OCEANOGRAPHICAL OBSERVATIONS
IN THE PACIFIC OCEAN IN 1963
H.M.A.S. *GASCOYNE*
Cruise G3/63

OCEANOGRAPHICAL CRUISE REPORT NO. 26

DIVISION OF FISHERIES AND OCEANOGRAPHY
COMMONWEALTH SCIENTIFIC AND INDUSTRIAL
RESEARCH ORGANIZATION, AUSTRALIA 1968

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CONTENTS

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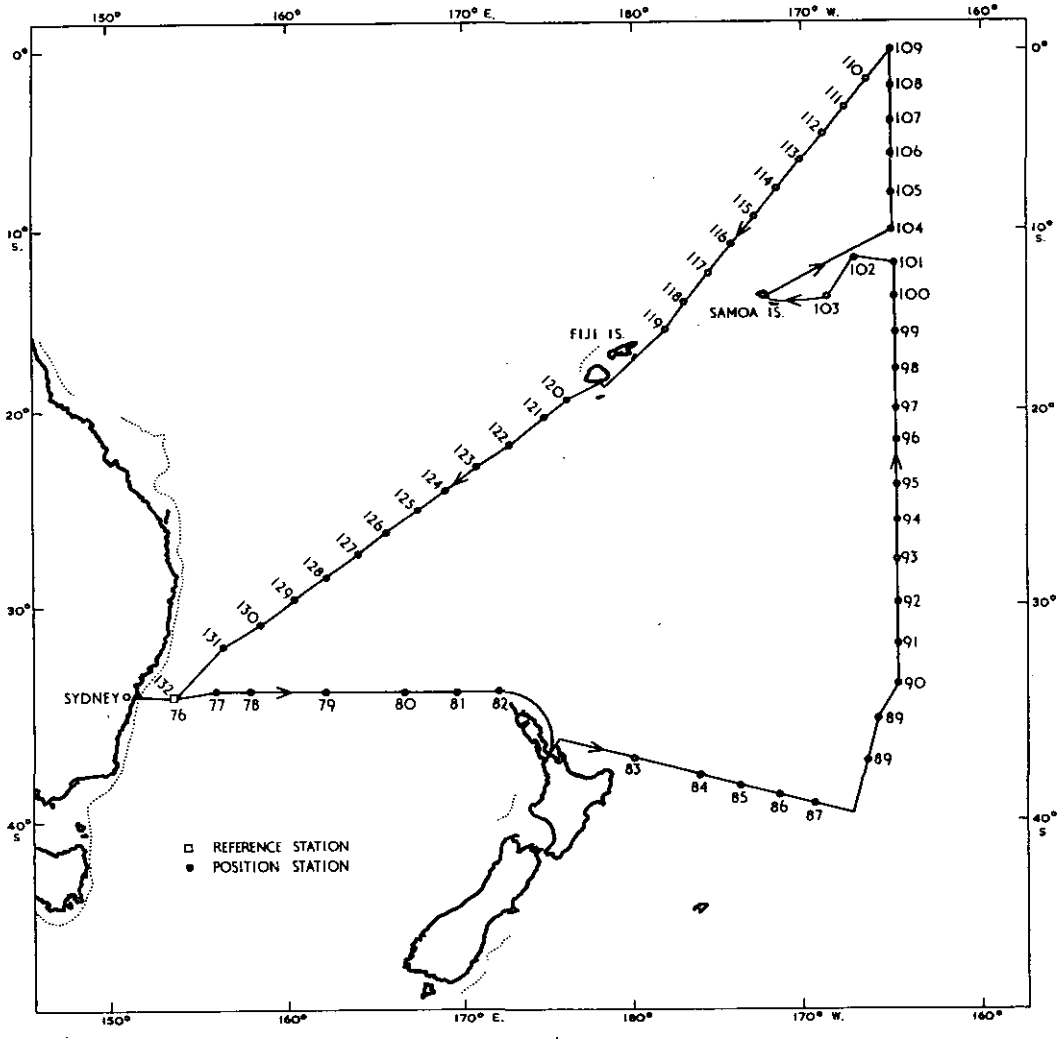

Fig. 1. Track chart

OCEANOGRAPHICAL CRUISE REPORT

No. 26

Oceanographical Observations in the Pacific Ocean in 1963

H.M.A.S. Gascoyne

Cruise G3/63

July 9 - August 21, 1963

I. INTRODUCTION

This report records the data collected during the third cruise in 1963 of H.M.A.S. Gascoyne, Royal Australian Navy oceanographical frigate.

Objectives

To determine the relation of particulate phosphorus distribution to hydrological structure in the central South Pacific Ocean.

To investigate conditions within the South Pacific gyral, the westward extremity of which was examined during Gascoyne Cruise G3/61 (CSIRO Aust. 1967).

To extend to the east, beyond the limits of island effects, the network of productivity stations.

To investigate the distribution of the larvae of southern bluefin tuna and albacore in the South Pacific Ocean.

To investigate the distribution of planktonic Foraminifera in the South Pacific Ocean.

To plot tuna distribution and shoaling patterns in the Tasman Sea.

Itinerary

The cruise began at Sydney on July 9 and worked a series of stations east to Auckland and then on to 165°W. A line of stations was then worked along 165°W. north to the equator with a detour to the Samoa Is. at about 13°S. Via the Fiji Is., a line of stations was then worked to Sydney where the cruise ended on August 21.

Scientific Personnel

D. Rochford (Cruise Leader)
F. Davies
N. Dyson
K. Fleming
J. Klye
S. Kustanowich, University of New South Wales, Sydney
G. Switzer, South Australian Fishermen's Cooperative Ltd, Port Lincoln (Sydney to Auckland)

The analyses of hydrological samples were made in the ship's laboratory by Messrs Davies, Fleming, and Klye. Nitrate analyses were made at Cronulla by Mr Klye. The primary production samples were incubated and counted aboard by Mr Dyson, who also collected the samples for pigment determinations. Pigment determinations were made at Cronulla by Mr Wootton. Zooplankton samples were examined for Foraminifera at the University of New South Wales, and for tuna eggs and larvae at Cronulla. Observations on surface schools of tuna were made by Mr Switzer.

The data were processed, under the direction of Mr Hedge, by Mrs Bailey, Miss Hammond, Mrs Sander, and Miss Wanstall. The track chart was prepared for publication by Mr Breach.

II. WORK ACCOMPLISHED

Fifty-seven stations were worked (G3/76/63-G3/132/63).

Bathythermograph casts were made at all stations. Surface and subsurface hydrology samples were collected at 56 stations, primary production and pigment samples at 30 stations, particulate carbon at 12 stations, and zooplankton at 49 stations.

TABLE 1

WORK DONE AT EACH STATION

Stn No.	BT	Hydrology Surface to Depth (m)	Primary Production 1	Primary Production 2	Part. Carbon	Pigments	Zooplankton 1	Zooplankton 2
76	+	4400	+			+		+
77	+							
78	+	4000	+			+		
79	+	500	+			+		
80	+	850	+			+		+
81	+	1250					+	
82	+	400	+			+		+
83	+	2900	+			+		
84	+	4500	+			+		
85	+	2000					+	

Stn No.	BT	Hydrology Surface to Depth (m)	Primary Production 1	Primary Production 2	Part. Carbon	Pig-ments	Zoo-plankton 1	Zoo-plankton 2
86	+	4500	+			+		
87	+	2000						
88	+	2300					+	+
89	+	4500	+		+	+		+
90	+	2000						+
91	+	5000	+		+	+		+
92	+	1600					+	
93	+	5000	+		+	+		+
94	+	2000					+	+
95	+	5000	+		+	+		+
96	+	2000					+	+
97	+	4500	+	+	+	+	+	+
98	+	2000					+	+
99	+	5000	+	+	+	+		+
100	+	2000					+	+
101	+	4000	+	+	+	+		+
102	+	2000					+	+
103	+	4500	+	+	+	+		+
104	+	1950					+	+
105	+	3000	+		+	+		+
106	+	2000					+	+
107	+	2700	+	+	+	+		+
108	+	2000					+	+
109	+	4000	+	+	+	+		+
110	+	2000					+	+
111	+	5000	+	+		+		+
112	+	2000					+	+
113	+	4000	+	+		+		+
114	+	2000					+	+
115	+	3700	+	+		+		+
116	+	2000					+	+
117	+	3700	+	+		+		
118	+	1500					+	+
119	+	1500	+			+		+
120	+	2000					+	+
121	+	2300	+			+		+
122	+	2000					+	+
123	+	2000						+
124	+	1500	+			+		+
125	+	900					+	+
126	+	3100	+			+		+
127	+	2000					+	+

Stn No.	BT	Hydrology Surface to Depth (m)	Primary Production 1	Primary Production 2	Part. Carbon	Pig-ments	Zoo-plankton 1	Zoo-plankton 2
128	+	1300	+			+		+
129	+	1250					+	+
130	+	3500	+			+		+
131	+	4300					+	+
132	+	4300	+		+	+		+

BT Bathythermogram
Primary Production 1 Light bath incubation
2 Simulated in situ incubation
Part. Carbon Particulate Carbon
Zooplankton 1 Larval net tow
2 Foraminifera net tow

III. METHOD OF COLLECTION AND ANALYSIS OF SAMPLES

1. Physics

Temperature.—Water temperatures were taken with deep-sea reversing thermometers: protected thermometers with a range of -2° to 30°C, and unprotected thermometers with a range of either -2° to 30°C or -4° to 60°C. The accuracy of the temperatures is considered to be ± 0.03 degC.

Bathythermograms.—A 900 ft bathythermograph was used at the stations indicated in Table 1. Slides were digitized according to the method of the U.S. National Oceanographic Data Centre (1964) and the results transferred to punched cards.

Thermometric Depth.—Depth calculations were made by the method described by Pollak (1950), and are considered accurate to ±15 m at depths greater than 1000 m and to 1% above that depth.

Sigma-t.—Sigma-t values were computed from temperature and salinity using the equations of Knudsen (La Fond 1951).

2. Chemistry

Salinity.—Salinity was measured on board with an inductive salinometer (Brown and Hamon 1961).

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 computed, using the simpler of the equations given by Richards and Corwin (1956) -

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

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% w/v stannous chloride diluted afresh from a 40% v/v stock solution in hydrochloric acid, which was kept under paraffin. The reagents were dispensed automatically by piston dispenser.

Standard phosphate solutions were made up in distilled water. At air temperatures less than 25°C, analyses were carried out in batches of 10; readings were begun within 10 min of adding reagents, and completed within 10 min. At air temperatures greater than 25°C, batches of 6 were analysed; readings were commenced within 5 min of adding reagents and completed within 7 min. 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 with no correction for salt error, and are precise to ± 10% for values less than 0.5 µg-atom/l and ± 5% for higher values. To correct for salt effects, the results given should be multiplied by 1.15.

Total Phosphorus.—100 ml samples were drawn from the Nansen bottles into 150 ml Pyrex conical flasks, 0.2 ml of 72% perchloric acid was added and digestion at 200°-250°C carried out immediately on a sand tray. After evaporation of water, heating was continued until fuming of the salt residue commenced. The samples were then allowed to cool and 100 ml of distilled water and 2 drops of 2% w/v phenolphthalein were added. If alkaline, perchloric acid was added until a slight acidity persisted. The flasks were allowed to stand for about 24 hr to allow the salts to dissolve. Phosphate was then determined as described above for inorganic phosphate. Results are given as µg-atom/l without salt correction. 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 $HgCl_2$. 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. Five 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 mμ using a 5 mm cell. Samples with an absorbance greater than that of the standard corresponding to 14.4 μg-atom/l were diluted with artificial seawater-sulphuric acid mixture before reading. Results are given in μg-atom/l.

Particulate Carbon.—Six litres of seawater, collected by means of a plastic sampler (Jitts 1964), were filtered through a Whatman GF/C glass fibre filter 25 mm in diameter. The filters were returned to Cronulla for particulate carbon estimation by the method of Dal Pont and Newell (1963). The column average was calculated according to Humphrey (1960).

3. Primary Production

Water samples were taken with a plastic sampler and aliquots poured into 300 ml Pyrex bottles and incubated in a simulated *in situ* incubator or in constant artificial light at 1100 f.c. The ^{14}C method described by Dyson *et al.* (1965) was used, and Geiger counting was done on board with a windowless counter.

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 envelopes and stored in a refrigerator in metal desiccators over silica gel. The analyses were carried out at Cronulla using the method given by Humphrey (1960), except that 4 cm cells were used in the Unicam SP 600 spectrophotometer and 9 ml 90% acetone were used for extraction

5. Zooplankton

Fish Eggs and Larvae.—Half-hour surface tows were made using a modified N70 net. No tuna eggs or larvae were found.

Foraminifera.—Half-hour surface tows were made using a

modified plankton net of No. 8 nylon (mesh aperture, 120 microns). Samples were preserved with neutralized bromoform.

The examination of the samples is not yet finished.

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IV. DATA SHEETS

Hydrology and pigment data were processed in a C.D.C. 3600 Computer, and primary production data in an I.B.M. 1401 Computer. An explanation of headings used is given at the beginning of each part.

DATA

PART 1

HYDROLOGY

EXPLANATION OF HEADINGS

Part 1 — Hydrology

STATION — Gives the station identification. For example, G3/76/63 signifies the 76th station worked by Gascoyne in 1963, on her 3rd 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 2

CODE FOR TIME ZONES

Longitude Exceeding		Up to but not exceeding	Time Zone (hr)	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
37°30'W.	–	22°30'W.	+2	O
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 CAST 3	Wire angles are measured at the surface and expressed in degrees for each cast
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

* and *** indicate no data available

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 76/63	10/ 7/63	0700 K	34 12 S	153 19 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
4803	11.9	12.8	27	4	15	5	2	6	26	3	24	1	1012.6	10	10	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	19.48	35.502	25.30	4.91	94	0.23	0.29	1.1
2	25	19.46	35.485	25.29	4.96	95	0.29	***	0.9
2	50	19.49	35.485	25.28	4.88	93	0.28	0.33	1.2
2	75	19.47	35.485	25.29	4.85	93	0.28	***	0.7
2	100	19.50	35.493	25.29	4.95	95	0.28	0.32	0.6
2	150	***	35.627	***	4.26	***	0.43	***	2.6
2	200	18.24	35.612	25.70	4.13	77	0.51	0.52	3.8
2	300	17.38	35.652	25.94	4.95	91	0.37	0.40	2.3
2	500	14.87	35.338	26.28	4.32	75	0.67	0.73	8.5
2	700	10.59	34.908	26.80	4.89	78	0.89	1.00	13.7
2	900	7.56	34.551	27.01	4.37	65	1.45	1.51	26.0
2	1100	5.91	34.468	27.16	4.13	59	1.59	1.68	30.9
1	1225	5.13	34.468	27.26	4.04	57	1.65	1.83	34.6
1	1419	4.07	34.515	27.42	3.75	51	1.90	1.96	38.1
1	1910	2.63	34.636	27.65	3.58	47	1.94	2.02	38.3
1	2407	2.12	34.705	27.75	4.03	53	1.91	1.96	38.7
1	2905	1.74	34.725	27.79	4.25	55	1.92	1.89	35.6
1	3402	1.40	34.725	27.82	4.37	56	1.91	1.93	36.9
1	3899	1.17	34.717	27.83	4.40	56	1.91	1.93	36.9
1	4396	1.18	34.716	27.83	4.47	57	1.91	1.95	36.9

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 78/63	11/ 7/63	0930 L	33 59 S	157 56 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4386	11.1	15.0	14	2	15	8	1	6	14	2	14	1	1012.1	10	10	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.59	35.559	25.82	5.16	95	0.24	0.31	1.1
2	25	17.57	35.562	25.82	5.18	95	0.26	***	1.0
2	50	17.58	35.611	25.86	5.12	94	0.26	0.41	1.0
2	75	17.09	35.553	25.93	5.06	92	0.24	***	1.2
2	100	17.03	35.544	25.94	5.15	94	0.26	0.39	1.0
2	150	15.78	35.433	26.15	4.45	79	0.50	***	4.7
2	200	14.10	35.287	26.41	4.37	75	0.70	0.73	8.3
2	300	12.60	35.187	26.64	4.72	78	0.70	0.78	9.0
2	500	9.30	34.719	26.87	4.84	75	1.09	1.22	19.0
2	700	7.40	34.535	27.02	4.37	65	1.46	1.60	26.2
2	900	5.79	34.461	27.17	4.25	60	1.70	1.80	32.7
2	1100	4.63	34.485	27.33	3.94	55	1.86	1.95	36.7
1	1300	3.84	34.522	27.44	3.63	49	1.83	1.98	37.1
1	1500	3.11	34.577	27.56	3.45	46	1.93	2.13	38.3
1	2000	2.32	34.667	27.70	3.75	49	1.96	2.04	36.9
1	2500	1.91	34.717	27.77	4.14	54	1.91	1.88	37.1
1	3000	1.48	34.723	27.81	4.31	55	1.89	1.94	36.0
1	3500	1.16	34.717	27.83	4.39	56	1.95	2.06	36.0
1	4000	1.16	34.715	27.83	4.53	58	1.93	2.00	36.4

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 79/63	12/ 7/63	0900 L	34 07 S	162 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1211	13.9	15.0	12	5	15	2	1	6	12	4	14	4	1005.9	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.71	35.518	25.51	5.14	97	0.15	0.39	0.8
1	25	18.68	35.522	25.52	5.08	96	0.22	***	0.9
1	49	18.70	35.522	25.52	5.02	95	0.29	0.42	0.8
1	74	18.68	35.520	25.52	5.02	95	0.15	***	0.5
1	99	18.70	35.526	25.52	5.04	95	0.31	0.42	***
1	148	17.79	35.577	25.78	4.34	80	0.43	***	3.4
1	198	16.76	35.510	25.98	4.17	76	0.53	0.65	5.4
1	297	14.25	35.294	26.38	4.24	73	0.65	0.86	9.2
1	495	10.53	34.888	26.79	4.43	70	1.02	1.11	15.8
1	693	8.04	34.595	26.97	4.37	66	1.41	1.58	24.8
1	890	6.32	34.477	27.12	4.28	62	1.60	1.72	28.9
1	489	5.67	34.463	27.19	4.11	58	1.63	1.87	30.8

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 80/63	13/ 7/63	0900 L	34 14 S	166 48 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1120	15.0	15.8	22	6	15	2	3	7	22	4	22	4	989.4	15	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.13	35.547	25.92	5.23	95	0.26	0.46	1.1
1	96	17.00	35.577	25.98	5.13	93	0.27	0.37	1.3
1	144	16.26	35.503	26.09	4.85	87	0.40	***	3.1
1	192	15.23	35.405	26.25	4.50	79	0.57	0.71	5.7
1	288	13.28	35.205	26.51	4.50	76	0.78	0.86	10.1
1	481	10.54	34.896	26.80	4.45	71	1.07	1.09	16.3
1	673	8.31	34.651	26.97	4.38	66	1.39	1.46	22.2
1	855	6.40	34.506	27.13	4.22	61	1.62	1.71	28.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 81/63	13/ 7/63	2145 L	34 03 S	169 52 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1772	13,6	15,0	27	5	15	2	5	8	27	3	28	4	993,7	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.94	35.564	25.98	5.24	95	0.21	0.38	1.4
1	83	16.46	35.528	26.06	***	***	0.24	0.61	2.0
1	124	14.98	35.383	26.29	4.59	80	0.45	***	5.8
1	165	14.18	35.345	26.43	4.53	78	0.54	0.75	6.5
1	248	12.84	35.224	26.62	***	***	0.59	0.85	10.2
1	415	10.85	34.971	26.80	4.44	71	0.90	1.12	16.5
1	578	8.96	34.737	26.94	4.39	67	1.20	1.35	20.4
1	743	7.53	34.593	27.04	4.34	64	1.40	1.62	24.1
1	907	6.11	34.519	27.18	4.11	59	1.63	1.72	27.6
1	1073	5.11	34.507	27.29	3.99	56	1.72	1.86	33.3
1	1237	4.37	34.512	27.38	3.86	53	1.89	2.04	34.6

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 82/63	14/ 7/63	0845 L	34 04 S	172 16 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
463	14.7	16.6	34	4	15	2	4	8	34	3	32	1	1002.1	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	15.22	35.382	26.24	5.15	90	0.52	0.60	4.5
1	25	15.17	35.378	26.24	5.13	90	0.52	0.59	5.4
1	50	15.08	35.363	26.25	5.02	88	0.58	0.65	5.3
1	75	14.92	35.348	26.28	5.00	87	0.63	0.62	5.8
1	100	14.66	35.324	26.31	5.10	88	0.65	0.69	5.7
1	150	13.38	35.193	26.48	4.80	81	0.78	0.83	8.9
1	200	12.13	35.062	26.63	4.56	75	0.99	0.91	14.2
1	300	10.33	34.886	26.83	4.44	70	1.13	1.33	17.1
1	400	9.96	34.852	26.86	4.46	70	1.19	1.31	18.0

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 83/63	17/ 7/63	1430 M	38 11 S	179 28 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
3272	11.1	12.8	17	5	15	6	2	8	16	3	16	4	1019.7	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	14.80	35.419	26.36	5.51	96	0.28	0.36	1.4
2	50	14.77	35.422	26.37	5.47	95	0.28	0.42	1.8
2	100	14.71	35.423	26.38	5.45	95	0.28	0.44	1.5
2	150	14.46	35.387	26.41	5.37	93	0.32	***	2.8
2	200	13.34	35.239	26.53	4.85	82	0.60	0.69	7.1
2	300	11.95	35.045	26.65	4.73	77	0.83	0.89	11.1
2	500	9.26	34.716	26.87	4.50	69	1.09	1.25	19.9
2	700	7.52	34.540	27.00	4.60	68	1.29	1.45	24.8
2	900	6.02	34.452	27.14	4.46	64	1.49	1.63	30.9
1	1100	5.07	34.446	27.25	4.17	58	1.63	1.72	35.4
1	1300	4.04	34.486	27.39	3.96	54	1.87	1.84	38.1
1	1500	3.40	34.551	27.51	3.74	50	1.90	1.89	36.2
1	2000	2.38	34.645	27.68	3.48	46	1.95	2.01	36.2
1	2500	1.79	34.714	27.78	3.93	51	1.96	2.00	35.2
1	2900	1.68	34.728	27.80	4.20	54	1.86	1.96	36.0

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 84/63	18/ 7/63	0900 Y	37 51 S	176 14 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4986	11.1	12.2	16	5	15	2	2	8	16	3	16	4	1020.8	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	14.01	35.234	26.38	5.60	96	0.26	0.42	1.2
2	50	14.00	35.235	26.39	5.64	96	0.28	0.46	1.3
2	100	13.99	35.230	26.38	5.70	97	0.28	0.44	1.0
2	150	13.89	35.240	26.41	5.53	94	0.37	***	1.4
2	200	12.37	35.116	26.63	5.06	84	0.65	0.72	7.2
2	300	11.04	34.909	26.72	4.79	77	0.82	0.95	12.4
2	500	8.62	34.624	26.90	4.67	71	1.19	1.29	20.1
2	700	7.31	34.496	27.00	4.80	71	1.35	1.51	24.0
2	900	6.11	34.454	27.13	4.46	64	1.54	1.61	27.5
2	1100	4.78	34.445	27.28	4.13	57	1.66	1.85	34.0
1	1300	3.84	34.474	27.41	3.93	53	1.70	1.88	35.2
1	1500	3.31	34.526	27.50	3.72	50	1.84	1.94	39.1
1	2000	2.53	34.621	27.65	3.45	46	2.00	2.16	41.4
1	2500	2.13	34.657	27.71	3.36	44	1.92	2.08	41.0
1	3000	1.86	34.722	27.78	4.14	54	1.78	2.05	35.4
1	3500	1.46	34.740	27.83	4.50	58	1.77	1.86	35.2
1	4000	1.10	34.726	27.84	4.59	59	1.80	1.88	34.8
1	4500	1.00	34.722	27.84	4.76	61	1.89	1.91	37.9

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 85/63	18/ 7/63	2145 Y	38 20 S	174 04 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5273	11.1	12.2	12	7	15	6	4	7	12	4	14	4	1019.4	15	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.89	35.310	26.47	5.63	96	0.27	0.85	1.6
1	50	13.64	35.234	26.46	5.57	95	0.30	0.42	1.9
1	99	13.42	35.224	26.50	5.46	92	0.36	0.52	2.8
1	148	13.01	35.196	26.56	5.14	86	0.53	***	6.3
1	198	12.34	35.098	26.62	4.96	82	0.65	0.85	8.5
1	297	11.06	34.920	26.72	4.60	74	0.93	1.03	13.7
1	494	8.66	34.642	26.91	4.56	69	1.22	1.78	20.0
1	691	7.33	34.525	27.02	4.55	67	1.38	1.62	24.5
1	887	6.11	34.452	27.13	4.42	63	1.56	1.86	27.3
1	1082	4.99	34.452	27.26	4.09	57	1.71	1.81	29.9
1	1277	3.97	34.485	27.40	3.95	54	1.88	1.98	34.4
1	1473	3.21	34.539	27.52	3.65	49	1.94	2.32	33.4
1	1959	2.48	34.631	27.66	3.40	45	1.96	2.28	37.1

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 86/63	19/ 7/63	1000 X	38 45 S	171 51 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4967	11.1	12.2	12	7	15	6	8	7	12	4	12	4	1016.8	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	13.81	35.169	26.38	5.68	97	0.16	0.28	0.7
2	50	13.81	35.264	26.45	5.64	96	0.32	0.36	0.7
2	100	13.78	35.172	26.38	5.66	96	0.30	0.31	0.5
2	150	12.31	35.070	26.60	5.07	84	0.54	***	6.9
2	200	11.58	34.984	26.68	4.83	78	0.77	0.80	11.3
2	300	10.27	34.805	26.77	4.72	74	0.95	1.00	14.0
2	500	8.14	34.578	26.94	4.76	72	1.22	1.26	22.2
2	700	7.02	34.482	27.03	4.63	68	1.44	1.46	25.7
2	900	5.88	34.441	27.15	4.46	64	1.59	1.73	29.3
2	1100	4.78	34.438	27.28	4.08	57	1.74	1.79	32.5
1	1300	3.79	34.484	27.42	3.87	53	1.88	1.87	36.6
1	1500	3.16	34.545	27.53	3.61	48	1.94	2.03	38.7
1	2000	2.47	34.618	27.65	3.36	44	1.83	2.16	37.1
1	2500	2.14	34.650	27.70	3.27	43	1.95	1.92	37.1
1	3000	1.85	34.697	27.76	3.79	49	1.99	1.95	35.2
1	3500	1.53	34.731	27.81	4.36	56	1.78	1.89	35.2
1	4000	1.19	34.722	27.83	4.48	57	1.78	1.89	35.2
1	4500	1.02	34.714	27.84	4.63	59	1.85	1.86	35.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 87/63	19/ 7/63	2245 X	39 00 S	169 43 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4517	12.2	12.8	11	7	15	6	8	6	11	4	12	4	1014.0	15	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	12.88	34.990	26.43	5.74	96	0.31	0.38	1.4
1	49	12.88	34.990	26.43	5.80	97	0.31	0.37	1.2
1	98	12.86	35.072	26.49	5.67	95	0.41	0.50	1.9
1	147	12.05	34.994	26.59	5.27	86	0.60	***	6.3
1	196	10.42	34.784	26.73	5.07	80	0.95	0.87	11.6
1	294	9.10	34.654	26.85	4.96	76	1.08	1.32	17.0
1	491	7.64	34.501	26.96	4.96	74	1.32	1.29	22.4
1	687	6.78	34.428	27.02	4.94	72	1.40	1.54	24.9
1	884	5.84	34.392	27.11	4.70	67	1.62	1.71	28.6
1	1080	4.92	34.434	27.26	4.13	58	1.70	1.92	30.8
1	1277	3.97	34.480	27.40	3.90	53	1.78	2.05	34.5
1	1473	3.29	34.516	27.49	3.73	50	2.00	1.97	36.4
1	1964	2.46	34.620	27.65	3.47	46	2.09	2.19	38.1

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 88/63	20/ 7/63	2245 X	37 13 S	166 50 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
2608	13.3	14.4	30	2	15	6	8	4	30	2	04	4	1005.6	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.91	35.027	26.25	5.67	97	0.14	0.28	0.3
1	50	13.94	35.042	26.25	5.67	97	0.18	0.41	0.5
1	100	12.67	34.993	26.47	5.33	89	0.38	0.54	3.4
1	150	11.57	34.926	26.63	5.07	82	0.57	***	7.6
1	200	10.88	34.877	26.72	4.77	76	0.75	1.08	12.0
1	300	9.17	34.645	26.83	5.01	77	0.98	1.15	15.0
1	500	7.71	34.512	26.95	4.87	72	1.22	1.42	21.7
1	700	6.61	34.408	27.03	5.04	73	1.31	1.54	24.5
1	900	5.40	34.386	27.16	4.54	64	1.56	1.77	30.1
1	1100	4.47	34.419	27.30	4.07	56	1.73	1.87	34.2
1	1300	3.63	34.475	27.43	3.87	52	1.83	2.05	36.6
1	1500	3.06	34.541	27.54	3.65	49	1.94	2.11	35.8
1	2000	2.44	34.614	27.65	3.39	45	1.96	2.17	36.6
1	2300	2.17	34.638	27.69	3.36	44	2.03	2.19	36.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 89/63	21/ 7/63	1000 X	35 22 S	166 06 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5176	16.7	17.5	02	4	15	3	7	7	02	3	34	4	1003.2	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	15.48	35.321	26.13	5.46	96	0.21	0.18	0.4
2	50	15.40	35.319	26.15	5.47	96	0.24	0.26	0.3
2	100	15.33	35.319	26.16	5.44	96	0.17	0.26	0.1
2	150	13.28	35.180	26.49	5.12	86	0.49	***	4.6
2	200	12.34	35.078	26.60	4.73	78	0.74	0.99	9.0
2	300	10.81	34.872	26.73	4.64	74	0.85	0.93	13.4
2	500	8.21	34.567	26.92	4.81	72	1.27	1.25	22.1
2	700	6.79	34.432	27.02	4.98	72	1.46	1.49	24.7
2	900	5.75	34.386	27.12	4.70	67	1.73	1.61	28.3
2	1100	4.55	34.391	27.27	4.24	59	1.87	1.79	33.6
1	1300	3.66	34.494	27.44	4.06	55	1.89	2.00	34.8
1	1500	3.02	34.529	27.53	3.71	50	2.04	2.00	36.2
1	2000	2.35	34.632	27.67	3.46	45	2.11	2.13	37.5
1	2500	1.98	34.668	27.73	3.30	43	2.07	1.98	38.9
1	3000	1.79	34.681	27.75	3.48	45	2.09	2.05	36.4
1	3500	1.61	34.716	27.80	4.07	53	1.92	1.92	33.2
1	4000	1.26	34.728	27.83	4.48	57	1.96	1.94	33.2
1	4500	1.02	34.722	27.84	4.64	59	1.88	1.89	33.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 90/63	21/ 7/63	2245 X	33 45 S	165 00 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5468	15.0	17.2	27	4	15	6	4	7	27	3	31	1	1004.0	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.57	35.472	26.00	5.29	95	0.15	0.34	0.4
1	50	16.58	35.468	25.99	5.29	95	0.15	0.36	0.8
1	99	16.54	35.461	26.00	5.34	96	0.17	0.38	1.0
1	149	14.53	35.274	26.30	4.92	85	0.35	***	4.5
1	199	13.33	35.166	26.47	4.59	77	0.60	0.73	8.1
1	298	11.30	35.089	26.81	4.54	73	0.77	0.93	11.8
1	497	8.38	34.595	26.92	4.59	69	1.17	1.40	18.8
1	696	6.77	34.435	27.03	4.89	71	1.45	1.50	23.2
1	895	5.67	34.376	27.12	4.67	66	1.62	1.64	26.2
1	1093	4.48	34.383	27.27	4.20	58	1.96	1.83	31.1
1	1292	3.47	34.444	27.42	3.96	53	2.04	2.00	36.2
1	1491	2.96	34.525	27.53	3.66	49	2.08	2.05	38.3
1	1988	2.32	34.627	27.67	3.35	44	2.17	2.18	38.7

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 91/63	22/ 7/63	0900 X	31 50 S	165 01 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5468	13.3	16.1	26	4	15	6	6	6	28	3	32	4	1014.2	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	17.83	35.594	25.79	5.17	96	0.02	0.25	0.6
2	50	17.84	35.596	25.79	5.19	96	0.08	0.25	0.5
2	100	17.83	35.652	25.83	5.20	96	0.06	0.25	0.0
2	150	16.40	35.491	26.05	4.81	87	0.18	***	1.9
2	200	15.46	35.431	26.22	4.66	82	0.30	0.49	4.2
2	300	12.91	35.124	26.53	4.42	74	0.59	0.78	10.6
2	500	9.15	34.666	26.85	4.65	71	0.97	1.12	20.9
2	700	7.07	34.451	27.00	4.92	72	1.33	1.43	25.9
2	900	5.78	34.355	27.09	4.82	69	1.43	1.62	32.4
2	1100	4.57	34.361	27.24	4.35	60	1.67	1.81	34.4
2	1102	4.60	***	***	***	***	***	***	***
1	1300	3.63	34.422	27.39	3.92	53	1.75	1.93	40.9
1	1500	2.96	34.523	27.53	3.70	49	1.92	2.07	42.3
1	2000	2.33	34.629	27.67	3.31	43	2.05	2.17	44.6
1	2500	2.02	34.656	27.72	3.24	42	2.11	1.87	44.1
1	3000	1.83	34.676	27.75	3.27	42	2.01	2.14	44.1
1	3500	1.61	34.711	27.79	3.93	51	1.46	2.03	41.9
1	4000	1.27	34.724	27.83	4.46	57	1.89	1.90	39.2
1	4500	1.02	34.715	27.84	4.54	58	1.85	1.90	39.2
1	5000	1.03	34.712	27.83	4.63	59	1.82	1.94	39.6

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 92/63	22/ 7/63	2145 X	29 52 S	165 00 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5479	13.9	17.8	*	*	15	6	8	6	*	*	30	1	1018.5	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.71	35.629	25.59	5.18	98	0.17	0.14	0.4
1	40	18.64	35.629	25.61	5.17	97	0.17	0.20	0.4
1	79	18.20	35.646	25.74	5.24	98	0.21	0.20	2.5
1	129	15.85	35.472	26.16	4.73	84	0.58	***	***
1	158	15.80	35.482	26.18	4.78	85	0.56	0.40	2.1
1	238	13.75	35.689	26.79	4.55	78	0.60	0.61	5.7
1	398	10.58	34.853	26.76	4.54	72	0.98	1.01	13.0
1	557	8.14	34.577	26.94	4.72	71	1.20	1.32	20.2
1	716	6.56	34.417	27.04	5.03	73	1.35	1.52	24.7
1	875	5.56	34.360	27.12	4.73	67	1.49	1.64	***
1	1039	4.58	34.362	27.24	4.48	62	1.65	1.96	31.6
1	1193	3.70	34.413	27.37	4.10	56	1.79	2.03	35.0
1	1591	2.73	34.542	27.57	3.69	49	1.88	2.20	39.0

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 93/63	23/ 7/63	0900 X	27 45 S	164 57 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5662	15.6	18.9	22	1	15	6	8	6	22	2	25	1	1019.5	5	10	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	20.37	35.538	25.09	5.03	98	0.08	0.25	0.5
2	50	20.07	35.622	25.24	5.06	98	0.10	0.24	0.5
2	100	19.93	35.610	25.26	5.06	98	0.13	0.22	0.2
2	150	18.14	35.553	25.68	4.90	91	0.18	***	0.2
2	200	17.02	35.526	25.93	4.74	86	0.28	0.33	0.9
2	300	14.73	35.289	26.27	4.49	78	0.56	0.57	5.1
2	500	9.31	34.680	26.84	4.59	71	1.17	1.17	15.8
2	700	6.77	34.410	27.01	5.09	74	1.38	1.35	23.3
2	900	5.45	34.346	27.13	4.83	68	1.60	1.70	27.6
2	1100	4.28	34.376	27.28	4.19	58	1.87	1.77	33.5
1	1300	3.48	34.447	27.42	3.83	52	1.87	1.84	34.5
1	1500	2.81	34.540	27.56	3.67	49	2.03	1.89	36.6
1	2000	2.26	34.635	27.68	3.22	42	1.64	1.99	37.2
1	2500	1.95	34.663	27.73	3.28	43	2.12	2.05	39.0
1	3000	1.73	34.679	27.76	3.31	43	2.07	1.94	39.0
1	3500	1.57	34.709	27.79	4.04	52	1.97	2.01	39.0
1	4000	1.29	34.726	27.83	4.44	57	1.87	2.00	36.6
1	4500	1.04	34.720	27.84	4.57	58	1.89	1.98	36.6
1	5000	1.05	34.715	27.83	4.66	59	1.70	2.02	36.9

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 94/63	23/ 7/63	2145 X	25 47 S	165 00 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5526	17.2	20.6	07	1	15	6	8	6	07	2	24	1	1017.4	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.25	35.212	24.61	4.93	97	0.04	0.25	0.5
1	50	20.65	35.547	25.02	4.96	97	0.09	0.22	0.6
1	100	20.07	35.595	25.22	5.06	98	0.10	0.25	0.3
1	150	18.68	35.562	25.55	4.85	91	0.12	***	0.2
1	200	17.33	35.536	25.86	4.51	83	0.25	0.45	2.2
1	300	14.78	35.272	26.25	4.30	75	0.48	0.67	5.8
1	500	8.93	34.614	26.85	4.32	66	1.13	1.30	18.6
1	700	6.43	34.386	27.03	4.83	70	1.42	1.74	25.0
1	900	5.05	34.350	27.18	4.49	63	1.62	1.91	33.5
1	1100	3.78	34.418	27.37	3.84	52	1.74	2.08	35.4
1	1300	3.11	34.496	27.50	3.65	49	1.94	2.10	37.4
1	1500	2.68	34.567	27.59	3.48	46	2.03	2.13	39.6
1	2000	2.17	34.637	27.69	3.27	43	2.16	2.21	41.6

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 95/63	24/ 7/63	0900 X	23 52 S	164 55 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5413	19.4	17.2	03	1	15	6	8	6	03	2	05	1	1016.0	20	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	23.07	35.267	24.14	4.86	99	0.14	0.19	0.5
2	50	22.76	35.342	24.28	4.89	99	0.13	0.22	0.5
2	100	20.84	35.586	25.00	4.81	94	0.17	0.19	0.3
2	150	19.07	35.563	25.45	4.29	81	0.34	***	1.5
2	200	17.49	35.471	25.77	4.14	76	0.42	0.47	2.8
2	300	15.30	35.309	26.16	4.29	75	0.56	0.65	4.8
2	400	12.31	35.010	26.56	4.35	72	0.82	***	10.2
2	500	9.13	34.630	26.83	4.37	67	1.14	1.34	20.1
2	700	6.52	34.400	27.03	4.85	70	1.37	1.59	25.9
2	900	5.05	34.372	27.19	4.26	60	1.71	1.92	33.5
2	1100	3.96	34.446	27.37	3.69	50	1.93	2.30	37.6
1	1300	3.16	34.513	27.50	3.51	47	1.99	2.13	38.8
1	1500	2.70	34.579	27.60	3.45	46	1.92	2.26	39.6
1	2000	2.29	34.636	27.68	3.24	43	2.07	2.22	41.0
1	2500	1.99	34.671	27.73	3.24	42	2.07	2.29	40.2
1	3000	1.77	34.680	27.76	3.23	42	1.95	2.11	41.4
1	3500	1.59	34.703	27.79	3.70	48	1.90	2.13	41.8
1	4000	1.32	34.727	27.83	4.42	57	1.83	1.98	39.0
1	4500	1.07	34.724	27.84	4.55	58	1.81	1.95	37.0
1	5000	1.05	34.723	27.84	4.66	59	1.84	2.07	36.0
1	5005	1.07	34.718	27.84	4.66	59	1.81	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 96/63	24/ 7/63	2145 X	21 37 S	164 46 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5298	21.7	23.9	08	2	15	*	*	6	08	2	08	1	1015.0	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	24.35	35,346	23.82	4.64	97	0.14	0.28	0.3
1	50	23.45	35,266	24.02	4.75	98	0.11	0.25	0.4
1	100	21.86	35,523	24.67	4.72	94	0.14	0.24	0.2
1	150	20.54	35,607	25.10	4.16	81	0.25	***	0.8
1	200	18.91	35,572	25.50	4.11	78	0.37	0.59	2.1
1	300	15.97	35,379	26.06	4.27	76	0.53	0.64	4.3
1	400	12.12	34,959	26.55	4.26	70	0.86	***	10.4
1	500	9.35	34,668	26.82	4.42	68	1.19	1.96	16.3
1	700	6.17	34,375	27.06	4.83	69	1.55	2.00	26.9
1	900	4.84	34,390	27.23	3.98	55	1.87	2.14	36.6
1	1100	3.68	34,464	27.41	3.50	47	2.08	2.16	37.8
1	1300	2.93	34,540	27.55	3.49	46	2.14	2.13	40.6
1	1500	2.57	34,599	27.62	3.34	44	2.14	2.30	37.4
1	2000	2.14	34,646	27.70	3.27	43	2.73	2.44	39.0

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 97/63	25/ 7/63	0900 X	19 49 S	165 00 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5123	24.4	25.6	07	3	15	6	6	6	08	2	09	1	1013.4	10	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	25.98	35.581	23.50	4.53	98	0.14	0.26	0.5
2	50	25.97	35.577	23.50	4.46	96	0.11	0.26	0.4
2	100	25.52	35.669	23.71	4.59	98	0.10	0.26	0.3
2	150	22.73	35.745	24.59	4.26	87	0.19	***	0.0
2	200	20.89	35.672	25.05	3.98	78	0.33	0.37	1.2
2	300	17.16	35.435	25.83	4.15	76	0.42	0.42	3.3
2	400	13.30	35.066	26.40	4.18	70	0.71	***	8.9
2	500	9.48	34.642	26.78	4.25	66	1.18	1.24	18.3
2	700	5.97	34.366	27.08	4.59	66	1.60	1.74	27.8
2	900	4.64	34.423	27.28	3.63	50	2.00	2.07	35.8
2	1100	3.59	34.493	27.45	3.40	46	2.02	2.12	36.6
1	1300	3.05	34.542	27.54	3.34	45	1.98	2.12	37.4
1	1500	2.60	34.587	27.61	3.34	44	2.18	2.32	39.8
1	2000	2.23	34.632	27.68	3.20	42	2.09	2.09	38.2
1	2500	1.91	34.654	27.72	3.29	43	2.23	2.18	38.2
1	3000	1.73	34.673	27.75	3.37	44	2.16	2.17	40.0
1	3500	1.60	34.683	27.77	3.63	47	2.03	2.12	40.8
1	4000	1.36	34.711	27.81	4.27	55	1.92	1.96	34.3
1	4500	1.07	34.711	27.83	4.53	58	1.93	1.96	33.9

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 98/63	25/ 7/63	2145 X	17 43 S	165 00 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5336	22.2	23.9	04	3	15	1	2	6	04	2	09	1	1011.0	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	26.45	35.641	23.40	4.44	97	0.17	0.45	0.4
1	50	26.43	35.638	23.40	4.44	97	0.21	0.27	0.3
1	100	26.36	35.640	23.43	4.50	98	0.15	0.42	0.3
1	150	24.60	35.806	24.09	4.27	90	0.25	***	0.0
1	200	22.18	35.865	24.84	3.76	76	0.41	0.63	1.3
1	300	18.56	35.512	25.54	3.84	72	0.46	0.85	3.2
1	400	13.78	35.000	26.25	3.82	65	0.81	***	9.1
1	500	9.21	34.576	26.77	3.53	54	1.40	1.55	22.6
1	700	5.77	34.397	27.13	3.87	55	1.73	1.94	31.9
1	900	4.33	34.429	27.32	3.60	50	1.93	2.13	35.8
1	1100	3.47	34.459	27.43	3.19	43	2.00	2.25	35.8
1	1300	2.97	34.552	27.55	3.32	44	2.03	2.44	36.6
1	1500	2.69	34.589	27.61	3.22	43	2.15	2.19	37.6
1	2000	2.21	34.629	27.68	3.20	42	2.18	2.18	35.6
1	2003	2.22	34.629	27.68	3.21	42	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 99/63	26/ 7/63	0900 X	15 46 S	164 59 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5565	24,4	26.7	03	1	15	8	3	6	03	2	04	1	1012.0	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	27.27	35,901	23.33	4.37	97	0.17	0.25	***
2	50	27.25	35,902	23.34	4.42	98	0.21	0.28	***
2	100	27.25	35,918	23.35	4.44	98	0.19	0.30	***
2	150	25.08	36,051	24.13	4.10	87	0.24	***	***
2	200	22.75	36,011	24.79	3.67	75	0.42	0.35	***
2	300	17.58	35,405	25.70	3.69	68	0.55	0.55	***
2	400	11.80	34,787	26.48	3.20	52	1.15	***	***
2	500	8.20	34,517	26.88	3.43	52	1.58	1.60	***
2	700	5.28	34,443	27.22	3.66	51	1.87	1.92	***
2	900	4.28	34,488	27.37	3.30	45	2.07	2.12	***
2	1100	3.64	34,533	27.47	3.08	42	2.15	2.15	***
1	1300	3.27	34,566	27.54	3.03	41	2.04	2.09	***
1	1500	2.82	34,593	27.60	3.13	42	2.09	2.31	***
1	2000	2.27	34,636	27.68	3.24	42	2.07	2.06	***
1	2500	1.90	34,667	27.73	3.33	43	2.09	2.03	***
1	3000	1.68	34,681	27.76	3.42	44	1.96	1.99	***
1	3500	1.52	34,688	27.78	3.75	48	1.98	2.06	***
1	4000	1.31	34,704	27.81	4.11	53	1.96	2.07	***
1	4500	1.12	34,711	27.83	4.43	57	1.90	1.92	***
1	5000	1.09	34,712	27.83	4.63	59	1.92	1.85	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 100/63	26/ 7/63	2145 X	13 39 S	164 58 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5565	25.6	26.7	13	1	15	8	2	6	*	*	07	1	1011.5	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	27.69	35.893	23.19	4.46	100	0.18	0.43	0.4
1	50	27.63	35.901	23.21	4.43	99	0.20	0.41	0.6
1	100	27.63	35.903	23.22	4.50	100	0.23	0.43	0.2
1	150	25.23	36.205	24.20	4.05	87	0.24	***	0.0
1	200	24.61	35.908	24.17	4.45	94	0.40	0.43	0.1
1	300	21.38	35.554	24.83	3.70	73	0.53	0.69	3.4
1	400	13.80	35.093	26.32	3.30	56	1.00	***	10.4
1	500	9.07	34.862	26.78	2.86	44	1.64	1.70	28.0
1	700	5.56	34.477	27.22	3.30	47	1.87	1.86	33.6
1	900	4.58	34.510	27.36	3.03	42	2.10	2.02	33.8
1	1100	3.86	34.533	27.45	2.90	39	2.25	2.06	37.0
1	1300	3.34	34.561	27.52	2.95	40	2.10	2.23	37.2
1	1500	2.95	34.587	27.58	3.05	41	2.08	2.07	35.7
1	2000	2.19	34.636	27.69	3.25	43	2.10	2.12	35.7

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 101/63	27/ 7/63	0900 X	11 57 S	165 02 W.

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4393	26.7	27.8	09	2	15	8	1	6	09	2	07	1	1011.1	10	15	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	27.78	36.000	23.24	4.44	99	0.12	0.40	0.5
2	49	27.77	36.005	23.25	4.37	98	0.14	0.37	0.2
2	99	27.75	36.014	23.26	4.47	100	0.13	0.35	0.2
2	148	24.29	36.306	24.56	3.70	78	0.36	***	2.0
2	197	22.04	36.043	25.02	3.72	75	0.44	0.54	2.4
2	296	16.88	35.289	25.78	3.47	63	0.70	0.87	7.7
2	394	10.43	34.702	26.67	2.39	38	1.41	***	24.6
2	493	8.41	34.612	26.93	2.60	39	1.67	1.83	29.5
2	690	5.93	34.512	27.20	2.96	42	1.89	1.89	34.7
2	887	4.77	34.522	27.34	4.44	62	1.98	2.26	34.7
2	1084	4.15	34.527	27.42	2.90	40	2.04	2.15	37.9
1	1275	3.62	34.557	27.49	2.89	39	2.03	2.12	37.9
1	1473	2.99	34.590	27.58	3.03	40	2.09	2.24	37.9
1	1972	2.23	34.632	27.68	3.29	43	2.00	2.08	37.6
1	2472	1.88	34.665	27.73	3.27	42	2.03	2.20	37.6
1	2971	1.67	34.687	27.77	3.44	44	2.00	2.12	36.4
1	3471	1.49	34.694	27.79	3.63	47	2.01	2.06	38.5
1	3971	1.40	34.697	27.80	3.94	51	1.92	1.97	37.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 102/63	27/ 7/63	2045 X	11 43 S	167 12 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5526	26.1	27.2	06	1	15	1	2	6	*	*	09	1	1011.7	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	28.09	35.728	22.93	4.36	98	0.23	0.47	0.4
1	50	28.02	35.729	22.96	4.24	95	0.22	0.43	0.6
1	100	27.21	36.154	23.54	4.07	90	0.30	0.46	0.4
1	150	24.83	36.282	24.38	3.62	77	0.43	***	1.8
1	200	22.16	36.051	24.99	3.63	73	0.48	0.63	2.2
1	300	14.00	35.196	25.92	3.22	57	0.89	1.07	9.3
1	400	10.45	34.698	26.66	2.23	35	1.53	***	25.1
1	500	7.59	34.583	27.03	2.52	37	1.81	1.98	31.1
1	700	5.72	34.518	27.23	2.75	39	1.96	2.16	34.2
1	900	4.85	34.511	27.33	2.87	40	1.98	2.22	37.2
1	1100	4.07	34.532	27.43	2.80	38	2.02	2.15	37.4
1	1300	3.45	34.565	27.52	2.77	37	2.08	2.25	37.8
1	1500	2.98	34.587	27.58	2.96	39	2.04	2.28	37.8
1	2000	2.19	34.641	27.69	3.08	40	2.04	2.30	36.6

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 103/63	28/ 7/63	1000 X	13 44 S	168 52 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5084	25.6	27.8	12	1	15	8	3	6	12	2	18	1	1012.0	10	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	27.83	35.747	23.03	4.35	97	0.23	0.44	0.3
2	50	27.77	35.747	23.05	4.32	96	0.22	0.40	0.3
2	100	27.79	35.747	23.04	4.40	98	0.23	0.42	0.1
2	150	25.41	36.289	24.21	3.89	84	0.35	***	0.1
2	200	23.03	36.147	24.81	3.60	74	0.49	0.56	1.9
2	300	17.88	35.446	25.66	3.49	65	0.71	0.82	5.3
2	400	11.46	34.761	26.52	2.78	45	1.35	***	19.6
2	500	7.88	34.541	26.95	3.05	46	1.68	1.72	28.0
2	700	5.47	34.469	27.22	3.33	47	1.85	1.92	28.8
2	900	4.60	34.494	27.34	3.15	44	1.99	2.14	36.2
2	1100	4.01	34.532	27.43	2.87	39	2.07	2.17	37.6
1	1298	3.36	34.565	27.53	2.99	40	2.10	2.30	38.3
1	1497	2.92	34.590	27.59	3.09	41	2.17	2.21	41.0
1	1994	2.19	34.642	27.69	3.22	42	2.08	2.19	36.2
1	2490	1.90	34.671	27.74	3.23	42	2.06	2.21	40.6
1	2987	1.72	34.678	27.76	3.37	44	1.96	2.08	39.5
1	3484	1.57	34.690	27.78	3.55	46	1.99	2.10	38.3
1	3980	1.31	34.711	27.81	4.16	53	1.91	2.08	37.6
1	4475	1.06	34.715	27.83	4.59	58	1.83	2.08	33.8
1	4480	1.08	34.716	27.83	4.58	58	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 104/63	1/ 8/63	2145 X	10 01 S	165 03 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4508	25.0	26.7	09	2	15	6	8	7	09	2	09	1	1010.7	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	28.01	35.845	23.05	4.42	99	0.21	0.48	0.6
1	48	28.01	35.853	23.05	4.37	98	0.21	0.39	0.5
1	95	27.24	36.220	23.58	4.26	94	0.28	0.40	0.3
1	143	24.83	36.310	24.40	3.72	79	0.46	***	1.0
1	190	21.64	35.978	25.08	3.59	72	0.56	0.63	2.9
1	286	15.39	35.129	26.00	3.05	54	1.00	1.11	11.7
1	382	10.15	34.705	26.71	2.27	36	1.60	***	26.8
1	479	7.90	34.600	27.00	2.49	37	1.84	1.98	34.9
1	674	5.81	34.532	27.23	2.54	36	2.09	2.24	41.0
1	870	4.80	34.528	27.35	2.52	35	2.16	2.17	41.0
1	1068	4.12	34.543	27.43	2.66	36	2.16	2.17	42.1
1	1265	3.47	34.571	27.52	2.71	37	2.19	2.31	42.9
1	1463	2.94	34.596	27.59	2.89	39	2.21	2.18	39.3
1	1959	2.20	34.643	27.69	3.10	41	2.18	2.21	39.1

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 105/63	2/ 8/63	0900 X	7 57 S	165 00 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
3323	25.0	27.2	08	3	15	7	2	6	08	2	09	1	1010.5	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	28.35	35.589	22.74	4.43	100	0.37	0.63	0.9
2	50	28.33	35.600	22.76	4.41	99	0.34	0.56	1.1
2	100	27.93	36.002	23.19	4.10	92	0.37	0.56	1.0
2	150	24.17	36.221	24.54	3.64	76	0.59	***	3.4
2	200	19.88	35.702	25.35	3.43	66	0.73	0.87	6.6
2	300	12.36	34.903	26.46	1.89	31	1.62	1.68	22.2
2	400	8.59	34.665	26.94	2.30	35	1.84	***	30.9
2	500	7.23	34.586	27.08	2.44	36	1.97	1.98	34.1
2	700	5.81	34.557	27.25	2.27	32	2.21	2.29	38.7
2	900	4.91	34.546	27.35	2.11	29	2.32	2.38	41.0
2	1100	4.20	34.554	27.43	2.33	32	2.26	2.40	41.8
1	1300	3.52	34.569	27.51	2.70	36	2.24	2.43	39.1
1	1500	2.96	34.598	27.59	2.76	37	2.24	2.33	36.2
1	2000	2.22	34.641	27.69	2.88	38	2.24	2.30	36.2
1	2500	1.86	34.664	27.74	3.05	40	2.16	2.24	40.2
1	3000	1.66	34.676	27.76	3.50	45	2.14	2.14	40.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 106/63.	2/ 8/63	2115 X	5 47 S	165 01 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
3177	26.1	27.2	09	2	15	*	*	6	08	2	05	1	1009.2	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	28.41	35.512	22.67	4.40	99	0.42	0.63	2.3
1	50	28.36	35.519	22.69	4.32	97	0.40	0.63	2.2
1	100	28.09	35.827	23.01	4.03	91	0.45	0.67	1.1
1	150	24.96	35.990	24.12	3.59	76	0.62	***	4.5
1	200	20.43	35.750	25.24	3.31	65	0.73	0.84	6.2
1	250	13.04	34.991	26.40	1.76	29	1.51	***	23.3
1	300	10.84	34.819	26.68	1.78	28	1.71	1.80	27.5
1	400	8.82	34.676	26.91	2.11	32	1.81	***	31.5
1	500	7.71	34.613	27.03	2.12	32	1.94	2.08	33.9
1	700	6.03	34.547	27.21	2.16	31	2.15	2.26	35.3
1	900	4.93	34.542	27.34	1.97	27	2.34	2.38	39.8
1	1100	3.99	34.562	27.46	2.23	30	2.26	2.56	39.8
1	1300	3.51	34.577	27.52	2.33	31	2.28	2.41	41.4
1	1500	3.04	34.602	27.59	2.49	33	2.25	2.30	41.4
1	2000	2.21	34.641	27.69	2.71	35	2.22	2.39	39.3

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 107/63	3/ 8/63	0830 X	3 55 S	165 03 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
2988	25.6	28.3	07	2	15	8	3	6	07	2	08	1	1009.5	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	28.38	35.434	22.62	4.34	98	0.43	0.59	1.5
2	50	28.32	35.439	22.64	4.34	98	0.41	0.57	1.7
2	100	28.26	35.448	22.67	4.34	98	0.44	0.59	1.7
2	150	22.58	35.952	24.79	3.52	72	0.68	***	4.9
2	200	16.67	35.317	25.85	2.50	45	1.20	1.18	13.9
2	250	12.61	34.948	26.45	1.74	29	1.63	***	24.8
2	300	10.74	34.810	26.69	1.79	29	1.78	1.74	36.1
2	400	8.81	34.677	26.92	2.00	31	1.86	***	35.2
2	500	7.78	34.618	27.03	2.04	30	2.01	2.05	39.1
2	700	5.81	34.556	27.25	1.63	23	2.33	2.37	42.4
1	893	4.90	34.548	27.35	1.93	27	2.34	2.39	43.3
1	1092	4.21	34.566	27.44	1.99	27	2.27	2.35	43.3
1	1289	3.50	34.582	27.53	2.30	31	2.32	2.28	42.6
1	1488	3.07	34.605	27.59	2.31	31	2.30	2.35	42.6
1	1984	2.26	34.643	27.69	2.61	34	2.30	2.35	41.0
1	2479	1.88	34.666	27.74	2.89	38	2.17	2.23	42.2
1	2678	1.78	34.671	27.75	3.02	39	2.17	2.24	43.1

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 108/63	3/ 8/63	2045 X	2 01 S	165 01 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5508	25.6	28.3	07	1	15	8	2	6	07	2	09	1	1007.5	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	28.37	35.416	22.61	4.41	99	0.42	0.55	1.9
1	49	28.20	35.451	22.69	4.33	97	0.41	0.54	1.9
1	98	28.19	35.452	22.69	4.40	99	0.48	0.55	1.6
1	146	23.43	35.822	24.45	3.48	72	0.73	***	6.4
1	195	14.16	35.105	26.25	2.28	39	1.33	1.42	19.9
1	244	11.25	34.839	26.62	2.33	38	1.59	***	26.3
1	293	10.64	34.780	26.69	1.75	28	1.74	1.82	29.7
1	390	10.05	34.751	26.77	1.54	24	1.83	***	33.4
1	488	8.08	34.642	27.00	1.50	23	2.08	2.13	38.1
1	682	6.36	34.562	27.18	1.94	28	2.26	2.32	41.4
1	877	5.10	34.548	27.33	1.88	26	2.37	2.50	43.7
1	1075	4.29	34.559	27.43	2.03	28	2.29	2.32	43.7
1	1274	3.62	34.579	27.51	2.29	31	2.31	2.55	42.4
1	1474	3.10	34.601	27.58	2.28	30	2.33	2.47	43.7
1	1974	2.21	34.646	27.69	2.49	33	2.34	2.40	43.7

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 109/63	4/ 8/63	0900 X	0 00 S	165 02 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4603	25.6	27.2	05	2	15	7	1	6	05	2	09	1	1009.0	10	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	28.23	35.418	22.65	4.27	96	0.44	0.73	2.3
2	50	27.88	35.447	22.79	4.11	92	0.47	0.67	3.1
2	100	27.41	35.619	23.07	3.90	86	0.57	0.75	5.0
2	150	21.98	35.258	24.44	3.08	62	0.75	***	7.9
2	200	14.52	35.012	26.10	3.08	53	1.07	1.20	16.7
2	250	13.26	34.965	26.33	2.96	50	1.25	***	20.6
2	300	11.84	34.846	26.52	2.42	39	1.43	1.59	24.9
2	400	9.17	34.702	26.88	0.85	13	2.05	***	38.9
2	500	8.10	34.646	27.00	0.80	12	2.29	2.50	41.2
2	700	5.99	34.562	27.23	1.60	23	2.31	2.54	42.2
2	900	5.00	34.557	27.35	1.79	25	2.35	2.56	45.7
2	1100	4.13	34.571	27.45	1.85	25	2.39	2.72	45.7
1	1300	3.54	34.591	27.53	1.93	26	2.39	2.56	45.7
1	1500	3.01	34.616	27.60	2.16	29	2.32	2.48	43.7
1	2000	2.25	34.651	27.69	2.47	32	2.30	2.45	47.4
1	2500	1.82	34.673	27.75	2.73	35	2.22	2.39	42.0
1	3000	1.65	34.680	27.76	3.08	40	2.19	2.38	42.6
1	3500	1.50	34.693	27.79	3.33	43	2.14	2.27	42.6
1	4000	1.41	34.722	27.81	3.75	48	2.11	2.24	41.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 110/63	4/ 8/63	2145 X	1 39 S	166 18 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5413	25.6	27.8	16	1	15	4	1	6	*	*	09	1	1009.0	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	28.52	35.463	22.59	4.40	99	0.41	0.50	1.7
1	50	28.28	35.449	22.66	4.34	98	0.39	0.50	1.7
1	100	27.84	35.696	22.99	4.03	90	0.54	0.69	1.7
1	150	23.29	35.739	24.43	3.33	69	0.77	***	7.5
1	200	15.71	35.244	26.02	2.53	45	1.25	1.25	17.7
1	250	11.44	34.841	26.59	1.89	31	1.67	***	29.3
1	300	11.21	34.819	26.62	1.44	23	1.79	1.82	30.9
1	400	9.99	34.757	26.78	1.67	26	1.81	***	34.6
1	500	8.15	34.646	26.99	0.98	15	2.27	2.18	40.2
1	700	6.38	34.562	27.18	1.95	28	2.27	2.24	38.7
1	900	4.95	34.554	27.35	1.95	27	2.38	2.28	41.0
1	1100	4.18	34.566	27.44	2.02	28	2.32	2.34	43.7
1	1300	3.53	34.585	27.53	2.17	29	2.32	2.36	41.6
1	1500	3.09	34.604	27.58	2.27	30	2.34	2.36	42.4
1	2000	2.24	34.646	27.69	2.50	33	2.32	2.30	40.6

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 111/63	5/ 8/63	0900 X	3 20 S	167 36 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5469	25.0	27.2	13	1	15	8	1	6	17	2	99	9	1010.5	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	28.68	35.399	22.49	4.43	100	0.40	0.59	1.6
2	50	28.53	35.464	22.59	4.38	99	0.39	0.62	1.7
2	100	27.83	35.591	22.92	4.16	93	0.56	0.71	1.9
2	150	22.68	35.936	24.75	3.48	71	0.73	***	5.1
2	200	13.45	35.041	26.35	2.21	37	1.41	1.53	21.1
2	250	10.64	34.791	26.70	1.70	27	1.74	***	30.6
2	300	10.22	34.758	26.75	1.75	28	1.78	1.88	34.0
2	400	9.71	34.729	26.81	1.62	25	1.85	***	34.0
2	500	9.02	34.697	26.90	1.61	25	1.67	2.04	34.6
2	700	6.19	34.564	27.21	1.67	24	2.24	2.38	41.6
2	900	5.02	34.564	27.35	1.78	25	2.39	2.55	42.9
2	1100	4.22	34.569	27.44	1.96	27	2.30	2.57	41.2
1	1300	3.56	34.586	27.52	2.25	30	2.29	2.37	42.4
1	1500	3.06	34.600	27.58	2.42	32	2.26	2.38	40.4
1	2000	2.26	34.644	27.69	2.58	34	2.28	2.45	40.4
1	2500	1.88	34.663	27.73	2.88	37	2.24	2.28	40.0
1	3000	1.63	34.684	27.77	3.20	41	2.18	2.18	38.3
1	3500	1.47	34.690	27.79	3.26	42	2.15	2.24	37.5
1	4000	1.40	34.713	27.81	3.68	47	2.08	2.19	36.9
1	4500	1.27	34.708	27.81	4.07	52	2.05	2.15	35.2
1	5000	1.21	34.709	27.82	4.42	57	1.95	2.03	35.6

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 112/63	5/ 8/63	2145 X	4 45 S	168 58 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5486	26.1	27.2	06	2	15	8	6	6	*	*	09	1	1008.5	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	28.69	35.438	22.52	4.33	98	0.35	0.61	1.8
1	50	28.54	35.426	22.56	4.28	97	0.35	0.59	1.5
1	100	28.56	35.771	22.81	4.08	92	0.44	0.58	1.1
1	150	23.75	35.846	24.38	3.42	71	0.69	***	5.9
1	200	16.64	35.300	25.85	2.29	41	1.21	1.29	15.8
1	250	11.77	34.900	26.57	2.21	36	1.51	***	23.8
1	300	10.36	34.778	26.74	1.67	26	1.70	1.86	31.5
1	400	9.30	34.712	26.86	1.72	27	1.78	***	35.6
1	499	8.64	34.674	26.94	1.64	25	1.95	2.23	35.4
1	699	6.76	34.579	27.14	1.67	24	2.17	2.20	38.7
1	898	4.98	34.543	27.34	2.18	30	2.17	2.27	37.1
1	1097	4.19	34.557	27.44	2.24	31	2.19	2.46	37.9
1	1296	3.45	34.580	27.53	2.41	32	2.25	2.54	40.2
1	1494	2.96	34.608	27.60	2.48	33	2.25	2.50	40.4
1	1984	2.30	34.641	27.68	2.65	35	2.24	2.58	39.4

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 113/63	6/ 8/63	0900 X	6 13 S	170 11 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4508	25.0	27.2	14	3	15	2	1	6	14	2	13	1	1010.5	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	28.61	35.180	22.35	4.40	99	0.44	0.50	1.2
2	50	28.58	35.527	22.62	4.28	97	0.40	0.44	0.9
2	100	27.57	35.822	23.17	3.90	87	0.58	0.71	0.9
2	150	24.66	36.144	24.33	3.47	73	0.65	***	1.7
2	200	18.56	35.523	25.55	2.82	53	1.00	1.07	4.6
2	250	14.41	35.090	26.19	2.32	40	1.39	***	9.8
2	300	11.38	34.857	26.61	1.97	32	1.67	1.66	15.6
2	400	8.75	34.667	26.92	2.75	42	1.70	***	17.4
2	500	7.71	34.607	27.03	2.58	38	1.87	1.93	22.0
2	700	6.12	34.540	27.20	2.62	38	2.05	2.16	25.7
2	900	4.64	34.545	27.38	2.17	30	2.31	2.51	25.6
2	1100	4.03	34.559	27.45	2.29	31	2.34	2.45	27.4
1	1300	3.60	34.573	27.51	2.42	33	2.31	2.35	21.5
1	1500	3.02	34.602	27.59	2.48	33	2.31	2.35	35.1
1	2000	2.25	34.638	27.68	2.88	38	2.29	2.32	23.7
1	2500	1.84	34.668	27.74	3.00	39	2.20	2.29	28.3
1	3000	1.66	34.679	27.76	3.28	42	2.25	2.24	22.0
1	3500	1.45	34.691	27.79	3.53	45	2.15	2.20	26.0
1	4000	1.41	34.696	27.79	3.76	48	2.06	2.12	29.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 114/63	6/ 8/63	2145 X	7 46 S	171 32 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
5084	25.6	27.8	08	2	15	6	4	7	08	2	10	1	1011.2	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	28.41	35.603	22.73	4.32	98	0.27	0.52	0.6
1	50	28.34	35.642	22.79	4.27	96	0.24	0.50	0.4
1	100	28.16	35.814	22.98	4.19	94	0.30	0.48	0.2
1	150	27.21	35.747	23.23	4.31	95	0.27	***	0.4
1	200	24.04	36.284	24.62	3.56	75	0.46	0.65	1.0
1	250	20.17	35.771	25.32	3.45	67	0.63	***	2.6
1	300	14.75	34.876	25.95	1.72	30	1.50	1.75	15.8
1	400	14.22	34.679	25.91	2.12	36	1.70	***	21.3
1	500	7.38	34.596	27.07	2.42	36	1.87	1.99	22.5
1	700	6.01	34.542	27.21	2.33	33	2.05	2.15	27.0
1	900	4.65	34.536	27.37	2.36	33	2.15	2.37	29.4
1	1100	4.00	34.550	27.45	2.58	35	2.17	2.34	29.1
1	1300	3.48	34.569	27.52	2.66	36	2.17	2.24	25.2
1	1500	2.92	34.600	27.59	2.76	37	2.13	2.32	24.7
1	2000	2.17	34.642	27.69	2.97	39	2.11	2.25	24.9

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 115/63	7/ 8/63	0800 Y	9 21 S	172 50 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4124	26.1	28.3	13	3	15	8	2	6	13	2	11	1	1010.5	20	15	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	28.30	35.583	22.76	4.34	98	0.31	0.37	0.6
2	47	28.33	35.624	22.78	4.30	97	0.31	0.37	0.3
2	94	28.34	35.657	22.80	4.31	97	0.32	0.31	0.1
2	141	25.43	36.160	24.11	3.45	74	0.53	***	2.3
2	188	22.49	36.069	24.91	3.51	71	0.53	0.57	3.5
2	235	19.94	35.750	25.37	3.50	68	0.69	***	6.1
2	282	16.20	35.268	25.93	2.93	52	0.99	1.05	16.6
2	376	10.26	34.734	26.72	2.47	39	1.64	***	31.9
2	470	7.97	34.597	26.98	2.93	44	1.75	1.85	40.9
2	658	5.72	34.519	27.23	2.99	42	2.00	2.07	49.0
2	846	4.73	34.522	27.35	2.74	38	2.20	2.32	52.4
2	1034	3.99	34.548	27.45	2.71	37	2.18	2.24	57.4
1	1259	3.45	34.574	27.52	2.64	36	2.20	2.28	59.4
1	1459	2.97	34.603	27.59	2.76	37	2.18	2.30	58.9
1	1957	2.25	34.644	27.69	2.94	39	2.18	2.22	59.0
1	2455	1.84	34.672	27.74	3.16	41	2.14	2.22	54.1
1	2948	1.67	34.679	27.76	3.33	43	2.14	2.24	55.2
1	3432	1.49	34.689	27.78	3.50	45	2.08	2.23	54.7
1	3721	1.45	34.697	27.79	3.79	49	2.01	2.12	52.2
1	3726	***	34.699	***	3.78	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 116/63	7/ 8/63	2045 Y	10 46 S	174 05 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4605	26.7	27.8	11	3	15	8	4	7	11	3	13	1	1010.0	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	28.09	35.355	22.65	4.47	100	0.19	0.42	1.2
1	47	28.11	35.349	22.64	4.31	97	0.22	0.38	0.9
1	95	28.25	35.490	22.70	4.33	97	0.30	0.40	0.0
1	142	25.67	36.183	24.05	3.64	78	0.42	***	0.4
1	189	23.55	36.175	24.68	3.52	73	0.62	0.72	1.9
1	236	19.34	35.652	25.45	3.45	66	0.99	***	5.7
1	282	15.48	35.146	26.00	3.06	54	1.15	1.18	11.9
1	377	9.98	34.684	26.73	2.30	36	1.76	***	41.0
1	471	7.70	34.585	27.01	2.61	39	1.87	1.89	32.6
1	659	6.03	34.535	27.20	2.65	38	2.09	2.18	50.6
1	847	4.95	34.523	27.32	2.62	37	2.26	2.30	66.1
1	1036	4.17	34.543	27.43	2.64	36	2.26	2.30	54.1
1	1224	3.58	34.563	27.50	2.74	37	3.37	2.30	45.6
1	1412	3.07	34.587	27.57	2.93	39	2.97	2.30	60.8
1	1883	2.24	34.638	27.68	3.09	41	2.44	2.26	59.3

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 117/63	8/ 8/63	0800 Y	12 24 S	175 35 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
3933	26.7	28.3	12	4	15	2	2	6	12	2	12	1	1011.7	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	27.91	35.276	22.65	4.35	97	0.22	0.39	1.4
2	50	27.93	35.279	22.65	4.30	96	0.22	0.38	0.7
2	100	27.54	35.639	23.05	4.41	98	0.23	0.38	0.6
2	150	25.35	36.117	24.10	3.91	84	0.35	***	0.3
2	200	22.59	36.074	24.88	3.62	74	0.50	0.61	2.1
2	250	18.99	35.612	25.51	3.59	68	0.63	***	4.3
2	300	16.13	35.232	25.91	3.32	59	0.85	1.00	9.6
2	400	10.82	34.735	26.62	2.63	42	1.51	$$$	31.8
2	500	8.13	34.571	26.94	2.98	45	1.78	1.81	38.8
2	700	5.51	34.489	27.23	3.18	45	2.09	2.05	52.1
2	900	4.46	34.513	27.37	3.06	42	2.08	2.13	56.0
2	1100	3.99	34.530	27.44	2.97	41	2.19	2.18	55.7
1	1200	3.60	34.551	27.49	3.00	41	2.19	2.25	50.8
1	1400	3.06	34.581	27.57	3.00	40	2.30	2.29	56.3
1	1900	2.30	34.640	27.68	3.17	42	2.23	2.27	49.2
1	2400	1.92	34.666	27.73	3.19	41	2.26	2.30	38.1
1	2900	1.71	34.676	27.76	3.20	41	2.22	2.19	52.4
1	3400	1.48	34.689	27.78	3.56	46	2.08	2.21	54.2
1	3700	1.31	34.708	27.81	4.15	53	1.99	2.05	52.7
1	3705	***	34.710	***	4.16	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 118/63	8/ 8/63	2045 Y	13 58 S	176 57 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1866	26.1	27.8	10	3	15	4	2	6	10	3	13	1	1011.8	15	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	27.41	35.220	22.77	4.36	96	0.17	0.38	0.8
1	48	27.41	35.214	22.77	4.34	96	0.17	0.40	0.7
1	95	27.37	35.212	22.78	4.41	97	0.17	0.36	0.6
1	143	25.64	35.896	23.84	3.83	82	0.30	***	0.4
1	191	23.45	36.052	24.62	3.47	72	0.46	0.58	2.5
1	238	21.18	35.878	25.13	3.52	70	0.55	***	5.9
1	286	18.38	35.524	25.60	3.39	63	0.75	0.81	4.6
1	381	11.93	34.828	26.49	2.86	47	1.33	***	26.5
1	478	8.83	34.600	26.85	3.25	50	1.58	1.62	36.7
1	633	5.68	34.484	27.21	3.33	47	1.89	1.90	51.7
1	869	4.59	34.498	27.35	3.15	44	2.08	2.03	53.6
1	1067	3.88	34.524	27.44	3.06	42	2.12	2.11	53.1
1	1265	3.23	34.549	27.53	3.25	44	2.18	2.21	54.7
1	1465	2.83	34.587	27.59	3.23	43	2.18	2.17	54.1

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 119/63	9/ 8/63	0700 Y	15 29 S	178 18 W

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1866	25.6	27.2	12	4	15	6	3	6	12	3	12	1	1011.7	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	26.65	35.096	22.92	4.44	97	0.19	0.32	0.0
1	50	26.67	35.094	22.92	4.40	96	0.20	0.40	0.0
1	100	26.88	35.673	23.29	4.23	93	0.22	0.40	0.0
1	150	24.88	36.018	24.17	3.52	75	0.38	***	0.3
1	200	22.46	36.002	24.87	3.41	69	0.56	0.55	1.1
1	250	20.51	35.792	25.25	3.49	68	0.66	***	1.8
1	300	18.16	35.483	25.62	3.53	66	0.71	0.74	2.9
1	400	13.29	34.952	26.32	3.12	52	1.09	***	10.2
1	500	7.92	34.507	26.92	4.00	60	1.48	1.51	16.4
1	700	5.15	34.377	27.19	4.10	57	1.60	1.99	22.5
1	900	4.00	34.440	27.36	3.51	48	1.96	2.08	26.0
1	1100	3.56	34.526	27.48	3.17	43	2.08	2.13	27.6
1	1300	3.10	34.556	27.54	3.16	42	2.11	2.16	41.7
1	1500	2.92	34.577	27.58	3.15	42	2.09	2.14	39.0

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 120/63	14/ 8/63	1930 M	19 16 S	176 36 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
3424	21.3	21.6	09	4	15	6	8	6	09	3	11	4	1014.2	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	25.12	34.792	23.17	4.58	97	0.12	0.27	1.0
1	49	25.15	34.792	23.16	4.54	96	0.17	0.32	0.6
1	98	25.15	34.795	23.16	4.56	97	0.18	0.25	0.9
1	148	23.28	35.500	24.25	3.83	79	0.36	***	2.5
1	197	20.49	35.645	25.14	3.77	74	0.41	0.53	2.9
1	246	18.80	35.538	25.50	3.83	72	0.49	***	4.9
1	295	17.54	35.436	25.74	3.92	72	0.55	0.60	6.0
1	394	14.21	35.194	26.31	4.19	72	0.65	***	17.1
1	492	10.94	34.827	26.67	4.24	68	1.01	1.04	33.7
1	689	6.71	34.449	27.05	4.33	63	1.54	1.56	45.2
1	886	4.80	34.420	27.26	3.96	55	1.83	1.91	47.4
1	1082	3.96	34.473	27.39	3.72	51	1.96	1.95	37.0
1	1279	3.32	34.537	27.51	3.49	47	2.08	2.15	56.6
1	1476	2.95	34.577	27.57	3.42	46	2.08	2.12	39.9
1	1968	2.29	34.636	27.68	3.38	44	2.17	2.12	32.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 121/63	15/ 8/63	0700 M	20 23 S	174 51 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
2798	20.1	21.7	11	6	15	6	8	6	11	3	13	4	1015.0	20	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	25.29	34.802	23.12	4.59	97	0.15	0.27	0.2
1	90	23.85	35.129	23.81	4.61	96	0.15	0.23	0.6
1	136	21.82	35.533	24.69	3.95	79	0.31	***	1.0
1	180	20.49	35.628	25.13	3.77	74	0.41	0.50	0.5
1	271	17.56	35.498	25.78	4.06	75	0.46	0.57	1.9
1	360	15.76	35.400	26.13	4.17	74	0.63	***	3.1
1	450	12.30	35.024	26.57	4.30	71	0.89	1.02	9.2
1	631	7.88	34.531	26.94	4.49	67	1.41	1.46	17.8
1	811	5.44	34.409	27.18	4.13	58	1.76	1.77	21.6
1	991	4.41	34.442	27.32	3.73	51	1.97	1.89	32.6
1	1174	3.74	34.495	27.43	3.60	49	2.05	2.02	29.0
1	1360	3.23	34.549	27.53	3.43	46	2.10	2.14	36.0
1	1835	2.41	34.630	27.66	3.31	44	2.13	2.07	27.1
1	2320	2.06	34.657	27.71	3.38	44	2.17	2.20	33.8

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 122/63	15/ 8/63	1845 M	21 42 S	172 51 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
2798	18.3	21.1	11	5	15	6	8	7	11	3	11	4	1015.2	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	23.27	34.868	23.78	4.77	98	0.16	0.30	0.5
1	49	23.27	34.868	23.78	4.77	98	0.18	0.30	0.7
1	97	22.85	35.453	24.34	4.19	85	0.30	0.40	0.6
1	146	21.41	35.579	24.84	3.90	77	0.38	***	1.7
1	194	19.58	35.611	25.36	4.16	80	0.40	0.43	1.8
1	291	17.36	35.550	25.87	4.28	79	0.46	0.52	4.1
1	388	14.29	35.215	26.31	4.19	72	0.71	***	11.0
1	486	10.71	34.792	26.69	4.19	67	1.09	1.15	21.1
1	683	6.76	34.445	27.04	4.48	65	1.52	1.59	30.2
1	880	5.10	34.404	27.21	4.24	59	1.73	1.81	32.1
1	1077	4.11	34.460	27.37	***	***	1.92	1.92	39.1
1	1276	3.50	34.519	27.48	3.59	48	2.01	2.09	44.0
1	1474	3.05	34.569	27.56	3.48	46	2.04	2.08	55.8
1	1972	2.29	34.635	27.68	3.36	44	2.09	2.13	50.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 123/63	16/ 8/63	0500 L	22 53 S	171 04 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4687	17.8	20.6	10	5	15	6	7	8	10	3	08	4	1016.0	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.24	35.273	24.65	4.96	98	0.12	0.26	0.5
1	50	21.27	35.277	24.65	4.88	96	0.12	0.23	0.5
1	100	20.57	35.581	25.07	4.49	88	0.27	0.32	0.5
1	150	18.93	35.612	25.53	4.27	81	0.36	***	1.5
1	200	17.92	35.605	25.77	4.42	82	0.38	0.44	2.3
1	300	15.56	35.392	26.17	4.36	77	0.56	0.62	5.2
1	400	13.22	35.137	26.47	4.24	71	0.80	***	9.1
1	500	10.81	34.860	26.72	4.34	69	1.02	1.07	14.3
1	700	6.27	34.409	27.07	4.62	66	1.53	1.61	32.0
1	900	5.10	34.383	27.20	4.39	61	1.70	1.79	41.3
1	1100	4.39	34.432	27.31	4.00	55	1.71	1.88	25.4
1	1300	3.57	34.500	27.45	3.72	50	2.02	2.08	44.2
1	1500	2.92	34.581	27.58	3.49	46	2.04	2.09	50.6
1	2000	2.31	34.634	27.68	3.37	44	2.15	2.09	48.3

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 124/63	16/ 8/63	1530 L	24 04 S	169 18 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1864	18.1	19.4	09	4	15	6	8	6	10	3	07	4	1017.5	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.16	35.302	24.70	4.92	97	0.16	0.24	1.0
1	50	21.16	35.313	24.71	4.88	96	0.15	0.22	0.5
1	100	20.57	35.448	24.97	4.94	96	0.15	0.27	0.1
1	150	20.11	35.574	25.19	4.65	90	0.19	***	0.1
1	200	19.49	35.655	25.41	4.95	95	0.18	0.27	0.0
1	300	17.39	35.575	25.88	4.33	79	0.43	0.49	2.6
1	400	14.47	35.246	26.30	4.21	73	0.67	***	6.8
1	500	11.77	34.949	26.61	4.28	70	0.95	1.01	14.4
1	700	7.47	34.501	26.98	4.50	67	1.44	1.41	24.5
1	900	5.80	34.406	27.13	4.33	62	1.68	1.67	35.8
1	1100	4.33	34.447	27.33	3.86	53	1.87	1.89	39.7
1	1300	3.66	34.506	27.45	3.68	50	2.02	2.08	48.5
1	1500	3.09	34.567	27.55	3.50	47	2.02	2.04	32.7

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 125/63	17/ 8/63	0130 L	25 03 S	167 38 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1176	17.8	20.6	10	4	15	6	3	8	10	2	08	4	1018.7	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.45	35.398	24.69	4.89	97	0.15	0.26	0.6
1	50	21.46	35.408	24.70	4.85	96	0.14	0.25	0.1
1	100	21.41	35.430	24.73	4.87	97	0.14	0.25	0.0
1	150	19.86	35.609	25.28	4.27	82	0.30	***	0.7
1	200	18.59	35.609	25.61	4.27	80	0.39	0.46	1.6
1	300	16.37	35.459	26.03	4.29	77	0.53	0.64	3.4
1	400	14.74	35.293	26.27	4.21	73	0.68	***	6.3
1	500	12.31	35.037	26.58	4.27	70	0.88	0.96	9.2
1	700	7.95	34.565	26.96	4.48	67	1.33	1.43	18.9
1	900	5.61	34.436	27.18	4.27	61	1.76	1.86	26.0

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 126/63	17/ 8/63	1200 L	26 12 S	165 49 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
3517	17.8	20.6	12	3	15	6	1	8	*	*	08	1	1021.0	20	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	21.34	35.385	24.71	4.92	97	0.14	0.27	0.7
2	49	20.99	35.408	24.83	4.96	98	0.14	0.26	0.2
2	97	20.08	35.546	25.18	4.84	94	0.18	0.27	0.0
2	146	19.46	35.624	25.40	4.75	91	0.22	***	0.0
2	195	18.57	35.596	25.60	4.24	80	0.36	0.48	1.9
2	293	16.77	35.486	25.96	4.24	77	0.50	0.54	2.7
2	390	14.11	35.216	26.35	4.22	72	0.70	***	6.0
2	488	11.31	34.912	26.67	4.30	69	0.98	1.01	9.2
2	683	8.15	34.599	26.96	4.45	67	1.29	1.45	20.4
2	878	5.97	34.463	27.15	4.33	62	1.58	1.70	26.6
2	1073	4.66	34.463	27.31	3.98	55	1.79	1.94	25.6
1	1201	4.12	34.499	27.40	3.88	53	1.93	1.99	32.0
1	1389	3.47	34.558	27.51	3.58	48	2.04	2.08	39.7
1	1865	2.48	34.641	27.67	3.51	46	2.08	2.24	58.8
1	2346	2.07	34.672	27.72	3.52	46	2.01	2.10	39.7
1	2832	1.95	34.686	27.75	3.56	46	2.17	2.07	40.6
1	3125	1.94	34.690	27.75	3.60	47	2.08	2.12	45.8

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 127/63	17/ 8/63	2230 L	27 18 S	164 05 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
2257	16.7	18.9	17	5	15	6	5	8	17	2	14	1	1020.0	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.51	35.484	25.01	4.99	97	0.15	0.24	0.8
1	50	20.49	35.494	25.03	4.99	97	0.15	0.23	0.8
1	100	20.45	35.479	25.03	4.97	97	0.15	0.27	0.8
1	150	19.86	35.579	25.26	4.84	93	0.19	***	0.7
1	200	18.78	35.618	25.57	4.35	82	0.36	0.43	2.3
1	300	17.05	35.522	25.92	4.22	77	0.50	0.54	3.9
1	400	14.80	35.297	26.26	4.20	73	0.68	***	5.7
1	500	12.74	35.100	26.54	4.33	72	0.85	0.94	10.6
1	700	8.35	34.605	26.93	4.44	67	1.33	1.37	21.6
1	900	6.09	34.451	27.13	4.36	62	1.59	1.67	30.3
1	1100	4.91	34.464	27.28	4.04	56	1.78	1.86	30.5
1	1300	3.75	34.530	27.46	3.64	49	1.94	1.96	33.5
1	1500	3.16	34.582	27.56	3.46	46	2.04	2.05	42.8
1	2000	2.32	34.651	27.69	3.46	45	2.04	2.14	43.8

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 128/63	18/ 8/63	1000 L	28 29 S	162 13 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1529	13.6	18.8	13	4	15	6	3	8	13	2	14	1	1023.4	5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.64	35.574	25.31	5.11	98	0.17	0.33	0.2
1	50	19.38	35.584	25.39	5.11	98	0.17	0.32	0.1
1	100	19.28	35.582	25.41	5.10	97	0.17	0.32	0.1
1	150	19.26	35.583	25.42	4.98	95	0.18	***	0.1
1	200	18.89	35.611	25.53	4.29	81	0.34	0.49	1.3
1	300	16.66	35.498	25.99	4.18	76	0.52	0.63	5.2
1	400	14.02	35.229	26.38	4.27	73	0.69	***	8.5
1	500	11.60	34.987	26.67	4.32	70	0.92	1.05	14.8
1	700	8.41	34.625	26.94	4.47	68	1.26	1.41	24.5
1	900	6.13	34.471	27.14	4.30	62	1.61	1.80	31.5
1	1100	4.93	34.479	27.29	4.02	56	1.74	1.92	40.2
1	1300	3.93	34.534	27.44	3.73	51	2.00	2.07	44.4

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 129/63	18/ 8/63	2230 L	29 38 S	160 20 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1716	13.9	17.8	12	4	15	6	6	8	11	2	15	4	1024.7	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.15	35.569	25.44	5.14	98	0.19	0.36	0.9
1	48	19.16	35.583	25.44	5.15	98	0.17	0.26	0.5
1	96	19.11	35.579	25.45	5.14	98	0.17	0.26	0.8
1	144	18.69	35.607	25.58	4.28	81	0.38	***	2.9
1	192	17.39	35.561	25.87	4.24	78	0.46	0.52	4.1
1	287	15.20	35.369	26.23	4.28	75	0.61	0.65	7.6
1	383	13.35	35.196	26.49	4.35	73	0.78	***	10.0
1	478	11.21	34.943	26.71	4.36	70	0.98	0.98	16.2
1	669	8.40	34.631	26.94	4.41	67	1.32	1.35	22.5
1	860	6.21	34.470	27.13	4.38	63	1.56	1.56	30.9
1	1051	5.08	34.456	27.26	4.07	57	1.76	1.70	36.8
1	1243	4.11	34.507	27.40	3.80	52	1.86	1.87	39.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 130/63	19/ 8/63	0900 L	30 49 S	158 23 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
3782	15.0	16.7	07	5	15	6	1	8	07	2	08	1	1025.0	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	18.14	35.550	25.68	5.19	97	0.22	0.39	1.0
2	50	17.70	35.542	25.78	4.98	92	0.30	0.44	2.0
2	100	17.16	35.528	25.90	4.44	81	0.44	0.60	5.0
2	150	16.16	35.477	26.10	4.87	87	0.44	***	3.6
2	200	15.18	35.393	26.25	4.39	77	0.60	0.70	8.0
2	300	12.59	35.121	26.59	4.39	73	0.80	0.95	15.0
2	400	11.03	34.945	26.75	4.45	71	1.02	***	17.6
2	500	9.33	34.727	26.87	4.51	70	1.22	1.31	25.5
2	700	7.50	34.551	27.02	4.39	65	1.51	1.59	33.7
2	900	5.98	34.476	27.16	4.22	60	1.68	1.78	37.6
2	1100	4.75	34.480	27.31	3.92	54	1.89	1.99	42.4
1	1292	3.97	34.513	27.42	3.74	51	1.97	2.05	47.1
1	1491	3.02	34.592	27.58	3.46	46	2.18	2.14	50.1
1	1989	2.27	34.678	27.71	3.89	51	2.03	2.02	52.2
1	2484	1.75	34.723	27.79	4.23	55	1.92	1.88	51.5
1	2982	1.29	34.720	27.82	4.33	55	1.97	2.12	45.5
1	3480	1.16	34.717	27.83	4.45	57	1.97	2.06	43.7
1	3485	***	34.717	***	4.46	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 131/63	19/ 8/63	1930 K	31 59 S	156 30 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
4707	15.0	18.2	34	4	15	5	6	6	33	3	35	1	1022.2	10	15	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	19.52	35.498	25.29	5.17	99	0.15	0.39	0.7
2	50	19.34	35.516	25.35	5.17	99	0.16	0.36	0.3
2	100	18.93	35.543	25.47	5.08	96	0.16	0.37	0.5
2	150	18.51	35.548	25.58	4.90	92	0.27	***	1.3
2	200	18.13	35.543	25.67	4.63	86	0.29	0.50	2.3
2	300	15.98	35.409	26.08	4.15	74	0.57	0.71	7.7
2	400	13.74	35.243	26.45	4.33	74	0.64	***	11.7
2	500	11.91	35.056	26.67	4.51	74	0.81	0.99	15.9
2	700	8.61	34.653	26.93	4.45	68	1.21	1.35	27.7
2	900	6.57	34.490	27.10	4.27	62	1.48	1.69	36.3
2	1100	5.24	34.473	27.25	4.05	57	1.64	1.83	38.7
1	1270	4.39	34.506	27.37	3.97	55	1.78	1.94	44.1
1	1470	3.65	34.543	27.48	3.59	49	1.93	2.14	50.4
1	1968	2.56	34.638	27.66	3.56	47	1.93	2.07	52.0
1	2467	2.08	34.704	27.75	3.98	52	1.80	1.89	45.7
1	2965	1.68	34.733	27.80	4.28	55	1.77	1.90	47.3
1	3464	1.30	34.722	27.82	4.39	56	1.77	1.96	43.7
1	3963	1.15	34.716	27.83	4.39	56	1.81	1.91	45.8
1	4261	1.16	34.718	27.83	4.46	57	1.83	1.95	48.6

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 132/63	20/ 8/63	1330 K	33 59 S	153 18 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
4803	14.0	17.7	22	1	15	6	1	6	*	*	*	*	1021.4	5	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	16.36	35.509	26.07	5.64	101	0.30	0.41	1.7
2	50	15.77	35.507	26.21	5.52	98	0.30	0.44	1.7
2	100	14.59	35.408	26.39	5.34	93	0.43	0.58	3.8
2	150	13.53	35.261	26.50	4.70	80	0.64	***	8.9
2	200	13.10	35.254	26.59	4.99	84	0.62	0.75	6.8
2	300	11.26	35.012	26.76	4.87	79	0.88	0.94	11.7
2	400	9.51	34.752	26.86	4.90	76	1.08	***	20.4
2	500	8.55	34.630	26.92	4.81	73	1.23	1.38	23.7
2	700	6.79	34.499	27.07	4.45	65	1.57	1.71	33.4
2	900	5.37	34.458	27.22	4.17	59	1.74	1.98	41.2
2	1100	4.11	34.485	27.39	3.91	54	1.94	2.01	48.7
1	1294	3.35	34.552	27.52	3.57	48	2.00	2.51	46.8
1	1493	2.91	34.600	27.60	3.50	47	2.04	2.17	50.1
1	1991	2.39	34.667	27.69	4.05	53	2.01	2.12	46.1
1	2488	1.98	34.721	27.77	4.10	53	1.81	2.01	45.1
1	2986	1.60	34.729	27.81	4.33	56	1.88	2.17	42.5
1	3484	1.24	34.720	27.83	4.39	56	1.90	2.09	48.3
1	3981	1.13	34.715	27.83	4.45	57	1.94	2.14	39.0
1	4280	1.16	34.715	27.83	4.57	58	1.93	2.11	44.4

DATA

PART 2

PRIMARY PRODUCTION

EXPLANATION OF HEADINGS

Part 2	Primary Production
STATION	Gives the station identification. For example, G3/76/63 signifies the 76th station worked by Gascoyne in 1963, on her 3rd cruise for that year
DATE	Given as day/month/year
TIME	Given in Zone Time (Table 2, p. 12)
LATITUDE LONGITUDE	Given in degrees and minutes
INCUBATION METHOD	SIMULATED IN SITU: Incubation from noon to sunset in a simulated in situ incubator using sunlight and blue glass filters ARTIFICIAL CONSTANT LIGHT: Incubation for 4 hours in a constant artificial light bath at 1100 f.c.
ACTIVITY CPM	Activity of the ^{14}C stock used, in counts per minute
BACKGROUND	Activity 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 this is more than 50 and also more than 10% of the LIGHT count it is assumed to be aberrant and the symbol "B" is placed after it
DARK USED	Usually the same as DARK. However, if this is aberrant or not done, the mean of the other DARK counts at that station which are not aberrant is used, and the symbol "E" placed after it If all the other DARK counts are aberrant an arbitrary count of 20 is used and the symbol "F" is placed after it

...

NETT	LIGHT minus DARK USED. If this is negative it is assumed to be equal to zero for further calculations and the symbol "G" is placed after it
INC. PER.	Incubation period
PRODUCTION A	For artificial constant light this is the calculated rate of production at the depth sampled per hour of incubation. For simulated in situ it is the production per day where this is assumed to be twice the production from noon to sunset
PRODUCTION B	The integrated rate of production per day under one square metre of sea surface from the surface to the depth given. For artificial constant light incubation, the production per day is assumed to equal 10 times the hourly production

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 76/63	10/ 7/63	0830 K	34 12 S	153 19 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	1335	22	22	1313	04.00	00.75	00.00
25	2295	23	23	2272	04.00	01.30	00.26
50	999	16	16	983	04.00	00.56	00.49
75	1458	20	20	1438	04.00	00.82	00.66
100	1220	12	12	1208	04.00	00.69	00.85
150	15	14	14	1	04.00	00.00	01.02

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 78/63	11/ 7/63	1000 L	33 59 S	157 56 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	2249	23	23	2226	04.25	01.19	00.00
25	1560	22	22	1538	04.25	00.87	00.26
50	1352	27	27	1325	04.25	00.71	00.45
75	1171	13	13	1158	04.25	00.62	00.62
100	380	11	11	369	04.25	00.20	00.72
150	51	20	20	31	04.25	00.02	00.78

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 79/63	12/ 7/63	0920 L	34 07 S	162 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	687	9	9	678	04.00	00.39	00.00
25	1144	9	9	1135	04.00	00.65	00.13
50	1149	22	22	1127	04.00	00.64	00.29
75	732	10	10	722	04.00	00.41	00.42
100	768	18	18	750	04.00	00.43	00.53
150	15	16	16	- 1 G	04.00	00.00	00.64

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 80/63	13/ 7/63	1005 M	34 14 S	166 48 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	569	17	17	552	04.00	00.31	00.00
25	892	11	11	881	04.00	00.50	00.10
50	772	22	22	750	04.00	00.43	00.22
75	315	9	9	306	04.00	00.17	00.29
100	60	15	15	45	04.00	00.03	00.32
150	24	6	6	18	04.00	00.01	00.33

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 82/63	14/ 7/63	0915 M	34 04 S	172 16 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	898	8	8	890	04.00	00.51	00.00
25	1457	20	20	1437	04.00	00.82	00.17
50	981	13	13	968	04.00	00.55	00.34
75	843	14	14	829	04.00	00.47	00.47
100	651	10	10	641	04.00	00.37	00.57
150	223	19	19	204	04.00	00.12	00.69

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 83/63	17/ 7/63	1500 Y	38 11 S	179 58 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	1019	24	24	995	04.00	00.57	00.00
25	1498	26	26	1472	04.00	00.84	00.18
50	1156	23	23	1133	04.00	00.65	00.36
75	1101	16	16	1085	04.00	00.62	00.52
100	754	9	9	745	04.00	00.42	00.65
150	254	14	14	240	04.00	00.14	00.79

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 84/63	18/ 7/63	0930 Y	37 51 S	176 14 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	689	10	10	679	04.00	00.39	00.00
25	749	13	13	736	04.00	00.42	00.10
50	632	10	10	622	04.00	00.35	00.20
75	678	26	26	652	04.00	00.37	00.29
100	494	9	9	485	04.00	00.28	00.37
150	59	9	9	50	04.00	00.03	00.45

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 86/63	19/ 7/63	0945 Y	38 45 S	171 51 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	823	15	15	808	04.00	00.46	00.00
25	878	14	14	864	04.00	00.49	00.12
50	648	5	5	643	04.00	00.37	00.23
75	903	19	19	884	04.00	00.50	00.34
100	625	14	14	611	04.00	00.35	00.44
150	23	15	15	8	04.00	00.00	00.53

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 89/63	21/ 7/63	1000 Y	35 22 S	166 06 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT O	4 HOURS	NO. 16	10.76 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTICN B G.C/DAY/SQ.M.
0	414	22	22	392	04.25	00.21	00.00
25	532	23	23	509	04.25	00.27	00.06
50	467	8	8	459	04.25	00.25	00.13
75	259	10	10	249	04.25	00.13	00.17
100	229	14	14	215	04.25	00.12	00.20
150	24	17	17	7	04.25	00.00	00.23

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 91/63	22/ 7/63	0945 X	31 50 S	165 01 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	163	11	11	152	04.25	00.08	00.00
25	218	16	16	202	04.25	00.11	00.02
50	637	19	19	618	04.25	00.33	00.08
75	151	16	16	135	04.25	00.07	00.13
100	124	18	18	106	04.25	00.06	00.15
150	11	25	25	- 14 G	04.25	00.00	00.16

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 93/63	23/ 7/63	0945 X	27 45 S	164 57 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	5 HOURS	NO. 16	10.76 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	232	22	22	210		04.50	00.11	00.00
25	200	25	25	175		04.50	00.09	00.03
50	314	16	16	298		04.50	00.15	00.06
75	81	16	16	65		04.50	00.03	00.08
100	67	12	12	55		04.50	00.03	00.09
150	27	29	29	2	G	04.50	00.00	00.09

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 95/63	24/ 7/63	0950 X	23 52 S	164 55 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	43	6	6	37	04.00	00.02	00.00
25	62	9	9	53	04.00	00.03	00.01
50	45	23	23	22	04.00	00.01	00.01
75	196	25	25	171	04.00	00.10	00.03
100	133	14	14	119	04.00	00.07	00.05
150	107	15	15	92	04.00	00.05	00.08

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 97/63	25/ 7/63	0945 X	19 49 S	165 00 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 MILLION	16 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	47	10	10	37	04.00	00.02	00.00
25	82	13	13	69	04.00	00.04	00.01
50	56	4	4	52	04.00	00.03	00.02
75	51	9	9	42	04.00	00.02	00.02
100	29	11	11	18	04.00	00.01	00.03
150	4	10	10	- 6 G	04.00	00.00	00.03

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 97/63	25/ 7/63	1115 X	19 49 S	165 00 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU	7 NOON - SUNSET	NO. 16	10.76 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	158	26	26	132	00.50	00.60	00.00
17	159	30	30	129	00.50	00.59	00.01
28	189	18	18	171	00.50	00.78	00.02
43	80	46	46	34	00.50	00.16	00.02
60	53	25	25	28	00.50	00.13	00.03
85	42	29	29	13	00.50	00.06	00.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 99/63	26/ 7/63	0915 X	15 46 S	164 59 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	1822	18	18	1804	04.00	01.03	00.00
25	108	9	9	99	04.00	00.06	00.14
50	156	17	17	139	04.00	00.08	00.15
75	94	12	12	82	04.00	00.05	00.17
100	44	110 B	14 E	30	04.00	00.02	00.18
150	53	16	16	37	04.00	00.02	00.19

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

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 99/63	26/ 7/63	1115 X	15 46 S	164 59 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU	7 NOON - SUNSET	NO. 16	10.76 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	128	12	12	116	00.50	00.53	00.00
20	171	17	17	154	00.50	00.70	00.01
34	83	24	24	59	00.50	00.27	00.02
52	73	22	22	51	00.50	00.23	00.02
70	29	27	27	2	00.50	00.01	00.03
100	45	22	22	23	00.50	00.10	00.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/101/63	27/ 7/63	0900 X	11 57 S	165 02 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	65	25	25	40	04.00	00.02	00.00
25	104	13	13	91	04.00	00.05	00.01
50	62	11	11	51	04.00	00.03	00.02
75	50	21	21	29	04.00	00.02	00.03
100	64	12	12	52	04.00	00.03	00.03
150	40	17	17	23	04.00	00.01	00.04

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/101/63	27/ 7/63	1100 X	11 57 S	165 02 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU	7 NOON - SUNSET	NO. 16	10.76 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	113	85 B	29 E	84	00.50	00.38	00.00
12	92	102 B	29 E	63	00.50	00.29	00.00
25	114	51 B	29 E	85	00.50	00.39	00.01
46	49	59 B	29 E	20	00.50	00.09	00.01
60	20	40	40 -	20 G	00.50	00.00	00.01
85	23	19	19	4	00.50	00.02	00.01

B ABERRANT VALUE, NOT USED
E MEAN NON-ABERRANT DARK USED
G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/103/63	28/ 7/63	1020 X	13 44 S	168 52 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	144	82	14	130		04.25	00.07	00.00
25	158	16	16	142		04.25	00.08	00.02
50	57	10	10	47		04.25	00.03	00.03
75	58	11	11	47		04.25	00.03	00.04
100	85	7	7	78		04.25	00.04	00.05
150	21	27	27	- 6	G	04.25	00.00	00.06

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/103/63	28/ 7/63	1200 X	13 44 S	168 52 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU	7 NOON - SUNSET	NO. 16	10.76 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	162	31	31	131	00.50	00.60	00.00
12	230	104 B	25 E	205	00.50	00.94	00.01
26	126	69 B	25 E	101	00.50	00.46	00.02
45	60	18	18	42	00.50	00.19	00.03
63	36	29	29	7	00.50	00.03	00.03
90	100	22	22	78	00.50	00.36	00.03

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

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/105/63	2/ 8/63	0930 X	07 57 S	165 00 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	118	47	47	71	04.00	00.04	00.00
25	315	5	5	310	04.00	00.18	00.03
50	148	18	18	130	04.00	00.07	00.06
75	98	16	16	82	04.00	00.05	00.07
100	71	20	20	51	04.00	00.03	00.08
150	42	52 B	21 E	21	04.00	00.01	00.09

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

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/107/63	3/ 8/63	0915 X	03 55 S	165 03 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	427	34	34	393	04.00	00.22	00.00
25	213	16	16	197	04.00	00.11	00.04
50	173	17	17	156	04.00	00.09	00.07
75	107	14	14	93	04.00	00.05	00.08
100	70	15	15	55	04.00	00.03	00.09
150	27	14	14	13	04.00	00.01	00.10

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/107/63	3/ 8/63	1145 X	03 55 S	165 03 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU	7 NOON - SUNSET	NO. 16	10.76 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	812	156 B	36 E	776	00.50	03.54	00.00
15	598	39	39	559	00.50	02.55	00.05
29	633	83 B	36 E	597	00.50	02.72	00.08
47	261	73 B	36 E	225	00.50	01.03	00.12
60	151	67 B	36 E	115	00.50	00.52	00.13
85	103	33	33	70	00.50	00.32	00.14

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

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/109/63	4/ 8/63	0925 X	00 00	165 02 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	554	31	31	523	04.00	00.30	00.00
25	1015	20	20	995	04.00	00.57	00.11
50	392	21	21	371	04.00	00.21	00.21
75	74	27	27	47	04.00	00.03	00.24
100	46	21	21	25	04.00	00.01	00.24
150	41	15	15	26	04.00	00.01	00.25

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/109/63	4/ 8/63	1155 X	00 00	165 02 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU	7 NOON - SUNSET	NO. 16	10.76 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	861	68	68	793	00.50	03.62	00.00
15	1912	206 B	71 E	1841	00.50	08.40	00.09
26	1506	111	111	1395	00.50	06.36	00.17
40	1137	34	34	1103	00.50	05.03	00.25
52	581	85 B	71 E	510	00.50	02.33	00.30
63	362	206 B	71 E	291	00.50	01.33	00.32

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

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/111/63	5/ 8/63	0915 X	03 20 S	167 36 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	301	151 B	26 E	275	04.00	00.16	00.00
25	346	94 B	26 E	320	04.00	00.18	00.04
50	193	32	32	161	04.00	00.09	00.08
75	105	12	12	93	04.00	00.05	00.09
100	88	42	42	46	04.00	00.03	00.10
150	37	21	21	16	04.00	00.01	00.11

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

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/111/63	5/ 8/63	1145 X	03 20 S	167 36 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU	7 NOON - SUNSET	NO. 16	10.76 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	846	58	58	788	00.50	03.60	00.00
20	1088	88	88	1000	00.50	04.56	00.08
30	579	52	52	527	00.50	02.40	00.12
45	375	50 B	56 E	319	00.50	01.46	00.15
61	164	38	38	126	00.50	00.57	00.16
82	182	46	46	136	00.50	00.62	00.17

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

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/113/63	6/ 8/63	0925 X	06 13 S	170 11 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	267	83 B	30 E	237	04.00	00.14	00.00
25	253	18	18	235	04.00	00.13	00.03
50	150	30	30	120	04.00	00.07	00.06
75	95	44	44	51	04.00	00.03	00.07
100	36	26	26	10	04.00	00.01	00.08
150	78	36	36	42	04.00	00.02	00.08

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

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/113/63	6/ 8/63	1145 X	06 13 S	170 11 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU	7 NOON - SUNSET	NO. 16	10.76 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	538	200 B	41 E	497	00.50	02.27	00.00
16	829	70	70	759	00.50	03.46	00.05
33	572	37	37	535	00.50	02.44	00.10
48	390	18	18	372	00.50	01.70	00.13
64	202	112 B	41 E	161	00.50	00.73	00.15
80	176	143 B	41 E	135	00.50	00.62	00.16

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

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/115/63	7/ 8/63	0930 X	09 21 S	172 50 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	369	90 B	18 E	351	04.00	00.20	00.00
25	617	80 B	18 E	599	04.00	00.34	00.07
50	361	79 B	18 E	343	04.00	00.20	00.14
75	197	16	16	181	04.00	00.10	00.17
100	82	17	17	65	04.00	00.04	00.19
150	23	22	22	1	04.00	00.00	00.20

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

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/115/63	7/ 8/63	1130 X	09 21 S	172 50 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU	7 NOON - SUNSET	NO. 16	10.76 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	499	536 B	20 F	479	00.50	02.19	00.00
17	371	92 B	20 F	351	00.50	01.60	00.03
30	307	149 B	20 F	287	00.50	01.31	00.05
47	302	269 B	20 F	282	00.50	01.29	00.07
61	213	131 B	20 F	193	00.50	00.88	00.09
80	199	163 B	20 F	179	00.50	00.82	00.10

B ABERRANT VALUE, NOT USED
F ARBITRARY DARK USED

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/117/63	8/ 8/63	0915 X	12 24 S	175 35 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	198	21	21	177	04.00	00.10	00.00
25	326	24	24	302	04.00	00.17	00.03
50	151	20	20	131	04.00	00.07	00.06
75	100	22	22	78	04.00	00.04	00.08
100	95	24	24	71	04.00	00.04	00.09
150	55	36	36	19	04.00	00.01	00.10

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/117/63	8/ 8/63	1150 X	12 24 S	175 35 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU	7 NOON - SUNSET	NO. 16	10.76 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	302	62 B	34 E	268	00.50	01.22	00.00
19	356	34	34	322	00.50	01.47	00.03
32	284	157 B	34 E	250	00.50	01.14	00.04
50	215	207 B	34 E	181	00.50	00.83	00.06
70	140	118 B	34 E	106	00.50	00.48	00.07
90	77	64 B	34 E	43	00.50	00.20	00.08

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

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/119/63	9/ 8/63	0830 X	15 29 S	178 18 W

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	137	30	30	107	04.00	00.06	00.00
25	276	20	20	256	04.00	00.15	00.03
50	145	18	18	127	04.00	00.07	00.05
75	90	21	21	69	04.00	00.04	00.07
100	38	12	12	26	04.00	00.01	00.07
150	36	18	18	18	04.00	00.01	00.08

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/121/63	15/ 8/63	0715 M	20 23 S	174 51 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	5 HOURS	NO. 16	10.76 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	134	76 B	20 E	114	04.50	00.06	00.00
25	205	43	43	162	04.50	00.08	00.02
50	120	18	18	102	04.50	00.05	00.03
75	78	13	13	65	04.50	00.03	00.04
100	90	124 B	20 E	70	04.50	00.04	00.05
150	9	8	8	1	04.50	00.00	00.06

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

STATION	DATE	TIME	LATITUDE.	LONGITUDE
G 3/124/63	16/ 8/63	1630 M	24 04 S	169 18 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	391	66 B	25 E	366	04.00	00.21	00.00
25	467	25	25	442	04.00	00.25	00.06
50	210	23	23	187	04.00	00.11	00.10
75	265	19	19	246	04.00	00.14	00.13
100	427	45	45	382	04.00	00.22	00.18
150	100	13	13	87	04.00	00.05	00.25

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

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/126/63	17/ 8/63	1300 M	26 12 S	165 49 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	302	39	39	263	04.00	00.15	00.00
25	441	36	36	405	04.00	00.23	00.05
50	258	25	25	233	04.00	00.13	00.09
75	349	27	27	322	04.00	00.18	00.13
100	136	15	15	121	04.00	00.07	00.16
150	40	18	18	22	04.00	00.01	00.18

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/128/63	18/ 8/63	1110 M	28 29 S	162 13 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	1969	45	45	1924	04.25	01.03	00.00
25	2041	34	34	2007	04.25	01.08	00.26
50	844	15	15	829	04.25	00.44	00.45
75	631	19	19	612	04.25	00.33	00.55
100	377	18	18	359	04.25	00.19	00.62
150	147	7	7	140	04.25	00.08	00.68

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/130/63	19/ 8/63	1035 M	30 49 S	158 23 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	2244	70	70	2174	04.00	01.24	00.00
25	3266	44	44	3222	04.00	01.84	00.39
50	405	37	37	368	04.00	00.21	00.64
75	210	32	32	178	04.00	00.10	00.68
100	107	11	11	96	04.00	00.05	00.70

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/132/63	20/ 8/63	1445 L	33 59 S	153 18 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 16	10.76 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	3802	42	42	3760	04.00	02.14	00.00
25	5727	74	74	5653	04.00	03.22	00.67
50	919	26	26	893	04.00	00.51	01.14
75	270	20	20	250	04.00	00.14	01.22
100	194	25	25	169	04.00	00.10	01.25
150	33	20	20	13	04.00	00.01	01.28

DATA

PART 3

PIGMENTS

EXPLANATION OF HEADINGS

Part 3	Pigments
STATION	Gives the station identification. For example, G3/76/63 signifies the 76th station worked from Gascoyne in 1963, on her 3rd cruise for that year
DATE	Given as day/month/year
TIME	Given in Zone Time (Table 2, p. 12)
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 3/ 76/63	10/ 7/63	0700 K	34 12 S	153 19 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.21	0.15	0.60	0.08	0.00
25	0.18	0.08	0.55	0.11	-0.01
50	0.47	0.15	1.02	0.16	0.00
75	0.25	0.16	0.98	0.13	-0.04
100	0.28	0.15	0.81	0.11	-0.01
150	0.00	0.00	0.00	0.05	-0.01

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 78/63	11/ 7/63	0930 L	33 59 S	157 56 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.30	0.15	1.02	0.10	-0.01
25	0.27	0.19	0.74	0.11	-0.01
50	0.39	0.25	0.65	0.05	0.09
75	0.20	0.06	0.56	0.13	0.00
100	0.21	0.12	0.80	0.09	-0.01
150	0.10	0.11	0.44	0.07	-0.02

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 79/63	12/ 7/63	0900 L	34 07 S	162 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.20	0.09	0.53	0.06	0.01
25	0.15	0.06	0.29	0.09	0.00
50	0.20	0.08	0.49	0.06	0.00
75	0.24	0.14	0.64	0.08	0.00
100	0.21	0.07	0.39	0.09	0.00
150	0.06	0.02	0.31	0.04	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 80/63	13/ 7/63	0930 M	34 14 S	166 48 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.29	0.19	1.07	0.04	0.02
25	0.18	0.10	0.62	0.08	-0.01
50	0.18	0.12	0.64	0.07	0.00
75	0.10	0.08	0.43	0.05	0.00
100	0.06	0.05	0.23	0.09	-0.02
150	0.01	-0.02	0.25	0.03	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 82/63	14/ 7/63	0915 M	34 04 S	172 16 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.17	0.07	0.53	0.05	0.01
25	0.16	0.06	0.29	0.04	0.01
50	0.22	0.15	0.66	0.08	-0.01
75	0.15	0.07	0.24	0.03	0.05
100	0.21	0.11	0.62	0.07	0.00
150	0.12	0.07	0.72	0.08	-0.01

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 83/63	17/ 7/63	1430 Y	38 11 S	179 28 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.18	0.07	0.52	0.06	0.00
25	0.22	0.06	0.66	0.09	0.00
50	0.20	0.07	0.37	0.05	0.02
75	0.12	0.00	0.23	0.07	0.01
100	0.27	0.13	0.75	0.07	0.00
150	0.19	0.10	0.44	0.08	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 84/63	18/ 7/63	0900 Y	37 51 S	176 14 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.02	-0.01	0.14	0.09	0.00
25	0.00	0.00	0.00	0.04	0.00
50	0.12	0.03	0.27	0.09	0.00
75	0.26	0.17	0.26	0.10	0.00
150	0.09	0.11	0.40	0.06	-0.02

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 86/63	19/ 7/63	0900 Y	38 45 S	171 51 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.12	0.06	0.51	0.07	-0.01
25	0.11	0.06	0.43	0.06	0.00
50	0.14	0.09	0.45	0.05	0.01
75	0.14	0.08	0.61	0.09	-0.01
100	0.09	0.06	0.37	0.05	-0.01
150	0.05	0.05	0.21	0.03	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 89/63	2/ 7/63	0930 X	35 22 S	166 06 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.11	0.08	0.33	0.06	0.00
25	0.09	0.06	0.55	0.03	0.03
50	0.08	0.01	-0.01	0.04	0.02
75	0.15	0.11	0.55	0.07	-0.01
100	0.15	0.08	0.55	0.09	-0.01
150	0.00	0.00	0.00	0.05	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 91/63	22/ 7/63	0900 X	31 50 S	165 01 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.00	0.00	0.00	0.04	0.04
25	0.06	0.02	0.36	0.08	0.01
50	0.12	0.09	0.57	0.08	-0.02
75	0.09	0.08	0.36	0.06	0.00
100	0.07	0.01	0.96	0.07	-0.01
150	0.12	0.11	0.59	0.09	-0.02

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 93/63	23/ 7/63	0900 X	27 45 S	164 57 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.10	0.07	0.62	0.06	-0.02
25	0.08	0.01	0.17	0.07	0.00
50	0.10	0.11	-0.05	0.06	0.00
75	0.09	0.05	0.28	0.04	0.00
100	0.10	0.09	0.55	0.08	0.00
150	0.22	0.07	0.84	0.10	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 95/63	24/ 7/63	0900 X	23 52 S	164 55 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.10	0.10	0.44	0.07	0.00
25	0.08	0.05	0.12	0.04	0.01
50	0.08	0.09	0.48	0.07	-0.01
75	0.10	0.03	0.25	0.06	0.03
100	0.05	0.05	0.21	0.05	0.00
150	0.09	0.05	0.51	0.07	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 97/63	25/ 7/63	0900 X	19 49 S	165 00 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.07	0.01	0.01	0.07	0.00
25	0.03	0.05	0.13	0.03	0.00
50	0.10	-0.02	-0.07	0.05	0.03
75	0.11	0.07	0.47	0.08	-0.01
100	0.11	0.09	0.40	0.14	-0.07
150	0.12	0.08	0.45	0.05	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 99/63	26/ 7/63	0900 X	15 46 S	164 59 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.05	0.07	0.28	0.06	-0.01
25	0.02	0.02	0.10	0.04	0.00
50	0.03	0.02	0.30	0.12	-0.04
75	0.00	0.00	0.00	0.05	0.00
100	0.00	0.00	0.00	0.07	0.00
150	0.12	0.07	0.41	0.05	0.02

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 101/63	27/ 7/63	0900 X	11 57 S	165 02 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.00	0.00	0.00	0.07	0.00
25	0.00	0.01	0.31	0.04	0.00
50	0.12	0.10	0.70	0.11	-0.03
75	0.05	0.00	-0.03	0.08	-0.01
100	0.09	0.04	0.44	0.05	0.00
150	0.09	0.07	0.27	0.09	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 103/63	28/ 7/63	1000 X	13 44 S	168 52 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.08	0.07	0.60	0.06	-0.01
25	0.06	0.00	0.38	0.06	-0.01
50	0.03	0.01	0.68	0.05	0.00
75	0.12	0.09	0.48	0.10	0.00
100	0.06	0.00	0.34	0.07	0.00
150	0.12	0.07	0.55	0.06	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 105/63	2/ 8/63	0900 X	7 57 S	165 00 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.06	0.00	0.29	0.06	0.01
25	0.10	0.08	0.34	0.06	0.01
50	0.10	0.04	0.52	0.09	-0.02
75	0.09	0.12	0.30	0.07	0.00
100	0.17	0.13	0.74	0.08	0.00
150	0.08	0.10	0.42	0.09	-0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 107/63	3/ 8/63	0830 X	3 55 S	165 03 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.12	0.09	0.57	0.09	0.00
25	0.09	0.13	0.06	0.07	0.01
50	0.15	0.15	0.46	0.07	0.02
75	0.12	0.09	0.61	0.09	-0.01
100	0.02	0.04	0.61	0.09	-0.02
150	0.15	0.12	0.59	0.08	-0.01

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 109/63	4/ 8/63	0900 X	0 00	165 02 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.15	0.08	0.49	0.08	0.00
25	0.19	0.12	0.63	0.09	0.00
50	0.22	0.13	0.77	0.09	0.01
75	0.01	-0.02	0.25	0.09	0.00
100	0.09	0.04	0.52	0.07	0.00
150	0.10	0.07	0.53	0.07	-0.01

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 111/63	5/ 8/63	0900 X	3 20 S	167 36 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.05	0.04	0.31	0.04	0.01
25	0.06	-0.01	-0.04	0.08	0.02
50	0.10	0.08	0.34	0.07	-0.01
75	0.13	0.10	0.46	0.05	0.00
100	0.14	0.09	0.59	0.06	0.00
150	0.12	0.08	0.39	0.04	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 113/63	6/ 8/63	0900 X	6 13 S	170 11 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.15	0.11	0.79	0.09	0.00
25	0.00	0.00	0.00	0.09	-0.02
50	0.12	0.15	0.41	0.04	0.04
75	0.13	0.09	0.43	0.05	0.00
100	0.10	0.13	0.37	0.07	0.00
150	0.04	0.02	0.38	0.07	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 115/63	7/ 8/63	0900 X	9 21 S	172 50 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.00	0.00	0.00	0.09	-0.01
25	0.21	0.13	0.87	0.05	-0.01
50	0.13	0.06	0.60	0.06	0.00
75	0.03	0.02	0.21	0.06	0.02
100	0.04	0.02	0.12	0.06	0.03
150	0.17	0.11	0.81	0.06	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 117/63	8/ 8/63	0900 X	12 24 S	175 35 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.10	0.02	0.50	0.05	0.00
25	0.00	0.03	0.15	0.07	0.00
50	0.09	0.06	0.37	0.06	-0.01
75	0.07	0.06	0.30	0.06	0.00
100	0.07	-0.02	0.42	0.04	0.00
150	0.02	0.00	0.16	0.05	0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 119/63	9/ 8/63	0800 X	15 29 S	178 18 W

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.12	0.09	0.57	0.08	0.00
25	0.06	0.00	0.45	0.05	0.01
50	0.14	0.07	0.66	0.04	0.01
75	0.15	0.08	0.46	0.07	-0.01
100	0.15	0.08	0.49	0.07	0.00
150	0.04	0.09	0.29	0.05	-0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 121/63	15/ 8/63	0700 M	20 23 S	174 51 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.11	0.05	0.53	0.09	-0.02
25	0.15	0.08	0.54	0.05	0.00
50	0.00	0.00	0.00	0.12	-0.13
75	0.09	0.01	0.29	0.09	0.00
100	0.17	0.08	0.48	0.09	-0.03
150	0.07	0.19	0.51	0.08	-0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 124/63	16/ 8/63	1630 M	24 04 S	169 18 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.20	0.15	0.72	0.08	-0.03
25	0.17	0.19	0.44	0.05	0.01
75	0.15	0.08	0.46	0.06	0.00
100	0.07	0.07	0.28	0.04	0.00
150	0.09	0.07	0.68	0.08	-0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 126/63	17/ 8/63	1300 M	26 12 S	165 49 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.17	0.10	0.68	0.06	0.00
25	0.10	0.04	0.47	0.08	-0.02
50	0.00	0.00	0.00	0.09	-0.01
75	0.18	0.09	0.45	0.08	0.00
100	0.23	0.12	0.64	0.10	0.00
150	0.00	0.00	0.00	0.10	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 128/63	18/ 8/63	1100 M	28 29 S	162 13 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.36	0.09	0.81	0.11	0.03
25	0.35	0.11	0.78	0.10	0.03
50	0.40	0.16	0.80	0.10	0.03
75	0.15	0.00	0.24	0.11	0.01
100	0.25	0.08	0.61	0.09	0.00
150	0.22	0.04	0.43	0.06	0.01

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 130/63	19/ 8/63	1000 M	30 49 S	158 23 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.38	0.12	0.95	0.11	0.01
25	0.28	0.13	0.57	0.04	0.04
50	0.05	0.04	0.12	0.02	0.01
75	0.09	0.01	0.29	0.03	0.00
150	0.06	0.04	0.19	0.03	0.00
150	0.11	0.13	0.45	0.06	-0.01

STATION	DATE	TIME	LATITUDE	LONGITUDE
G 3/ 132/63	20/ 8/63	1430 L	33 59 S	153 18 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.51	0.15	1.14	0.10	0.04
25	0.78	0.22	1.24	0.13	0.08
50	0.43	0.14	0.93	0.09	0.02
75	0.15	0.09	0.54	0.09	-0.02
100	0.18	0.08	0.51	0.08	-0.01
150	0.08	0.05	0.34	0.06	-0.02

DATA

PART 4

PARTICULATE CARBON

PARTICULATE CARBON

(µg/l)

Station	0m	25m	50m	75m	100m	150m	Column Average
89	30	45	28	35	27	18	30
91	75	25	31	20	24	99	48
93	75	23	28	22	27	19	28
95	42	22	18	28	22	20	24
97	20	28	17	17	126	21	38
99	46	20	28	22	-	43	33
101	32	16	20	18	33	11	20
103	31	17	14	22	15	13	17
105	50	29	27	25	20	13	24
107	52	28	20	26	55	15	30
109	39	35	27	28	20	20	27
132	67	42	25	19	19	-	32

OCEANOGRAPHICAL CRUISE REPORTS

1. Oceanographical observations in the Indian Ocean in 1959. H.M.A.S. *Diamantina* Cruises Dm1/59 and Dm2/59.
2. Oceanographical observations in the Indian Ocean in 1960. H.M.A.S. *Diamantina* Cruise Dm1/60.
3. Oceanographical observations in the Indian Ocean in 1960. H.M.A.S. *Diamantina* Cruise Dm2/60.
4. Oceanographical observations in the Indian Ocean in 1960. H.M.A.S. *Diamantina* Cruise Dm3/60.
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.
7. Oceanographical observations in the Indian Ocean in 1961. H.M.A.S. *Diamantina* Cruise Dm1/61.
8. Oceanographical observations in the Pacific Ocean in 1961. H.M.A.S. *Gascoyne* Cruise G1/61.
9. Oceanographical observations in the Indian Ocean in 1961. H.M.A.S. *Diamantina* Cruise Dm2/61.
10. Oceanographical observations in the Indian and Pacific Oceans in 1961. H.M.A.S. *Gascoyne* Cruise G2/61.
11. Oceanographical observations in the Indian Ocean in 1961. H.M.A.S. *Diamantina* Cruise Dm3/61.
12. Oceanographical observations in the Pacific Ocean in 1961. H.M.A.S. *Gascoyne* Cruise G3/61.
13. Oceanographical observations in the Pacific Ocean in 1962. H.M.A.S. *Gascoyne* Cruise G1/62.
14. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Diamantina* Cruise Dm1/62.
15. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Diamantina* Cruise Dm2/62.
16. Oceanographical observations in the Pacific and Indian Oceans in 1962. H.M.A.S. *Gascoyne* Cruises G2/62 and G3/62.
17. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Gascoyne* Cruise G4/62.
18. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Diamantina* Cruise Dm3/62.
19. Oceanographical observations in the Pacific Ocean in 1962. H.M.A.S. *Gascoyne* Cruise G5/62.
20. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Diamantina* Cruise Dm4/62.
21. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G1/63.
22. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G2/63.
23. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm1/63.
24. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm2/63.

OCEANOGRAPHICAL CRUISE REPORTS

(Continued)

25. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm3/63.
26. Oceanographical observations in the Pacific Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G3/63.
29. Oceanographical observations in the Pacific Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G4/63.
31. Oceanographical observations in the Pacific Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G5/63.
32. Oceanographical observations in the Pacific Ocean in 1964. H.M.A.S. *Gascoyne* Cruise G1/64.
34. Oceanographical observations in the Indian Ocean in 1964. H.M.A.S. *Gascoyne* Cruise G2/64.
35. Oceanographical observations in the Indian and Pacific Oceans in 1964. H.M.A.S. *Gascoyne* Cruise G3/64.
36. Oceanographical observations in the Indian Ocean in 1964. H.M.A.S. *Diamantina* Cruise Dm2/64.
39. Oceanographical observations in the Pacific Ocean in 1964. H.M.A.S. *Gascoyne* Cruise G4/64.
40. Oceanographical observations in the Indian Ocean in 1964. H.M.A.S. *Diamantina* Cruise Dm5/64.
41. Oceanographical observations in the Indian Ocean in 1964. H.M.A.S. *Gascoyne* Cruise G5/64.
42. Oceanographical observations in the Pacific Ocean in 1964. H.M.A.S. *Gascoyne* Cruise G6/64.
43. Oceanographical observations in the Indian Ocean in 1965. H.M.A.S. *Gascoyne* Cruise G2/65.
46. Oceanographical observations in the Indian Ocean in 1965. H.M.A.S. *Gascoyne* Cruise G5/65.