***	***	***		
2	98	12.27	35.090	26.62	5.52	95	0.48	***	***	***		
2	147	12.20	35.140	26.68	5.40	92	0.49	***	***	***		
2	195	12.21	35.160	26.69	5.44	93	0.50	***	***	***		
1	292	11.77	35.100	26.73	5.55	94	0.49	***	***	***		
1	486	9.08	34.690	26.88	5.72	91	0.89	***	***	***		
1	649	8.32	34.580	26.92	5.58	87	1.13	***	***	***		
1	771	7.38	34.450	26.95	4.66	71	1.41	***	***	***		

STATION	DATE	TIME	LATITUDE	LONGITUDE					
SONIC DEPTH	AIR TEMP. KET	WIND DRY SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST 1 CAST 2 CAST 3
5303	16.7 108/61	28/ 2/61	0945 K	59 52 S	137 26 E				
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.97	35.300	25.53	4.86	94	0.18	***	0.0
1	21	17.94	35.310	25.54	5.03	97	0.17	***	0.0
1	42	17.96	35.320	25.55	4.73	91	0.20	***	0.4
1	64	16.62	35.280	25.84	5.71	107	0.23	***	0.1
1	65	14.65	35.260	26.27	5.56	101	0.23	***	0.2
1	127	13.23	35.250	26.56	5.54	97	0.25	***	0.3
1	161	12.74	35.250	26.66	4.87	84	0.27	***	0.8
1	230	12.45	35.230	26.70	4.54	78	0.42	***	1.2
1	411	11.25	35.030	26.77	4.15	69	0.45	***	13.0
1	598	7.62	34.560	27.01	4.14	63	0.62	***	24.8
1	815	4.79	34.430	27.27	4.34	62	1.29	***	35.2
2	996	3.88	34.440	27.38	4.12	57	1.73	***	31.1
2	1176	3.24	34.490	27.48	3.95	54	1.79	***	21.1
2	1358	2.84	34.540	27.55	3.76	51	1.85	***	32.0
2	1610	2.38	34.690	27.71	3.82	51	1.93	***	39.4
2	2261	2.11	34.740	27.78	3.92	52	1.95	***	46.6
2	2846	1.77	34.740	27.80	4.09	54	1.86	***	17.5
3	3275	1.55	34.740	27.82	4.24	55	1.75	***	32.0
3	3700	1.36	34.740	27.83	4.33	56	1.69	***	38.3
3	4156	1.21	34.730	27.84	4.39	57	1.66	***	39.2
3	4610	0.94	34.720	27.85	4.50	58	1.66	***	46.2

STATION

TIME

LONGITUDE

6 2/ 110/61

1/ 3/61 0030 J

37 33 S

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRES
DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

4755 17.2 19.4 13 4 16 8 5 8 13 3 13 4 1015.2 5 * * *

CAST DEPTH TEMP.

SALINITY

SIGMA-T

OXYGEN OXYGFN % SAT.

INORG. P

TOTAL P

NITRATE

1	0	19.32	35.420	25.28	***	0.22	***
1	23	19.32	35.420	25.28	5.11	0.21	***
1	47	17.67	35.300	25.60	5.69	0.23	***
1	70	13.84	35.160	26.36	6.17	0.26	***
1	92	12.99	35.160	26.54	6.06	0.50	***
1	138	12.23	35.150	26.68	5.58	0.51	***
1	180	12.11	35.150	26.70	5.57	0.55	***
1	262	11.50	35.090	26.77	5.51	0.60	***
1	452	9.39	34.770	26.89	5.50	1.02	***
1	654	7.77	34.590	27.01	5.19	1.16	***

STATION	DATE	TIME	LATITUDE	LONGITUDE			
G 2 / 111/61	1 / 3/61	0350 J	37 04 S	137 58 E			
SONIC DEPTH	AIR TEMP. WIND WET DRY	ANEM. DIR. SP.	CLOUD HEIGHT TYPE AMT.	VIS. SEA DIR. AMT.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
183	17.8 19.4	13 4	16 6	8 13 3	13 4	1013.5	15 * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P TOTAL P NITRATE
1	0	19.44	35.570	25.36	5.22	104	0.20 ***
1	25	19.30	35.570	25.40	5.17	102	0.21 ***
1	50	15.03	35.250	26.18	5.87	107	0.32 ***
1	75	13.88	35.350	26.50	5.55	99	0.38 ***
1	100	13.39	35.330	26.59	5.29	93	0.43 ***

STATION

LATITUDE

TIME

DATE

LONGITUDE

G 2 / 112/61

1 / 3/61 0710 J 36 34 S 138 03 E

SONIC DEPTH AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

64 17.8 20.0 15 5 16 8 5 8 15 2 15 4 1013.2 0 * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN CXYYGEN % SAT. INORG. P TOTAL P NITRATE

1	0	20.04	35.760	25.33	5.24	105	0.14	***
1	10	19.97	35.750	25.36	5.00	100	0.15	***
1	20	19.97	35.740	25.35	5.02	101	0.14	***
1	30	19.99	35.750	25.36	5.04	101	0.16	***
1	45	16.13	35.590	26.19	4.76	89	0.31	***
1	60	14.44	35.500	26.50	4.30	77	0.62	***

STATION	DATE	TIME	LATITUDE	LONGITUDE				
6 2/ 113/61	1/ 3/61	1030 J	35 56 S	138 12 E				
SONIC DEPTH	AIR TEMP. WEI DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. SEA	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
41	18.9	21.7	15	4	16	8	3	8 15 2 15 4 1014.1 5 * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P NITRATE
1	0	19.91	35.660	25.31	5.17	104	0.20	***
1	10	19.86	35.660	25.32	4.94	99	0.14	***
1	20	19.80	35.670	25.34	5.10	102	0.16	***
1	30	19.05	35.680	25.55	5.11	101	0.21	***
1	40	17.65	35.660	25.83	4.67	90	0.33	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 2 / 115/61	4/ 3/61	1225 J	34 54 S	138 17 E

SONIC DEPTH	AIR TEMP. WET	WIND DRY	ANEM. TYPE	CLOUD HEIGHT	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
22 ***	99	1	16	*	*	8 00	0 00	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	22.25	37.410	26.00	4.61	98	0.17	***	***
1	22	22.22	37.450	26.04	4.50	95	0.16	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE				
2 / 116/61	4 / 3/61	1340 J	35 04 S	138 10 E				
SONIC DEPTH	AIR TEMP., WIND WET DRY DIR. SP.	ANEM., HEIGHT TYPE AMT.	CLOUD, VIS., DIR. AMT.	SEA DIR. AMT.	SHELL, DIR. AMT.	ATMOS. PRESSURE	CAS11 CAST2 CAST3	WIRE ANGLES
41	17.2 22.2	99 1	16 . 1 2	8 * 0	* 0	1016.9	0	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P NITRATE
1	0 40	22.18 22.43	36.940 37.410	25.66 25.95	4.73 4.62	100 98	0.17 0.22	*** ***

STATION	DATE		TIME		LATITUDE		LONGITUDE		
SONIC DEPTH	AIR TEMP. WEI	WIND DRY. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
6 2 / 117/61			4 / 3/61		1430 J		35 10 S	158 05 E	
41 17.2 22.2	99	1	16	1 2	8	* 0	*	1016.9	5 * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1 0	22.29	36.870	25.58	4.81	102	0.19	***		***
1 15	21.94	36.870	25.67	4.70	99	0.17	***		***
1 25	21.97	36.930	25.71	4.70	99	0.19	***		***
1 40	22.10	37.010	25.74	4.53	95	0.20	***		***

STATION	DATE	TIME	LATITUDE	LONGITUDE				
G 2 / 118/61	4 / 3/61	1540 J	35 13 S	137 54 E				
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. SEA	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
39 17.2	22.8	20	3	16	1 2	8	*	0 1015.8
					0	*	0	5 *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P NITRATE
1	0	21.15	36.330	25.48	4.97	102	0.17 ***	***
	38	20.91	36.310	25.53	4.90	101	0.16 ***	***

STATION *	DATE		TIME		LATITUDE		LONGITUDE	
6 2/ 119/61	4/ 3/61		1705 J		35 17 S		137 41 E	

SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3 WIRE ANGLES
33 17.8 19.4	20	3	16	1 2	8	14	2	1014.6	0 * * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P.	TOTAL P	NITRATE
1 0	21.18	36.290	25.44	5.05	104	0.14	***		
1 12	20.95	36.270	25.49	4.90	101	0.11	***		
1 22	20.93	36.280	25.51	5.08	104	0.16	***		
1 32	20.93	36.300	25.52	5.02	103	0.15	***		

STATION	DATE			TIME			LATITUDE			LONGITUDE			
	AIR TEMP.	WIND DRY	DIR. SP.	ANEM.	CLOUD TYPE	AMT.	VIS.	SEA DIR.	AMT.	SWELL DIR.	AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3
6 2/ 120/61				4/ 3/61			1859 J			35 25 S			137 17 E
SONIC DEPTH	WEI	DRY	DIR.	SP.	HFLIGHT	TYPE	AMT.						
33	16.1	20.6	12	4	16	1	1	8	12	2	12	1	1016.1
CAST	DEPTH	TEMP.			SALINITY		SIGMA-T	OXYGEN		OXYGEN % SAT.		INORG. P	TOTAL P NITRATE
1	0	20.72			36.150		25.46	5.00		102		0.12	***
1	12	20.69			36.140		25.46	5.01		102		0.11	***
1	22	20.68			36.130		25.46	4.95		101		0.10	***
1	32	20.67			36.140		25.47	4.91		100		0.14	***

STATION

TIME

DATE

LATITUDE

LONGITUDE

6 2/ 121/61

4/ 3/61

2045 J

35 33 S

136 54 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

48 17.2 21.1 12 3 16 0 5 8 14 2 * 0 1016.2 0 * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.20	36.160	25.61	5.05	102	0.15	***	***
1	10	20.15	36.160	25.62	5.05	102	0.12	***	***
1	20	19.99	36.150	25.66	5.03	101	0.13	***	***
1	30	19.93	36.140	25.67	4.93	99	0.13	***	***
1	45	16.90	35.830	26.19	4.58	87	0.36	***	***

STATION	DATE			TIME			LATITUDE			LONGITUDE					
SUNIC	AIR TEMP.	WIND DRY. SP.	ANEM.	CLOUD HEIGHT	TYPE AMT.	VIS.	SEA DIR.	AMT.	SWELL DIR.	AMT.	ATMOS. PRESSURE	CAST1	CAST2	CAST3	WIRE ANGLES
DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH				
6	2 / 122/61		4 / 3/61			2315	J		35	40	S	136	31	E	
82	16.7	20.6	10	4	16	*	0	8	12	3	*	0	1015.2	0	*
CAST	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	DEPTH	INORG. P	TOTAL P	NITRATE	
1	0	18.72	35.730		25.67		5.30		104		0.20	***	***	***	
1	10	18.61	35.720		25.69		5.40		106		0.15	***	***	***	
1	20	17.18	35.570		25.93		5.53		105		0.21	***	***	***	
1	30	15.44	35.300		26.12		5.94		109		0.22	***	***	***	
1	50	13.69	35.350		26.54		5.24		93		0.39	***	***	***	
1	60	13.65	35.370		26.56		5.22		92		0.45	***	***	***	

STATION	DATE			TIME			LATITUDE			LONGITUDE		
6 2/ 123/61	5/ 3/61			0100 J			35 47 S			136 10 E		
SONIC DEPTH	AIR TEMP. WEI DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3	WIRES ANGLES	WIRES ANGLES	
122	15.6	19.4	11	2	16	*	0	8	*	0	12	1
											1016.1	0
											0	0
										*		
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE			
1	0	19.38	35.710	25.48	5.18	103	0.06	0.05	***	***	***	***
1	10	19.35	35.710	25.49	5.17	103	0.05	0.06	***	***	***	***
1	20	19.39	35.710	25.48	5.15	102	0.06	0.07	***	***	***	***
1	30	19.19	35.760	25.57	5.17	102	0.07	0.20	***	***	***	***
1	50	15.42	35.400	26.20	5.80	106	0.20	0.37	***	***	***	***
1	75	13.34	35.310	26.58	5.31	93	0.37	0.38	***	***	***	***
1	100	13.34	35.310	26.58	5.28	93	0.44	0.44	***	***	***	***
2	120	13.12	35.260	26.59	5.45	95						

STATION	DATE		TIME		LATITUDE		LONGITUDE		
SONIC DEPTH	AIR TEMP.	WIND DRY. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3 WIRES ANGLES
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
6 2 / 124/61	5 / 3/61		0310 J		35 55 S		1015.0	0	*
155 18.9 22.2	09 3	16	*	0	8	*	12 1	1015.0	*
1	0	19.67	35.640	25.35	5.22	104		0.10	***
1	10	19.63	35.640	25.37	5.30	106		0.10	***
1	20	19.65	35.640	25.36	5.23	104		0.09	***
1	30	19.65	35.640	25.36	5.22	104		0.10	***
1	50	17.75	35.490	25.73	5.70	110		0.11	***
1	73	14.84	35.400	26.33	5.64	102		0.16	***
1	93	14.45	35.500	26.49	4.74	85		0.29	***
1	140	14.21	35.490	26.54	5.06	91		0.33	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
6 2/ 125/61	5/ 3/61	0505 J	36 03 S	135 23 E					
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRES CAST1 CAST2 CAST3
2930	16.7	18.3	12	3	16	8	7	13	1 1015.0 0 * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.65	35.560	25.30	5.11	102	0.15	***	***
1	24	19.55	35.560	25.33	5.06	101	0.14	***	***
1	48	18.57	35.450	25.49	5.46	107	0.14	***	***
1	72	13.41	35.040	26.36	5.95	104	0.26	***	***
1	95	14.25	35.490	26.53	5.31	95	0.31	***	***
1	142	12.33	35.100	26.62	5.44	93	0.43	***	***
1	187	12.04	35.090	26.67	5.59	95	0.44	***	***
1	278	11.23	35.020	26.77	5.40	90	0.70	***	***
1	462	9.46	34.780	26.89	5.40	87	0.88	***	***
1	644	8.78	34.710	26.95	5.28	83	0.98	***	***

85

STATION

TIME
LATITUDE
LONGITUDE

6 2 / 126/61

DATE
TIME
LATITUDE
LONGITUDE

SONIC AIR TEMP. WIND ANEM. CLOUD V/S. SEA SWELL ATMOS. WIRES ANGLES
DEPTH WT DRY DIR. SP. HEIGHT TYPF AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

4389 16.7 19.4 11 3 16 8 8 7 11 2 10 1 1016.1 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1	0	19.73	35.650	25.35	5.16	103	0.16	***
1	24	19.60	35.650	25.38	5.17	103	0.11	***
1	48	16.43	35.490	26.04	5.84	109	0.14	***
1	70	14.51	35.430	26.43	5.90	106	0.19	***
1	93	14.12	35.470	26.54	5.34	95	0.30	***
1	140	13.40	35.360	26.61	5.46	96	0.37	***
1	164	13.02	35.270	26.62	5.46	95	0.42	***
1	272	12.05	35.120	26.69	5.46	93	0.48	***
1	462	9.57	34.790	26.88	5.56	89	0.86	***
1	700	8.92	34.710	26.92	5.36	85	1.04	***

STATION

LATITUDE

TIME

DATE

LONGITUDE

6 2 / 130/61

5 / 3/61

1615 J

35 04 S

133 22 E

SONIC DEPTH AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

1006 17.8 20.6 14 3 16 0 5 8 14 2 14 1 1013.7 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1	0	20.66	35.980	25.35	5.13	105	0.10	***
1	24	20.52	35.990	25.40	4.78	97	0.05	***
1	47	20.44	36.000	25.42	5.04	102	0.06	***
1	70	15.39	35.360	26.18	5.84	107	0.16	***
1	93	13.54	35.180	26.44	5.72	101	0.26	***
1	140	12.51	35.130	26.61	5.51	95	0.44	***
1	186	12.08	35.100	26.67	5.54	94	0.46	***
1	281	11.05	34.970	26.76	5.26	88	0.63	***
1	472	9.05	34.720	26.91	5.44	86	1.00	***
1	664	7.71	***	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. APT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3 WIRE ANGLES
6 2 / 131/61	5 / 3/61	1830 J	34 45 S	133 33 E					
119 17.2 20,6 13 4	16	8 4	8	12 3	*	0	1013.4	0	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1 0	20.56	35.780	25.23	4.99	101	0.11	***	***	***
1 10	20.50	35.790	25.25	5.05	102	0.12	***	***	***
1 20	20.42	35.790	25.27	5.07	103	0.25	***	***	***
1 30	20.42	35.800	25.28	5.11	104	0.12	***	***	***
1 50	18.16	35.690	25.78	5.46	106	0.10	***	***	***
1 71	15.94	35.620	26.26	5.49	102	0.21	***	***	***
1 92	15.33	35.580	26.36	5.13	94	0.28	***	***	***
1 102	15.34	35.580	26.36	5.13	94	0.27	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 2/ 132/61	5/ 3/61	2030 J	34 29 S	133 50 E

SONIC DEPTH	AIR TEMP. WEI DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
99	17.2	20.0	13 4	16	8 4	8 *	0	11 1	1014.7 0 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.37	35.720	25.23	4.85	98	0.16	***	***
1	10	20.30	35.720	25.25	4.95	100	0.12	***	***
1	20	20.30	35.720	25.25	4.88	99	0.12	***	***
1	30	20.31	35.720	25.25	5.05	102	0.13	***	***
1	50	20.25	35.710	25.26	5.15	104	0.13	***	***
1	72	16.45	35.650	26.16	5.52	104	0.14	***	***
1	93	15.57	35.730	26.42	4.82	89	0.28	***	***

STATION	DATE			TIME			LATITUDE			LONGITUDE		
	5 /	3 / 61		2215	J		34	09	S	133	55	E
SUNIC	AIR TEMP.	WIND DRY SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3			
DEPTH	WET DRY	DRY. SP.	HEIGHT	TYPE AMT.	DIR.	AMT.	DIR.	AMT.				
86	16.7	20.0	15	4	16	1	1	8	*	0	13	1
											1013.4	0
										*	*	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE	
1	0	20.17	35.720	25.28	5.06		102		0.15		***	
1	10	20.15	35.720	25.29	4.85		98		0.16		***	
1	20	20.15	35.720	25.29	5.05		102		0.14		***	
1	30	20.16	35.720	25.29	5.01		101		0.17		***	
1	50	20.11	35.720	25.30	4.85		98		0.17		***	
1	75	16.76	35.780	26.19	5.54		105		0.18		***	

STATION	DATE			TIME			LATITUDE			LONGITUDE		
G 2/ 134/61	6/ 3/61			0012 J			33 46 S			134 02 E		
SONIC DEPTH	AIR TEMP. WET	WIND DRY	ANEM. DIR.	CLOUD HEIGHT	TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2	WIRE ANGLES CAST3	
77	16.7	19.4	13	5	16	*	*	8	13	2	13	1
											1013.0	15
											*	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE	
1	0	19.84	35.710	25.36	4.76	95			0.17	***	***	
1	10	19.78	35.720	25.39	4.98	100			0.16	***	***	
1	20	19.77	35.710	25.38	5.11	102			0.14	***	***	
1	30	19.67	35.710	25.41	5.05	101			0.16	***	***	
1	50	17.22	35.700	26.02	5.37	102			0.16	***	***	
1	75	16.02	35.740	26.33	4.87	91			0.26	***	***	

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STATION	DATE			TIME			LATITUDE			LONGITUDE		
SONIC DEPTH	AIR TEMP.	WIND DRY SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1	CAST2	CAST3	WIRE ANGLES
6 2 / 135/61	6 / 3/61			0220 J			33 33 S		134 13 E			
72 16.7 19.4	12 4	16	*	0	8	12	2	11 1	1012.3	0	*	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE			
1 0	18.21	35.630	25.72	5.31	103			0.18	***			
1 10	18.21	35.620	25.71	5.29	103			0.20	***			
1 20	18.12	35.600	25.72	5.21	101			0.19	***			
1 30	17.64	35.560	25.81	5.21	100			0.17	***			
1 50	16.86	35.560	25.99	5.34	101			0.23	***			
1 70	16.00	35.590	26.22	5.37	100			0.23	***			

STATION	DATE		TIME		LATITUDE		LONGITUDE		
SONIC DEPTH	AIR TEMP.	WIND DIR. \$P.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
6 2/ 139/61	6/ 3/61			0930 J		32 38 S		1014.5	0 * *
62 16.7 19.4	11 4	16	*	0	8	11 2	18 1	1014.5	0 * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1 0	19.56	35.690	25.42	4.94	98	0.20	***		***
1 10	19.44	35.700	25.46	5.11	102	0.18	***		***
1 20	19.41	35.690	25.46	4.62	92	0.28	***		***
1 30	18.61	35.630	25.62	5.26	103	0.22	***		***
1 45	17.23	35.610	25.94	5.04	96	0.10	***		***
1 60	16.07	35.780	26.35	5.06	94	0.23	***		***

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STATION	DATE			TIME			LATITUDE			LONGITUDE							
	AIR TEMP.	WIND DRY DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA SWELL	DIR. AMT.	DIR. AMT.	ATMOS. PRESSURE	CAST1	CAST2	CAST3					
SONIC DEPTH	68	16.7	20.0	08	3	16	*	0	8	11	2	12	1	1014.5	0	*	*
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE						
1	0	20.12		35.710	25.29	5.02	101	101	0.14	***	***						
1	10	20.08		35.710	25.30	5.12	103	103	0.15	***	***						
1	20	20.01		35.700	25.31	5.07	102	102	0.16	***	***						
1	30	20.01		35.680	25.30	5.05	101	101	0.15	***	***						
1	45	20.00		35.670	25.29	4.97	100	100	0.16	***	***						
1	65	16.67		35.980	26.36	4.92	93	93	0.25	***	***						

STATION DATE TIME LATITUDE LONGITUDE

G 2/ 141/61 6/ 3/61 1305 J 33 09 S 132 31 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

91 16.7 20.6 13 4 16 * 0 8 13 2 16 1 1014.6 0 * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.47	35.740	25.22	5.07	103	0.16	***	***
1	10	20.45	35.740	25.22	5.05	102	0.12	***	***
1	20	20.37	35.740	25.24	5.10	103	0.12	***	***
1	30	20.37	35.730	25.24	5.10	103	0.14	***	***
1	50	19.60	35.810	25.50	4.79	96	0.13	***	***
1	75	16.34	35.860	26.35	4.48	84	0.33	***	***
1	90	16.29	35.860	26.36	4.27	80	0.22	***	***

STATION	DATE			TIME			LATITUDE			LONGITUDE		
SONIC DEPTH	AIR TEMP. WET	WIND DRY	ANEM. SP.	CLOUD HEIGHT	TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2	WIRE ANGLES CAST3	
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE			
6	2/ 142/61	6/ 3/61		1615 J		33 29 S		1014.5	0	*	*	
115	18.3	21.7	11 4	16 *	0	8 11 2	14 1	1014.5	0	*	*	
1	0	21.52	36.120	25.22	5.05	105		0.10	***			
1	10	21.01	36.120	25.36	5.05	104		0.16	***			
1	20	20.96	36.110	25.37	5.04	103		0.09	***			
1	30	20.98	36.110	25.36	5.05	104		0.13	***			
1	45	20.90	36.100	25.38	5.05	103		0.12	***			
1	65	17.46	36.760	26.00	5.34	102		0.20	***			
1	85	16.12	35.710	26.28	4.96	92		0.29	***			
1	98	16.05	35.710	26.30	4.98	93		0.33	***			

STATION

TIME

LATITUDE

LONGITUDE

6 2/ 143/61

6/ 3/61

 SONIC AIR TEMP. WIND
 DEPTH DRY DIR. SP.
 HEIGHT ANEM. CLOUD
 TYPE AMT.

155 17.8 21.1 10 2 16 * 0 8 * 0 15 4 1014.3 0 * *

CAST DEPTH TEMP. SALINITY SIGMANT

 1 0 21.49 36.090 25.21 4.91 102 0.09 ***
 1 10 21.05 36.090 25.33 5.03 103 0.08 ***
 1 20 20.98 36.090 25.35 5.05 104 0.07 ***
 1 30 20.96 36.080 25.34 5.06 104 0.09 ***
 1 48 20.83 36.070 25.37 5.00 102 0.10 ***
 1 68 16.07 35.570 26.19 5.23 97 0.12 ***
 1 89 15.93 35.570 26.22 5.13 95 0.31 ***
 1 133 15.80 35.570 26.25 5.13 95 0.33 ***

STATION

DATE

LONGITUDE

G 2/ 144/61

TIME

LATITUDE

SONIC DEPTH
AIR TEMP.
WET DRY DIR. SP.
WIND HEIGHT

ANEM.
TYPE AMT.
CLOUD
VIS.

DIR. AMT.
SEA
DIR. AMT.

SHELL
DIR. AMT.
ATMOS.

PRESSURE
CAST1 CAST2 CAST3

393 17.8 21.1 10 2 16 * 0 8 * 0 15 4 1014.2 0 * *

CAST DEPTH TEMP.
SIGMA-T
SALINITY

OXYGEN
SIGMA-T

OXYGEN % SAT.
OXYGEN

INORG. P
TOTAL P

1	0	21.49	36.100	25.21	4.90	102	0.10	***
1	25	20.97	36.080	25.34	5.02	103	0.07	***
1	50	20.25	35.960	25.44	5.10	103	0.10	***
1	73	16.32	35.580	26.14	5.49	103	0.22	***
1	96	15.89	35.570	26.23	5.08	94	0.29	***
1	143	15.71	35.570	26.27	5.07	94	0.27	***
1	187	14.93	35.480	26.37	5.08	92	0.36	***
1	280	12.60	35.200	26.65	5.20	90	0.50	***
1	375	10.87	34.970	26.79	4.95	82	0.78	***

STATION DATE TIME LATITUDE LONGITUDE

6 2/ 147/61 6/ 3/61 2342 J 33 30 S 130 52 E

SONIC AIR TEMP. WIND ANEM. CLOUD
DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT.

466 17.8 20.0 14 1 16 * 0 8 * 2 14 1 1014.6 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT.

	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	0	20.88	35.860	25.20	4.84	99	0.07	***	**	***	***	***	***	***	***	***
	24	20.68	35.860	25.25	5.03	102	0.05	***	**	***	***	***	***	***	***	***
	48	18.40	35.660	25.69	5.56	108	0.06	***	**	***	***	***	***	***	***	***
	72	15.94	35.510	26.17	5.62	104	0.11	***	**	***	***	***	***	***	***	***
	95	15.18	35.460	26.31	5.62	103	0.16	***	**	***	***	***	***	***	***	***
	142	13.76	35.420	26.58	5.44	96	0.30	***	**	***	***	***	***	***	***	***
	190	12.98	35.270	26.62	5.27	92	0.29	***	**	***	***	***	***	***	***	***
	284	11.94	35.140	26.73	4.76	81	0.46	***	**	***	***	***	***	***	***	***
	426	9.63	34.790	26.87	5.15	83	0.82	***	**	***	***	***	***	***	***	***

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STATION	DATE			TIME			LATITUDE			LONGITUDE			
	SONIC DEPTH	AIR TEMP.	WIND DRY SP.	ANEM.	CLOUD HEIGHT	TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1	CAST2	CAST3
62	2 / 148/61	7 / 3/61			0245	J				1013.9	0	*	*
95	18.9	20.6	00	0	16	*	0	8	00	0	14	1	*
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T		OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P			NITRATE
1	0	21.62		36.270	25.31		4.94		103	0.07	***	***	
1	10	21.48		36.270	25.35		4.95		103	0.06	***	***	
1	20	21.39		36.270	25.37		4.93		102	0.04	***	***	
1	30	21.32		36.280	25.40		4.98		103	0.05	***	***	
1	50	20.50		36.170	25.54		5.00		102	0.05	***	***	
1	67	17.20		35.790	26.09		5.02		96	0.08	***	***	
1	90	16.83		35.420	26.20		4.60		87	0.22	***	***	

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STATION	DATE		TIME		LATITUDE		LONGITUDE		
SONIC DEPTH	AIR TEMP. WEI	WIND DIR. SP.	ANEM. HHEIGHT	CLOUD TYPE AMT.	VIS. DIR.	SEA AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
6 2/ 149/61		7/ 3/61		0436 J		32 41 S		1013.9	0 * *
				*	0	0	11	1	
81 18.9 20.6	00	0	16	*	0	8	00	1013.9	0 * *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1 0	21.54	36.310	25.36	4.98	103	0.02	***	***	***
1 10	21.36	36.290	25.40	4.93	102	0.04	***	***	***
1 20	21.33	36.290	25.40	5.01	104	0.03	***	***	***
1 30	21.27	36.290	25.42	5.01	103	0.06	***	***	***
1 50	21.22	36.280	25.43	4.95	102	0.06	***	***	***
1 75	17.52	35.900	26.10	4.74	91	0.11	***	***	***

STATION	DATE			TIME			LATITUDE			LONGITUDE		
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3	WIRE ANGLES		
6 2/ 150/61		7/ 3/61		0636 J		32 21 S		1016.2	0	*	*	*
68 18.9 20.6 n9 2	16 *	0	8	00	0	12 1						
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE			
1 0	20.64	35.880	25.28	5.06	103	0.10	***	***	***			
1 10	20.53	35.880	25.31	5.04	102	0.11	***	***	***			
1 20	20.53	35.880	25.31	5.10	104	0.15	***	***	***			
1 30	20.51	35.890	25.32	5.03	102	0.10	***	***	***			
1 45	20.46	35.900	25.34	5.15	105	0.10	***	***	***			
1 65	17.29	35.890	26.14	4.90	94	0.19	***	***	***			

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STATION DATE TIME LATITUDE LONGITUDE

6 2 / 151/61 7 / 3/61 0830 J - 31 58 S 131 16 E

SONIC AIR TEMP., WIND ANEM. CLOUD
DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT.

55 19.4 20.6 00 0 16 * 0 8 * 0 15 1 1017.0 0 * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.22	35.840	25.36	5.08	103	0.10	***	***
1	10	20.18	35.830	25.36	5.15	104	0.09	***	***
1	20	20.11	35.840	25.39	5.04	102	0.11	***	***
1	30	20.06	35.960	25.50	4.86	98	0.11	***	***
1	55	17.37	35.870	26.11	4.80	92	0.17	***	***

STATION	DATE			TIME			LATITUDE			LONGITUDE		
	SONIC DEPTH	AIR TEMP.	WIND DIR. SP.	ANEM. WEF DRY	HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS.	CAST1 PRESSURE	CAST2 CAST3 WIRE ANGLES
6 2/ 155/61		7/ 3/61					1700 J			32 12 S	1015.2	0 * * *
								8	13	2	*	
48	21.1	22.8	14	4	16	*	0					
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.			INORG. P	TOTAL P	NITRATE
1	0	22.04		36.430	25.31	5.05				0.05		***
1	10	21.38		36.440	25.50	5.09				0.04		***
1	20	21.26		36.450	25.54	5.08				0.03		***
1	30	21.17		36.460	25.58	5.13				0.03		***
1	45	20.38		36.320	25.69	5.10				0.09		***

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STATION

LATITUDE

TIME

DATE

6 2 / 156/61 7 / 3 / 61 1901 J 32 34 S 129 20 E

SONIC AIR TEMP., WIND
DEPTH WEI DRY DIR. SP.
NEPTH

ANEM. CLOUD
HEIGHT TYPE AMT.

VIS. SEA SWELL
DIR. AMT. DIR. AMT. ATMOS. PRESSURE

CAST1 CAST2 CAST3

56 20.6 22.2 12 4 16 * 0 8 12 2 18 1 1015.5 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN

OXYGEN % SAT.

INORG. P TOTAL P NITRATE

1	0	22.13	36.380	25.25	4.92	103	0.04	***
1	10	21.71	36.370	25.36	4.76	99	0.04	***
1	20	21.65	36.380	25.38	4.82	100	0.03	***
1	30	21.58	36.370	25.39	4.59	95	0.03	***
1	55	19.21	36.140	25.85	4.63	92	0.09	***

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STATION	DATE			TIME			LATITUDE	LONGITUDE			
SONIC DEPTH	AIR TEMP.	WIND DIR.	SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3	WIRE ANGLES
6 2 / 157 / 61		7 / 3 / 61			2050 J		32 52 S		1016.1	10	*
66 17.6 21.7 10 2	16	*	0	8	*	0	14	1	1016.1	10	*
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE	
1 0	22.20	36.320		25.18	5.00	105		0.04	***	***	
1 10	21.84	36.320		25.28	5.07	106		0.05	***	***	
1 20	21.75	36.320		25.31	5.04	105		0.04	***	***	
1 30	21.68	36.300		25.32	5.02	104		0.03	***	***	
1 45	21.59	36.300		25.34	4.99	104		0.04	***	***	
1 65	18.11	35.970		26.01	4.69	91		0.26	***	***	

STATION DATE TIME LATITUDE LONGITUDE

G 2 / 158/61 7 / 3/61 2245 J 33 13 S 129 20 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
DEPTH WT DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

124 19.4 21.7 09 3 16 * 0 8 * 0 13 1 1016.0 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 21.48 36.070 25.19 4.83 100 0.04 ***
 1 10 21.37 36.050 25.21 4.99 103 0.04 ***
 1 20 21.22 36.090 25.28 5.04 104 0.06 ***
 1 30 21.22 36.070 25.27 4.99 103 0.05 ***
 1 50 20.89 36.080 25.36 5.08 104 0.04 ***
 1 74 17.42 35.700 25.97 5.21 100 0.15 ***
 1 95 16.86 35.670 26.08 5.00 95 0.30 ***

STATION	DATE			TIME			LATITUDE			LONGITUDE		
	SONIC DEPTH	AIR TEMP. WEI	WIND DRY SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS., DIR. AMT.	SEA DIR. AMT.	SWELL	ATMOS. PRESSURE	CAST1 CAST2 CAST3	WIRE ANGLES	
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE		
6 2/ 159/61	8 / 3/61				0045 J		33 32 S		1016.6	0	*	
603 20.0 21.7	07 3	16 *	0	8	07 2	13 1	1016.6	0	*	*	*	
1 0	21.34	35.960		25.15	5.02	104		0.09	***	***	***	
1 24	20.84	35.940		25.27	5.08	104		0.08	***	***	***	
1 47	20.59	35.900		25.31	5.18	105		0.07	***	***	***	
1 71	16.69	35.560		26.04	5.69	107		0.12	***	***	***	
1 94	14.61	35.310		26.31	5.52	99		0.23	***	***	***	
1 141	13.13	35.250		26.58	5.44	95		0.43	***	***	***	
1 181	13.09	35.280		26.61	5.51	96		0.41	***	***	***	
1 274	12.30	35.180		26.69	5.52	95		0.49	***	***	***	
1 364	10.84	34.970		26.80	5.37	89		0.77	***	***	***	
1 458	9.23	34.740		26.90	5.45	87		0.89	***	***	***	

STATION	DATE			TIME			LATITUDE			LONGITUDE		
SONIC DEPTH	AIR TEMP. WEI	WIND DRY	ANEM. DIR.	CLOUD HEIGHT	VIS.	SEA DIR.	SWELL AMT.	ATMOS. DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2	WIRE ANGLES CAST3	
6 2 / 164/61			8 / 3/61		0738 J					33 37 S		127 38 E
878	21.1	22.2	03	4	16	1	3	8	0.3	2	0.4	1
												*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.				INORG. P	TOTAL P	NITRATE
1	0	20.90	35.800	25.15	5.10	104				0.16		***
1	23	20.49	35.830	25.28	5.15	105				0.15		***
1	46	20.44	36.030*	25.45	5.12	104				0.14		***
1	69	16.84	35.530	25.98	5.73	108				0.16		***
1	92	15.13	35.430	26.29	5.74	105				0.23		***
1	138	13.84	35.420	26.56	5.57	99				0.34		***
1	162	13.36	35.340	26.60	5.51	97				0.33		***
1	276	12.41	35.170	26.66	5.41	93				0.51		***
1	460	9.40	34.740	26.87	5.12	82				0.91		***
1	643	8.47	34.620	26.92	4.92	77				1.06		***

* PROPERTY DOUBTFUL
+ PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE					
6 2/ 165/61	8 / 3/61	1005 J	33 20 S	127 36 E					
SONIC DEPTH	AIR TEMP. WT1	WIND DRY. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS., DIR. AMT.	SEA DIR. AMT.	SWELL, DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
183	21.7	23.3	04	4	16	1 2	8	04	03
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.06	35.830	25.13	5.00	103	0.15	***	***
1	25	20.70	35.830	25.22	5.06	103	0.12	***	***
1	50	20.52	35.820	25.27	5.09	103	0.14	***	***
1	75	19.04	35.770	25.62	5.15	102	0.22	***	***
1	100	16.51	35.580	26.09	5.38	101	0.28	***	***
1	140	14.60	35.440	26.42	5.59	101	0.27	***	***
1	172	14.04	35.400	26.51	5.41	96	0.32	***	***

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STATION

TIME

DATE

DEPTH

NITRATE

6 2/ 166/61

8 / 3/61

8 / 3/61

8 / 3/61

8 / 3/61

8 / 3/61

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

71 20.0 22.2 04 2 16 * 0 8 04 2 06 1 1016.5 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1	0	21.89	36.360	25.30	4.94	103	0.11	***
1	10	21.88	36.360	25.30	4.95	103	0.07	***
1	20	21.78	36.360	25.33	4.83	101	0.12	***
1	30	21.70	36.360	25.35	4.92	102	0.13	***
1	50	21.48	36.350	25.41	4.94	102	0.14	***
1	70	17.86	35.820	25.95	4.78	92	0.27	***

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STATION	DATE		TIME		LATITUDE		LONGITUDE			
	SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3 WIRE ANGLES
6 2 / 167/61		8 / 3/61			1530 J		32 44 S	32	1016.5	0 * *
52	20.0	22.2	07	4	16	*	0	8	1016.5	0 * *
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	22.27	36.380	25.21	4.86	102	0.06	***	***	***
1	10	22.00	36.380	25.29	4.95	104	0.05	***	***	***
1	20	21.90	36.380	25.31	5.01	105	0.09	***	***	***
1	30	21.44	36.360	25.43	4.95	103	0.09	***	***	***
1	40	20.38	36.230	25.62	4.64	94	0.17	***	***	***
1	50	20.06	36.180	25.66	4.56	92	0.18	***	***	***

STATION

TIME

DATE

LATITUDE

LONGITUDE

6 2/ 168/61 8/ 3/61 1500 J 32 34 S 127 30 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3

45 15.6 23.9 09 4 16 * 0 8 07 3 09 1 1014.0 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1	0	22.51	36.430	25.18	4.86	103	0.06	***
1	20	22.09	36.410	25.28	4.86	102	0.07	***
1	30	21.72	36.390	25.37	4.92	103	0.07	***
1	40	21.55	36.370	25.40	4.68	97	0.13	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
6 2 / 172/61	8 / 3/61	2215 J	32 50 S	125 40 E					
SONIC DEPTH	AIR TEMP. WEI DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL, DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3 WIRE ANGLES
55	18.3	21.7	19	5	16	8	5	7	19 4 * 0 1017.5 0 *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.61	36.390	25.40	4.97	103	0.09	***	
1	20	21.31	36.370	25.47	4.94	102	0.10	***	***
1	30	20.67	36.340	25.62	4.86	99	0.12	***	***
1	40	20.63	36.340	25.63	4.81	98	0.13	***	***

STATION DATE TIME LATITUDE LONGITUDE

6 2/ 173/61 9/ 3/61 0010 J 33 10 S 125 48 E

SONIC AIR TEMP. WIND ANEM. CLOUD
DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT.

66 20.0 22.2 19 8 16 8 8 7 19 2 19 1 1022.5 0 * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE

1	0	21.50	36.000	25.14	5.00	104	0.13	***
1	10	21.44	35.990	25.14	4.99	103	0.11	***
1	20	21.42	36.040	25.19	4.94	102	0.11	***
1	30	21.31	36.240	25.37	4.83	100	0.15	***
1	50	20.25	36.050	25.51	4.82	98	0.16	***
1	60	19.33	35.910	25.65	4.52	90	0.22	***

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STATION	DATE			TIME			LATITUDE			LONGITUDE			
	SONIC DEPTH	AIR TEMP.	WIND DRY SP.	ANEM.	CLOUD HEIGHT	TYPE AMT.	VIS.	SEA DIR. AMT.	SWEEL DIR. AMT.	ATMOS. PRESSURE	CAST1	CAST2	CAST3
6 2/ 174/61		9/ 3/61			0230	J					33 31 S	125 54 E	
114	21.1	23.3	16	6	16	8	8	7	16	2	17	4	1021.7
											0	*	*
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN	OXYGEN	% SAT.	INORG. P	TOTAL P			NITRATE
1	0	21.40		36.180	25.30	5.00			103		0.08		***
1	10	21.34		36.180	25.32	4.94			102		0.07		***
1	20	21.34		36.180	25.32	4.97			103		0.11		***
1	30	21.33		36.180	25.32	4.94			102		0.12		***
1	50	20.58		36.110	25.47	5.05			103		0.14		***
1	75	18.75		35.790	25.71	5.08			100		0.20		***
1	100	18.35		35.780	25.80	5.05			98		0.24		***

STATION	DATE			TIME			LATITUDE			LONGITUDE		
	SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL	ATMOS. PRESSURE	CAST1 CAST2	WIRE ANGLES CAST3	
6 2 / 175/61		9 / 3/61			0 445 J		33 51 S		1022.4	0	*	*
658	19.4	21.7	15	7	16	8	7	15	3	16	4	
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	OXYGEN	INORG. P	TOTAL P	NITRATE	
1	0	20.72		35.710	25.13	4.80	98		0.16	***	***	
1	23	20.71		35.720	25.14	4.93	100		0.13	***	***	
1	46	20.61		35.840	25.26	4.95	101		0.15	***	***	
1	69	16.80		35.440	25.92	5.66	107		0.20	***	***	
1	91	14.37		35.360	26.40	5.58	100		0.25	***	***	
1	137	13.84		35.400	26.55	5.34	95		0.29	***	***	
1	178	13.40		35.330	26.58	5.30	93		0.43	***	***	
1	269	12.23		35.150	26.68	4.91	84		0.51	***	***	
1	446	9.27		34.710	26.87	4.85	77		0.79	***	***	
1	623	8.20		34.570	26.93	5.04	78		1.00	***	***	

STATION	DATE			TIME			LATITUDE			LONGITUDE			WIRE ANGLES
	AIR TEMP.	WIND WET DRY DIR.	SP. TYPE AMT.	CLOUD HEIGHT	ANEM.	DIR. AMT.	VIS.	SEA DIR. AMT.	SWELL	ATMOS.	CAST1 PRESSURE	CAST2 CAST3	WIRE ANGLES
G 2/ 176/61	10 / 3/61				0130 J		36 51 S		1030.1	0	0	0	0.0
													0.0
5577	13.3	17.2	13	6	16	1	8	14	4	15	4	1030.1	0
													0.0
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T		OXYGEN	OXYGEN % SAT.		INORG. P	TOTAL P		NITRATE
1	0	19.24		35.370	25.26		5.29	105		0.25			***
1	25	19.23		35.370	25.26		5.29	105		0.26			***
1	50	15.36		35.330	26.17		5.91	108		0.32			***
1	75	13.71		35.350	26.54		5.41	96		0.28			***
1	95	13.22		35.340	26.63		5.58	98		0.40			***
1	140	13.11		35.350	26.66		5.56	97		0.42			***
1	185	13.16		35.350	26.65		5.57	97		0.43			***
1	280	12.96		35.310	26.66		5.54	96		0.43			***
1	466	10.72		34.960	26.81		5.51	91		0.81			4.7
1	657	8.79		34.650	26.90		5.47	86		1.11			***
1	828	7.77		34.530	26.96		5.03	77		1.24			12.3
2	1019	5.33		34.420	27.20		4.40	64		1.51			15.0
2	1190	3.77		34.430	27.38		4.17	58		1.66			16.0
2	1378	3.06		34.510	27.51		3.85	52		1.67			14.1
2	1847	2.48		34.690	27.71		3.73	50		1.70			13.6
2	2316	2.14		34.740	27.77		3.94	52		1.73			10.4
2	2784	1.86		34.740	27.87		3.97	52		1.63			12.5
3	3255	1.59		34.750	27.82		4.30	56		1.81			10.5
3	3725	1.32		34.740	27.84		4.37	57		1.72			12.1
3	4194	1.19		34.730	27.84		4.51	58		1.70			12.5
3	4665	0.99		34.720	27.84		4.71	61		1.68			19.5
3	5130	0.92		***	***		***	***		***			***

STATION DATE TIME LATITUDE LONGITUDE

G 2/ 177/61 10/ 3/61 2045 J 36 15 S 133 35 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA ATMOS. WIRES
DEPTH DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. SWELL PRESSURE ANGLES
WET 15.0 17.8 14 4 16 8 3 8 14 3 15 4 1031.5 0 0 *
4755

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.23	35.430	25.31	5.23	103	0.12	0.0	0.0
1	24	19.22	35.430	25.31	5.20	103	0.17	***	0.0
1	48	14.85	35.120	26.12	6.16	111	0.19	***	0.0
1	71	12.65	35.030	26.50	5.87	101	0.32	***	1.2
1	95	12.16	35.050	26.62	5.64	96	0.42	***	2.0
1	142	11.99	35.090	26.68	5.63	96	0.44	***	1.6
1	190	11.89	35.100	26.71	5.66	96	0.45	***	2.2
1	286	10.76	34.970	26.81	5.41	89	0.66	***	6.7
1	475	9.13	34.730	26.91	5.48	87	0.88	***	10.0
1	660	8.94	34.740	26.94	5.29	84	0.99	***	14.5
1	840	6.28	34.450	27.10	4.49	67	1.39	***	27.0
2	1025	4.21	34.400	27.31	4.36	61	1.69	***	29.5
2	1210	3.25	34.470	27.46	3.95	54	1.74	***	28.2
2	1395	2.80	34.550	27.57	3.75	51	1.84	***	29.1
2	1855	2.37	34.700	27.72	3.77	50	1.81	***	29.9
2	2335	2.05	34.730	27.77	4.01	53	1.80	***	34.1
3	2800	1.77	34.730	27.79	4.05	53	1.70	***	26.6
3	3270	1.49	34.780	27.86	4.35	57	1.68	***	25.1
3	3735	1.30	34.720	27.82	4.64	60	1.67	***	30.1
3	4300	1.07	34.720	27.84	4.49	57	1.69	***	31.4

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STATION	DATE	TIME	LATITUDE	LONGITUDE					
ANEM.	CLOUD	VIS., SEA	SWELL	ATMOS.	WIRE ANGLES				
WIND	TYPE AMT.	DIR. AMT.	DIR. AMT.	PRESSURE	CAST1 CAST2 CAST3				
WET DRY	DIR. SP.	HEIGHT	AMT.	AMT.	AMT.				
6 2/ 179/61	11/ 3/61	1335 J	36 58 S	136 56 E					
170	14.4	18.9	14	4	16	8	14		
						2	17		
						4	1027.8		
							0		
						*	*		
						*	*		
CAST	DEPTH	TFMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.07	35.460	25.37	5.08	100	0.19	***	***
1	25	19.01	35.460	25.39	5.17	102	0.20	***	***
1	50	18.83	35.500	25.46	5.21	102	0.12	***	***
1	75	13.06	35.030*	26.42	5.77	100	0.22	***	***
1	98	12.67	35.150	26.59	5.84	101	0.40	***	***
1	146	11.99	35.110	26.69	5.43	92	0.51	***	***
1	191	11.77	35.100	26.73	5.39	91	0.54	***	***
1	282	10.53	34.920	26.82	4.71	77	0.77	***	***
1	470	9.00	34.700	26.90	5.24	83	0.91	***	***
1	661	8.28	34.610	26.95	5.04	78	1.06	***	***
1	844	6.05	34.420	27.11	4.40	65	1.60	***	***
1	1032	4.13	34.400	27.32	4.23	59	1.81	***	***

**PROPERTY DOUBTFUL
PROPERTY INTERPOLATED**

STATION	DATE			TIME			LATITUDE			LONGITUDE					
G 2 / 180/61	11/ 3/61			1630 J			36 53 S			137 26 E					
SONIC DEPTH	AIR TEMP.	WIND DIR.	ANEM. SP.	CLOUD HEIGHT	TYPE	AMT.	VIS.	SEA DIR.	AMT.	SWELL DIR.	AMT.	ATMOS. PRESSURE	WIRES CAST1	CAST2	CAST3
384	15.0	18.9	15	4	16	8	6	8	13	2	20	4	1025.9	0	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE						
1	0	19.37	35.750	25.52	4.93	98	0.10	***	***						
1	24	19.25	35.730	25.53	4.89	97	0.11	***	***						
1	47	15.36	35.310	26.15	5.60	102	0.30	***	***						
1	71	13.43	35.310	26.56	5.36	94	0.41	***	***						
1	118	13.25	35.280	26.58	5.19	91	0.46	***	***						
1	165	12.87	35.250	26.63	4.05	70	0.48	***	***						
1	260	11.16	34.990	26.76	5.12	85	0.51	***	***						
1	355	10.82	34.970	26.80	5.30	88	0.75	***	***						

STATION	DATE			TIME			LATITUDE	LONGITUDE				
	SONIC DEPTH	AIR TEMP. WEI	WIND DRY	ANEM. SP.	HEIGHT	CLOUD TYPE AMT.	VIS. DIR.	SEA AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2	WIRE ANGLES CAST3
6 2/ 181/61		11/ 3/61				1900	J		36 48 S	1025.2	0	*
	61	16.7	18.9	14	7	16	8	8	7	14	4	*
									16	4	1025.2	*
CAST	DEPTH	TEMP.		SALINITY		SIGMA-T	OXYGEN	OXYGEN X SAT.		INORG. P	TOTAL P	NITRATE
1	0	19.41		35.790		25.54	5.00	99		0.10	***	
1	20	19.43		35.790		25.53	5.12	102		0.09	***	
1	30	19.45		35.780		25.52	5.00	100		0.17	***	
1	40	19.43		35.780		25.52	4.86	97		0.15	***	
1	55	14.09		35.410		26.50	4.31	77		0.50	***	

STATION	DATE		TIME		LATITUDE		LONGITUDE		
G 2 / 182/61	11/ 3/61		2135 J		36 39 S		138 22 E		
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIRR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
66	13.6	16.7	15	6	16	*	0	7	15
							3	16	4
								1024.7	0
									*
CAST	DEPTH	TEMP.	SALINITY	SIGNAL-T	OXYGEN	OXYGEN X SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.82	35.410	25.65	4.89	94	0.15	***	***
1	20	17.79	35.410	25.66	4.34	83	0.21	***	***
1	30	17.51	35.370	25.69	4.11	79	0.20	***	***
1	45	14.66	35.410	26.38	4.47	81	0.50	***	***
1	60	14.65	35.400	26.37	4.52	82	0.51	***	***

STATION	DATE			TIME			LATITUDE			LONGITUDE		
	SONIC DEPTH	AIR TEMP.	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS., SEA DIR. AMT.	SWELL, DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3	WIRE ANGLES		
6 2/ 183/61		11/ 3/61			2355 J		36 30 S	1024.9	0	*	*	*
	55	13.3	15.0	14	6	16	*	0	7	14	3	16
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE		
1	0	18.50		35.480	25.53	5.26	103	0.14	***	***		
1	20	18.50		35.480	25.53	5.25	102	0.13	***	***		
1	30	18.52		35.470	25.52	5.29	103	0.13	***	***		
1	40	15.93		35.440	26.12	4.79	89	0.35	***	***		
1	52	15.26		35.620	26.41	3.92	72	0.50	***	***		

STATION	DATE			TIME			LATITUDE			LONGITUDE		
SONIC DEPTH	AIR TEMP. WET DEPTH	WIND DIR.	ANEM. SP.	CLOUD HEIGHT	VIS. TYPE AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2	WIRE ANGLES CAST3		
6 2/ 184/61		12/ 3/61			0220 J			36 23 S			139 18 E	
46	12.8	15.0	14	5	16 *	0	8	15	3	14	1	1022.9
										0	*	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE			
1	0	16.51	35.410	25.96	5.03	94		0.21	***			
1	20	16.53	35.400	25.95	5.01	94		0.30	***			
1	30	16.53	35.400	25.95	4.97	93		0.33	***			
1	40	16.41	35.400	25.98	4.83	90		0.34	***			

STATION	DATE	TIME	LATITUDE	LONGITUDE					
6 2 / 187/61	12 / 3/61	0945 J	37 39 S	140 02 E					
SONIC DEPTH	AIR TEMP., WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3 WIRES ANGLES
42 13.3 17.2	17 4	16	8	8	*	0	17 1	1024.0	0 * *
CAST	DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	OXYGEN X SAT.	INORG. P	TOTAL P	NITRATE
1 0	14.76	35.230	26.22	5.98	108	0.22	***	***	***
1 10	13.77	35.200	26.41	5.69	101	0.21	***	***	***
1 20	12.74	35.160	26.59	5.31	92	0.44	***	***	***
1 30	12.73	35.160	26.59	5.40	93	0.51	***	***	***
1 40	12.73	35.160	26.59	5.09	88	0.50	***	***	***

STATION	DATE		TIME		LATITUDE		LONGITUDE		
G 2 / 188/61	12 / 3/61		1100 J		37 45 S		139 56 E		
SONIC DEPTH	AIR TEMP. WEI	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
95	13.3	17.2	17	4	16	8	8	*	0
						*	0		17
							4	1024.0	0
								*	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.17	35.330	25.75	5.54	105	0.16	***	***
1	10	16.75	35.300	25.82	5.58	105	0.17	***	***
1	20	16.52	35.280	25.86	5.66	106	0.18	***	***
1	30	16.03	35.260	25.96	5.82	108	0.20	***	***
1	50	13.67	35.170	26.41	5.85	103	0.29	***	***
1	75	12.67	35.180	26.62	5.46	94	0.39	***	***
1	95	12.53	35.180	26.64	5.40	93	0.43	***	***

STATION	DATE			TIME			LATITUDE			LONGITUDE		
SONIC DEPTH	AIR TEMP.	WIND WEI DRY DIR.	SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2	WIRE ANGLES CAST3	
6 2/ 189/61	12/ 3/61				1230 J		37 55 S		1023.0	0	*	*
933 13.9 16.1 14 4	16	1	5	8	14	2	17	1	1023.0	0	*	*
CAST	DEPTH	TEMP.		SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE		
1 0	17.65	35.350		25.64	5.38	103	0.18					
1 2.4	17.36	35.340		25.71	5.42	103	0.17					
1 4.6	16.66	35.290		25.84	5.63	106	0.19					
1 6.8	14.26	35.150		26.27	6.07	108	0.20					
1 9.0	12.70	35.120		26.56	5.92	102	0.36					
1 13.6	12.20	35.130		26.67	5.63	96	0.48					
1 18.0	11.92	35.130		26.72	5.56	94	0.51					
1 27.0	11.40	35.050		26.76	5.52	93	0.54					
1 45.1	9.14	34.710		26.89	5.45	87	1.00					
1 63.8	7.86	34.550		26.96	4.92	76	1.25					
1 82.6	5.52	34.430		27.18	4.28	62	1.57					

STATION	DATE			TIME			LATITUDE			LONGITUDE			
	AIR TEMP.	WIND DIR.	ANEM. SP.	CLOUD HEIGHT	TYPE	AMT.	VIS.	SEA DIR.	AMT.	SWELL DIR.	AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3
6 2/ 193/61				12/ 3/61			2010 J			38 45 S			141 13 E
1463	14.4	17.2	10	3	16	8	2	8	10	2	15	1	1020.9
													0 *
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN		OXYGEN	OXYGEN % SAT.		INORG. P		TOTAL P	NITRATE
1	0	17.62	35.350	25.65	5.28		101	0.17		***		***	
1	25	17.64	35.350	25.65	5.34		102	0.15		***		***	
1	48	14.20	35.180	26.30	5.98		107	0.23		***		***	
1	72	12.89	35.160	26.56	5.48		95	0.41		***		***	
1	94	12.66	35.170	26.61	5.45		94	0.50		***		***	
1	138	12.30	35.140	26.66	5.39		92	0.52		***		***	
1	164	12.06	35.160	26.72	5.45		93	0.51		***		***	
1	274	11.01	34.980	26.78	5.58		93	0.69		***		***	
1	456	8.77	34.620	26.88	5.57		88	1.00		***		***	
1	640	7.97	34.550	26.95	5.21		81	1.19		***		***	
1	820	5.79	34.430	27.15	4.44		65	1.51		***		***	
1	1003	3.98	34.420	27.35	4.20		59	1.77		***		***	

STATION	DATE	TIME	LATITUDE	LONGITUDE												
6 2/ 194/61	12/ 3/61	2200 J	38 33 S	141 19 E												
SONIC DEPTH	AIR TEMP. WET	WIND DRY	ANEM. DIR.	CLOUD HEIGHT	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3	WIRE ANGLES						
123	15.6	18.9	10	3	16	*	0	8	10	2	15	1	1021.1	0	*	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	OXYGEN	INORG. P	TOTAL P	NITRATE						
1	0	***	35.400	***	5.48	***	5.48	0.29	***	***						
1	20	***	35.340	***	5.54	***	5.54	0.27	***	***						
1	30	***	35.340	***	5.56	***	5.56	0.18	***	***						
1	50	***	35.170	***	5.74	***	5.74	0.40	***	***						
1	75	13.05	35.160	26.53	5.45	95	5.45	0.42	***	***						
1	100	12.90	35.150	26.55	5.40	94	5.40	0.40	***	***						
1	120	12.65	35.150	26.60	5.34	92	5.34	0.42	***	***						

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STATION	DATE	TIME	LATITUDE	LONGITUDE						
6 2/ 195/61	12/ 3/61	2300 J	38 26 S	141 22 E						
SONIC DEPTH	AIR TEMP. WET DRY	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	CAST1 CAST2 CAST3	WIRE ANGLES
93 15.6	17.2	09	3	16 *	0	8	09	2	15 1	1019.9
										*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE	
1	0	16.93	35.340	25.81	5.60	106	0.17	***	***	
1	1.0	16.96	35.340	25.80	5.59	106	0.16	***	***	
1	2.0	15.91	35.260	25.99	5.63	104	0.20	***	***	
1	3.0	13.69	35.190	26.42	5.66	100	0.31	***	***	
1	5.0	12.87	35.170	26.57	5.41	94	0.51	***	***	
1	7.5	12.50	35.160	26.63	5.35	92	0.52	***	***	

DATA
PART 2
HYDROLOGY
SURFACE SAMPLING

VESSEL CRUISE NUMBER	STATION YR.	MTH.	DAY	TIME	Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND DN.	AMT.	SEA DN.	AMT.	SWELL DN.	AMT.	WEA.	VIS.	BAROM.	SAMPLING METHOD
20	2	43	61	2	21	1700	K 38	38	S 144	55	E 19.9	35.42	00	00	00	00	00	00	1
20	2	44	61	2	21	1900	K 38	50	S 145	10	E 19.9	35.41	00	00	00	00	00	00	1
20	2	45	61	2	21	2100	K 38	58	S 145	29	E 19.9	35.36	99	1	00	00	00	00	1
20	2	46	61	2	21	2300	K 39	19	S 145	58	E 19.9	35.40	00	00	00	00	00	00	1
20	2	47	61	2	22	0104	K 39	35	S 146	33	E 19.9	35.49	18	2	20	1	00	00	1
20	2	48	61	2	22	0306	K 39	51	S 146	48	E 19.9	35.40	18	2	20	1	00	00	1
20	2	49	61	2	22	0500	K 40	07	S 147	10	E 19.9	35.45	01	2	01	1	00	00	1
20	2	50	61	2	22	0700	K 40	21	S 147	38	E 19.9	35.50	07	3	07	2	00	00	1
20	2	51	61	2	22	0930	K 40	40	S 148	10	E 19.9	35.59	13	2	13	1	00	00	1
20	2	52	61	2	22	1137	K 40	43	S 148	36	E 19.9	35.58	01	2	06	1	00	00	1
20	2	53	61	2	22	1315	K 40	46	S 148	53	E 19.9	35.54	01	2	05	1	00	00	1
20	2	54	61	2	22	1645	K 40	24	S 149	01	E 19.9	35.71	02	3	02	2	02	02	1
20	2	55	61	2	22	2025	K 39	57	S 149	12	E 19.9	35.72	35	3	02	2	02	02	1
20	2	56	61	2	23	0130	K 39	31	S 148	46	E 19.9	35.72	35	3	02	2	02	02	1
20	2	57	61	2	23	0300	K 39	30	S 148	41	E 19.9	35.67	03	5	03	2	05	04	1
20	2	58	61	2	23	0410	K 39	28	S 148	29	E 19.9	35.66	02	4	02	3	04	04	1
20	2	59	61	2	23	0625	K 39	06	S 148	28	E 19.9	35.58	32	5	34	2	02	02	1
20	2	60	61	2	23	1000	K 38	40	S 148	19	E 19.9	35.43	25	4	25	2	02	02	1
20	2	61	61	2	23	1135	K 38	41	S 148	33	E 19.9	35.43	25	4	25	2	02	02	1
20	2	62	61	2	23	1330	K 38	41	S 148	47	E 19.9	35.71	25	4	25	2	02	02	1
20	2	63	61	2	23	1615	K 38	39	S 149	15	E 19.9	35.72	24	3	24	2	02	02	1
20	2	64	61	2	23	1915	K 38	39	S 149	44	E 19.9	35.79	24	2	24	2	02	02	1
20	2	65	61	2	23	2145	K 38	19	S 149	43	E 19.9	35.71	24	2	24	2	02	02	1
20	2	66	61	2	23	2350	K 38	06	S 149	45	E 19.9	35.76	00	0	25	1	00	00	1
20	2	67	61	2	24	0120	K 37	55	S 149	43	E 19.9	35.57	14	3	25	1	00	00	1
20	2	68	61	2	24	0300	K 37	57	S 149	22	E 19.9	35.52	15	3	25	1	00	00	1
20	2	69	61	2	24	0445	K 38	01	S 148	56	E 18.9	35.41	99	2	26	1	00	00	1
20	2	70	61	2	24	0712	K 38	05	S 148	28	E 19.9	35.41	34	2	27	1	00	00	1
20	2	71	61	2	24	0900	K 38	08	S 148	00	E 19.8	35.46	25	3	25	2	02	02	1
20	2	72	61	2	24	1200	K 38	28	S 147	58	E 19.7	35.46	25	3	25	2	02	02	1
20	2	73	61	2	24	1430	K 38	49	S 147	12	E 19.7	35.40	25	3	24	2	02	02	1
20	2	74	61	2	24	1640	K 39	06	S 147	14	E 19.7	35.51	24	3	24	2	02	02	1
20	2	75	61	2	24	1820	K 39	22	S 147	12	E 18.9	35.52	26	4	24	2	02	02	1
20	2	76	61	2	24	2020	K 39	38	S 147	12	E 19.8	35.54	26	4	24	2	02	02	1
20	2	77	61	2	24	2200	K 39	54	S 147	12	E 19.7	35.52	25	5	25	2	02	02	1
20	2	78	61	2	24	2335	K 40	10	S 147	12	E 19.7	35.6	27	5	26	3	02	02	1
20	2	79	61	2	25	0120	K 40	25	S 147	12	E 19.8	35.4	27	4	25	4	02	02	1
20	2	80	61	2	25	0307	K 40	42	S 147	12	E 19.8	35.54	25	6	25	4	02	02	1
20	2	81	61	2	25	0500	K 40	48	S 146	55	E 19.7	35.6	28	4	25	2	02	02	1
20	2	82	61	2	25	0720	K 40	54	S 146	28	E 19.7	35.48	28	7	28	7	02	02	1

VESSEL CRUISE NUMBER	STATION	16H.	17H.	18H.	19H.	20H.	21H.	22H.	23H.	24H.	25H.	26H.	27H.	28H.	29H.	30H.	31H.	DN.	AMT.	SEA SWELL.	WEA.	VIS.	BAROM.	SAMPLING METHOD	
20 83	61	2 25	935 K 40	35 S 146	30 E 19.7	35.49	26	4	26	2	27	4	26	2	27	4	26	2	25	4	25	2	25	1	
20 84	61	2 25	1155 K 40	15 S 146	28 E 19.8	35.52	26	5	25	3	24	1	26	2	25	3	24	1	25	3	24	1	25	1	
20 85	61	2 25	1400 K 39	55 S 146	29 E 19.8	35.53	25	5	25	3	24	1	26	2	25	3	24	1	25	3	24	1	25	1	
20 86	61	2 25	1622 K 39	34 S 146	30 E 19.7	35.49	25	5	25	5	25	2	25	2	25	3	24	1	25	3	24	1	25	1	
20 87	61	2 25	1900 K 39	11 S 146	29 E 19.7	35.40	25	5	25	5	25	2	25	2	25	3	24	1	25	3	24	1	25	1	
20 88	61	2 25	2205 K 39	00 S 145	58 E 19.7	35.43	22	4	22	3	21	1	26	2	25	3	21	1	25	3	21	1	25	1	
20 89	61	2 26	0100 K 38	47 S 145	36 E 19.3	35.35	25	5	25	4	25	2	25	2	25	3	24	1	25	3	24	1	25	1	
20 90	61	2 26	0300 K 39	05 S 145	56 E 19.6	35.49	25	5	25	5	25	4	25	2	25	3	24	1	25	3	24	1	25	1	
20 91	61	2 26	0445 K 39	26 S 145	33 E 19.5	35.50	23	5	23	2	23	1	26	2	23	2	23	1	25	3	24	1	25	1	
20 92	61	2 26	0725 K 39	46 S 145	33 E 19.3	35.55	21	5	21	2	21	1	26	2	21	2	21	1	25	3	24	1	25	1	
20 93	61	2 26	0930 K 40	03 S 145	30 E 19.3	35.57	21	5	21	2	21	1	26	2	21	2	21	1	25	3	24	1	25	1	
20 94	61	2 26	1240 K 40	28 S 145	29 E 19.4	35.61	22	4	22	3	21	1	26	2	21	2	21	1	25	3	24	1	25	1	
20 95	61	2 26	1540 K 40	15 S 145	07 E 19.2	35.48	23	5	23	3	22	1	26	2	22	3	22	1	25	3	24	1	25	1	
20 96	61	2 26	1815 K 40	12 S 144	42 E 17.4	35.26	20	5	22	4	22	3	23	1	23	2	23	1	22	3	22	1	22	1	
20 97	61	2 26	2000 K 40	00 S 144	33 E 18.0	35.33	22	4	22	3	22	1	26	2	22	3	22	1	25	3	24	1	25	1	
20 98	61	2 26	2135 K 39	45 S 144	22 E 18.0	35.52	17	4	17	3	18	2	26	2	18	3	17	2	17	3	17	2	17	1	
20 99	61	2 26	2320 K 39	29 S 144	10 E 17.9	35.33	18	4	18	3	17	2	26	2	17	3	17	2	17	3	17	2	17	1	
20 100	61	2 27	0120 K 39	08 S 143	57 E 17.9	35.33	18	4	18	3	17	2	26	2	17	3	17	2	17	3	17	2	17	1	
20 101	61	2 27	0315 K 38	54 S 143	44 E 18.3	35.42	18	4	17	2	20	1	26	2	20	3	22	1	20	3	22	1	20	1	
20 102	61	2 27	0355 K 39	08 S 143	52 E 19.1	35.48	18	4	18	2	20	1	26	2	20	3	22	1	20	3	22	1	20	1	
20 103	61	2 27	0800 K 39	25 S 143	19 E 18.8	35.40	18	5	20	3	20	1	26	2	20	3	20	1	25	3	24	1	25	1	
20 104	61	2 27	1001 K 39	43 S 143	03 E 18.6	35.41	18	5	20	3	20	1	26	2	20	3	20	1	25	3	24	1	25	1	
20 105	61	2 27	1130 K 39	46 S 142	56 E 18.3	35.37	18	5	20	3	20	1	26	2	20	3	20	1	25	3	24	1	25	1	
20 107	61	2 27	1840 K 39	51 S 141	17 F 17.4	35.12	15	6	15	4	18	1	26	2	18	3	18	1	25	3	18	1	25	1	
20 108	61	2 28	0945 K 39	52 S 137	26 E 18.0	35.30	14	4	13	3	13	4	26	2	13	3	13	4	26	2	13	3	13	1	
20 109	61	2 28	1535 K 39	48 S 142	08 E	35.26	16	5	16	5	16	4	26	2	15	3	16	4	26	2	15	3	16	1	
20 110	61	3 1	0100 K 37	33 S 137	03 S 137	49 E	35.26	14	5	15	5	15	4	26	2	15	3	16	4	26	2	15	3	16	1
20 111	61	3 1	0420 K 37	04 S 137	53 S 137	53 E 19.3	35.40	13	4	13	3	13	4	26	2	13	3	13	4	26	2	13	3	13	1
20 112	61	3 1	0710 J 36	34 S 138	03 E 19.4	35.57	13	4	13	3	13	4	26	2	13	3	13	4	26	2	13	3	13	1	
20 113	61	3 1	1030 J 35	56 S 138	12 E 19.9	35.76	15	5	15	4	15	2	26	2	15	3	15	4	26	2	15	3	15	1	
20 114	61	3 1	1250 J 35	41 S 138	00 E	35.66	15	4	14	2	14	1	26	2	14	3	14	2	14	3	14	2	14	1	
20 115	61	3 1	1225 J 34	54 S 138	17 E 22.3	37.1	99	1	00	0	0	0	26	2	0	0	0	0	0	0	0	0	0	1	
20 116	61	3 1	1340 J 35	04 S 138	10 F 22.2	36.94	99	1	00	0	0	0	26	2	0	0	0	0	0	0	0	0	0	1	
20 117	61	3 1	1430 J 35	10 S 138	05 E 22.3	36.87	99	1	00	0	0	0	26	2	0	0	0	0	0	0	0	0	0	1	
20 118	61	3 1	1540 J 35	13 S 137	54 E 21.1	36.33	20	3	17	1	17	1	26	2	17	1	17	1	17	1	17	1	17	1	
20 119	61	3 1	1705 J 35	17 S 137	41 E 21.2	36.29	20	3	17	1	17	1	26	2	17	1	17	1	17	1	17	1	17	1	
20 120	61	3 1	1859 J 35	25 S 137	17 E 20.7	36.15	12	4	12	2	12	1	26	2	12	2	12	1	12	2	12	1	12	1	
20 121	61	3 1	2045 J 35	33 S 136	54 E 20.2	36.16	12	3	14	2	14	1	26	2	14	3	14	2	14	3	14	2	14	1	
20 122	61	3 1	2315 J 35	40 S 136	31 E 18.7	35.73	10	4	12	3	12	1	26	2	12	3	12	1	12	3	12	1	12	1	

VESSEL CRUISE STATION NUMBER	YR.	MTH.	DAY	TIME	Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND	SEA SWELL	WEA.	VIS.	HAROM.	SAMPLING METHOD		
20	123	61	3	5	0100	39	47	5	156	10	E 19.4	35.71	11	2	00	0	
20	124	61	3	5	0310	35	55	5	135	46	E 19.7	35.64	09	3	00	0	
20	125	61	3	5	0505	36	03	5	135	23	E 19.6	35.56	12	13	2	12	
20	126	61	3	5	0720	36	10	5	135	00	E 19.7	35.65	11	11	2	13	
20	127	61	3	5	1012	35	53	5	134	36	E		09	3	10	1	
20	128	61	3	5	1210	35	55	5	134	10	E		09	3	09	1	
20	129	61	3	5	1415	35	19	5	133	45	E		09	3	10	1	
20	130	61	3	5	1615	35	04	5	133	22	E	20.7	35.98	14	2	14	1
20	131	61	3	5	1830	34	45	5	133	33	E	20.5	35.78	13	4	12	0
20	132	61	3	5	2030	34	29	5	133	50	E	20.4	35.72	15	4	00	0
20	133	61	3	5	2215	34	09	5	133	55	E	20.2	35.72	15	4	00	0
20	134	61	3	6	0012	33	46	5	134	02	E	19.8	35.71	13	5	13	1
20	135	61	3	6	0220	33	33	5	134	13	E	18.2	35.63	12	4	12	2
20	136	61	3	6	0420	33	20	5	133	55	E		10	4	10	2	11
20	137	61	3	6	0600	33	05	5	133	36	E		10	4	10	2	11
20	138	61	3	6	0740	32	51	5	133	16	E		10	4	10	2	11
20	139	61	3	6	0930	32	38	5	132	57	E	19.5	35.69	11	4	11	2
20	140	61	3	6	1110	32	54	5	132	46	E	20.1	35.71	08	3	11	2
20	141	61	3	6	1305	32	09	5	132	31	E	20.5	35.74	13	4	13	2
20	142	61	3	6	1515	32	29	5	132	26	E	21.5	36.12	11	4	12	2
20	143	61	3	6	1720	32	43	5	132	10	E	21.5	36.09	10	2	00	0
20	144	61	3	6	1740	32	47	5	132	08	E	21.5	36.10	10	4	00	0
20	145	61	3	6	2011	33	41	5	131	45	E		15	3	00	0	15
20	146	61	3	6	2150	33	38	5	131	19	E		15	2	00	0	15
20	147	61	3	6	2342	33	30	5	131	52	E	20.9	35.86	14	1	00	2
20	148	61	3	7	0245	33	00	5	131	00	E	21.6	36.27	00	0	00	0
20	149	61	3	7	0436	32	41	5	131	05	E	21.5	36.31	00	0	00	0
20	150	61	3	7	0636	32	21	5	131	10	E	20.6	35.88	09	2	00	0
20	151	61	3	7	0830	32	51	5	131	16	E	20.2	35.84	00	0	00	0
20	152	61	3	7	1112	32	01	5	130	47	E		00	0	00	0	15
20	153	61	3	7	1309	32	04	5	130	18	E		20	3	00	0	18
20	154	61	3	7	1510	32	09	5	129	49	E		14	4	13	2	00
20	155	61	3	7	1700	32	12	5	129	18	E	22.0	36.43	12	4	12	2
20	156	61	3	7	1901	32	34	5	129	20	E	22.1	36.38	10	2	00	0
20	157	61	3	7	2050	32	52	5	129	18	E	22.2	36.32	07	0	13	1
20	158	61	3	7	2245	33	13	5	129	20	E	21.5	36.07	09	3	00	0
20	159	61	3	8	0045	33	32	5	129	21	E	21.3	35.96	07	3	07	2
20	160	61	3	8	0135	33	34	5	129	21	E		07	3	07	2	13
20	161	61	3	8	0323	33	35	5	128	49	E		07	3	07	2	13
20	162	61	3	8	0506	33	35	5	128	19	E		05	3	04	2	19

**DATA
PART 3
PRIMARY PRODUCTION**

EXPLANATION OF HEADINGSPart 3Primary Production

STATION	Gives the station identification. For example, G2/43/61 signifies the 43rd station worked by Gascoyne in 1961, on her 2nd cruise for that year
DATE	Given as day/month/year
TIME	Given in Zone Time (Table 2, p. 14)
LATITUDE LONGITUDE	Given in degrees and minutes
INCUBATION METHOD	Artificial constant light incubation
¹⁴ C STOCK	Stock number used
ACTIVITY CPM	Activity of ¹⁴ C stock used, recorded in counts per minute
BACKGROUND	Background count is recorded in counts per minute
DEPTH	Depth of sampling in metres
LIGHT	The counts per minute of the filter from the clear bottle
DARK	The counts per minute of the filter from the dark bottle. If the DARK count is more than 50 cpm and also more than 10% of the LIGHT count, it is considered aberrant, is not used, and the symbol "B" placed after it
DARK USED	This is usually the same as the DARK count. If the DARK count is aberrant the mean of all the dark counts for samples from that station is used (Symbol "E")
NETT	The difference between LIGHT and DARK USED

INC. PER.

Incubation period

PRODUCTION A

The calculated rate of production in mg
of carbon per hour per cubic metre

PRODUCTION B

The integrated production under one square
metre from the surface to the given depth
in g of carbon per day per square metre.
A day has been taken to equal 10 hours

STATION
G 2/126/61

DATE
5/ 3/61

TIME
0810 I

LATITUDE
36 10 S

LONGITUDE
135 00 E

INCUBATION METHOD
ARTIFICIAL CONSTANT LIGHT 0

PERIOD
4 HOURS

ACTIVITY CPM
10.02 MILLION

BACKGROUND
15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	266	14	14	252	04.00	00.15	00.00
25	231	49	49	182	04.00	00.11	00.03
50	302	20	20	282	04.00	00.17	00.07
75	457	121 B	24 E	433	04.00	00.27	00.12
100	89	21	21	68	04.00	00.04	00.16
150	47	16	31	31	04.00	00.02	00.18

B ABERRANT VALUE, NOT USED
E MEAN NON-ABERRANT DARK USED

STATION	DATE		TIME	LATITUDE	LONGITUDE
G 2/130/61	5/ 3/61		1620 I	35 04 S	133 22 E
INCUBATION METHOD	PERIOD		14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT	0	4 HOURS	NO. 7	10.02 MILLION	15 CPM
DEPTH	LIGHT	DARK	DARK USED	NETT	INC. PER.
M	CPM	CPM	CPM	CPM	CPM
				HOURS	PRODUCTION A MG.C/HR./CU.M.
					PRODUCTION B G.C/DAY/SQ.M.
0	179	23	23	156	00.10
25	225	34	34	191	00.12
50	400	20	20	380	00.23
75	353	2	2	351	00.21
100	108	10	10	98	00.06
150	776	47	47	729	00.45
					00.29

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STATION	DATE	TIME	LATITUDE	LONGITUDE
G 2/139/61	6/ 3/61	0915 I	32 38 S	132 57 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 7	10.02 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	827	21		806	04.00	00.49	00.00
10	1046	32	30	1014	04.00	00.62	00.06
20	951		67	921	04.00	00.56	00.11
30	901		15	834	04.00	00.51	00.17
40	842		52	827	04.00	00.51	00.22
50	1392			1340	04.00	00.82	00.29

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 2/144/61	6/ 3/61	1805 L	33 47 S	132 08 E
INCUBATION METHOD				
ARTIFICIAL CONSTANT LIGHT	0	4 HOURS	14C STOCK	BACKGROUND
DEPTH	LIGHT	DARK USED	NETT	ACTIVITY CPM
M	CPM	CPM	CPM	10.02 MILLION
			NO.	15 CPM
			INC. PER.	PRODUCTION A
			HOURS	MG.C./HR./CU.M.
				G.C./DAY/SQ.M.

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B ABERRANT VALUE NOT USED
 E MEAN NON-ABERRANT DARK USED

0	375	59 B	23 E	352	04.00	00.22	00.00
25	447	82 B	23 E	424	04.00	00.26	00.06
50	696	46	46	650	04.00	00.40	00.14
75	272	12	12	260	04.00	00.16	00.21
100	88	13	13	75	04.00	00.05	00.24
150	69	58 B	23 E	46	04.00	00.03	00.26

STATION	DATE	TIME	LATITUDE	LONGITUDE
6 2/151/61	7/ 3/61	0840 I	31 58 S	131 16 E
INCUBATION METHOD	PERIOD	^{14C} STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 7	10.02 MILLION	15 CPM
DEPTH	LIGHT	DARK	NETT	INC. PER.
M	CPM	CPM	CPM	HOURS
0	453	29	424	04.00
10	520	38	482	04.00
20	500	26	474	04.00
30	833	29	804	04.00
40	1437	20	1417	04.00
50	1215	47	1168	04.00
				00.26
				00.30
				00.06
				00.10
				00.16
				00.72
				00.00
				00.03
				00.06
				00.10
				00.16
				00.24
PRODUCTION A		PRODUCTION B		
		MG. C / HR. / CU. M.		G. C / DAY / SQ. M.

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 2155/61	7/ 3/61	1705 1	32 12 S	129 18 E
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 7	10.02 MILLION	15 CPM
DEPTH	LIGHT	DARK	NETT	INC. PER.
M	CPM	CPM	CPM	HOURS MG.C/HR./CU.M.
0	330	27	303	04.00 00.19
10	475	49	426	04.00 00.26
20	498	60 B	458	04.00 00.28
30	582	72 B	542	04.00 00.33
40	1381	46	1335	04.00 00.82

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B ABERRANT VALUE, NOT USED
 E MEAN NON-ABERRANT DARK USED

STATION

6 2164/61

DATE

8 / 3 / 61

TIME

0810 I

LONGITUDE

127 38 E

LATITUDE

33 37 S

INCUBATION METHOD

ARTIFICIAL CONSTANT LIGHT 0

BACKGROUND

14C STOCK

ACTIVITY CPM

10.02 MILLION

PERIOD

4 HOURS

DARK USED

NO. 7

ACTIVITY CPM

15 CPM

DEPTH

M

LIGHT

CPM

DARK

CPM

NETT

CPM

INC. PER.

HOURS

PRODUCTION A

MG.C./HR./CU.M.

PRODUCTION B

G.C./DAY/SQ.M.

0	309	16	293	04.00	00.18
25	315	19	296	04.00	00.18
50	450	33	417	04.00	00.26
75	440	9	431	04.00	00.26
100	58	9	49	04.00	00.03
150	104	18	86	04.00	00.05

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 2/167/61	8 / 3/61	1340 1	32 44 S	127 31 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 7	10.02 MILLION	15 CPM

DEPTH	LIGHT	DARK	DARK USED	NETT	INC. PER.	PRODUCTION A	PRODUCTION B
M	CPM	CPM	CPM	CPM	HOURS	MG.C/HR./CU.M.	G.C/DAY/SQ.M.
0	798	21	21	777	04.00	00.48	00.00
10	962	25	25	937	04.00	00.57	00.05
20	1066	136 B	21 E	1045	04.00	00.64	00.11
30	1419	194 B	21 E	1398	04.00	00.86	00.19
45	1083	18	18	1065	04.00	00.65	00.30

B ABERRANT VALUE, NOT USED
 E MEAN NON-ABERRANT DARK USED

STATION	DATE		LATITUDE	TIME	LATITUDE	LONGITUDE
G 2175/61	9 / 3/61		33 51 S	0500 H	33 51 S	126 00 E

INCUBATION METHOD	PERIOD		14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO.	7	10.02 MILLION	15 CPM

DEPTH	LIGHT	DARK	DARK USED	NETT	INC. PER.	PRODUCTION A	PRODUCTION B
M	CPM	CPM	CPM	CPM	HOUR S	MG.C/HR./CU.M.	G.C/DAY/SQ.M.
0	276	17	17	259	04.00	00.16	00.00
25	270	29	29	241	04.00	00.15	00.04
50	276	53 B	22 E	254	04.00	00.16	00.08
75	350	30	30	320	04.00	00.20	00.12
100	260	16	16	244	04.00	00.15	00.17
150	41	19	22	22	04.00	00.01	00.21

B ABERRANT VALUE, NOT USED
 E MEAN NON-ABERRANT DARK USED

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 2/176/61	10/ 3/61	0225 I	36 51 S	129 35 E
INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 7	10.02 MILLION	15 CPM
DEPTH	LIGHT	DARK USED	NETT	INC. PER.
M	CPM	CPM	CPM	HOURS
0	145	19	126	04.00
25	163	19	144	04.00
50	241	11	230	04.00
75	146	6	140	04.00
100	83	15	68	04.00
150	29	8	21	04.00
				00.08
				00.09
				00.14
				00.05
				00.08
				00.09
				00.04
				00.10
				00.01

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STATION	DATE	TIME	LATITUDE	LONGITUDE
6 2/17/61	10/ 3/61	2130 I	36 15 S	133 35 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 7	10.02 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C./HR./CU.M.	PRODUCTION B G.C./DAY/SQ.M.
0	143	33	33	110	04.00	00.07	00.00
25	155	22	22	133	04.00	00.08	00.02
50	165	25	25	140	04.00	00.09	00.04
75	297	15	15	282	04.00	00.17	00.07
100	64	13	13	51	04.00	00.03	00.10
150	68	9	9	59	04.00	00.04	00.12

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STATION

G 2/180/61

DATE

LATITUDE

TIME

LONGITUDE

11 / 3/61

36 53 S

1705 1

137 26 E

INCUBATION METHOD

PERIOD

ACTIVITY CPM

DARK USED

BACKGROUND

ARTIFICIAL CONSTANT LIGHT 0

4 HOURS

10.02 MILLION

15 CPM

DEPTH M	LIGHT CPM	DARK CPM	NETT CPM	INC. PER. %	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	571	28	543	04.00	00.33	00.00
25	411	15	396	04.00	00.24	00.07
50	317	13	304	04.00	00.19	00.13
75	65	3	62	04.00	00.04	00.15
100	25	19	6	04.00	00.00	00.16
150	26	14	12	04.00	00.01	00.16

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STATION	DATE	TIME	LATITUDE	LONGITUDE
G 2187/61	12/ 3/61	0850 1	37 39 S	140 02 E
INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	ND. 7	10.02 MILLION	15 CPM
DEPTH	LIGHT	DARK	NETT	INC. PER.
M	CPM	CPM	CPM	HR'S
0	3696	65	3631	04.00
10	2637	19	2618	04.00
20	891	16	875	04.00
30	793	9	784	04.00
				02.22
				01.60
				00.54
				00.48
				00.35
				00.30
				00.19
				00.00

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STATION	DATE	TIME	LATITUDE	LONGITUDE
G 2/193/61	12/ 3/61	2040 I	38 45 S	141 13 E
INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 7	10.02 MILLION	15 CPM
DEPTH	LIGHT	DARK USED	NETT	INC. PER.
M	CPM	CPM	CPM	HOURS
0	273	19	254	04.00
25	249	26	223	04.00
50	576	23	553	04.00
75	186	12	174	04.00
100	72	7	65	04.00
150	43	4	39	04.00
				00.16
				00.14
				00.34
				00.11
				00.15
				00.17
				00.02
				00.19

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DATA

PART 4

PIGMENTS

EXPLANATION OF HEADINGSPart 4Pigments

STATION	Gives the station identification. For example, G2/43/61 signifies the 43rd station worked by <u>Gascoyne</u> in 1961, on her 2nd cruise for that year
DATE	Given as day/month/year
TIME	Given in Zone Time (Table 2, p. 14)
LATITUDE LONGITUDE	Given in degrees and minutes
DEPTH	Actual sampling depth given in metres
CHLOROPHYLL A B C	A and B given in mg/m ³ C given in MSPU/m ³
ASTACIN NON-ASTACIN	Given in MSPU/m ³

STATION		DATE		TIME		LATITUDE		LONGITUDE	
G	2/126/61		5 / 3/61		0720 K		36 10 S		135 00 E
DEPTH		CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C		ASTACIN		NON-ASTACIN	
0		0.12	0.09	0.58		0.10		- 0.02	
25		0.09	0.04	0.40		0.12		- 0.01	
50		0.10	0.09	0.54		0.11		0.00	
75		0.29	0.15	1.32		0.17		- 0.01	
100		0.18	0.05	0.56		0.06		0.04	
150		0.09	0.06	0.79		0.12		- 0.04	

STATION		DATE		TIME		LATITUDE		LONGITUDE	
G	2/130/61		5 / 3/61		1615 K		35 04 S		133 22 E
DEPTH		CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C		ASTACIN		NON-ASTACIN	
0		0.09	0.09	0.28		0.08		0.00	
25		0.08	0.02	0.46		0.06		0.04	
50		0.11	0.09	0.59		0.09		0.00	
75		0.15	0.07	0.77		0.10		0.00	
100		0.17	0.07	0.75		0.07		0.04	
150		0.09	0.08	0.49		0.08		0.00	

STATION		DATE	TIME	LATITUDE	LONGITUDE
6	2/139/61	6 / 3/61	0930 K	32 38 S	132 57 E
DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.11	0.08	0.50	0.06	0.01
10	0.06	0.06	0.23	0.04	0.01
20	0.06	0.04	0.25	0.07	- 0.01
30	0.11	0.03	0.24	0.03	0.03
50	0.08	0.05	0.21	0.05	0.01

STATION		DATE	TIME	LATITUDE	LONGITUDE
6	2/144/61	6 / 3/61	1740 K	33 47 S	132 08 E
DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.10	0.05	0.63	0.06	0.00
25	0.12	0.08	0.55	0.08	0.02
50	0.20	0.09	0.64	0.08	0.01
75	0.15	0.11	0.46	0.08	0.00
100	0.10	0.10	0.37	0.10	- 0.01
150	0.12	0.09	0.56	0.08	0.04

STATION	DATE	TIME	LATITUDE	LONGITUDE	
G 2/151/61	7/ 3/61	0830 K	31 58 S	131 16 E	
DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.09	0.08	0.50	0.09	- 0.01
10	0.11	0.08	0.53	0.07	0.06
20	0.11	0.08	0.40	0.09	0.00
30	0.08	0.04	0.30	0.04	0.02
40	0.11	0.08	0.53	0.08	0.00
50	0.35	0.14	1.00	0.12	0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE	
G 2/155/61	7/ 3/61	1700 K	32 12 S	129 18 E	
DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.46	0.20	0.73	0.10	0.01
10	0.10	0.08	0.51	0.06	0.00
20	0.11	0.08	0.39	0.06	0.03
35	0.20	0.16	0.88	0.14	- 0.01

STATION	DATE	TIME			LATITUDE	LONGITUDE
G 2/164/61	8 / 3/61	0738	K		33 37 S	127 38 E
DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NCN-ASTACIN	
0	0.05	0.02	0.28	0.04	0.01	
25	0.06	0.03	0.31	0.07	0.00	
50	0.10	0.07	0.74	0.10	- 0.03	
75	0.17	0.11	0.46	0.10	0.01	
100	0.10	0.06	0.53	0.08	0.00	
150	0.08	0.08	0.36	0.06	0.01	

STATION	DATE	TIME			LATITUDE	LONGITUDE
G 2/167/61	8 / 3/61	1330	K		32 44 S	127 31 E
DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NCN-ASTACIN	
0	0.11	0.10	0.22	0.05	0.02	
10	0.11	0.06	0.44	0.06	0.02	
20	0.15	0.14	0.73	0.10	0.00	
30	0.23	0.16	0.78	0.13	- 0.01	
45	0.35	0.16	1.14	0.13	0.01	

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 2/176/61	10/ 3/61	0130 K	36 51 S	129 35 E
DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN
0	0.06	0.04	0.40	0.05
25	0.10	0.09	0.54	0.08
50	0.05	0.03	0.46	0.05
75	0.17	0.14	0.74	0.11
100	0.15	0.11	0.58	0.08
150	0.06	0.05	0.30	0.05

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 2/177/61	10/ 3/61	2045 K	36 15 S	133 35 E
DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN
0	0.05	0.04	0.28	0.02
25	0.06	0.01	0.11	0.02
50	0.11	0.10	0.32	0.08
100	0.15	0.05	0.53	0.06
150	0.10	0.03	0.40	0.05

STATION	DATE	TIME	LATITUDE	LONGITUDE
			36 52 S	137 26 E
G 2/180/61	11 / 3/61	1630 K		
DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN
0	0.14	0.07	0.46	0.09
25	0.12	0.07	0.49	0.10
50	0.11	0.08	0.49	0.07
75	0.07	0.04	0.25	0.04
150	0.09	0.07	0.47	0.07

STATION	DATE	TIME	LATITUDE	LONGITUDE
			37 39 S	140 02 E
G 2/187/61	12 / 3/61	0945 K		
DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN
0	0.59	0.24	1.76	0.22
10	0.52	0.24	1.20	0.18
20	0.30	0.14	1.00	0.16
30	0.20	0.11	0.65	0.12

STATION	DATE	TIME	LATITUDE	LONGITUDE					
					CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
G 2/193/61	12/ 3/61	2010 K	38 44 S	141 13 E	0.11	0.11	0.66	0.11	- 0.02
					0.16	0.07	0.64	0.11	- 0.02
					0.16	0.09	0.63	0.10	0.00
					0.12	0.06	0.68	0.06	0.01
					0.10	0.04	0.57	0.05	0.00
					0.10	0.08	0.53	0.09	0.00

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1. Oceanographical observations in the Indian Ocean in 1959. H.M.A.S. *Diamantina* Cruises Dml/59 and Dm2/59.
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3. Oceanographical observations in the Indian Ocean in 1960. H.M.A.S. *Diamantina* Cruise Dm2/60.
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5. Oceanographical observations in the Pacific Ocean in 1960. H.M.A.S. *Gascoyne* Cruises G1/60 and G2/60.
6. Oceanographical observations in the Pacific Ocean in 1960. H.M.A.S. *Gascoyne* Cruise G3/60.
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24. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm2/63.
25. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm3/63.