

OCEANOGRAPHICAL STATION LIST

VOLUME 65

INVESTIGATIONS BY F.R.V. *MARELDA* ON THE
EASTERN AUSTRALIAN TUNA GROUNDS IN 1963

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

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AUSTRALIA

MELBOURNE, 1968

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When citing this station list, abbreviate as follows:
CSIRO Aust. Oceanogr. Stn List 65.

OCEANOGRAPHICAL STATION LIST

VOLUME 65

Investigations by F.R.V. Marelda
on the Eastern Australian Tuna Grounds in 1963

I. INTRODUCTION

This report records the data collected during the 1963 cruises of F.R.V. Marelda (ML/63-ML6/63).

These cruises were planned to investigate hydrological conditions on the tuna grounds and to longline, troll, and tag tuna. Track charts and station positions are given in Figures 1-13.

Marelda is a 36-ft wooden fishing vessel built in 1946 and converted for research in 1955. She is powered by a 48 hp Gardner diesel engine with an auxiliary Coventry Victor diesel of 5 hp, and is equipped with a magnetic compass, a radio transmitter with four transmitting frequencies, and a Kelvin Hughes Fisherman's Asdic. Marelda has two hydraulic drum winches of 4 hp with 1,000 m of wire on each.

II. WORK ACCOMPLISHED

Table 1 gives details of time, scientific personnel, number of stations worked, and numbers of fish longlined and trolled and tuna tagged for each cruise. The longlining gear used is described by Davies (1961).

III. METHOD OF COLLECTION AND ANALYSIS OF SAMPLES

1. Physics

Temperature and Depth of Samples.—Water temperatures were taken with deep-sea reversing thermometers. On Cruises 1-7, a single protected thermometer was used at each depth plus an unprotected thermometer on the two deepest water bottles. For these cruises, temperatures are considered accurate to ± 0.1 degC and depths to about 7%. On Cruises 8-16, two protected thermometers were used on each water bottle with unprotected thermometers added to three of the four deepest water bottles. For these cruises, temperatures are a little more accurate, and depths accurate to within 5%.

Bathythermographs.—A 900-ft bathythermograph was used, and slides were digitized according to the method of the U.S. National Oceanographic Data Centre (1964). The results were transferred to punched cards and computer listings are held at Cronulla.

TABLE 1

DETAILS OF CRUISES AND WORK DONE

Cruise	Dates	Scientific Personnel	Number of Stations Occupied	BT	Hydrology	Long-line	Fish			Tuna Tagged			
							Trolled	4	5		6		
M1/63	Jan. 12-20	R. Greig	27	27	23		3	1	10	3			
M2/63	Jan. 22-31	R. Blick R. Greig				51	2	84		1	50		
M3/63	Feb. 9-Mar. 29	J. Robins R. Greig G. Reid	19	19	6	138	6	155		1	137		
M4/63	Apr. 1-11	R. Greig J. Robins	10	10	13	1	2	6			2		
M5/63	Apr. 23-May 30	R. Greig G. Reid	54	54	29		8	76		7	1		
M6/63	July 2-19	R. Greig G. Reid	43	3	43	33	3	4	1	81	1	3	4
M7/63	July 26-Aug. 1	R. Greig G. Reid	28	28	23		2	48	2	3	2		
M8/63	Aug. 14-28	R. Greig G. Reid	55	12	55	35	4	33	1		4		
M9/63	Sept. 10-30	R. Greig G. Reid	39	16	39	23	9	11	5		9		
M10/63	Oct. 9-19	K. Fleming R. Greig	48	20	48	28	5	2	3	1	5	2	

TABLE 1 (Cont'd....)

Cruise	Dates	Scientific Personnel	Number of Stations Occupied	BT	Hydrology	Long-				Fish						Tuna		
						line	2	4	1	2	3	4	5	6	1	2	3	8
M11/63	Oct. 22-23	R. Greig	10	10	10	1	2	4	1	2	3	4	5	6	1	2	3	8
		G. Reid																
M12/63	Nov. 3-26	R. Greig	51	34	51	17			18	45	27	2	18	2	18	2	1	
M13/63	Dec. 3	R. Greig	13	13	13				5	5	18						4	
M14/63	Dec. 6-11	R. Blick	27	27	27				13		16						13	
		R. Greig																
M15/63	Dec. 12-14	R. Blick	32	32	32				1	4	3	63					1	4
		R. Greig																
M16/63	Dec. 6-22	R. Blick	27	10	27	17				2	5	10						2
		R. Greig																5

BT Bathythermographs

Hydrology 1 Number of stations at which surface samples were collected
 2 Number of stations at which subsurface samples were collected

Fish longlined
 trolled and
 tagged 1 Southern bluefin tuna 4 Striped tuna
 2 Yellowfin tuna 5 Mackerel tuna
 3 Albacore 6 Other species

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

2. Chemistry

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

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

Salinities are considered accurate to $\pm 0.05\%$.

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, given as ml/l, were computed, using the simpler of the equations given by Richards and Corwin (1956) -

$$\text{O}_2(\% \text{ Satn.}) = \frac{\text{O}_2(\text{ml/l}) \times (33.5 + \text{T}^\circ\text{C}) \times 100}{332.4 - (1.854 \times \text{S}\text{‰})}$$

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- U.S. NAVY HYDROGRAPHIC OFFICE (1955).—Instruction manual for oceanographic observations. Publ. No. 607.

IV. TRACK CHARTS

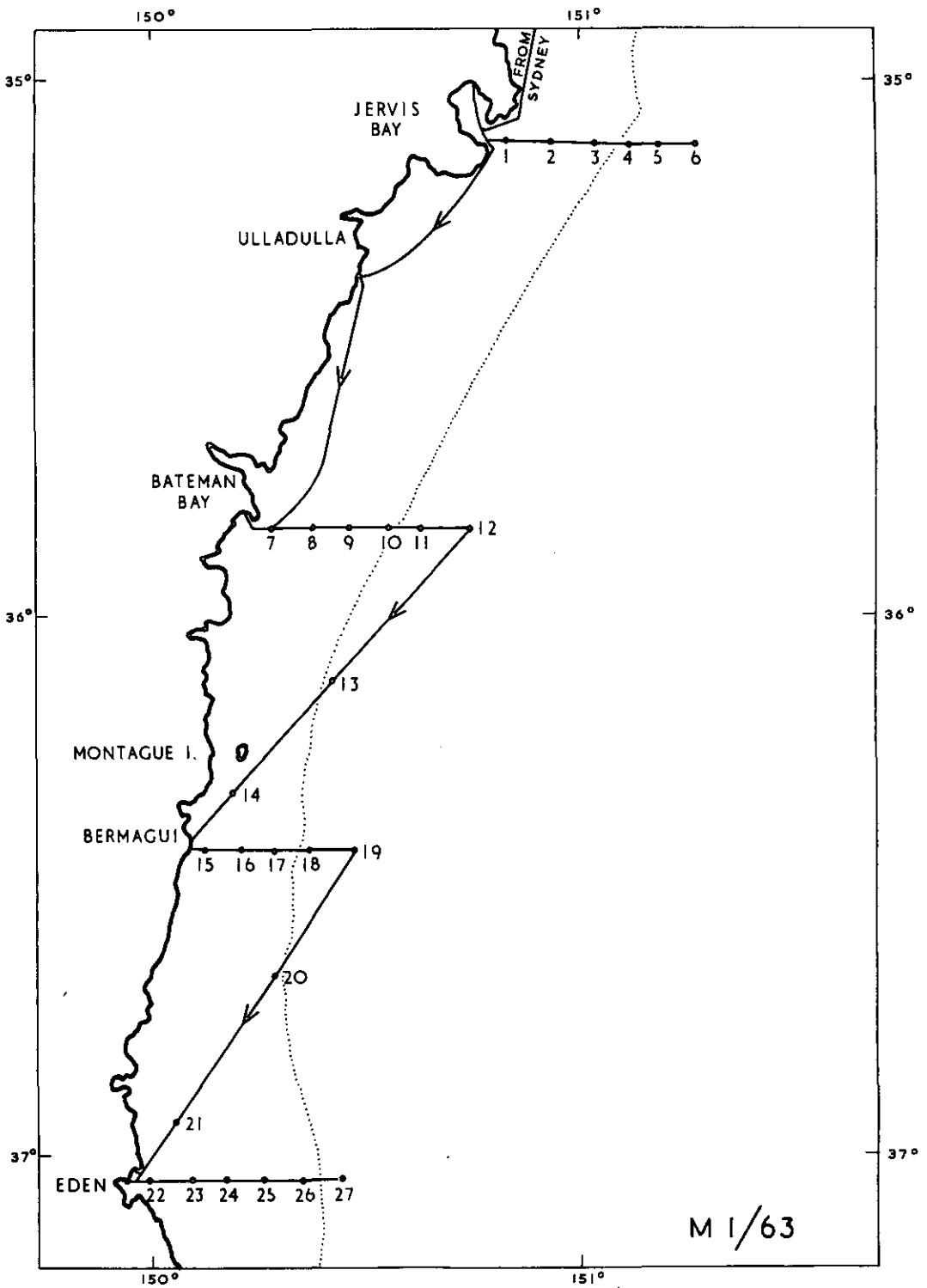


Fig. 1.- Track chart Cruise M 1/63

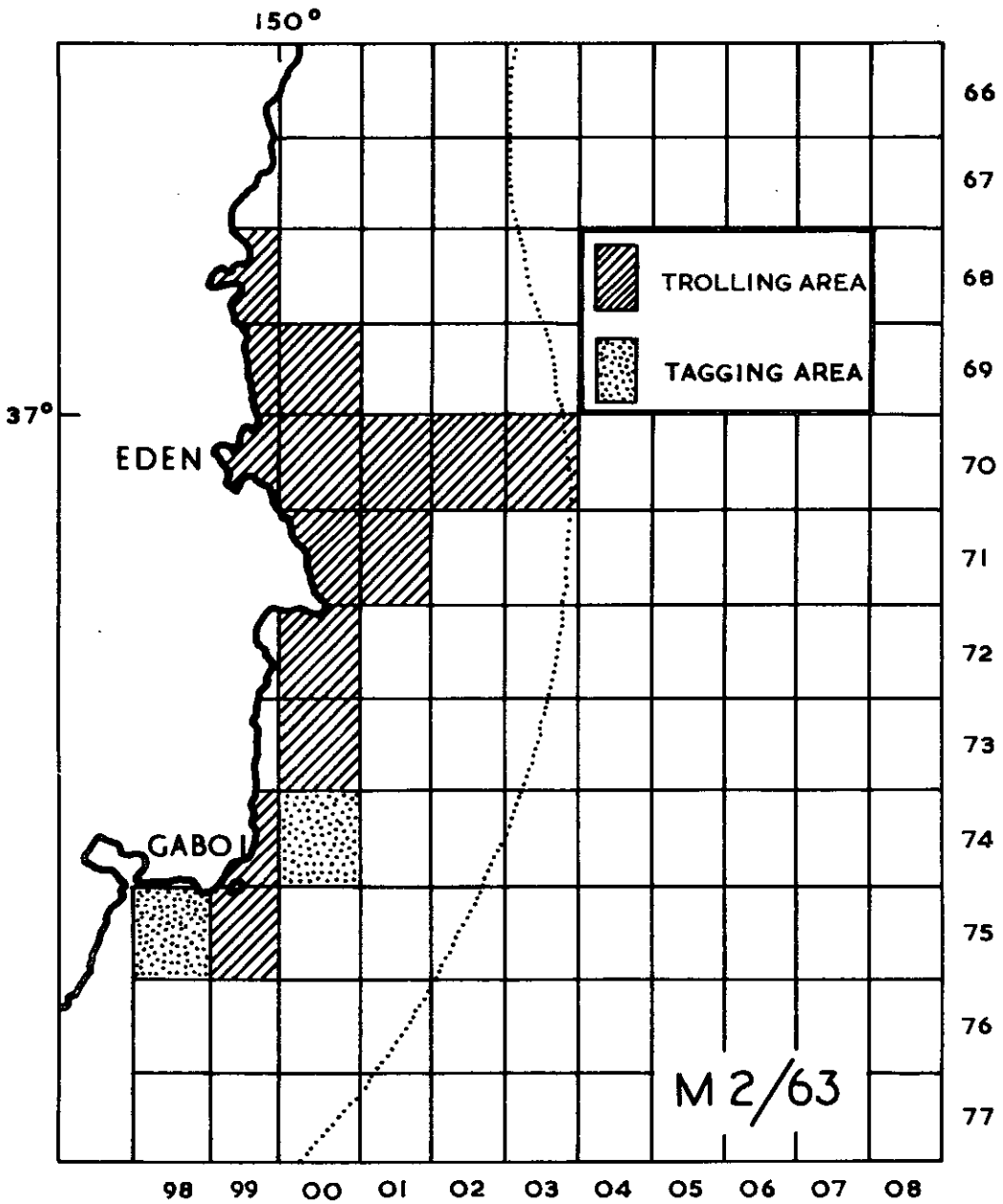


Fig. 2.- Track chart Cruise M 2/63

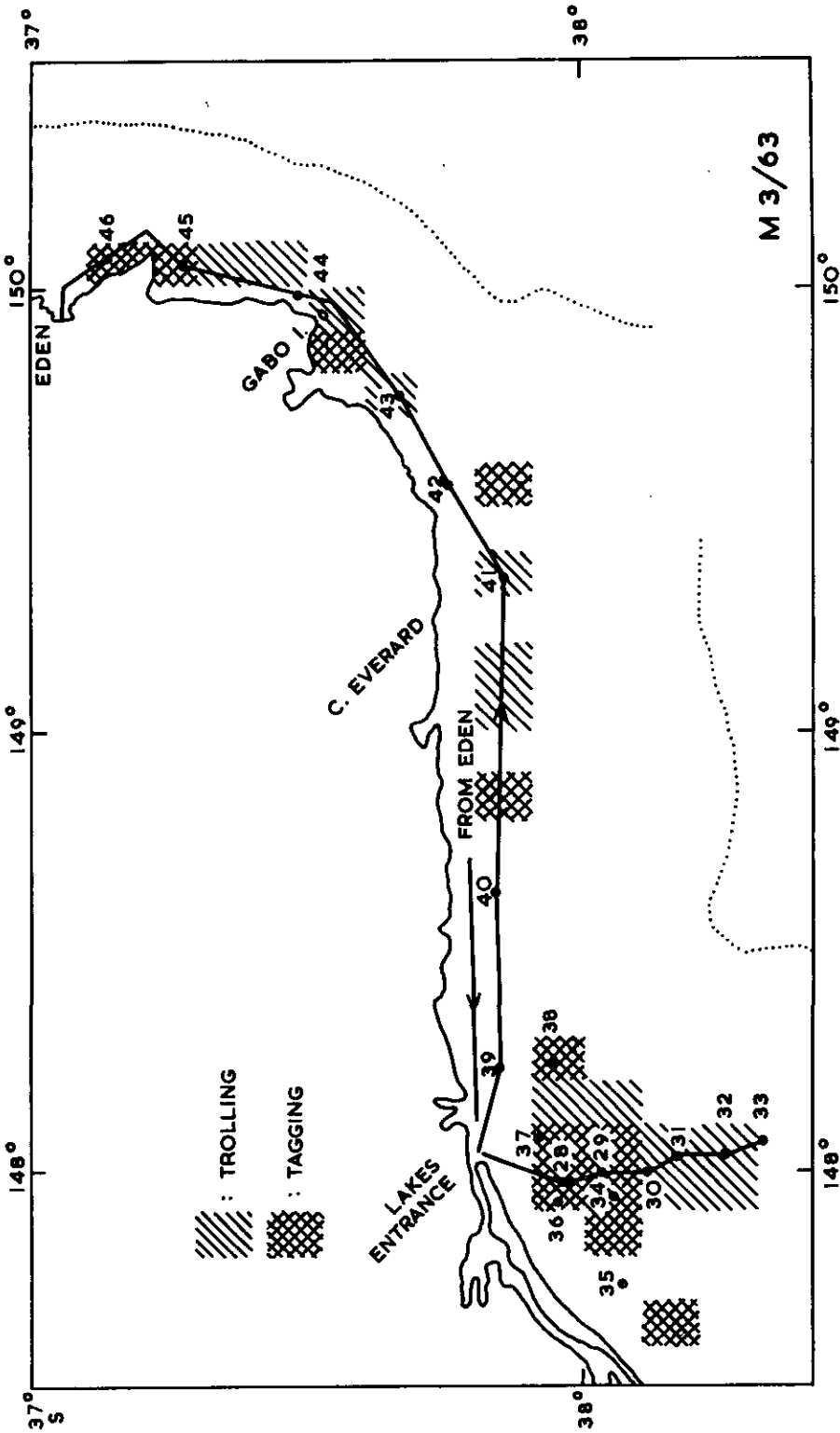


Fig. 3- Track chart Cruise M 3/63

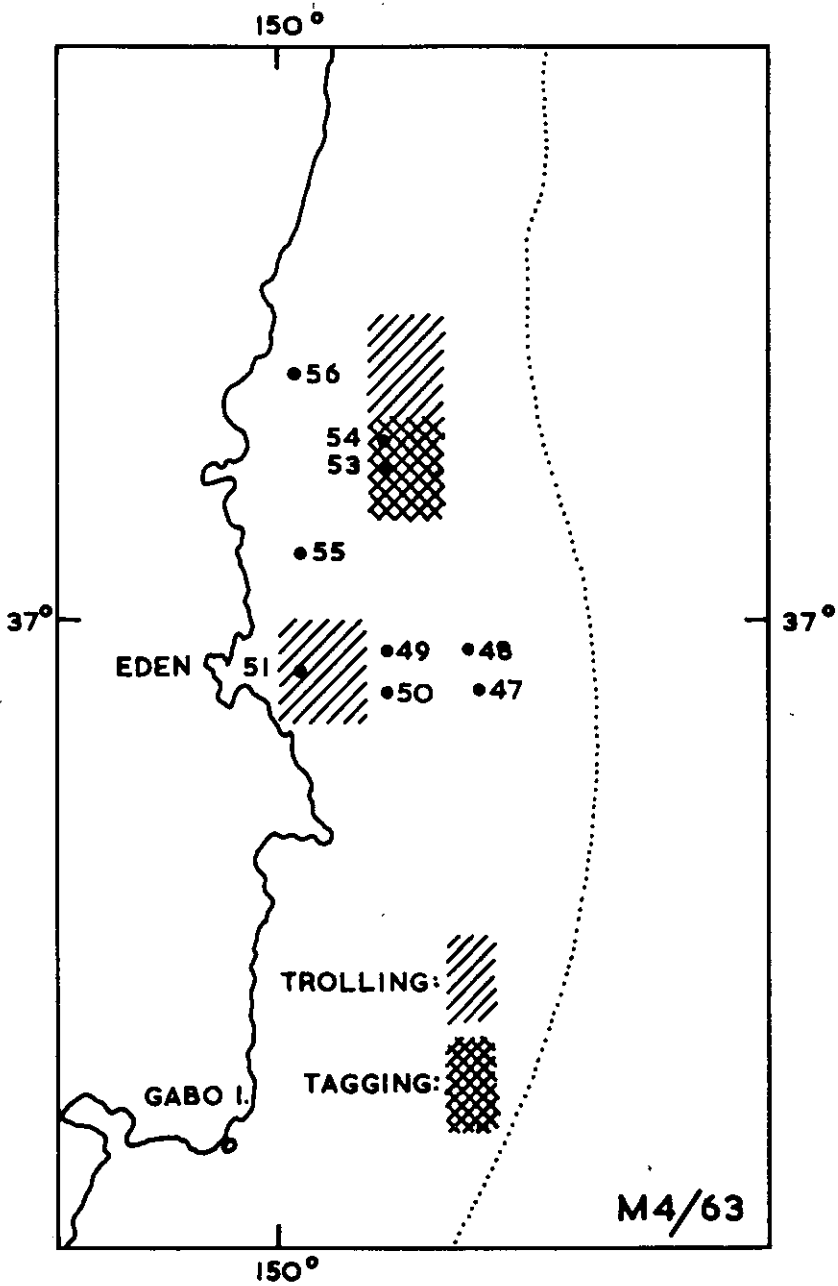


Fig. 4.- Track chart Cruise M 4/63

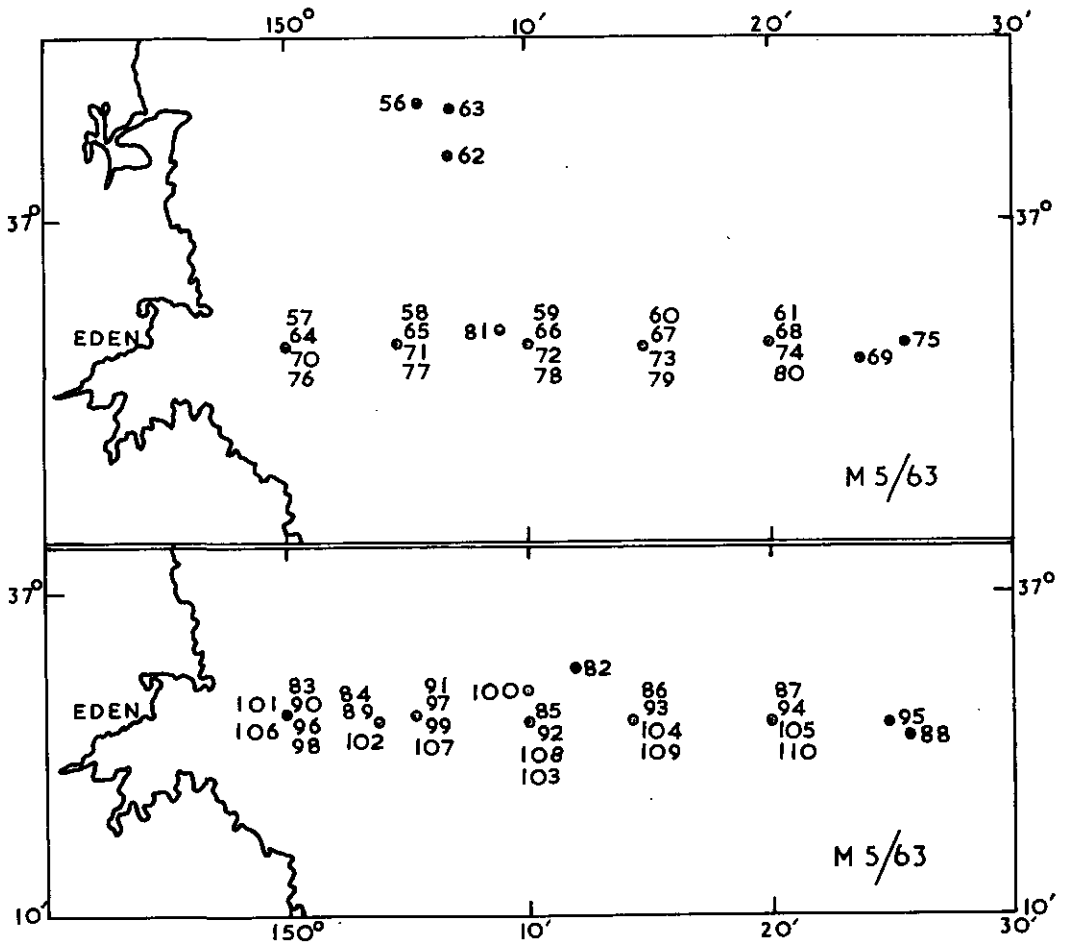


Fig. 5.-Track chart Cruise M 5/63

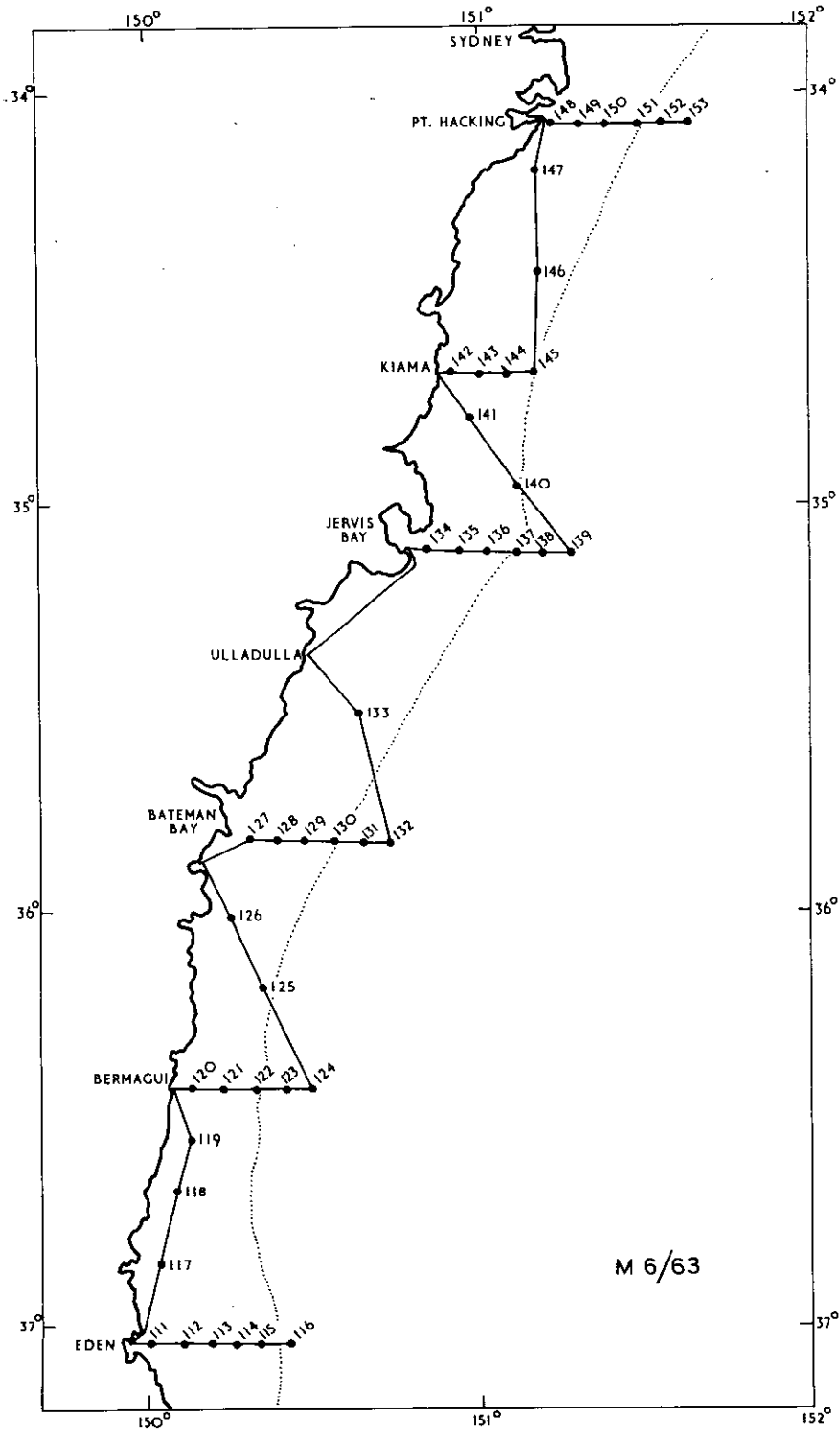


Fig. 6.- Track chart Cruise M 6/63

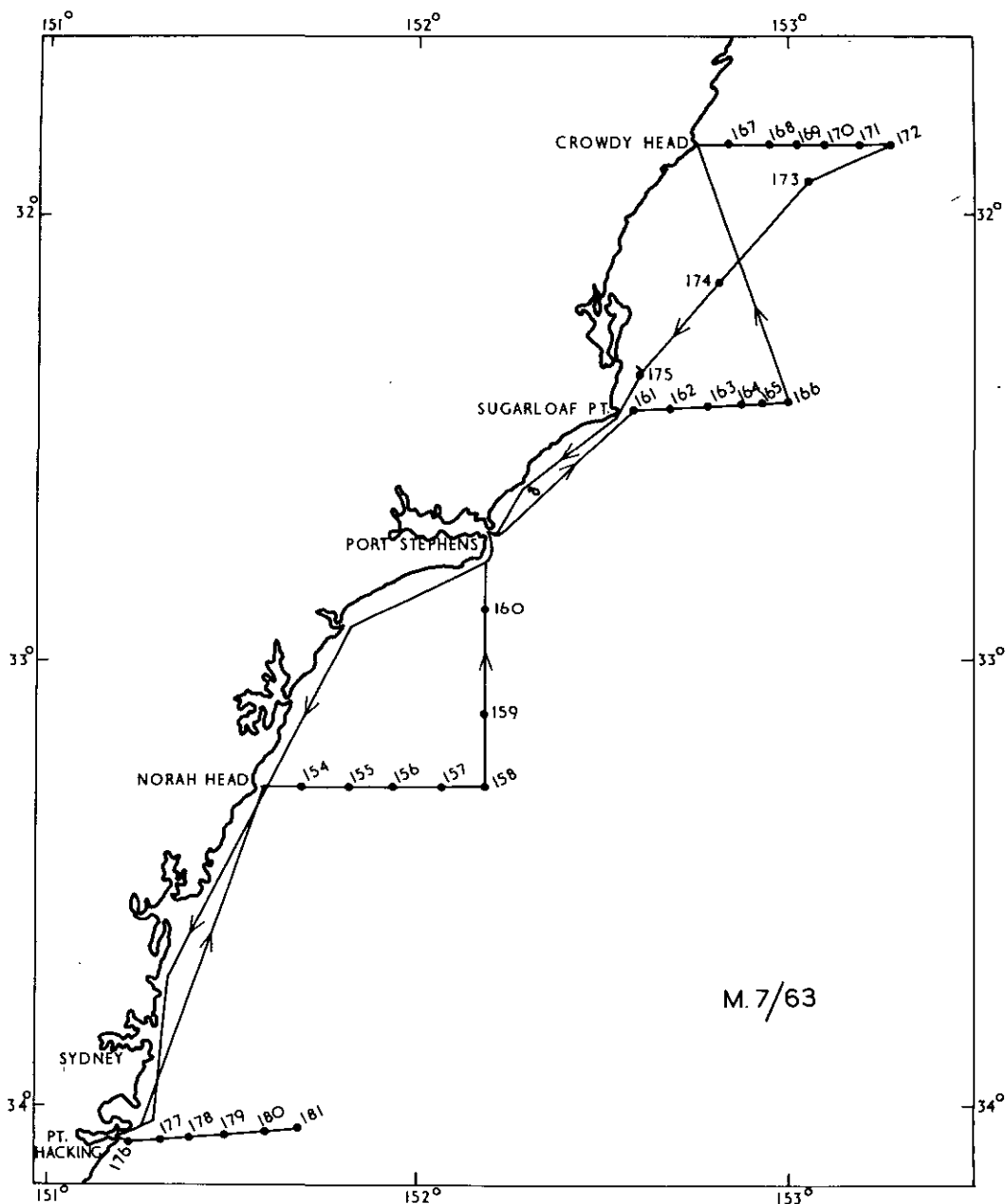


Fig. 7.- Track chart Cruise M 7/63

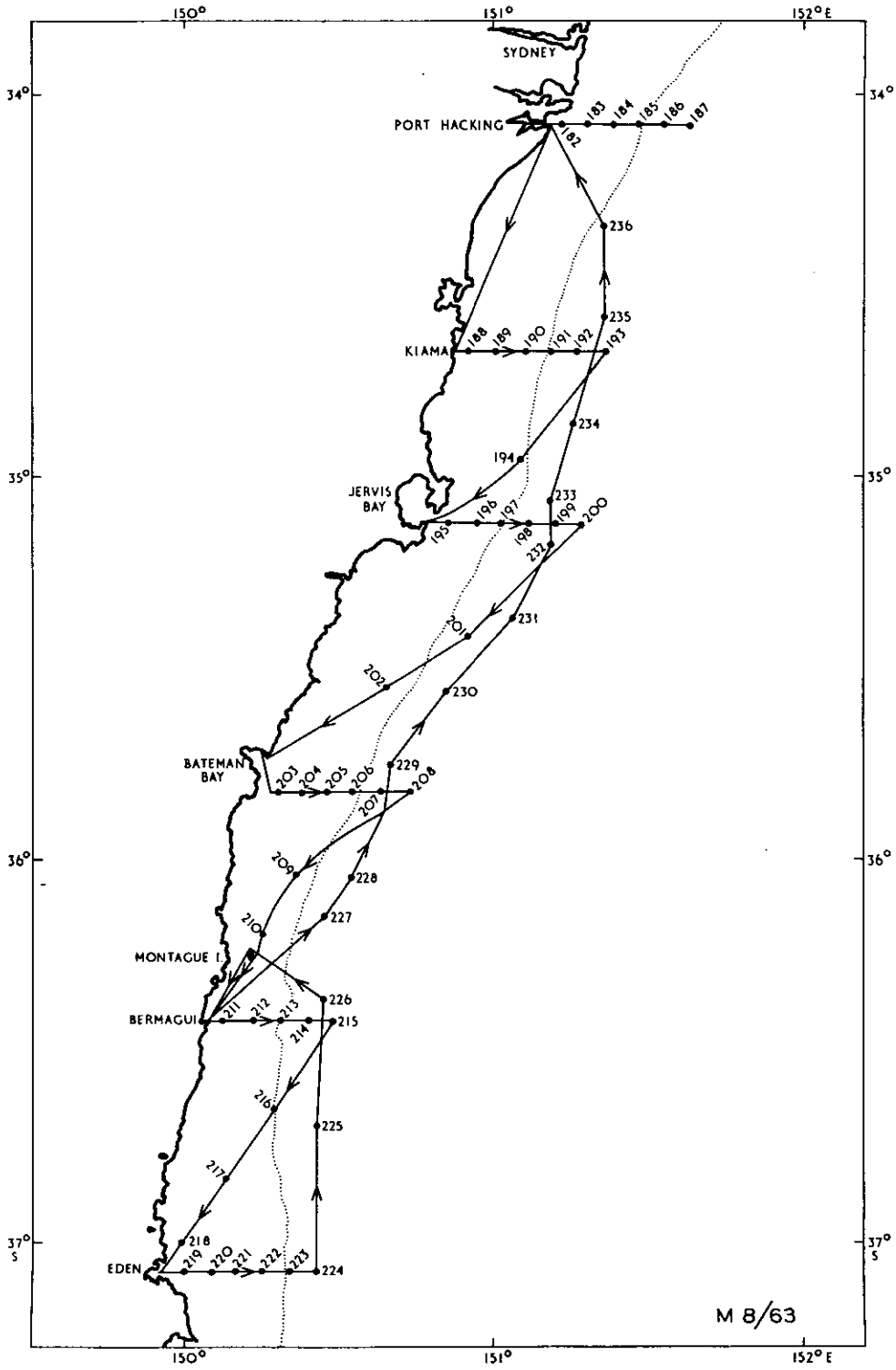


Fig. 8:- Track chart Cruise M 8/63

M 8/63

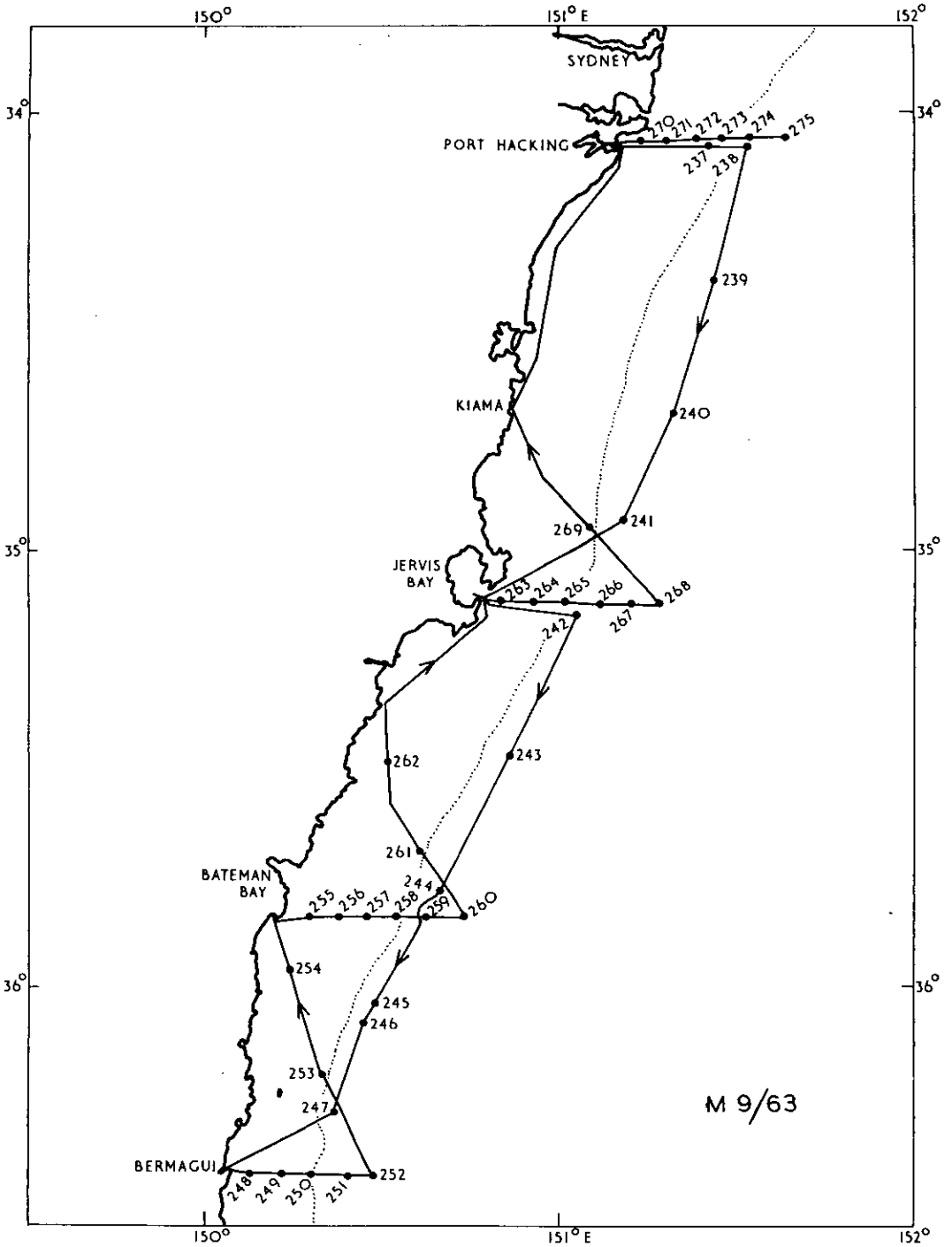


Fig. 9.- Track chart Cruise M 9/63

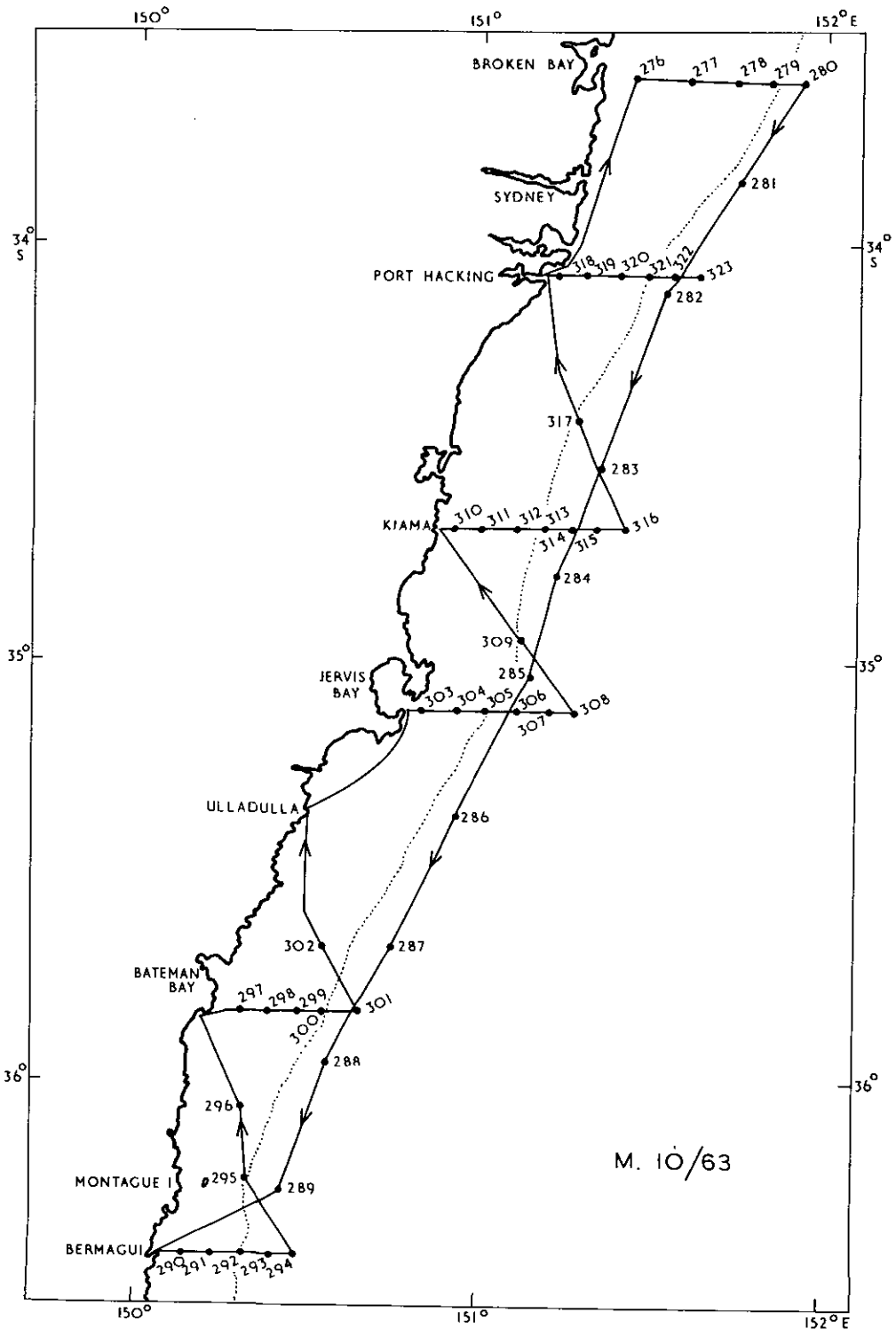


Fig. 10.- Track chart Cruise M 10/63

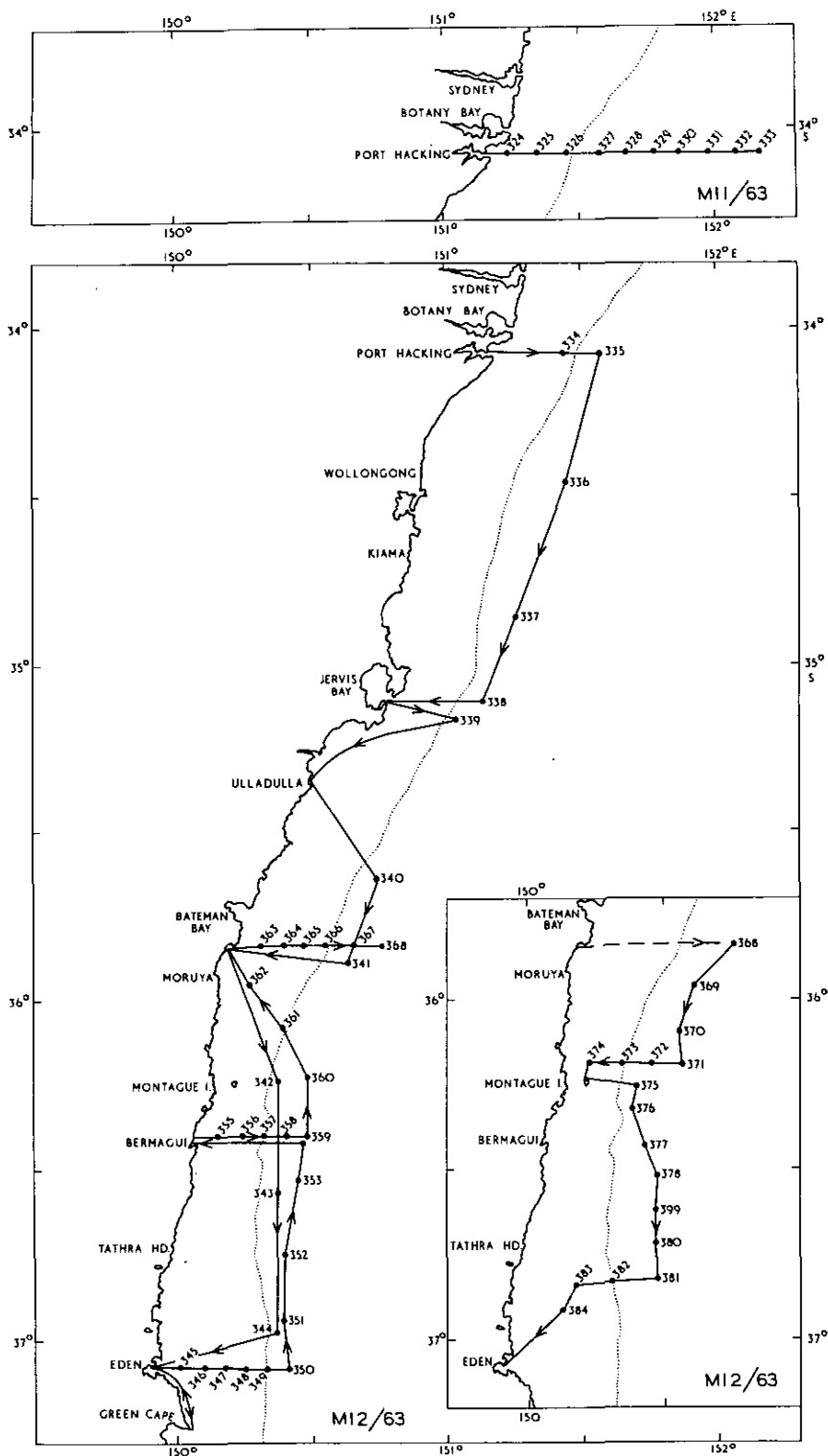


Fig. 11: Track chart Cruises M11 & M12/63

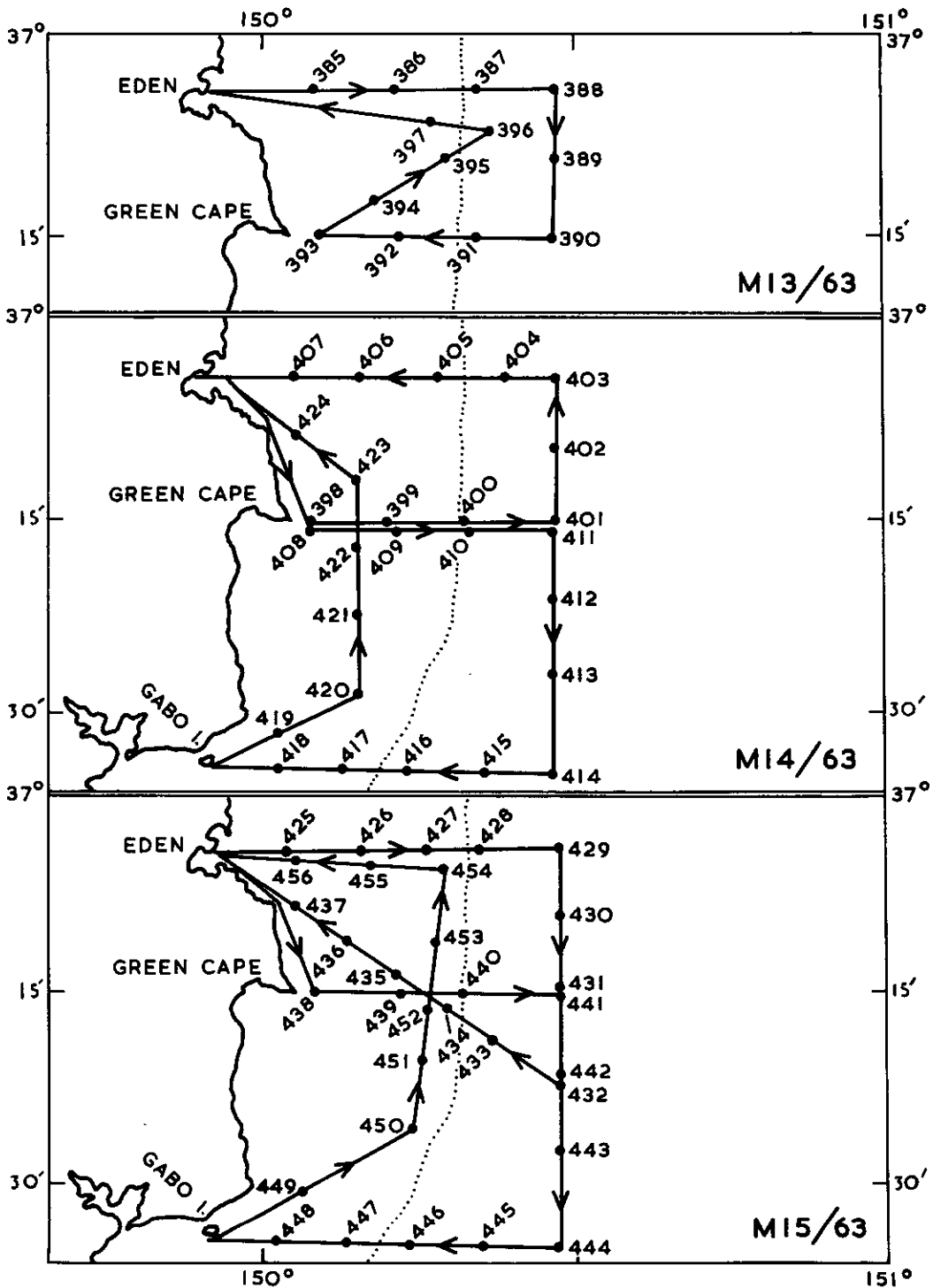


Fig. 12: Track chart Cruises M 13, M14 & M15/63

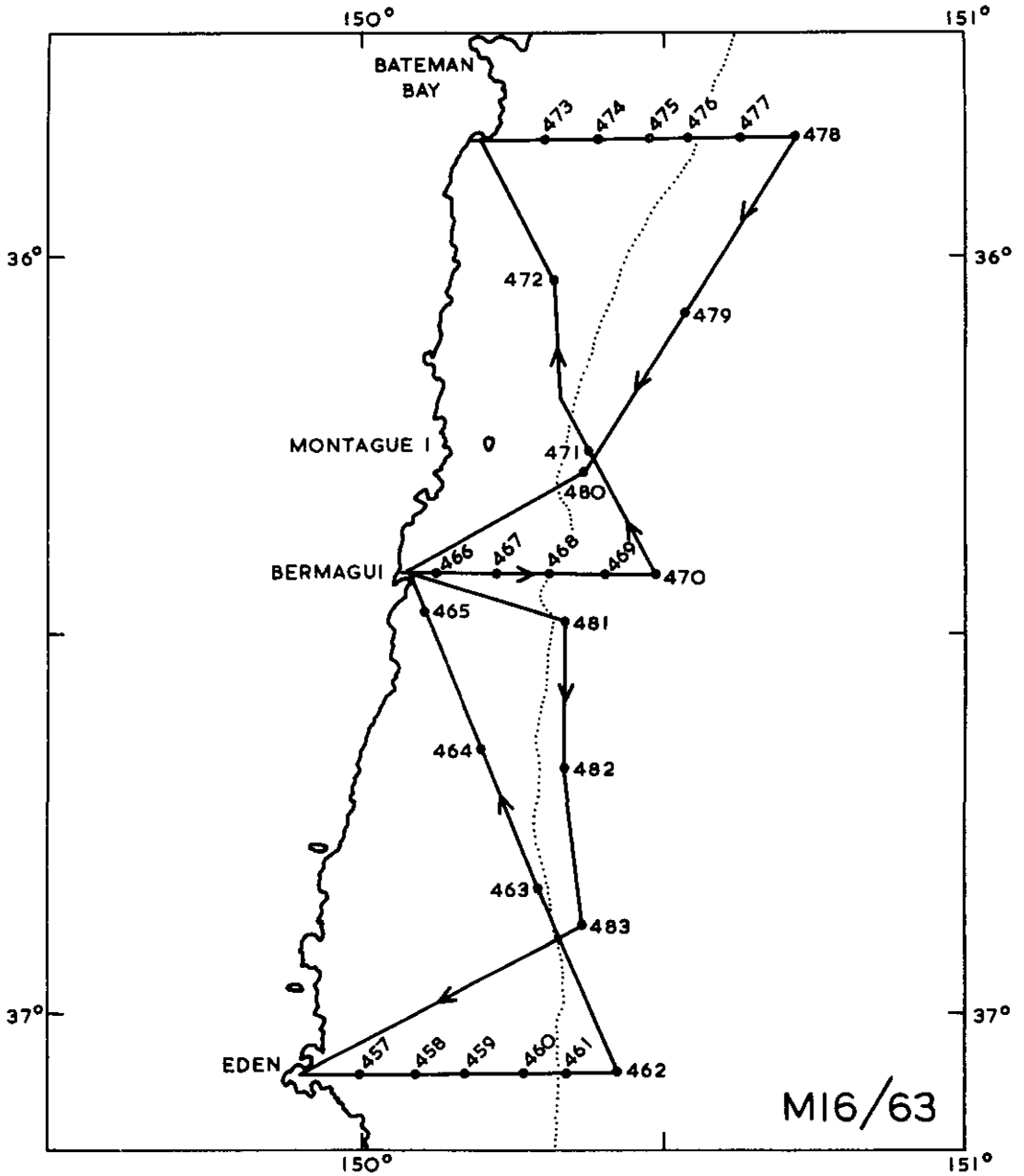


Fig. 13.- Track chart Cruise M16/63

V. DATA SHEETS

The data were processed in a C.D.C. 3600 Computer. An explanation of the headings used is given at the beginning of the surface listing.

DATA
PART 1
HYDROLOGY
SURFACE SAMPLES

EXPLANATION OF HEADINGS

Parts 1 and 2Hydrology

STATION	Gives the station identification. For example, M1/1/63 signifies the 1st station worked by <u>Marelda</u> , on her 1st 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. Zone Time in all cases was Eastern Australian Standard Time, GMT +10 hr, Code K
LATITUDE LONGITUDE	Given in degrees and minutes
SONIC DEPTH	Given in metres, measured at standard sound velocity of 800 fm (1463 m) per second
WIND DIR. SP.	Wind direction and speed are coded using Tables 8 and 9 in U.S. Navy Hydrogr. Office (1955)
WEA.	Weather is coded using Table 1 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)
BAROM. or ATMOS. PRESSURE	Atmospheric pressure given in millibars
CAST	Gives the cast number
DEPTH	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

*, ***, and a blank indicate no data available

VESSEL	CRUISE NUMBER	STATION NUMBER	YR.	MCH.	DAY	TIME	Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND DN.	SEA DN.	AMT.	SMELL DN.	AMT.	WEA.	VIS.	BAROM.	SAMPLING METHOD	
38	1	1	63	1	15	0830	K 35	07 S	150	50 E	17.3	35.37	22	1	14	04	4	03	7	1012.0	1
38	1	2	63	1	15	0930	K 35	07 S	150	55 E	18.3	35.37	14	1	04	4	03	7	1012.0	1	
38	1	3	63	1	15	1025	K 35	07 S	151	00 E	19.0	35.41	14	3	14	2	04	03	7	1012.0	1
38	1	4	63	1	15	1120	K 35	07 S	151	05 E	19.7	35.40	14	2	14	2	04	03	7	1012.0	1
38	1	5	63	1	15	1225	K 35	07 S	151	10 E	20.3	35.58	14	2	14	2	04	03	7	1011.0	1
38	1	6	63	1	15	1345	K 35	07 S	151	15 E	20.5	35.45	14	2	14	2	04	03	7	1031.0	1
38	1	7	63	1	18	0430	K 35	50 S	150	17 E	17.8	35.22	27	1	27	1	04	01	5	1009.0	1
38	1	8	63	1	18	0525	K 35	50 S	150	22 E	19.2	35.35	27	1	27	1	04	01	7	1009.0	1
38	1	9	63	1	18	0615	K 35	50 S	150	27 E	19.9	35.54	23	2	23	1	04	01	7	1030.0	1
38	1	10	63	1	18	0710	K 35	50 S	150	32 E	21.0	35.54	23	2	23	1	04	01	7	1030.0	1
38	1	11	63	1	18	0805	K 35	50 S	150	37 E	21.6	35.45	23	2	23	1	04	01	7	1012.0	1
38	1	12	63	1	18	0910	K 35	50 S	150	42 E	21.9	35.41	23	2	23	2	04	01	7	1012.0	1
38	1	13	63	1	18	1130	K 36	09 S	150	27 E	22.2	35.56	22	2	22	2	04	01	7	1012.0	1
38	1	14	63	1	18	1330	K 36	21 S	150	09 E	17.0	35.11	14	2	14	1	04	01	7	1012.0	1
38	1	15	63	1	19	0500	K 36	25 S	150	09 E	15.9	35.15	27	1	27	1	04	01	7	1014.0	1
38	1	16	63	1	19	0550	K 36	25 S	150	14 E	17.1	35.35	23	1	23	1	04	01	7	1016.0	1
38	1	17	63	1	19	0640	K 36	25 S	150	19 E	21.0	35.50	20	1	20	1	04	01	7	1017.0	1
38	1	18	63	1	19	0735	K 36	25 S	150	24 E	21.9	35.44	18	2	18	1	04	01	7	1017.0	1
38	1	19	63	1	19	0840	K 36	25 S	150	29 E	22.7	35.48	18	2	18	1	04	01	7	1017.0	1
38	1	20	63	1	19	1130	K 36	39 S	150	15 E	21.5	35.51	16	4	16	2	04	01	7	1017.0	1
38	1	21	63	1	19	1330	K 36	57 S	150	03 E	17.5	35.29	14	5	14	3	04	01	7	1017.0	1
38	1	22	63	1	20	0505	K 37	04 S	150	00 E	17.1	35.34	16	1	16	1	04	01	7	1023.0	1
38	1	23	63	1	20	0555	K 37	04 S	150	05 E	17.2	35.44	16	1	16	1	04	01	7	1023.0	1
38	1	24	63	1	20	0645	K 37	04 S	150	10 E	17.0	35.41	18	1	18	1	04	01	7	1023.0	1
38	1	25	63	1	20	0735	K 37	04 S	150	15 E	19.8	35.44	18	1	18	1	04	01	7	1023.0	1
38	1	26	63	1	20	0840	K 37	04 S	150	20 E	21.2	35.56	18	1	18	2	04	01	7	1023.0	1
38	1	27	63	1	20	0943	K 37	04 S	150	25 E	22.9	35.45	00	0	0	2	04	01	7	1023.0	1
38	3	28	63	3	17	0715	K 37	58 S	147	59 E	18.5	35.44	27	2	27	1	18	02	7	1021.0	1
38	3	29	63	3	17	0800	K 38	02 S	148	00 E	18.3	35.46	27	2	27	1	18	02	7	1021.0	1
38	3	30	63	3	17	0850	K 38	07 S	148	00 E	18.2	35.50	27	2	27	1	18	02	7	1021.0	1
38	3	31	63	3	17	0940	K 38	10 S	148	02 E	18.2	35.51	27	2	27	1	18	02	7	1021.0	1
38	3	32	63	3	17	1030	K 38	15 S	148	02 E	18.2	35.48	27	3	27	1	18	02	7	1021.0	1
38	3	33	63	3	17	1120	K 38	19 S	148	03 E	18.1	35.46	18	1	18	2	02	7	1021.0	1	
38	3	34	63	3	23	0830	K 38	03 S	147	57 E	15.9	35.33	27	1	27	1	14	03	7	1016.0	1
38	3	35	63	3	23	1030	K 38	03 S	147	45 E	16.7	35.36	27	1	27	1	14	03	7	1017.0	1
38	3	36	63	3	23	1230	K 37	57 S	147	57 E	16.8	35.24	27	1	27	1	14	03	7	1018.0	1
38	3	37	63	3	25	0730	K 37	57 S	148	03 E	16.9	35.10	27	2	27	1	09	03	7	1004.0	1
38	3	38	63	3	28	0900	K 37	51 S	148	15 E	16.0	35.34	22	3	22	1	09	03	5	1004.0	1
38	3	39	63	3	28	0900	K 37	51 S	148	15 E	16.5	35.37	00	0	00	0	14	01	7	1025.0	1
38	3	40	63	3	28	1200	K 37	51 S	148	39 E	17.2	35.26	09	4	09	3	14	01	7	1024.0	1

VESSEL	CRUISE NUMBER	STATION NUMBER	YR.	MTH.	DAY	TIME	LONGITUDE	TEMP.	SALINITY	WIND DN, AMT,	SEA DN, AMT,	SHELL DN, AMT,	WEA.	VIS.	BAROM.	SAMPLING METHOD	
38	3	41	63	3	29	0630	K 37	51 S 149	35.37	04	2	04	1	09	3	7	1020.0
38	3	42	63	3	29	0830	K 37	45 S 149	35.37	04	3	04	2	09	3	7	1019.0
38	3	43	63	3	29	1030	K 37	39 S 149	35.43	36	2	36	1	09	3	7	1019.0
38	3	44	63	3	29	1230	K 37	27 S 149	35.34	04	2	04	1	09	3	7	1018.0
38	3	45	63	3	29	1425	K 37	15 S 150	35.39	04	2	04	1	09	3	7	1017.0
38	3	46	63	3	29	1745	K 37	09 S 150	35.41	04	2	04	1	09	3	7	1016.0
38	4	47	63	4	5	1100	K 37	03 S 150	35.48	22	1	22	1	14	2	7	1029.0
38	4	48	63	4	5	1310	K 37	03 S 150	35.48	00	0	22	1	14	2	7	1029.0
38	4	49	63	4	5	1350	K 37	03 S 150	35.59	00	0	00	0	14	2	7	1028.0
38	4	50	63	4	5	1425	K 37	03 S 150	35.52	00	0	00	0	14	2	7	1027.0
38	4	51	63	4	5	1515	K 37	03 S 150	35.46	04	1	00	0	14	2	7	1027.0
38	4	52	63	4	6	1120	K 36	51 S 150	35.23	14	1	00	0	14	2	7	1030.0
38	4	53	63	4	7	1050	K 36	51 S 150	35.20	27	2	27	1	04	2	7	1023.0
38	4	54	63	4	7	1125	K 36	51 S 150	35.23	27	2	27	1	04	2	7	1023.0
38	4	55	63	4	9	1020	K 36	57 S 150	35.123	00	0	00	0	04	2	7	1023.0
38	4	56	63	4	10	1010	K 36	45 S 150	35.21	20	3	20	2	14	2	7	1021.0
38	4	57	63	4	24	0730	K 37	04 S 150	35.27	27	1	00	0	14	2	7	1026.0
38	5	58	63	4	24	0815	K 37	04 S 150	36	36	2	36	1	09	3	7	1024.0
38	5	59	63	4	24	0855	K 37	04 S 150	36	36	2	36	1	09	3	7	1023.0
38	5	60	63	4	24	0945	K 37	04 S 150	36	36	2	36	1	09	3	7	1023.0
38	5	61	63	4	24	1040	K 37	04 S 150	36	36	2	36	1	09	3	7	1023.0
38	5	62	63	4	26	0950	K 36	57 S 150	35.11	18	1	18	1	09	3	7	1026.0
38	5	63	63	4	26	1015	K 36	55 S 150	35.12	18	1	18	1	09	3	7	1026.0
38	5	64	63	5	3	0725	K 37	04 S 150	35.20	20	2	20	1	14	3	7	1025.0
38	5	65	63	5	3	0805	K 37	04 S 150	35.20	20	2	20	1	14	3	7	1025.0
38	5	66	63	5	3	0845	K 37	04 S 150	35.20	20	2	20	1	14	3	7	1025.0
38	5	67	63	5	3	0930	K 37	04 S 150	35.20	20	2	20	1	14	3	7	1025.0
38	5	68	63	5	3	1025	K 37	04 S 150	35.20	20	2	20	1	14	3	7	1025.0
38	5	69	63	5	3	1110	K 37	04 S 150	35.20	20	2	20	1	14	3	7	1025.0
38	5	70	63	5	6	0750	K 37	04 S 150	35.22	22	2	22	1	14	3	7	1027.0
38	5	71	63	5	6	0830	K 37	04 S 150	35.22	22	2	22	1	14	3	7	1027.0
38	5	72	63	5	6	0910	K 37	04 S 150	35.22	22	2	22	1	14	3	7	1027.0
38	5	73	63	5	6	0955	K 37	04 S 150	35.22	22	2	22	1	14	3	7	1027.0
38	5	74	63	5	6	1055	K 37	04 S 150	35.22	22	2	22	1	14	3	7	1027.0
38	5	75	63	5	6	1140	K 37	04 S 150	35.22	22	2	22	1	14	3	7	1027.0
38	5	76	63	5	9	0805	K 37	04 S 150	35.10	10	1	10	1	14	3	7	1027.0
38	5	77	63	5	9	0855	K 37	04 S 150	35.04	04	1	04	1	09	4	6	1023.0
38	5	78	63	5	9	0940	K 37	04 S 150	35.04	04	1	04	1	09	4	6	1023.0
38	5	79	63	5	9	1025	K 37	04 S 150	35.04	04	1	04	1	09	4	6	1023.0
38	5	80	63	5	9	1115	K 37	04 S 150	35.04	04	1	04	1	09	4	6	1023.0

VESSE-	CRUISE	STATION	YR.	MTH.	DAY	TIME	◊	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND	SEA	SWELL	WEA.	VIS.	BAROM.	SAMPLING	
		NUMBER									DN. AMT.	DN. AMT.	DN. AMT.	DN. AMT.				METHOD	
38	6	121	63	7	7	0805	K 36	25 S 150	14 E 18.2	35.44	27	4	27	2	14	2	7	999.0	1
38	6	122	63	7	7	0900	K 36	25 S 150	19 E 18.1	35.48	27	4	27	2	14	2	7	999.0	1
38	6	123	63	7	7	1000	K 36	25 S 150	24 E 17.7	35.50	27	4	27	2	14	2	7	1000.0	1
38	6	124	63	7	7	1110	K 36	29 S 150	29 E 17.4	35.44	27	3	27	2	14	2	7	1000.0	1
38	6	125	63	7	7	1400	K 36	11 S 150	19 E 18.4	35.44	25	2	25	1	14	2	7	999.0	1
38	6	126	63	7	7	1600	K 36	01 S 150	16 E 18.4	35.44	00	0	00	0	14	2	7	999.0	1
38	6	127	63	7	8	0755	K 35	50 S 150	17 E 18.0	35.53	23	2	23	1	14	2	7	1003.0	1
38	6	128	63	7	8	0755	K 35	50 S 150	22 E 18.0	35.46	23	2	23	1	14	2	7	1003.0	1
38	6	129	63	7	8	0845	K 35	50 S 150	27 E 18.2	35.53	27	2	27	1	14	2	7	1003.0	1
38	6	130	63	7	8	0940	K 35	50 S 150	32 E 17.9	35.44	27	2	27	1	14	2	7	1003.0	1
38	6	131	63	7	8	1035	K 35	50 S 150	37 E 17.2	35.44	30	3	30	2	14	2	7	1004.0	1
38	6	132	63	7	8	1145	K 35	50 S 150	42 E 16.9	35.43	30	4	30	3	14	2	7	1004.0	1
38	6	133	63	7	8	1430	K 35	31 S 150	37 E 18.3	35.43	25	5	25	3	14	2	7	1003.0	1
38	6	134	63	7	12	0720	K 35	07 S 150	50 E 17.3	35.43	30	3	30	2	14	4	7	1015.0	1
38	6	135	63	7	12	0815	K 35	07 S 150	55 E 16.6	35.19	27	3	27	2	14	4	7	1015.0	1
38	6	136	63	7	12	0915	K 35	07 S 150	00 E 16.8	35.39	27	3	27	2	14	4	7	1015.0	1
38	6	137	63	7	12	1010	K 35	07 S 151	05 E 16.8	35.37	27	2	27	2	14	4	7	1014.0	1
38	6	138	63	7	12	1120	K 35	07 S 151	10 E 16.9	35.37	25	2	25	2	14	4	7	1014.0	1
38	6	139	63	7	12	1255	K 35	07 S 151	15 E 17.1	35.37	25	2	25	2	14	4	7	1014.0	1
38	6	140	63	7	12	1500	K 34	56 S 151	07 E 16.8	35.37	25	3	25	2	14	4	7	1014.0	1
38	6	141	63	7	12	1630	K 34	47 S 150	58 E 17.4	35.43	23	3	23	2	14	4	7	1010.0	1
38	6	142	63	7	13	0640	K 34	40 S 150	55 E 17.1	35.46	27	3	27	2	14	4	7	1015.0	1
38	6	143	63	7	13	0725	K 34	40 S 151	00 E 17.4	35.46	27	3	27	2	14	4	7	1015.0	1
38	6	144	63	7	13	0825	K 34	40 S 151	05 E 17.3	35.46	27	3	27	2	14	4	7	1015.0	1
38	6	145	63	7	13	0920	K 34	40 S 151	10 E 17.0	35.46	27	3	27	2	14	4	7	1015.0	1
38	6	146	63	7	13	1230	K 34	27 S 151	08 E 17.2	35.46	25	3	25	2	14	4	7	1014.0	1
38	6	147	63	7	13	1500	K 34	11 S 151	08 E 17.4	35.44	23	2	23	2	14	4	7	1013.0	1
38	6	148	63	7	13	1610	K 34	05 S 151	13 E 16.5	35.44	23	2	23	2	14	4	7	1010.0	1
38	6	149	63	7	13	1800	K 34	05 S 151	18 E 17.0	35.48	32	2	32	1	09	2	7	1019.0	1
38	6	150	63	7	13	1955	K 34	05 S 151	23 E 17.2	35.46	30	3	30	1	09	2	7	1019.0	1
38	6	151	63	7	19	1150	K 34	05 S 151	28 E 17.9	35.53	30	3	30	2	09	2	7	1019.0	1
38	6	152	63	7	19	1245	K 34	05 S 151	33 E 17.4	35.46	30	3	30	2	09	2	7	1016.0	1
38	6	153	63	7	19	1345	K 34	05 S 151	37 E 17.6	35.46	30	3	30	2	09	2	7	1016.0	1
38	7	154	63	7	27	0640	K 33	17 S 151	42 E 17.1	35.39	36	2	36	2	14	2	7	1021.0	1
38	7	155	63	7	27	0750	K 33	17 S 151	49 E 17.3	35.32	34	3	34	2	14	2	7	1021.0	1
38	7	156	63	7	27	0900	K 33	17 S 151	56 E 18.5	35.38	34	3	34	2	14	2	7	1021.0	1
38	7	157	63	7	27	1010	K 33	17 S 152	03 E 18.6	35.44	34	3	34	2	14	2	7	1021.0	1
38	7	158	63	7	27	1130	K 33	07 S 152	11 E 18.6	35.40	34	3	34	3	14	2	7	1021.0	1
38	7	159	63	7	27	1430	K 33	07 S 152	11 E 18.6	35.40	34	3	34	2	14	2	7	1019.0	1
38	7	160	63	7	27	1630	K 32	53 S 152	11 E 18.4	35.40	36	3	36	2	14	2	7	1019.0	1

VESSE -	CRUISE	STATION	YR.	MTH.	DAY	TIME	Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND	SEA	SMELL	VIS.	BAROM.	SAMPLING
		NUMBER										DN.	DN.	DN.	ANT.	ANT.	METHOD
38	7	161	63	7	28	0725	K 32	27 S 152	35 E 17.4	35.41	34	34	2	14	2	1016.0	1
38	7	162	63	7	28	0815	K 32	27 S 152	40 E 18.3	35.52	34	34	2	14	2	1016.0	1
38	7	163	63	7	28	0905	K 32	27 S 152	45 E 18.2	35.48	34	34	2	14	2	1016.0	1
38	7	164	63	7	28	0955	K 32	27 S 152	50 E 18.1	35.49	34	34	3	14	2	1015.0	1
38	7	165	63	7	28	1055	K 32	27 S 152	55 E 18.1	35.20	34	34	3	14	2	1014.0	1
38	7	166	63	7	28	1155	K 32	27 S 153	00 E 17.9	35.55	36	36	3	14	2	1012.0	1
38	7	167	63	7	29	0630	K 31	50 S 152	50 E 17.7	35.48	36	36	2	05	1	1011.0	1
38	7	168	63	7	29	0715	K 31	50 S 152	55 E 18.1	35.50	36	36	2	05	1	1011.0	1
38	7	169	63	7	29	0805	K 31	50 S 153	00 E 18.1	35.45	34	34	1	05	1	1012.0	1
38	7	170	63	7	29	0907	K 31	50 S 153	05 E 18.1	35.46	34	34	1	05	1	1012.0	1
38	7	171	63	7	29	1000	K 31	50 S 153	10 E 18.6	35.50	34	34	1	05	1	1012.0	1
38	7	172	63	7	29	1055	K 31	50 S 153	14 E 18.1	35.50	36	36	2	05	1	1012.0	1
38	7	173	63	7	29	1130	K 31	50 S 153	03 E 18.6	35.50	36	36	2	05	1	1010.0	1
38	7	174	63	7	29	1530	K 32	08 S 152	50 E 18.6	36	36	3	2	14	3	1010.0	1
38	7	175	63	7	29	1700	K 32	23 S 152	37 E 18.0	35.41	25	25	2	14	3	1010.0	1
38	7	176	63	8	1	0735	K 34	05 S 151	13 E 16.9	35.44	27	27	1	14	1	1024.0	1
38	7	177	63	8	1	0840	K 34	05 S 151	18 E 17.3	35.44	27	27	1	14	1	1024.0	1
38	7	178	63	8	1	0930	K 34	05 S 151	23 E 18.1	35.55	27	27	2	14	1	1024.0	1
38	7	179	63	8	1	1030	K 34	05 S 151	28 E 17.9	35.53	27	27	3	14	1	1023.0	1
38	7	180	63	8	1	1140	K 34	05 S 151	33 E 18.0	35.53	27	27	3	14	1	1023.0	1
38	7	181	63	8	1	1240	K 34	05 S 151	37 E 17.9	35.55	27	27	3	14	1	1022.0	1
38	8	182	63	8	14	0657	K 34	05 S 151	13 E 16.3	35.39	27	27	1	05	3	1017.0	1
38	8	183	63	8	14	0745	K 34	05 S 151	18 E 16.9	35.50	28	28	1	05	3	1018.0	1
38	8	184	63	8	14	0840	K 34	05 S 151	23 E 17.0	35.50	28	28	1	05	3	1018.0	1
38	8	185	63	8	14	0935	K 34	05 S 151	28 E 17.3	35.55	28	28	1	05	3	1018.0	1
38	8	186	63	8	14	1030	K 34	05 S 151	33 E 17.9	35.50	28	28	2	05	3	1018.0	1
38	8	187	63	8	14	1142	K 34	05 S 151	37 E 18.1	35.52	28	28	2	05	3	1017.0	1
38	8	188	63	8	19	0610	K 34	40 S 150	55 E 15.6	35.39	18	18	1	14	1	1021.0	1
38	8	189	63	8	19	0700	K 34	40 S 151	00 E 17.0	35.53	18	18	2	14	1	1021.0	1
38	8	190	63	8	19	0750	K 34	40 S 151	05 E 17.9	35.53	18	18	2	14	1	1022.0	1
38	8	191	63	8	19	0845	K 34	40 S 151	10 E 17.8	35.44	18	18	3	14	1	1022.0	1
38	8	192	63	8	19	0945	K 34	40 S 151	15 E 18.0	35.53	18	18	3	14	1	1023.0	1
38	8	193	63	8	19	1053	K 34	40 S 151	20 E 18.0	35.55	18	18	2	14	1	1023.0	1
38	8	194	63	8	19	1330	K 34	58 S 151	05 E 17.4	35.62	18	18	3	14	1	1021.0	1
38	8	195	63	8	20	0605	K 35	07 S 150	50 E 15.6	35.52	27	27	1	14	2	1022.0	1
38	8	196	63	8	20	0700	K 35	07 S 150	55 E 17.1	35.61	27	27	1	14	2	1023.0	1
38	8	197	63	8	20	0750	K 35	07 S 151	00 E 17.6	35.61	00	00	0	14	2	1023.0	1
38	8	198	63	8	20	0840	K 35	07 S 151	05 E 17.5	35.57	04	1	1	14	2	1023.0	1
38	8	199	63	8	20	0950	K 35	07 S 151	10 E 17.8	35.61	04	1	1	14	2	1023.0	1
38	8	200	63	8	20	1055	K 35	07 S 151	15 E 18.1	35.61	04	1	1	14	2	1023.0	1

VESSEL CRUISE STATION YR. MTH. DAY TIME Z LATITUDE LONGITUDE TEMP. SALINITY WIND DN, AMT, DN, AMT, SEA SWELL HEA. VIS. BAROM. SAMPLING METHOD

58	0	201	63	8	20	1330	K 33	26	S 150	58 E 18.3	35.62	2	36	1	14	2	01	7	1022.0	1
58	0	202	63	8	20	1530	K 35	34	S 150	38 E 16.9	35.59	2	36	1	14	2	01	7	1021.0	1
58	0	203	63	8	21	0620	K 35	50	S 150	17 E 15.7	35.53	2	32	1	14	2	01	7	1020.0	1
58	0	204	63	8	21	0707	K 35	50	S 150	22 E 15.8	35.44	2	32	1	14	2	01	7	1020.0	1
58	0	205	63	8	21	0845	K 35	50	S 150	27 E 15.8	35.50	2	32	1	14	2	02	7	1020.0	1
58	0	206	63	8	21	0935	K 35	50	S 150	22 E 16.0	35.52	2	36	1	14	2	01	7	1021.0	1
58	0	207	63	8	21	0935	K 35	50	S 150	37 E 15.5	35.46	2	36	1	14	2	02	7	1020.0	1
58	0	208	63	8	21	1045	K 35	50	S 150	42 E 16.0	35.46	2	36	2	14	2	01	7	1020.0	1
58	0	209	63	8	21	1330	K 36	04	S 150	23 E 15.8	35.50	2	36	2	14	2	02	7	1019.0	1
58	0	210	63	8	21	1530	K 36	14	S 150	16 E 14.1	35.46	2	36	2	14	2	02	7	1019.0	1
58	0	211	63	8	23	0615	K 36	25	S 150	09 E 13.5	35.44	2	00	0	04	3	02	7	1019.0	1
58	0	212	63	8	23	0710	K 36	25	S 150	14 E 13.6	35.44	2	18	1	04	3	02	7	1020.0	1
58	0	213	63	8	23	0803	K 36	25	S 150	19 E 14.3	35.44	2	15	2	14	3	02	7	1020.0	1
58	0	214	63	8	23	0900	K 36	25	S 150	24 E 15.4	35.46	2	15	2	14	3	02	7	1021.0	1
58	0	215	63	8	23	1010	K 36	25	S 150	29 E 15.7	35.50	2	15	2	14	3	02	7	1022.0	1
58	0	216	63	8	23	1300	K 36	38	S 150	17 E 15.2	35.50	2	14	1	14	3	01	7	1019.0	1
58	0	217	63	8	23	1500	K 36	50	S 150	08 E 13.6	35.50	2	14	1	14	3	01	7	1020.0	1
58	0	218	63	8	23	1700	K 37	04	S 150	00 E 13.4	35.55	2	14	2	14	2	02	7	1021.0	1
58	0	219	63	8	24	0615	K 37	04	S 150	00 E 13.1	35.48	2	24	1	14	2	02	7	1023.0	1
58	0	220	63	8	24	0700	K 37	04	S 150	05 E 13.5	35.43	2	24	1	14	2	01	7	1023.0	1
58	0	221	63	8	24	0742	K 37	04	S 150	10 E 13.5	35.44	2	00	0	14	2	01	7	1024.0	1
58	0	222	63	8	24	0835	K 37	04	S 150	15 E 13.6	35.43	2	00	0	14	2	01	7	1024.0	1
58	0	223	63	8	24	0935	K 37	04	S 150	20 E 14.3	35.44	2	00	0	14	2	01	7	1024.0	1
58	0	224	63	8	24	1030	K 37	04	S 150	25 E 15.2	35.46	2	04	1	14	2	01	7	1024.0	1
58	0	225	63	8	24	1430	K 36	42	S 150	25 E 15.6	35.52	2	04	1	14	2	01	7	1022.0	1
58	0	226	63	8	24	1800	K 36	22	S 150	28 E 16.7	35.62	2	04	2	14	2	01	7	1020.0	1
58	0	227	63	8	27	1200	K 36	08	S 150	26 E 16.6	35.62	2	32	1	14	4	01	7	1015.0	1
58	0	228	63	8	27	1300	K 36	02	S 150	28 E 15.6	35.46	2	32	1	14	4	01	7	1015.0	1
58	0	229	63	8	27	1500	K 35	47	S 150	41 E 16.7	35.55	2	08	1	14	4	02	7	1015.0	1
58	0	230	63	8	27	1800	K 35	34	S 150	51 E 16.4	35.46	2	00	0	14	4	03	7	1016.0	1
58	0	231	63	8	28	0100	K 35	11	S 151	04 E 17.8	35.64	2	14	2	14	4	03	7	1017.0	1
58	0	232	63	8	28	0350	K 35	04	S 151	10 E 17.6	35.61	2	14	2	14	4	02	7	1018.0	1
58	0	233	63	8	28	0550	K 35	04	S 151	10 E 17.7	35.61	2	14	2	14	4	02	7	1018.0	1
58	0	234	63	8	28	0630	K 34	51	S 151	15 E 17.8	35.61	2	20	0	14	4	03	7	1019.0	1
58	0	235	63	8	28	0930	K 34	34	S 151	20 E 18.1	35.62	2	00	0	14	4	03	7	1019.0	1
58	0	236	63	8	28	1200	K 34	20	S 151	20 E 18.0	35.59	2	14	1	14	4	01	7	1016.0	1
58	9	10	0900	K 34	05	S 151	25 E 17.0	35.59	2	32	2	14	2	01	7	1017.0	1			
58	9	10	0930	K 34	05	S 151	32 E 17.3	35.59	2	32	2	14	2	01	7	1017.0	1			
58	9	10	1330	K 34	23	S 151	25 E 17.3	35.59	2	34	3	14	2	01	7	1013.0	1			
58	9	10	1600	K 34	41	S 151	19 E 17.4	35.62	2	34	3	14	2	02	7	1010.0	1			

VESSE-	CRUISE	STATION	YR.	MTH.	DAY	TIME	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND	SEA		SWELL	HEA.	VIS.	BAROM.	SAMPLING
												DN.	AMT.					
38	9	241	63	9	10	2000	K 34	55 S 151	10 E 17.1	35.59	28	4	28	2	14	2	1009.0	1
38	9	242	63	9	14	0830	K 35	11 S 151	01 E 16.7	35.59	32	3	32	2	00	0	1018.0	1
38	9	243	63	9	14	1200	K 35	29 S 150	53 E 16.4	35.86	27	3	27	3	00	0	1017.0	1
38	9	244	63	9	14	1530	K 35	46 S 150	38 E 17.2	35.61	36	2	27	2	00	0	1012.0	1
38	9	245	63	9	14	1750	K 36	02 S 150	29 E 16.7	35.59	32	3	32	2	00	0	1012.0	1
38	9	246	63	9	14	1825	K 36	05 S 150	29 E 14.3	35.43	32	3	32	2	00	0	1012.0	1
38	9	247	63	9	14	2050	K 36	17 S 150	26 E 14.0	35.46	32	2	32	2	00	0	1012.0	1
38	9	248	63	9	17	0625	K 36	25 S 150	09 E 13.6	35.41	26	2	26	1	14	2	1002.0	1
38	9	249	63	9	17	0710	K 36	25 S 150	14 E 13.5	35.41	25	2	26	1	14	2	1004.0	1
38	9	250	63	9	17	0805	K 36	25 S 150	19 E 15.3	35.48	23	3	23	2	14	2	1004.0	1
38	9	251	63	9	19	0830	K 36	25 S 150	24 E 15.9	35.52	27	2	27	1	14	4	1019.0	1
38	9	252	63	9	19	0945	K 36	25 S 150	21 E 16.2	35.50	18	2	23	1	14	4	1020.0	1
38	9	253	63	9	19	1230	K 36	12 S 150	21 E 15.4	35.50	18	3	18	3	14	4	1021.0	1
38	9	254	63	9	19	1430	K 36	00 S 150	17 E 14.0	35.41	18	4	18	3	14	4	1020.0	1
38	9	255	63	9	21	0625	K 35	50 S 150	17 E 14.4	35.48	23	1	23	1	14	3	1027.0	1
38	9	256	63	9	21	0715	K 35	50 S 150	22 E 13.8	35.41	23	1	23	1	14	3	1027.0	1
38	9	257	63	9	21	0805	K 35	50 S 150	27 E 14.6	35.43	27	1	27	1	14	3	1028.0	1
38	9	258	63	9	21	0900	K 35	50 S 150	32 E 15.8	35.52	23	1	23	1	14	3	1028.0	1
38	9	259	63	9	21	0955	K 35	50 S 150	37 E 16.1	35.50	18	1	18	1	14	3	1028.0	1
38	9	260	63	9	21	1110	K 35	50 S 150	42 E 16.3	35.37	04	1	00	0	14	3	1028.0	1
38	9	261	63	9	21	1345	K 35	42 S 150	36 E 17.2	35.61	04	1	04	1	14	3	1027.0	1
38	9	262	63	9	21	1555	K 35	29 S 150	32 E 16.6	35.55	04	2	04	1	14	3	1026.0	1
38	9	263	63	9	26	0630	K 35	07 S 150	50 E 15.9	35.46	04	2	04	2	14	4	1035.0	1
38	9	264	63	9	26	0720	K 35	07 S 150	55 E 15.8	35.50	04	2	04	2	14	4	1035.0	1
38	9	265	63	9	26	0815	K 35	07 S 151	00 E 15.6	35.53	04	2	04	2	14	4	1035.0	1
38	9	266	63	9	26	0910	K 35	07 S 151	05 E 15.3	35.48	06	2	06	2	14	4	1035.0	1
38	9	267	63	9	26	1020	K 35	07 S 151	10 E 15.4	35.52	08	3	08	2	14	4	1034.0	1
38	9	268	63	9	26	1130	K 35	07 S 151	12 E 15.4	35.48	05	2	05	2	14	4	1033.0	1
38	9	269	63	9	26	1500	K 34	55 S 151	02 E 16.5	35.52	04	2	04	1	14	3	1026.0	1
38	9	270	63	9	30	0650	K 34	05 S 151	13 E 16.0	35.16	36	1	36	1	04	1	1022.0	1
38	9	271	63	9	30	0735	K 34	05 S 151	18 E 16.3	35.14	36	3	36	2	04	1	1022.0	1
38	9	272	63	9	30	0840	K 34	05 S 151	23 E 16.6	35.46	36	2	36	2	04	1	1021.0	1
38	9	273	63	9	30	0935	K 34	05 S 151	28 E 16.3	35.55	36	2	36	2	04	1	1021.0	1
38	9	274	63	9	30	1050	K 34	05 S 151	33 E 16.6	35.59	36	2	36	2	04	1	1020.0	1
38	9	275	63	9	30	1150	K 34	05 S 151	37 E 16.5	35.50	36	2	36	2	04	1	1020.0	1
38	10	276	63	10	9	1820	K 33	36 S 151	29 E 18.0	35.60	04	2	04	1	09	1	1031.0	1
38	10	277	63	10	9	1930	K 33	37 S 151	37 E 18.0	35.41	04	2	04	1	09	1	1032.0	1
38	10	278	63	10	9	2030	K 33	37 S 151	45 E 17.7	35.62	04	2	04	1	09	1	1032.0	1
38	10	279	63	10	9	2135	K 33	37 S 151	50 E 17.3	35.57	04	2	04	1	09	1	1032.0	1
38	10	280	63	10	9	2245	K 33	38 S 151	57 E 18.3	35.64	04	2	04	1	09	1	1032.0	1

VESSEL CRUISE STATION YR. MTH. DAY TIME Z LATITUDE LONGITUDE TEMP. SALINITY WIND DN. AMT. SEA SWELL WEA. VIS. BAROM. SAMPLING METHOD

58	10	281	63	10	10	0200	K 33	52 S 151	47 E 18.0	35.64	04	2	04	2	09	1	1032.0	1
58	10	282	63	10	10	0515	K 34	07 S 151	34 E 17.0	35.59	36	1	36	1	05	2	1032.0	1
58	10	283	63	10	10	0830	K 34	30 S 151	21 E 18.0	35.61	36	2	36	1	05	2	1033.0	1
58	10	284	63	10	10	1125	K 34	47 S 151	13 E 17.8	35.61	36	2	36	2	05	2	1033.0	1
58	10	285	63	10	10	1430	K 35	03 S 151	09 E 17.8	35.62	02	3	02	2	05	2	1032.0	1
58	10	286	63	10	10	1730	K 35	23 S 150	47 E 17.6	35.61	02	4	02	3	05	2	1030.0	1
58	10	287	63	10	10	2045	K 35	39 S 150	45 E 17.4	35.62	36	3	36	3	05	2	1030.0	1
58	10	288	63	10	10	2400	K 35	58 S 150	35 E 17.3	35.64	36	3	36	3	05	2	1030.0	1
58	10	289	63	10	11	0215	K 36	17 S 150	27 E 17.1	35.64	36	3	36	2	05	2	1030.0	1
58	10	290	63	10	14	0610	K 36	25 S 150	09 E 14.7	35.41	20	3	20	2	14	4	1030.0	1
58	10	291	63	10	14	0700	K 36	25 S 150	14 E 16.6	35.59	20	4	20	3	14	4	1030.0	1
58	10	292	63	10	14	0810	K 36	25 S 150	19 E 16.9	35.59	20	4	20	3	14	4	1030.0	1
58	10	293	63	10	14	0905	K 36	25 S 150	24 E 16.8	35.59	18	4	18	3	14	4	1030.0	1
58	10	294	63	10	14	1020	K 36	25 S 150	29 E 16.9	35.59	18	4	18	3	14	4	1030.0	1
58	10	295	63	10	14	1300	K 36	14 S 150	20 E 17.0	35.62	18	3	18	2	14	4	1031.0	1
58	10	296	63	10	14	1500	K 36	02 S 150	20 E 16.9	35.61	18	3	18	2	14	4	1028.0	1
58	10	297	63	10	15	0535	K 35	50 S 150	17 E 16.5	35.53	18	4	18	3	14	3	1030.0	1
58	10	298	63	10	15	0630	K 35	50 S 150	22 E 16.7	35.57	18	4	18	3	14	3	1031.0	1
58	10	299	63	10	15	0730	K 35	50 S 150	27 E 16.7	35.59	18	4	18	3	14	3	1031.0	1
58	10	300	63	10	15	0840	K 35	50 S 150	32 E 16.5	35.57	18	4	18	3	14	3	1032.0	1
58	10	301	63	10	15	0945	K 35	50 S 150	37 E 16.6	35.61	18	5	18	3	14	3	1032.0	1
58	10	302	63	10	15	1230	K 35	41 S 150	33 E 16.8	35.66	18	4	18	3	14	3	1032.0	1
58	10	303	63	10	17	0525	K 35	07 S 150	50 E 16.3	35.41	32	2	32	1	09	2	1028.0	1
58	10	304	63	10	17	0617	K 35	07 S 150	50 E 16.3	35.41	32	2	32	1	09	2	1028.0	1
58	10	305	63	10	17	0705	K 35	07 S 151	00 E 16.2	35.53	36	3	36	2	09	2	1029.0	1
58	10	306	63	10	17	0800	K 35	07 S 151	05 E 16.0	35.50	36	4	36	2	09	2	1029.0	1
58	10	307	63	10	17	0910	K 35	07 S 151	10 E 16.0	35.53	36	4	36	2	09	2	1030.0	1
58	10	308	63	10	17	1025	K 35	07 S 151	15 E 16.0	35.50	36	4	36	2	09	2	1030.0	1
58	10	309	63	10	17	1330	K 34	57 S 151	09 E 16.7	35.59	36	4	36	2	09	2	1027.0	1
58	10	310	63	10	18	0500	K 34	40 S 150	55 E 16.5	35.35	36	2	32	1	08	2	1026.0	1
58	10	311	63	10	18	0545	K 34	40 S 151	00 E 16.7	35.48	02	3	02	2	08	2	1027.0	1
58	10	312	63	10	18	0635	K 34	40 S 151	05 E 16.7	35.52	02	3	02	2	08	2	1027.0	1
58	10	313	63	10	18	0755	K 34	40 S 151	10 E 16.6	35.53	36	3	36	2	08	2	1028.0	1
58	10	314	63	10	18	0848	K 34	40 S 151	15 E 16.7	35.55	36	4	36	3	08	2	1028.0	1
58	10	315	63	10	18	0945	K 34	40 S 151	20 E 16.6	35.55	36	4	36	3	08	2	1028.0	1
58	10	316	63	10	18	1100	K 34	40 S 151	25 E 16.9	35.57	36	4	36	3	08	2	1028.0	1
58	10	317	63	10	18	1400	K 34	26 S 151	17 E 17.5	35.57	36	3	36	2	08	2	1024.0	1
58	10	318	63	10	19	0505	K 34	05 S 151	13 E 16.6	35.43	34	1	00	0	09	3	1024.0	1
58	10	319	63	10	19	0555	K 34	05 S 151	18 E 17.1	35.52	36	2	36	1	09	3	1024.0	1
58	10	320	63	10	19	0645	K 34	05 S 151	23 E 17.2	35.55	36	2	36	1	09	3	1025.0	1

VESSE - CRUISE STATION YR. MTH. DAY TIME Z LATITUDE LONGITUDE TEMP. SALINITY WIND DN, AMT. SEA SWELL. WEA. VIS. BAROM. SAMPLING METHOD

VESSE	CRUISE	STATION	YR.	MTH.	DAY	TIME	Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND	DN, AMT.	SEA	SWELL.	WEA.	VIS.	BAROM.	SAMPLING METHOD	
58	10	321	63	10	19	0735	K 34	05 S 151	28 E 17.3	17.3	35.48	36	2	36	1	09	3	01	7	1025.0
58	10	322	63	10	19	0830	K 34	05 S 151	33 E 17.5	17.5	35.37	36	2	36	1	09	3	01	7	1025.0
58	10	323	63	10	19	0930	K 34	05 S 151	37 E 17.7	17.7	35.55	36	2	36	1	09	3	01	7	1025.0
58	11	324	63	10	23	0045	K 34	05 S 151	16 E 17.6	17.6		05	1	05	2	09	3	01	7	1028.0
58	11	325	63	10	23	0145	K 34	05 S 151	23 E 18.0	18.0		05	1	05	2	09	3	01	7	1028.0
58	11	326	63	10	23	0245	K 34	05 S 151	28 E 18.2	18.2		05	1	05	2	09	3	01	7	1028.0
58	11	327	63	10	23	0345	K 34	05 S 151	35 E 18.4	18.4		05	1	05	2	09	3	01	7	1028.0
58	11	328	63	10	23	0445	K 34	05 S 151	41 E 18.5	18.5		05	2	05	2	09	3	01	7	1028.0
58	11	329	63	10	23	0545	K 34	05 S 151	47 E 18.6	18.6		05	2	05	2	09	3	01	7	1030.0
58	11	330	63	10	23	0645	K 34	05 S 151	53 E 18.8	18.8		04	1	05	2	05	3	01	7	1030.0
58	11	331	63	10	23	0745	K 34	05 S 151	59 E 18.8	18.8		04	1	04	2	05	3	01	7	1030.0
58	11	332	63	10	23	0845	K 34	05 S 152	05 E 19.5	19.5		04	1	04	2	05	3	01	7	1030.0
58	11	333	63	10	23	0945	K 34	05 S 152	11 E 20.0	20.0		04	1	04	1	05	3	01	7	1030.0
58	12	334	63	11	3	0730	K 34	05 S 151	27 E 19.6	19.6	35.37	36	3	36	1	05	1	03	7	1012.0
58	12	335	63	11	3	0830	K 34	05 S 151	35 E 20.3	20.3	35.59	36	2	36	1	05	1	03	7	1012.0
58	12	336	63	11	3	1200	K 34	26 S 151	28 E 19.6	19.6	35.50	36	3	36	2	05	1	01	7	1009.0
58	12	337	63	11	3	1300	K 34	31 S 151	18 E 18.8	18.8	35.44	36	2	36	2	05	1	01	7	1006.0
58	12	338	63	11	3	1730	K 35	09 S 151	07 E 18.2	18.2	35.61	33	3	33	1	05	1	02	7	1006.0
58	12	339	63	11	6	0800	K 35	11 S 151	02 E 18.7	18.7	35.57	32	4	32	2	14	4	01	7	1022.0
58	12	340	63	11	9	1330	K 35	37 S 150	44 E 19.0	19.0	35.50	04	3	04	1	14	4	01	7	1022.0
58	12	341	63	11	9	1600	K 36	13 S 150	23 E 18.5	18.5	35.66	16	3	16	2	14	4	03	7	1022.0
58	12	342	63	11	10	0830	K 36	13 S 150	23 E 18.2	18.2	35.84	15	2	15	1	14	4	02	7	1027.0
58	12	343	63	11	10	1215	K 36	31 S 150	23 E 18.6	18.6	35.64	15	2	15	1	14	4	02	7	1027.0
58	12	344	63	11	10	1300	K 36	35 S 150	23 E 18.7	18.7	35.64	15	2	15	1	14	4	02	7	1026.0
58	12	345	63	11	16	0300	K 37	04 S 150	00 E 16.9	16.9	35.44	23	2	23	1	14	4	02	7	1028.0
58	12	346	63	11	16	0415	K 37	04 S 150	05 E 17.2	17.2	35.50+	20	4	20	2	14	2	02	7	1022.0
58	12	347	63	11	16	0710	K 37	04 S 150	10 E 17.0	17.0	35.55	20	4	20	3	14	2	02	7	1023.0
58	12	348	63	11	21	0715	K 37	04 S 150	15 E 18.3	18.3	35.55	20	3	20	3	14	2	02	7	1022.0
58	12	349	63	11	21	0855	K 37	04 S 150	20 E 18.5	18.5	35.53	04	2	04	1	10	1	02	7	1022.0
58	12	350	63	11	21	1010	K 37	04 S 150	25 E 18.3	18.3	35.64*	04	2	04	1	10	1	01	7	1022.0
58	12	351	63	11	21	1300	K 36	55 S 150	24 E 18.8	18.8	35.61	04	3	04	2	10	1	01	7	1022.0
58	12	352	63	11	21	1500	K 36	47 S 150	23 E 19.9	19.9	35.64	04	3	04	2	10	1	01	7	1022.0
58	12	353	63	11	21	1700	K 36	35 S 150	26 E 19.5	19.5	35.61	04	1	10	1	10	1	01	7	1021.0
58	12	354	63	11	21	1830	K 36	29 S 150	26 E 19.6	19.6	35.61	04	2	04	1	10	1	01	7	1021.0
58	12	355	63	11	23	0545	K 36	25 S 150	09 E 17.7	17.7	35.50	23	1	23	1	14	3	01	7	1016.0
58	12	356	63	11	23	0640	K 36	25 S 150	14 E 18.3	18.3	35.59	18	2	18	1	14	3	02	7	1016.0
58	12	357	63	11	23	0750	K 36	25 S 150	19 E 18.4	18.4	35.59	18	3	18	1	14	3	02	7	1016.0
58	12	358	63	11	23	0850	K 36	25 S 150	24 E 18.5	18.5	35.59	14	3	14	2	14	3	02	7	1017.0
58	12	359	63	11	23	1005	K 36	25 S 150	29 E 18.5	18.5	35.61	14	2	14	2	14	3	02	7	1017.0
58	12	360	63	11	23	1300	K 36	13 S 150	28 E 18.7	18.7	35.55	14	2	14	1	14	3	03	7	1018.0

* PROPERTY DOUBTFUL
+ PROPERTY INTERPOLATED

VESSEL	CRUISE NUMBER	STATION	YR.	MTH.	DAY	TIME	Z	LAITUDE	LONGITUDE	TEMP.	SALINITY	WIND UN, AMT.	SEA DN, AMT.	SMELL DN, AMT.	WEA.	VIS.	BAROM.	SAMPLING METHOD
38	12	361	63	11	25	1500	K 36	05 S 150	22 E 18.8	E	35.50	14	14	1	14	7	1016.0	1
38	12	362	63	11	25	1700	K 35	55 S 150	15 E 18.4	E	35.52	09	14	3	03	7	1016.0	1
38	12	363	63	11	25	0520	K 35	50 S 150	17 E 18.3	E	35.61	23	23	1	14	7	1021.0	1
38	12	364	63	11	25	0610	K 35	50 S 150	22 E 18.8	E	35.55	14	14	3	03	7	1022.0	1
38	12	365	63	11	25	0705	K 35	50 S 150	27 E 18.8	E	35.55	14	14	3	03	7	1023.0	1
38	12	366	63	11	25	0800	K 35	50 S 150	32 E 18.8	E	35.57	14	14	3	03	7	1023.0	1
38	12	367	63	11	25	0855	K 35	50 S 150	37 E 19.7	E	35.53	14	14	3	03	7	1023.0	1
38	12	368	63	11	25	1010	K 35	50 S 150	42 E 19.9	E	35.53	12	12	1	14	7	1023.0	1
38	12	369	63	11	25	1200	K 35	57 S 150	40 E 20.0	E	35.59	14	14	2	14	7	1023.0	1
38	12	370	63	11	25	1300	K 36	05 S 150	35 E 20.1	E	35.61	14	14	3	01	7	1023.0	1
38	12	371	63	11	25	1400	K 36	12 S 150	35 E 20.3	E	35.61	14	14	3	01	7	1022.0	1
38	12	372	63	11	25	1500	K 36	12 S 150	27 E 20.1	E	35.66	14	14	3	01	7	1022.0	1
38	12	373	63	11	25	1600	K 36	12 S 150	21 E 19.5	E	35.61	14	14	3	01	7	1022.0	1
38	12	374	63	11	25	1700	K 36	12 S 150	15 E 18.9	E	35.66	14	14	3	01	7	1022.0	1
38	12	375	63	11	26	0610	K 36	15 S 150	22 E 19.1	E	35.52	20	20	1	14	7	1023.0	1
38	12	376	63	11	26	0710	K 36	20 S 150	25 E 19.3	E	35.62	20	20	1	14	7	1023.0	1
38	12	377	63	11	26	0810	K 36	26 S 150	25 E 19.9	E	35.68	14	14	1	14	7	1025.0	1
38	12	378	63	11	26	0910	K 36	31 S 150	27 E 19.9	E	35.64	14	14	1	14	7	1025.0	1
38	12	379	63	11	26	1015	K 36	37 S 150	26 E 20.0	E	35.61	14	14	1	14	7	1025.0	1
38	12	380	63	11	26	1115	K 36	43 S 150	27 E 20.0	E	35.70	14	14	1	14	7	1024.0	1
38	12	381	63	11	26	1215	K 36	49 S 150	28 E 20.1	E	35.66	14	14	1	14	7	1023.0	1
38	12	382	63	11	26	1330	K 36	51 S 150	19 E 19.8	E	35.62	14	14	1	14	7	1023.0	1
38	12	383	63	11	26	1430	K 36	51 S 150	10 E 19.7	E	35.48	14	14	1	14	7	1023.0	1
38	13	384	63	11	26	1530	K 36	55 S 150	08 E 19.6	E	35.59	14	14	1	14	7	1023.0	1
38	13	385	63	12	3	0600	K 37	03 S 150	05 E 17.4	E	35.40	16	16	1	10	7	1030.0	1
38	13	386	63	12	3	0700	K 37	03 S 150	13 E 18.2	E	35.52	16	16	1	10	7	1030.0	1
38	13	387	63	12	3	0805	K 37	03 S 150	20 E 19.3	E	35.53	16	16	1	14	7	1030.0	1
38	13	388	63	12	3	0915	K 37	09 S 150	27 E 19.6	E	35.52	16	16	1	14	7	1030.0	1
38	13	389	63	12	3	1020	K 37	09 S 150	27 E 19.6	E	35.52	16	16	1	14	7	1030.0	1
38	13	390	63	12	3	1130	K 37	15 S 150	27 E 19.8	E	35.52	16	16	1	14	7	1030.0	1
38	13	391	63	12	3	1230	K 37	15 S 150	20 E 18.5	E	35.52	14	14	1	14	7	1030.0	1
38	13	392	63	12	3	1330	K 37	15 S 150	14 E 19.1	E	35.53	04	04	1	14	7	1030.0	1
38	13	393	63	12	3	1430	K 37	13 S 150	06 E 17.0	E	35.44	04	04	1	14	7	1028.0	1
38	13	394	63	12	3	1530	K 37	13 S 150	11 E 18.4	E	35.55	04	04	1	14	7	1028.0	1
38	13	395	63	12	3	1630	K 37	10 S 150	16 E 18.7	E	35.52	04	04	2	14	7	1027.0	1
38	13	396	63	12	3	1730	K 37	09 S 150	22 E 19.7	E	35.55	04	04	2	14	7	1027.0	1
38	13	397	63	12	3	1830	K 37	07 S 150	16 E 18.5	E	35.52	04	04	3	04	7	1027.0	1
38	14	398	63	12	6	0805	K 37	15 S 150	06 E 17.1	E	35.44	18	18	1	18	7	1016.0	1
38	14	399	63	12	6	0900	K 37	15 S 150	12 E 17.4	E	35.46	18	18	2	05	7	1016.0	1
38	14	400	63	12	6	1010	K 37	15 S 150	20 E 17.5	E	35.44	18	18	1	05	7	1016.0	1

VESSE-	CRUISE	STATION	YR.	MTH.	DAY	TIME	Z	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND	SEA	SWELL	WEA.	VIS.	BAROM.	SAMPLING				
		NUMBER										DN, AMT.	DN, AMT.	DN, AMT.				METHOD				
38	14	401	63	12	6	1115	K 37	15 S	150	28 E	18.6	35.50	18	1	18		05	3	7	1016.0	1	
38	14	402	63	12	6	1225	K 37	08 S	150	28 E	20.2	35.53	15	2	15		05	3	7	1016.0	1	
38	14	403	63	12	6	1335	K 37	05 S	150	30 E	20.1	35.52	18	2	18		05	3	6	1016.0	1	
38	14	404	63	12	6	1440	K 37	05 S	150	23 E	19.8	35.52	18	3	18		05	3	6	1016.0	1	
38	14	405	63	12	6	1545	K 37	05 S	150	17 E	18.8	35.46	18	4	18		05	3	53	7	1016.0	1
38	14	406	63	12	6	1650	K 37	05 S	150	11 E	17.7	35.37	18	3	18		05	3	02	7	1016.0	1
38	14	407	63	12	6	1800	K 37	05 S	150	06 E	17.4	35.35	18	3	18		05	3	02	7	1016.0	1
38	14	408	63	12	10	0810	K 37	16 S	150	06 E	17.7	35.37	08	2	08		09	3	03	7	1018.0	1
38	14	409	63	12	10	0910	K 37	16 S	150	12 E	18.7	35.57	05	2	05		09	3	52	6	1018.0	1
38	14	410	63	12	10	1020	K 37	16 S	150	20 E	19.4	35.57	09	2	09		09	3	01	7	1018.0	1
38	14	411	63	12	10	1120	K 37	16 S	150	27 E	20.0	35.57	09	2	09		09	3	01	7	1017.0	1
38	14	412	63	12	10	1230	K 37	22 S	150	27 E	20.2	35.55	09	1	09		09	3	01	7	1017.0	1
38	14	413	63	12	10	1330	K 37	28 S	150	27 E	20.2	35.55	09	2	09		09	3	01	7	1016.0	1
38	14	414	63	12	10	1430	K 37	34 S	150	27 E	19.6	35.57	09	2	09		09	3	01	7	1016.0	1
38	14	415	63	12	10	1530	K 37	34 S	150	20 E	19.8	35.53	09	2	09		09	3	02	7	1015.0	1
38	14	416	63	12	10	1625	K 37	34 S	150	12 E	19.8	35.55	09	2	09		09	3	02	7	1016.0	1
38	14	417	63	12	10	1730	K 37	34 S	150	07 E	19.7	35.50	09	2	09		09	3	03	7	1016.0	1
38	14	418	63	12	10	1830	K 37	34 S	150	03 E	18.9	35.35	09	2	09		09	3	52	7	1016.0	1
38	14	419	63	12	11	1145	K 37	32 S	150	05 E	18.6	35.41	09	4	09		09	3	52	7	1017.0	1
38	14	420	63	12	11	1245	K 37	27 S	150	09 E	18.7	35.41	09	4	09		09	3	52	7	1017.0	1
38	14	421	63	12	11	1345	K 37	21 S	150	10 E	18.9	35.39	09	4	09		09	3	03	7	1017.0	1
38	14	422	63	12	11	1445	K 37	15 S	150	12 E	18.7	35.41	09	3	09		09	3	03	7	1017.0	1
38	14	423	63	12	11	1545	K 37	11 S	150	12 E	18.6	35.41	09	4	09		09	3	03	7	1017.0	1
38	14	424	63	12	11	1655	K 37	09 S	150	06 E	18.0	35.32	09	4	09		09	3	03	7	1017.0	1
38	15	425	63	12	12	0600	K 37	04 S	150	04 E	18.6	35.10	12	2	12		09	3	52	7	1017.0	1
38	15	426	63	12	12	0700	K 37	04 S	150	10 E	19.0	35.48	12	2	12		09	3	52	7	1016.0	1
38	15	427	63	12	12	0800	K 37	04 S	150	17 E	19.3	35.52	12	2	12		09	3	52	7	1016.0	1
38	15	428	63	12	12	0900	K 37	04 S	150	22 E	19.9	35.62	09	3	09		09	3	52	7	1018.0	1
38	15	429	63	12	12	1000	K 37	04 S	150	28 E	19.8	35.59	09	3	09		09	3	03	7	1018.0	1
38	15	430	63	12	12	1100	K 37	10 S	150	28 E	19.9	35.59	09	3	09		09	3	03	7	1019.0	1
38	15	431	63	12	12	1200	K 37	16 S	150	28 E	20.0	35.61	09	3	09		09	3	02	7	1019.0	1
38	15	432	63	12	12	1300	K 37	22 S	150	28 E	20.0	35.61	09	2	09		09	3	02	7	1019.0	1
38	15	433	63	12	12	1400	K 37	19 S	150	22 E	19.5	35.52	09	2	09		09	3	02	7	1016.0	1
38	15	434	63	12	12	1500	K 37	13 S	150	17 E	19.6	35.53	09	2	09		09	3	02	7	1016.0	1
38	15	435	63	12	12	1600	K 37	13 S	150	13 E	19.1	35.41	05	2	05		09	3	03	7	1016.0	1
38	15	436	63	12	12	1700	K 37	10 S	150	09 E	18.6	35.37	05	2	05		09	3	03	7	1016.0	1
38	15	437	63	12	12	1800	K 37	09 S	150	03 E	18.0	35.08	05	2	05		09	3	03	7	1018.0	1
38	15	438	63	12	13	0700	K 37	15 S	150	06 E	17.7	35.14	23	2	23		09	3	02	7	1019.0	1
38	15	439	63	12	13	0800	K 37	15 S	150	13 E	19.0	35.37	23	2	23		09	3	02	7	1020.0	1
38	15	440	63	12	13	0900	K 37	15 S	150	21 E	19.6	35.46	20	1	20		09	3	01	7	1020.0	1

VESSEL	CRUISE NUMBER	STATION NUMBER	YR.	MTH.	DAY	TIME	LONGITUDE	TEMP.	SALINITY	HIND DN.	SEA DN.	SWELL DN.	WEA.	VIS.	BAROM.	SAMPLING METHOD					
38	15	441	63	12	13	1000	K 37	15 S	150	28 E	20.0	35.52	18	1	00	0	09	3	02	7	1021.0
38	15	442	63	12	13	1100	K 37	21 S	150	28 E	20.4	35.54	18	1	00	0	09	3	01	7	1021.0
38	15	443	63	12	13	1200	K 37	27 S	150	28 E	20.2	35.66	18	1	00	0	09	3	01	7	1021.0
38	15	444	63	12	13	1300	K 37	33 S	150	28 E	20.7	35.62	18	1	00	0	09	3	01	7	1021.0
38	15	445	63	12	13	1400	K 37	33 S	150	22 E	20.2	35.61	32	1	00	0	09	3	01	7	1021.0
38	15	446	63	12	13	1500	K 37	33 S	150	14 E	20.0	35.46	23	1	00	0	09	3	01	7	1021.0
38	15	447	63	12	13	1600	K 37	33 S	150	08 E	20.1	35.48	23	1	00	0	09	3	01	7	1021.0
38	15	448	63	12	13	1700	K 37	33 S	150	03 E	18.6	35.32	00	0	00	0	09	3	01	7	1020.0
38	15	449	63	12	14	0630	K 37	26 S	150	04 E	18.3	34.79	36	1	00	0	09	3	01	7	1021.0
38	15	450	63	12	14	0800	K 37	26 S	150	14 E	19.0	35.39	03	3	03	1	09	3	01	7	1021.0
38	15	451	63	12	14	0900	K 37	21 S	150	14 E	18.9	35.37	03	3	03	1	14	2	01	7	1021.0
38	15	452	63	12	14	1000	K 37	15 S	150	17 E	19.1	35.32	03	3	03	1	14	2	01	7	1021.0
38	15	453	63	12	14	1100	K 37	10 S	150	17 E	19.6	35.53	03	3	03	1	14	2	01	7	1021.0
38	15	454	63	12	14	1200	K 37	05 S	150	17 E	19.5	35.53	03	3	03	2	14	2	01	7	1020.0
38	15	455	63	12	14	1310	K 37	05 S	150	10 E	19.8	35.19	03	3	03	2	14	2	01	7	1020.0
38	15	456	63	12	14	1415	K 37	05 S	150	05 E	19.1	35.30	03	4	03	2	14	2	01	7	1020.0
38	16	457	63	12	18	0530	K 37	04 S	150	00 E	17.3	35.01	23	3	23	1	14	3	02	7	1020.0
38	16	458	63	12	18	0620	K 37	04 S	150	05 E	18.4	35.14	23	3	23	1	14	3	02	7	1020.0
38	16	459	63	12	18	0715	K 37	04 S	150	10 E	19.0	35.53	23	2	23	1	14	3	01	7	1021.0
38	16	460	63	12	18	0810	K 37	04 S	150	15 E	19.6	35.39	20	2	20	1	14	3	01	7	1021.0
38	16	461	63	12	18	0915	K 37	04 S	150	20 E	20.3	35.55	18	1	18	1	14	3	02	7	1021.0
38	16	462	63	12	18	1015	K 37	04 S	150	25 E	20.2	35.59	18	1	18	1	14	3	02	7	1021.0
38	16	463	63	12	18	1300	K 36	51 S	150	19 E	20.8	35.59	18	1	18	0	14	3	01	7	1020.0
38	16	464	63	12	18	1500	K 36	40 S	150	11 E	19.9	35.55	16	1	00	0	14	3	01	7	1020.0
38	16	465	63	12	18	1700	K 36	29 S	150	06 E	19.5	35.39	10	2	10	1	14	3	01	7	1019.0
38	16	466	63	12	19	0500	K 36	25 S	150	09 E	17.6	34.76	27	1	00	0	14	2	01	7	1019.0
38	16	467	63	12	19	0550	K 36	25 S	150	14 E	19.1	35.32	23	1	00	0	14	2	01	7	1019.0
38	16	468	63	12	19	0645	K 36	25 S	150	19 E	19.1	35.39	18	1	00	0	14	2	01	7	1019.0
38	16	469	63	12	19	0740	K 36	25 S	150	24 E	19.0	35.57	18	1	00	0	14	2	01	7	1020.0
38	16	470	63	12	19	0915	K 36	25 S	150	29 E	19.3	35.62	00	0	00	0	14	2	01	7	1020.0
38	16	471	63	12	19	1200	K 36	13 S	150	23 E	19.9	35.68	14	1	00	0	14	2	01	7	1020.0
38	16	472	63	12	19	1400	K 36	02 S	150	21 E	20.3	35.30	05	1	00	0	14	2	01	7	1019.0
38	16	473	63	12	20	0540	K 35	50 S	150	17 E	19.1	34.74	23	1	00	0	14	2	01	7	1021.0
38	16	474	63	12	20	0625	K 35	50 S	150	22 E	19.8	35.39	23	1	00	0	14	2	03	7	1021.0
38	16	475	63	12	20	0715	K 35	50 S	150	27 E	19.8	35.44	23	1	00	0	14	2	02	7	1023.0
38	16	476	63	12	20	0815	K 35	50 S	150	32 E	19.9	35.48	20	1	00	0	14	2	02	7	1023.0
38	16	477	63	12	20	0905	K 35	50 S	150	37 E	20.0	35.48	00	0	00	0	14	2	02	7	1023.0
38	16	478	63	12	20	1015	K 35	50 S	150	42 E	19.7	35.53	00	0	00	0	14	2	02	7	1023.0
38	16	479	63	12	20	1300	K 36	03 S	150	32 E	20.7	35.43	04	1	00	0	14	2	01	7	1022.0
38	16	480	63	12	20	1500	K 36	16 S	150	24 E	20.3	35.55	04	3	04	2	14	2	01	7	1020.0

VESSE-	CHUISE	STATION	YR.	MTH.	DAY	TIME	LONGITUDE	TEMP.	SALINITY	WIND	SEA	SWELL	HEA.	VIS.	BAROM.	SAMPLING
		NUMBER								DN, AMT,	DN, AMT,	DN, AMT,				METHOD
38	16	481	63	12	21	0630	K 36 28 S 150 21 E 19.5	35.50	36 4	36 2	14 2	01	7	1019.0		1
38	16	482	63	12	21	0830	K 36 41 S 150 20 E 19.5	35.66	36 4	36 2	14 2	01	7	1019.0		1
38	16	483	63	12	21	1030	K 36 53 S 150 21 E 20.2	35.68	36 5	36 3	14 2	01	7	1018.0		1

DATA
PART 2
HYDROLOGY
SUBSURFACE SAMPLES

STATION # 1/ 1/63 DATE 15/ 1/63 TIME 0830 K LATITUDE 35 07 S LONGITUDE 150 50 E

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

106 *** ** 22 1 * * * * 7 * * 04 4 1012.0 * * *

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

1	0	17.34	35.370	25.73	***	***	***	***	***	***
1	10	15.16	35.350	26.22	***	***	***	***	***	***
1	20	14.87	35.350	26.29	***	***	***	***	***	***
1	30	14.22	35.350	26.43	4.65	80	***	***	***	***
1	40	13.34	35.270	26.54	***	***	***	***	***	***
1	50	11.02	35.240	26.59	***	***	***	***	***	***
1	75	12.78	35.220	26.63	***	***	***	***	***	***
1	100	12.72	35.210	26.63	***	***	***	***	***	***

STATION # 1/ 2/63 DATE 15/ 1/63 TIME 0930 K LATITUDE 35 07 S LONGITUDE 150 55 E

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

139 *** ** 14 1 * * * * 7 14 1 04 4 1012.0 * * *

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

1	0	18.30	35.370	25.50	***	***	***	***	***	***
1	10	17.62	35.370	25.67	***	***	***	***	***	***
1	20	16.33+	35.330	25.94	***	***	***	***	***	***
1	30	15.04	35.380	26.27	***	***	***	***	***	***
1	40	14.37	35.400	26.44	***	***	***	***	***	***
1	50	14.04	35.360	26.48	4.61	79	***	***	***	***
1	75	12.80	35.240	26.64	***	***	***	***	***	***
1	100	11.90	***	***	4.61	***	***	***	***	***
1	125	10.61	34.930	26.81	***	***	***	***	***	***

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE		LONGITUDE								
Y 1/ 3/63	15/ 1/63	1025 K	35	07 S	151	00 E							
SONIC AIR TEMP.	WIND	ANEM.	CLOUD	SEA	SHELL	ATMOS.							
DEPTH MET DRY	DIR. SP.	HEIGHT	TYPE	DIR. AMT.	DIR. AMT.	PRESSURE							
174 ***	***	14	3	*	7	14	2	04	4	1012.0	*	*	*
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE				
1	0	19.01	35.410	25.35	***	***	***	***	***				
1	10	17.95	35.440	25.64	***	***	***	***	***				
1	20	16.80	35.520	25.98	***	***	***	***	***				
1	30	15.64	35.540	26.26	4.79	85	***	***	***				
1	40	15.08	35.490	26.35	***	***	***	***	***				
1	50	14.66	35.420	26.39	***	***	***	***	***				
1	75	13.86	35.350	26.51	***	***	***	***	***				
1	100	13.30	35.200	26.71	4.60	76	***	***	***				
1	125	10.76	34.980	26.82	4.73	75	***	***	***				

STATION	DATE	TIME	LATITUDE		LONGITUDE								
Y 1/ 4/63	15/ 1/63	1120 K	35	07 S	151	05 E							
SONIC AIR TEMP.	WIND	ANEM.	CLOUD	SEA	SHELL	ATMOS.							
DEPTH MET DRY	DIR. SP.	HEIGHT	TYPE	DIR. AMT.	DIR. AMT.	PRESSURE							
768 ***	***	14	2	*	7	14	2	04	4	1012.0	*	*	*
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE				
1	0	19.70	35.400	25.16	***	***	***	***	***				
1	25	18.64	35.530	25.49	***	***	***	***	***				
1	50	15.50	35.490	26.26	4.66	82	***	***	***				
1	75	14.42	35.370	26.40	***	***	***	***	***				
1	100	13.42	35.270	26.53	4.58	77	***	***	***				
1	150	12.09	35.180	26.73	***	***	***	***	***				
1	200	11.40	35.130	26.82	***	***	***	***	***				
1	300	9.79	34.840	26.88	4.58	71	***	***	***				
1	500	8.22	34.650	26.99	***	***	***	***	***				

* PROPERTY DOUBTFUL
* PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE							
M 1/ 5/63	15/ 1/63	1225 K	35 07 S	151 10 E							
SONIC AIR TEMP.	WIND DIR.	SP.	WIND DIR.	SEA DIR.	AMT.	SHELL DIR.	AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
DEPTH ***	***	14 2 *	* * *	7 14 2 04 4	1011.0	*	*	*	*	*	*
1280											
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE			
1	0	20.26	35.580	25.15	***	***	***	***			
1	25	19.23	35.590	25.43	***	***	***	***			
1	50	16.13	35.530	26.14	4.38	78	***	***			
1	75	14.56	35.420	26.41	***	***	***	***			
1	100	14.03	35.440	26.54	4.81	82	***	***			
1	150	12.74	35.280	26.68	***	***	***	***			
1	200	11.38	35.170	26.86	4.55	74	***	***			
1	300	9.79	34.820	26.87	4.58	71	***	***			
1	500	8.09	34.630	26.99	4.42	66	***	***			

STATION	DATE	TIME	LATITUDE	LONGITUDE							
M 1/ 6/63	15/ 1/63	1345 K	35 07 S	151 15 E							
SONIC AIR TEMP.	WIND DIR.	SP.	WIND DIR.	SEA DIR.	AMT.	SHELL DIR.	AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
DEPTH ***	***	14 2 *	* * *	7 14 2 04 4	1011.0	*	*	*	*	*	*

CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE			
1	0	20.47	35.450	25.00	***	***	***	***			
1	25	18.53	35.550	25.58	***	***	***	***			
1	50	16.30	35.470	26.06	4.19	75	***	***			
1	75	15.42	35.510	26.29	***	***	***	***			
1	100	14.39	35.420	26.45	4.70	81	***	***			
1	150	12.63	35.230	26.66	***	***	***	***			
1	200	11.59	35.100	26.76	4.68	76	***	***			
1	300	10.25	34.810	26.86	4.46	70	***	***			
1	500	8.34	34.700	27.01	4.47	67	***	***			

STATION DATE TIME LATITUDE LONGITUDE
 P 1/ 7/63 18/ 1/63 0430 K 35 50 S 150 17 E

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

64 *** ** 27 1 * * * 5 27 1 04 4 1009.0 * * * *

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

1 0 17.84 35.220 25.90 *** ** ** ** **

1 10 14.56 35.310 25.87 *** ** ** **·

1 20 15.07 35.250 26.17 *** ** ** **·

1 30 14.44 35.300 26.34 87 5.03 *** ** ** **·

1 40 13.37 35.240 26.52 *** ** ** **·

1 50 13.00 35.270 26.62 73 4.37 *** ** ** **·

STATION DATE TIME LATITUDE LONGITUDE
 P 1/ 8/63 18/ 1/63 0525 K 35 50 S 150 22 E

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

121 *** ** 27 1 * * * 7 27 1 04 4 1009.0 * * * *

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

1 0 19.22 35.350 25.25 *** ** ** **·

1 10 19.18 35.350 25.26 *** ** ** **·

1 20 18.86 35.380 25.37 *** ** ** **·

1 30 14.86 35.390 25.86 93 5.14 *** ** ** **·

1 40 15.05 35.420 26.30 *** ** ** **·

1 50 14.33 35.380 26.43 80 4.62 *** ** ** **·

1 75 13.42 35.330 26.54 *** ** ** **·

1 100 19.73 35.240 26.65 76 4.59 *** ** ** **·

STATION	DATE	TIME	LATITUDE	LONGITUDE
K 1/ 9/63	18/ 1/63	0615 K	35 50 S	150 27 E
SONIC AIR TEMP.	WIND ANEM.	CLOUD	SWELL	ATMOS.
DEPTH NET DRY DIR, SP.	DIR, SP.	HEIGHT TYPE AMT.	DIR, AMT.	PRESSURE
134 *** 27 2 * * * *	27 1 04 4	1009.0	* * *	* * *
CAST DEPTH TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.
1 0 19.91	35.400	25.11	***	***
1 10 19.90	35.460	25.16	***	***
1 20 18.66*	35.460	25.48	***	***
1 30 17.42	35.460	25.78	97	***
1 40 16.15	35.460	26.08	***	***
1 50 15.59	35.490	26.24	85	***
1 75 14.40	35.400	26.43	***	***
1 100 13.30	35.290	26.57	77	***
1 125 12.71	35.280	26.69	75	***

WIRE ANGLES
CAST1 CAST2 CAST3

STATION	DATE	TIME	LATITUDE	LONGITUDE
K 1/ 10/63	18/ 1/63	0710 K	35 50 S	150 32 E
SONIC AIR TEMP.	WIND ANEM.	CLOUD	SWELL	ATMOS.
DEPTH NET DRY DIR, SP.	DIR, SP.	HEIGHT TYPE AMT.	DIR, AMT.	PRESSURE
137 ** 23 2 * * * *	23 1 04 3	1010.0	* * *	* * *
CAST DEPTH TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.
1 0 21.03	35.540	24.92	***	***
1 10 20.80	35.540	24.98	***	***
1 20 19.84	35.690	25.35	***	***
1 30 17.23	35.660	25.91	76	***
1 40 14.46	35.540	26.07	***	***
1 50 15.94	35.530	26.19	82	***
1 75 14.90	35.460	26.37	**	***
1 100 14.12	35.440	26.52	78	***
1 125 13.15	35.270	26.59	77	***

* PROPERTY DOUBTFUL
* PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 M 1/ 11/63 0805 K 35 50 S 150 37 E

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

1189 *** ** 73 2 * * * * 7 23 1 04 3 1012.0 * * * *

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

1 0 21.63 35.450 24.68 *** *** *** ***

1 25 21.00 35.490 24.89 *** *** *** ***

1 50 14.00 35.460 26.12 4.08 *** *** *** ***

1 75 15.11 35.370 26.25 *** *** *** ***

1 100 14.40 35.280 26.34 4.02 *** *** *** ***

1 150 13.89 35.400 26.54 *** *** *** ***

1 200 12.27 35.150 26.67 4.24 *** *** *** ***

1 300 11.10 35.060 26.82 4.60 *** *** *** ***

1 500 8.74 34.720 26.96 4.61 *** *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 M 1/ 12/63 0910 K 35 50 S 150 42 E

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

*** ** 73 2 * * * * 7 23 2 04 3 1012.0 * * * *

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

1 0 21.89 35.410 24.58 *** *** *** ***

1 25 20.77 35.530 24.98 *** *** *** ***

1 50 14.65 35.530 26.02 3.99 *** *** *** ***

1 75 15.77 35.570 26.26 *** *** *** ***

1 100 15.10 35.440 26.31 4.38 *** *** *** ***

1 150 14.04 35.380 26.49 *** *** *** ***

1 200 12.77 35.210 26.62 3.74 *** *** *** ***

1 300 10.94 34.980 26.79 4.41 *** *** *** ***

1 500 8.39 34.640 26.95 4.44 *** *** *** ***

STATION	DATE	TIME	LATITUDE	LONGITUDE			
P 1/ 15/63	15/ 1/63	0500 K	36 25 S	150 09 E			
SONIC AIR TEMP, WIND DIR, SP, WET DRY	ANEM. HEIGHT	CLOUD TYPE	AMT.	SWELL DIR, AMT, PRESSURE	ATMOS. CAST1 CAST2 CAST3		
60 *** ** 27 1	* * * *	* * *	04 2	1014.0	* * *		
CST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT, INORG. P	TOTAL P	NITRATE
1 0	15.86	35.150	25.91	***	***	***	***
1 10	14.63	35.240	26.26	***	***	***	***
1 20	13.88	35.260	26.43	***	***	***	***
1 30	12.76	35.190	26.61	4.38	73	***	***
1 40	12.57	35.180	26.64	***	***	***	***
1 50	12.54	35.240	26.69	4.44	74	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE			
P 1/ 10/63	15/ 1/63	0550 K	36 25 S	150 14 E			
SONIC AIR TEMP, WIND DIR, SP, WET DRY	ANEM. HEIGHT	CLOUD TYPE	AMT.	SWELL DIR, AMT, PRESSURE	ATMOS. CAST1 CAST2 CAST3		
126 *** ** 23 1	* * * *	* * *	04 2	1016.0	* * *		
CST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT, INORG. P	TOTAL P	NITRATE
1 0	17.09	35.350	25.78	***	***	***	***
1 10	14.02	35.240	25.95	***	***	***	***
1 20	15.60	35.350	26.13	***	***	***	***
1 30	14.65	35.310	26.30	5.22	91	***	***
1 40	13.53	35.260	26.50	***	***	***	***
1 50	12.95	35.270	26.63	4.59	77	***	***
1 75	11.92	35.150	26.74	***	***	***	***
1 100	11.46	35.080	26.77	4.55	74	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE				
N 1/ 17/63	19/ 1/63	0640 K	36 25 S	150 19 E				
SONIC AIR TEMP, WIND	ANEM, CLOUD	VIS, SEA	SWELL	ATMOS.	WIRE ANGLES			
DEPTH MET DRY DIR, SP, HEIGHT	TYPE AMT,	DIR, AMT, DIR, AMT, PRESSURE	DIR, AMT, PRESSURE	CAS11 CAS212 CAS213				
154 *** ** 20 1 * * * *	* * * *	7 20 1 04 2	1017.0	* * * *				
C4ST DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INORG. P	TOTAL P	NITRATE
1 0	21.05	35.500	24.88	***	***	***	***	***
1 10	20.97	35.510	24.91	***	***	***	***	***
1 20	19.29	35.530	25.37	***	***	***	***	***
1 30	18.20	35.500	25.62	4.84	90	***	***	***
1 40	17.14	35.470	25.86	***	***	***	***	***
1 50	15.85	35.490	26.16	4.89	87	***	***	***
1 75	14.83	35.470	26.39	***	***	***	***	***
1 100	12.76	35.360	26.74	4.52	75	***	***	***
1 150	11.72	35.110	26.75	4.62	75	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE				
N 1/ 18/63	19/ 1/63	0735 K	36 25 S	150 24 E				
SONIC AIR TEMP, WIND	ANEM, CLOUD	VIS, SEA	SWELL	ATMOS.	WIRE ANGLES			
DEPTH MET DRY DIR, SP, HEIGHT	TYPE AMT,	DIR, AMT, DIR, AMT, PRESSURE	DIR, AMT, PRESSURE	CAS11 CAS212 CAS213				
003 *** ** 16 2 * * * *	* * * *	7 16 1 04 2	1017.0	* * * *				
C4ST DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INORG. P	TOTAL P	NITRATE
1 0	21.87	35.440	24.61	***	***	***	***	***
1 25	19.26	35.560	25.40	***	***	***	***	***
1 50	15.64	35.440	26.12	4.15	74	***	***	***
1 75	14.96	35.440	26.33	***	***	***	***	***
1 100	14.58	35.510	26.47	4.54	79	***	***	***
1 150	13.48	***	***	***	***	***	***	***
1 200	12.60	35.240	26.68	4.80	80	***	***	***
1 300	10.57	34.980	26.86	4.50	71	***	***	***
1 500	8.56	34.660	26.94	4.53	69	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE									
Y 1/ 23/63	20/ 1/63	0925 K	37 04 S	150 05 E									
SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES													
DEPTH MET	DRY DIR. SP.	HEIGHT	TYPE	AMT.	VIS. DIR. AMT.	DIR. AMT.	PRESSURE	CAST1	CAST2	CAST3			
81 ***	***	16	1	*	7	10	1	04	2	1023.0	*	*	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN %	SAT.	INORG. P	TOTAL P	NITRATE			
1	0	17.22	35.440	25.82	***	***	***	***	***	***	***	***	***
1	10	17.18	35.450	25.83	***	***	***	***	***	***	***	***	***
1	20	16.44	35.380	25.96	***	***	***	***	***	***	***	***	***
1	30	14.25	35.350	26.42	5.58	96	***	***	***	***	***	***	***
1	40	13.39	35.260	26.53	***	***	***	***	***	***	***	***	***
1	50	13.02	35.220	26.58	4.46	75	***	***	***	***	***	***	***
1	70	12.94	35.240	26.61	4.26	71	***	***	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE									
Y 1/ 24/63	20/ 1/63	0645 K	37 04 S	150 10 E									
SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES													
DEPTH MET	DRY DIR. SP.	HEIGHT	TYPE	AMT.	VIS. DIR. AMT.	DIR. AMT.	PRESSURE	CAST1	CAST2	CAST3			
95 ***	***	18	1	*	7	18	1	04	2	1023.0	*	*	*
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN %	SAT.	INORG. P	TOTAL P	NITRATE			
1	0	16.98	35.410	25.85	***	***	***	***	***	***	***	***	***
1	10	16.90	35.420*	25.86	***	***	***	***	***	***	***	***	***
1	20	16.48	35.420	25.98	***	***	***	***	***	***	***	***	***
1	30	15.17	35.420	26.28	5.19	91	***	***	***	***	***	***	***
1	40	14.03	35.320	26.45	***	***	***	***	***	***	***	***	***
1	50	13.60	35.290	26.51	4.44	75	***	***	***	***	***	***	***
1	75	12.63	35.190	26.63	***	***	***	***	***	***	***	***	***
1	90	12.62	35.190	26.63	4.44	74	***	***	***	***	***	***	***

* PROPERTY DOUBTFUL
+ PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
1/ 25/63	20/ 1/63	0735 K	37 04 S	150 15 E
SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES				
DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT.	DIR. SP. HEIGHT TYPE AMT.	DIR. AMT. PRESSURE	DIR. AMT. PRESSURE	CAST1 CAST2 CAST3
121 *** ** 18 1 * * * *	* * * * 7 18 1 04 2	1023.0	* * * *	* * * *
CAST DEPTH TEMP.	SALINITY SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P
1 0 19.84	35.440 25.16	***	***	***
1 10 19.04	35.360 25.31	***	***	***
1 20 18.06	35.350 25.54	***	***	***
1 30 15.82	35.490 26.18	5.64	100	***
1 40 14.94	35.400 26.31	***	***	***
1 50 14.43	35.370 26.40	4.41	76	***
1 75 13.16	35.240 26.57	***	***	***
1 100 12.46	35.230 26.70	4.44	74	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
1/ 26/63	20/ 1/63	0840 K	37 04 S	150 20 E
SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES				
DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT.	DIR. SP. HEIGHT TYPE AMT.	DIR. AMT. PRESSURE	DIR. AMT. PRESSURE	CAST1 CAST2 CAST3
220 *** ** 18 1 * * * *	* * * * 7 14 2 04 2	1023.0	* * * *	* * * *
CAST DEPTH TEMP.	SALINITY SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P
1 0 21.20	35.560 24.68	***	***	***
1 25 20.25	35.480 25.08	***	***	***
1 50 16.28	***	4.72	***	***
1 75 15.47	35.490 26.26	***	***	***
1 100 14.68	35.440 26.40	4.72	82	***
1 125 13.58	35.320 26.54	***	***	***
1 150 12.84	35.260 26.64	4.58	76	***
1 175 12.76	35.240 26.64	***	***	***
1 200 12.75	35.220 26.63	4.57	76	***

STATION X 1/ 27/63 DATE 20/ 1/63 TIME 0943 K LATITUDE 37 04 S LONGITUDE 150 25 E

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

*** *** 00 0 * * * * * 7 14 2 04 2 1023.0 * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	22.86	35.450	24.34	***	***	***	***	***
1	25	21.89	35.850	24.69	***	***	***	***	***
1	50	16.76	35.340	26.00	3.91	71	***	***	***
1	75	15.64	35.450	26.19	***	***	***	***	***
1	100	15.03	35.440	26.32	4.59	80	***	***	***
1	150	13.45	35.350	26.51	***	***	***	***	***
1	200	12.13	35.300	26.62	4.77	80	***	***	***
1	300	11.67	35.090	26.74	4.69	76	***	***	***
1	500	9.03	34.770	26.95	4.69	72	***	***	***

STATION Y 3/ 28/63 DATE 17/ 3/63 TIME 0715 K LATITUDE 37 58 S LONGITUDE 147 59 E

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

33 *** *** 27 2 * * * * * 7 27 1 18 2 1021.0 * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.50	35.440	25.50	***	***	***	***	***
1	10	14.42	35.420	25.51	***	***	***	***	***
1	20	14.31	35.480	25.58	***	***	***	***	***
1	30	17.48	35.440	25.75	***	***	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 P 3/ 29/63 17/ 3/63 0800 K 38 02 S 148 00 E

SONIC AIR TEMP, WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH *ET DRY DIR, SP, HEIGHT TYPE AMT, DIR, AMT, DIR, AMT, PRESSURE CAST1 CAST2 CAST3
 48 *** ** 27 2 * * * 7 27 1 18 2 1021.0 * * * *

CAST DEPTH TEMP, SALINITY SIGMA-T OXYGEN OXYGEN % SAT, INDRG. P TOTAL P NITRATE
 1 0 18.32 35.460 25.56 *** *** ***
 1 10 18.29 35.590 25.67 *** *** ***
 1 20 18.05 35.500 25.66 *** *** ***
 1 30 16.67 35.410 25.93 *** *** ***
 1 40 14.31 35.410 26.01 *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 P 3/ 30/63 17/ 3/63 0850 K 38 07 S 148 00 E

SONIC AIR TEMP, WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH *ET DRY DIR, SP, HEIGHT TYPE AMT, DIR, AMT, DIR, AMT, PRESSURE CAST1 CAST2 CAST3
 51 *** ** 27 2 * * * 7 27 1 18 2 1021.0 * * * *

CAST DEPTH TEMP, SALINITY SIGMA-T OXYGEN OXYGEN % SAT, INDRG. P TOTAL P NITRATE
 1 0 18.29 35.500 25.60 *** *** ***
 1 10 18.20 35.460 25.59 *** *** ***
 1 20 17.96 35.460 25.65 *** *** ***
 1 30 15.96 35.460 26.13 *** *** ***
 1 40 15.96 35.550 26.20 *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 # 3/ 31/63 17/ 3/63 0940 K 38 10 S 148 02 E

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

25 *** 27 2 * * * 7 27 1 18 2 1021.0 * * * *

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

1 0 18.24 35.910 25.62 *** ** ** **

1 10 18.13 35.900 25.64 *** ** ** **

1 20 17.93 35.900 25.69 *** ** ** **

1 30 15.89 35.390 26.09 *** ** ** **

1 40 15.87 35.390* 26.09 *** ** ** **

1 50 15.86 35.390 26.09 *** ** ** **

55

STATION DATE TIME LATITUDE LONGITUDE
 # 3/ 32/63 17/ 3/63 1030 K 38 15 S 148 02 E

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

57 *** 27 3 * * * 7 27 1 18 2 1021.0 * * * *

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

1 0 18.21 35.480 25.60 *** ** ** **

1 10 18.11 35.480 25.63 *** ** ** **

1 20 17.39 35.440 25.78 *** ** ** **

1 30 15.85 35.410 26.12 *** ** ** **

1 40 15.86 35.370 26.08 *** ** ** **

1 50 15.85 35.370 26.08 *** ** ** **

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION 3/ 33/63 DATE 17/ 3/63 TIME 1120 K LATITUDE 38 19 S LONGITUDE 148 03 E

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

60 *** ** 1.8 1 * * * 7 23 1 18 2 1021.0 * * * *

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

1 0 18.09 35.460 25.62 *** *** *** ***

1 10 17.96 35.450 25.64 *** *** *** ***

1 20 17.59 35.450 25.73 *** *** *** ***

1 30 16.91 35.420 25.97 *** *** *** ***

1 40 15.71 35.390 26.13 *** *** *** ***

1 50 15.65 35.390 26.14 *** *** *** ***

STATION 6/ 111/63 DATE 9/ 7/63 TIME 0720 K LATITUDE 37 04 S LONGITUDE 150 00 E

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

50 *** ** 20 3 * * * 7 20 2 14 5 1006.0 * * * *

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

1 0 14.11 35.340 26.00 *** *** *** ***

1 10 14.04 35.340 26.02 *** *** *** ***

1 20 14.40 35.340 26.16 *** *** *** ***

1 30 14.75 35.350 26.31 92 *** *** *** ***

1 40 14.28 35.370 26.43 *** *** *** ***

1 50 14.17 35.370 26.45 96 *** *** *** ***

STATION	DATE	TIME	LATITUDE	LONGITUDE							
6/ 112/63	5/ 7/63	0820 K	37 04 S	150 05 E							
SONIC AIR TEMP.	WIND DIR. SP.	WIND ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3			
79 ***	20 3	*	*	*	7	20 2	14 4	1006.0	*	*	*
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE			
1	0	15.23	35.300	26.17	***	***	***	***			
1	10	15.02	35.300	26.22	***	***	***	***			
1	20	14.63	35.340	26.33	***	***	***	***			
1	30	14.39	35.340	26.38	5.50	95	***	***			
1	40	14.25	35.350	26.42	***	***	***	***			
1	50	14.20	35.350	26.43	5.67	97	***	***			
1	70	14.13	35.410	26.49	5.64	97	***	***			

STATION	DATE	TIME	LATITUDE	LONGITUDE							
6/ 113/63	5/ 7/63	0915 K	37 04 S	150 10 E							
SONIC AIR TEMP.	WIND DIR. SP.	WIND ANEM. HEIGHT	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3			
97 ***	18 3	*	*	*	7	18 2	14 4	1006.0	*	*	*
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE			
1	0	14.56	35.340	26.35	***	***	***	***			
1	10	14.49	35.350	26.37	***	***	***	***			
1	20	14.26	35.350	26.42	***	***	***	***			
1	30	14.16	35.370	26.46	5.47	94	***	***			
1	40	14.15	35.370	26.46	***	***	***	***			
1	50	14.05	35.350	26.46	5.53	95	***	***			
1	75	13.99	35.370	26.49	***	***	***	***			
1	90	13.94	35.370	26.50	5.72	98	***	***			

STATION DATE TIME LATITUDE LONGITUDE
 X 6/ 114/63 5/ 7/63 1015 K 37 04 S 150 15 E

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

124 *** ** 18 3 * * * * 7 18 2 14 4 1006.0 * * * *

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

1 0 14.78 35.390 *** 26.34 *** ** ** **

1 10 14.77 35.390 *** 26.34 *** ** ** **

1 20 14.64 35.410 *** 26.38 *** ** ** **

1 30 14.67 35.370 5.44 *** 94 *** ** ** **

1 40 14.63 35.370 26.36 *** ** ** **

1 50 14.57 35.370 26.37 5.44 *** 94 *** ** ** **

1 75 14.39 35.370 26.41 *** ** ** **

1 100 14.06 35.370 26.47 *** 97 *** ** ** **

STATION DATE TIME LATITUDE LONGITUDE
 X 6/ 115/63 5/ 7/63 1105 K 37 04 S 150 20 E

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

220 *** ** 18 3 * * * * 7 18 2 14 4 1006.0 * * * *

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

1 0 14.92 35.320 26.26 *** ** ** **

1 25 14.93 35.320 26.27 *** ** ** **

1 50 14.75 35.340 26.31 5.56 *** 97 *** ** ** **

1 75 14.74 35.350 26.32 *** ** ** **

1 100 14.75 35.370 26.33 5.50 *** 96 *** ** ** **

1 125 14.34 35.440 26.47 *** ** ** **

1 150 14.27 35.430 26.48 5.61 *** 97 *** ** ** **

1 175 14.26 35.440 26.48 *** ** ** **

1 200 14.23 35.440 26.50 *** 96 *** ** ** **

STATION DATE TIME LATITUDE LONGITUDE
 # 6/ 116/63 9/ 7/63 1210 K 37 04 S 150 25 E

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

*** ** 18 3 * * * 7 18 2 14 4 1006.0 45 10 *

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

2	0	14.16	35.390	25.55	***	***	***	***	***	***	***
2	25	17.56	35.430	25.73	***	***	***	***	***	***	***
2	50	15.53	35.390	25.17	5.22	***	92	***	***	***	***
2	75	14.27	35.410	24.25	***	***	***	***	***	***	***
2	100	14.92	35.390	24.31	5.50	***	96	***	***	***	***
1	150	14.66	35.390	24.37	***	***	***	***	***	***	***
1	200	13.96	35.440	26.55	5.64	***	97	***	***	***	***
1	300	13.38	35.430	24.67	5.26	***	89	***	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 # 6/ 120/63 7/ 7/63 0710 K 36 25 S 150 09 E

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

59 *** ** 27 3 * * * 7 27 1 14 2 999.0 * * *

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

1	0	14.07	35.440	25.61	***	***	***	***	***	***	***
1	10	14.12	35.900	25.64	***	***	***	***	***	***	***
1	20	14.00	35.440	25.63	***	***	***	***	***	***	***
1	30	17.96	35.440	25.64	4.89	***	91	***	***	***	***
1	40	14.51	35.410	24.19	***	***	***	***	***	***	***
1	50	14.93	35.390	24.31	4.77	***	83	***	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 P 6/ 123/63 7/ 7/63 1000 K 36 25 S 150 24 E

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

549 *** ** 27 4 * * * 7 27 2 14 2 * * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.74	35.500	25.74	***	***	***	***	***
1	25	17.68	35.440	25.70	***	***	***	***	***
1	50	17.00	35.410	25.85	5.01	91	***	***	***
1	75	16.16	35.430	26.06	***	***	***	***	***
1	100	15.76	35.370	26.10	4.89	87	***	***	***
1	150	15.15	35.350	26.23	***	***	***	***	***
1	200	14.10	35.300	26.41	4.65	80	***	***	***
1	300	13.40	35.080	26.59	4.44	73	***	***	***
1	500	10.05	34.810	26.81	4.62	72	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 P 6/ 124/63 7/ 7/63 1110 K 36 25 S 150 29 E

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

*** ** 27 3 * * * 7 27 2 14 2 * * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.36	35.440	25.78	***	***	***	***	***
1	25	17.12	35.410	25.82	***	***	***	***	***
1	50	16.69	35.350	25.87	5.28	95	***	***	***
1	75	16.91	35.440	25.99	***	***	***	***	***
1	100	15.28	35.390	26.09	4.34	77	***	***	***
1	150	15.17	35.350	26.22	***	***	***	***	***
1	200	14.21	35.320	26.41	4.94	85	***	***	***
1	300	12.86	35.230	26.62	4.94	83	***	***	***
1	500	9.86	34.790	26.83	5.24	82	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 N 6/ 127/63 8/ 7/63 0705 K 35 50 S 150 17 E

SONIC AIR TEMP. WIND ANEM. CLOUD SHELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. VIS. SEA DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 73 *** ** 23 2 * * * 7 23 1 14 2 1003.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 18.04 35.930 25.69 *** *** *** ***
 1 10 18.07 35.460 25.63 *** *** *** ***
 1 20 18.12 35.500 25.64 *** *** *** ***
 1 30 17.98 35.500 25.68 4.91 *** *** *** ***
 1 40 17.61 35.610 25.85 *** *** *** ***
 1 50 17.49 35.900 25.80 4.81 *** *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 N 6/ 128/63 8/ 7/63 0755 K 35 50 S 150 22 E

SONIC AIR TEMP. WIND ANEM. CLOUD SHELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. VIS. SEA DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 123 *** ** 23 2 * * * 7 23 1 14 2 1003.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 18.01 35.460 25.64 *** *** *** ***
 1 10 18.04 35.460 25.63 *** *** *** ***
 1 20 18.00 35.900 25.67 *** *** *** ***
 1 30 18.02 35.460 25.64 5.19 96 *** *** *** ***
 1 40 18.01 35.480 25.66 *** *** *** ***
 1 50 17.97 35.930 25.70 5.14 95 *** *** *** ***
 1 75 16.72 35.900 25.98 *** *** *** ***
 1 100 15.85 35.440 26.14 4.79 85 *** *** *** ***

STATION M 6/ 129/63 DATE 8/ 7/63 TIME 0945 K LATITUDE 35 50 S LONGITUDE 150 27 E

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

134 *** ** 27 2 * * * * * 7 27 1 14 2 1003.0 * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-t	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.23	35.530	25.64	***	***	***	***	***
1	10	18.16	35.480	25.62	***	***	***	***	***
1	20	18.20	35.530	25.65	***	***	***	***	***
1	30	18.20	35.520	25.64	5.14	96	***	***	***
1	40	18.27	35.520	25.62	***	***	***	***	***
1	50	17.69	35.520	25.76	4.63	85	***	***	***
1	75	15.94	35.460	26.13	***	***	***	***	***
1	100	15.60	35.460	26.21	5.28	93	***	***	***
1	125	14.84	35.390	26.33	4.69	82	***	***	***

STATION M 6/ 130/63 DATE 8/ 7/63 TIME 0940 K LATITUDE 35 50 S LONGITUDE 150 32 E

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

150 *** ** 27 3 * * * * * 7 27 1 14 2 1003.0 * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-t	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.87	35.440	25.66	***	***	***	***	***
1	10	17.81	35.430	25.67	***	***	***	***	***
1	20	17.61	35.440	25.72	***	***	***	***	***
1	30	17.22	35.410	25.79	5.14	94	***	***	***
1	40	16.94	35.440	25.89	***	***	***	***	***
1	50	16.58	35.460	25.98	4.58	83	***	***	***
1	75	15.96	35.460	26.13	***	***	***	***	***
1	100	15.13	35.440	26.30	4.97	87	***	***	***
1	125	14.08	35.320	26.44	4.69	80	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 M 6/ 131/63 8/ 7/63 1035 K 35 50 S 150 37 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 *** ** 30 3 * * * * 7 30 2 14 2 1004.0 * * * *
 CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 17.16 35.440 25.83 *** *** *** ***
 1 25 16.82 35.410 25.89 *** *** *** ***
 1 50 16.38 35.440 26.02 90 *** *** *** ***
 1 75 15.99 35.460 26.12 *** *** *** ***
 1 100 15.75 35.480 26.18 90 *** *** *** ***
 1 150 13.04 35.280 26.43 *** *** *** ***
 1 200 13.21 35.320 26.62 82 *** *** *** ***
 1 300 12.08 35.170 26.72 81 *** *** *** ***
 1 500 6.29 34.690 26.85 74 *** *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 M 6/ 132/63 8/ 7/63 1145 K 35 50 S 150 42 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 *** ** 30 4 * * * * 7 30 3 14 2 1004.0 * * * *
 CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 16.93 35.430 25.88 *** *** *** ***
 1 25 16.77 35.440 25.93 *** *** *** ***
 1 50 16.52 35.480 26.01 89 *** *** *** ***
 1 75 16.07 35.480 26.12 *** *** *** ***
 1 100 15.95 35.480 26.15 93 *** *** *** ***
 1 150 14.71 35.390 26.35 *** *** *** ***
 1 200 13.10 34.920 26.33 4.55 *** *** *** ***
 1 300 *** 35.010 4.58 *** *** *** ***
 1 500 9.04 34.670 4.61 71 *** *** *** ***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
N 6/134/63	12/7/63	0720 K	35 07 S	150 50 E					
SONIC AIR TEMP, WIND, ANEM, CLOUD, SWELL, ATMOS, WIRE ANGLES									
DEPTH	NET DRY DIR, SP,	DIR, AMT, SEA DIR, AMT, PRESSURE	DIR, AMT, PRESSURE	CAST1 CAST2 CAST3					
104 ***	*** 30 3 *	* * * 7 30 2 14 4 1015.0	*	* * *					
CASST	DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT,	INORG. P	TOTAL P	NITRATE
1	0	17.29	35.430	25.79	***	***	***	***	***
1	10	17.30	35.390	25.76	***	***	***	***	***
1	20	17.31	35.390	25.76	***	***	***	***	***
1	30	17.27	35.350	25.74	5.14	94	***	***	***
1	40	17.26	35.430	25.80	***	***	***	***	***
1	50	17.20	35.430	25.81	4.94	90	***	***	***
1	75	17.09	35.440	25.85	***	***	***	***	***
1	100	16.64	35.440	25.95	4.86	88	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
N 6/135/63	12/7/63	0815 K	35 07 S	150 55 E					
SONIC AIR TEMP, WIND, ANEM, CLOUD, SWELL, ATMOS, WIRE ANGLES									
DEPTH	NET DRY DIR, SP,	DIR, AMT, SEA DIR, AMT, PRESSURE	DIR, AMT, PRESSURE	CAST1 CAST2 CAST3					
134 ***	*** 27 3 *	* * * 7 27 2 14 4 1015.0	*	* * *					
CASST	DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT,	INORG. P	TOTAL P	NITRATE
1	0	16.62	35.190	25.77	***	***	***	***	***
1	10	16.57	35.440*	25.97	***	***	***	***	***
1	20	16.58	35.340	25.89	***	***	***	***	***
1	30	16.50	35.350	25.92	5.33	96	***	***	***
1	40	16.52	35.390	25.94	***	***	***	***	***
1	50	16.51	35.430	25.98	5.33	96	***	***	***
1	75	15.79	35.460	26.17	***	***	***	***	***
1	100	15.70	35.460	26.19	5.08	90	***	***	***
1	125	15.73	35.430	26.16	5.07	90	***	***	***

* PROPERTY DOUBTFUL
* PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE		LONGITUDE	
N 6/ 136/63	12/ 7/63	0915 K	33	07 S	151	00 E
SONIC AIR TEMP.	WIND DIR, SP.	WIND DIR, SP.	WIND DIR, SP.	WIND DIR, SP.	WIND DIR, SP.	WIND DIR, SP.
DEPTH WET DRY	WET DRY	WET DRY	WET DRY	WET DRY	WET DRY	WET DRY
152 *** **	27 3	7 27 2	14 4	1014.0	*	* * *
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN X SAT.	INORG. P
1	0	14.77	25.88	***	***	***
1	10	14.77	25.87	***	***	***
1	20	14.79	25.84	***	***	***
1	30	14.70	25.86	5.39	97	***
1	40	14.49	25.80	***	***	***
1	50	14.90	26.13	5.08	90	***
1	75	14.87	26.29	***	***	***
1	100	14.87	26.29	4.89	85	***
1	125	14.45	26.38	4.86	84	***
						TOTAL P NITRATE

STATION	DATE	TIME	LATITUDE		LONGITUDE	
N 6/ 137/63	12/ 7/63	1010 K	35	07 S	151	05 E
SONIC AIR TEMP.	WIND DIR, SP.	WIND DIR, SP.	WIND DIR, SP.	WIND DIR, SP.	WIND DIR, SP.	WIND DIR, SP.
DEPTH WET DRY	WET DRY	WET DRY	WET DRY	WET DRY	WET DRY	WET DRY
732 *** **	27 2	7 27 2	14 4	1014.0	*	* * *
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN X SAT.	INORG. P
1	0	16.82	25.86	***	***	***
1	1	16.77	25.87	***	***	***
1	50	16.43	25.95	5.30	96	***
1	75	16.65	26.00	***	***	***
1	100	15.91	26.13	4.94	88	***
1	150	14.36	26.39	***	***	***
1	200	13.51	26.52	5.14	87	***
1	300	11.96	26.47	***	***	***
1	500	8.66	26.92	4.86	81	***
						TOTAL P NITRATE

STATION	DATE	TIME	LATITUDE	LONGITUDE				
M 6/138/63	12/7/63	1120 K	35 07 S	151 10 E				
SONIC AIR TEMP.	WIND	ANEM.	CLOUD	SEA	WIRE ANGLES			
DEPTH WET DRY	DIR, SP,	HEIGHT	TYPE AMT,	DIR, AMT, PRESSURE	CAST1 CAST2 CAST3			
1244 *** **	25 2	*	* * *	7 25 2 14 4	* * * *			
CASST DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INORG. P	TOTAL P	NITRATE
1 0	16.90	35.370	25.84	***	***	***	***	***
1 25	16.86	35.370	25.85	***	***	***	***	***
1 50	16.87	35.370	25.85	5.30	96	***	***	***
1 75	16.70	35.390	25.90	***	***	***	***	***
1 100	15.95	35.440	26.12	4.86	87	***	***	***
1 150	13.79	35.260	26.45	***	***	***	***	***
1 200	12.49	34.830	26.38	4.61	76	***	***	***
1 300	10.94	34.700	26.57	4.50	72	***	***	***
1 500	8.34	34.400	26.77	4.72	71	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE				
M 6/139/63	12/7/63	1225 K	35 07 S	151 15 E				
SONIC AIR TEMP.	WIND	ANEM.	CLOUD	SEA	WIRE ANGLES			
DEPTH WET DRY	DIR, SP,	HEIGHT	TYPE AMT,	DIR, AMT, PRESSURE	CAST1 CAST2 CAST3			
*** **	25 3	*	* * *	7 25 2 14 4	* * * *			
CASST DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INORG. P	TOTAL P	NITRATE
1 0	17.11	35.370	25.79	***	***	***	***	***
1 25	17.07	35.370	25.80	***	***	***	***	***
1 50	17.08	35.360*	25.79	5.19	95	***	***	***
1 75	17.05	35.350	25.79	***	***	***	***	***
1 100	15.53	35.350*	26.14	4.13	73	***	***	***
1 150	13.62	35.350	26.49	***	***	***	***	***
1 200	12.44	35.080	24.58	4.36	72	***	***	***
1 300	10.90	34.520	26.75	4.51	72	***	***	***
1 500	8.32	34.650	26.97	4.45	67	***	***	***

* PROPERTY DOUBTFUL
* PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 P 6/ 142/63 13/ 7/63 0640 K 34 40 S 150 55 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT. VIS. SEA DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 62 *** ** 30 3 * * * 7 30 2 14 4 1015.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 17.08 35.430 25.84 *** *** *** *** ***
 1 10 17.17 35.440 25.83 *** *** *** *** ***
 1 20 17.15 35.430* 25.83 *** *** *** *** ***
 1 30 17.13 35.430 25.83 5.28 96 *** *** *** *** ***
 1 40 17.14 35.390 25.80 *** *** *** *** ***
 1 50 17.16 35.390 25.79 5.22 95 *** *** *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 P 6/ 143/63 13/ 7/63 0725 K 34 40 S 151 00 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT. VIS. SEA DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 119 *** ** 27 3 * * * 7 27 2 14 4 1015.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 17.38 35.460 25.79 *** *** *** *** ***
 1 10 17.41 35.480 25.80 *** *** *** *** ***
 1 20 17.41 35.460 25.79 *** *** *** *** ***
 1 30 17.43 35.460 25.78 5.17 95 *** *** *** *** ***
 1 40 17.41 35.460 25.79 *** *** *** *** ***
 1 50 17.39 35.460 25.79 5.1b 94 *** *** *** *** ***
 1 75 17.40 35.460 25.79 *** *** *** *** ***
 1 100 17.10 35.460 25.86 5.17 94 *** *** *** *** ***

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE				
M 6/ 144/63	13/ 7/63	0825 K	34 40 S	151 05 E				
SONIC AIR TEMP, WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. HEIGHT TYPE AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3								
141 ***	** 27 3	* * *	7 27 2 14 4	* * * 1015.0				
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN X SAT,	INORG. P	TOTAL P	NITRATE
1	0	35.460	25.82	***	***	***	***	***
1	10	35.480	25.84	***	***	***	***	***
1	20	35.480	25.84	***	***	***	***	***
1	30	35.480	25.84	5.14	94	***	***	***
1	40	35.460	25.83	***	***	***	***	***
1	50	35.460	25.85	5.17	94	***	***	***
1	75	35.460	25.87	***	***	***	***	***
1	100	35.460	25.86	5.13	94	***	***	***
1	125	35.440	25.94	5.19	94	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE				
M 6/ 145/63	13/ 7/63	0920 K	34 40 S	151 10 E				
SONIC AIR TEMP, WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. HEIGHT TYPE AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3								
210 ***	** 27 3	* * *	7 27 2 14 4	* * * 1014.0				
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN X SAT,	INORG. P	TOTAL P	NITRATE
1	0	35.460	25.89	***	***	***	***	***
1	25	35.460	25.84	***	***	***	***	***
1	50	35.440	25.94	5.15	93	***	***	***
1	75	35.440	25.94	***	***	***	***	***
1	100	35.430	25.95	5.25	95	***	***	***
1	125	35.440	25.99	***	***	***	***	***
1	150	35.440	26.08	4.97	89	***	***	***
1	175	35.440	26.14	***	***	***	***	***
1	200	35.430	26.20	4.77	84	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 148/63	19/ 7/63	0910 K	34 05 S	151 13 E
SONIC AIR TEMP, WIND DIR, SP, ANEM, CLOUD VIS, SEA SWELL ATMOS, WIRE ANGLES				
DEPTH MET DRY	DIR, SP, HEIGHT	DIR, AMT, TYPE	DIR, AMT, PRESSURE	CAST1 CAST2 CAST3
73 ***	32 2 * *	7 32 1 09 2	1019.0	* * *
CAST DEPTH	TEMP, SALINITY	SIGMA-T	OXYGEN	CXYGEN X SAT, INORG, P
1 0	16.55 35.440	25.98	***	***
1 10	16.57 35.410	25.95	***	***
1 20	16.53 35.410	25.96	***	***
1 30	16.42 35.440	26.01	92	***
1 40	16.64 35.430	25.99	***	***
1 50	16.45 35.430	25.99	96	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 149/63	19/ 7/63	1000 K	34 05 S	151 18 E
SONIC AIR TEMP, WIND DIR, SP, ANEM, CLOUD VIS, SEA SWELL ATMOS, WIRE ANGLES				
DEPTH MET DRY	DIR, SP, HEIGHT	DIR, AMT, TYPE	DIR, AMT, PRESSURE	CAST1 CAST2 CAST3
132 ***	30 2 * *	7 30 1 09 2	1019.0	* * *
CAST DEPTH	TEMP, SALINITY	SIGMA-T	OXYGEN	CXYGEN X SAT, INORG, P
1 0	17.05 35.480	25.89	***	***
1 10	17.08 35.460	25.87	***	***
1 20	17.07 35.460	25.87	***	***
1 30	17.03 35.440	25.86	5.22	***
1 40	16.98 35.440	25.87	***	***
1 50	16.94 35.440	25.88	4.55	***
1 75	16.91 35.440	25.89	***	***
1 100	16.90 35.460	25.91	4.69	***
1 125	16.34 35.440	26.03	4.70	***

STATION DATE TIME LATITUDE LONGITUDE
 Y 6/ 150/63 19/ 7/63 1055 K 34 05 S 151 23 E

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

143 *** 30 3 * * * 7 30 2 09 2 1019.0 * * *

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

1 0 17.20 35.460 25.84 *** ** ** ** **

1 10 17.16 35.460 25.85 *** ** ** ** * * *

1 20 *** 35.460 *** ** ** ** * * *

1 30 17.20 35.460 25.84 5.24 96 *** ** ** * * *

1 40 17.19 35.460 25.84 *** ** ** * * *

1 50 17.09 35.440 25.85 4.69 89 *** ** ** * * *

1 75 16.97 35.440 25.88 *** ** ** * * *

1 100 16.91 35.530 25.96 4.89 * 89 *** ** ** * * *

STATION DATE TIME LATITUDE LONGITUDE
 Y 6/ 151/63 19/ 7/63 1150 K 34 05 S 151 28 E

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

155 *** 30 3 * * * 7 30 2 09 2 1018.0 * * *

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

1 0 17.90 35.530 25.72 ** ** ** ** **

1 10 17.84 35.500 25.71 *** ** ** * * *

1 20 17.77 35.480 25.71 *** ** ** * * *

1 30 17.28 35.440 25.80 4.55 83 *** ** ** * * *

1 40 14.98 35.440 25.87 *** ** ** * * *

1 50 16.95 35.530 25.95 4.80 87 *** ** ** * * *

1 75 15.84 35.460 25.92 *** ** ** * * *

1 100 16.61 35.440 25.96 4.26 77 *** ** ** * * *

1 140 16.34 35.440 26.03 4.47 80 *** ** ** * * *

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE		LONGITUDE	
M 6/152/63	19/ 7/63	1245 K	34	05 S	151	33 E
SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES						
DEPTH	WET DRY DIR, SP.	DIR, SP.	DIR, AMT.	DIR, AMT.	PRESSURE	CAST1 CAST2 CAST3
311 ***	30 2	*	*	09 2	1016.0	* * *
CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE						
1	0	17.40	35.460	25.79	***	***
1	25	17.33*	35.460	25.79	***	***
1	50	17.37	35.460	25.80	83	***
1	75	16.69	35.480	26.02	***	***
1	100	16.11	35.440	26.08	81	***
1	150	15.21	35.480	26.20	***	***
1	200	14.27	35.390	26.45	72	***
1	300	12.05	35.160	26.72	74	***

STATION	DATE	TIME	LATITUDE		LONGITUDE	
M 6/153/63	19/ 7/63	1345 K	34	05 S	151	37 E
SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES						
DEPTH	WET DRY DIR, SP.	DIR, SP.	DIR, AMT.	DIR, AMT.	PRESSURE	CAST1 CAST2 CAST3
695 ***	30 2	*	*	09 2	1016.0	10 * *
CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE						
1	0	17.65	35.460	25.73	***	***
1	25	17.37*	35.520	25.84	***	***
1	50	17.09	35.500	25.90	80	***
1	75	16.94	35.460	25.90	***	***
1	100	16.92	35.480	25.92	87	***
1	150	16.08	35.440	26.09	***	***
1	200	14.78	35.370	26.32	77	***
1	300	12.35	35.160	26.66	74	***
1	500	9.69	34.810	26.68	70	***

* * PROPERTY DOUBTFUL
* * PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE			
M 7/ 154/63	27/ 7/63	0640 K	33 17 S	151 42 E			
SONIC AIR TEMP, WIND DIR, SP, WIND DIR, SP, ANEM, CLOUD TYPE AMT, VIS, SEA DIR, AMT, SWELL DIR, AMT, ATMOS, PRESSURE CAST1 CAST2 CAST3							
DEPTH MET DRY							
64 *** ** 16 3 * * * * 7 36 2 14 2 1021.0 * * * *							
CASST DEPTH	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INORG. P	TOTAL P	NITRATE
1 0 17.12	35.320	25.73	***	***	***	***	***
1 10 17.35	35.330	25.72	***	***	***	***	***
1 20 17.31+	35.350	25.73	***	***	***	***	***
1 30 17.29	35.400	25.77	5.08	93	***	***	***
1 40 17.35	35.480*	25.82	***	***	***	***	***
1 50 17.37	35.390	25.74	4.70	86	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE			
M 7/ 155/64	27/ 7/63	0750 K	33 17 S	151 49 E			
SONIC AIR TEMP, WIND DIR, SP, WIND DIR, SP, ANEM, CLOUD TYPE AMT, VIS, SEA DIR, AMT, SWELL DIR, AMT, ATMOS, PRESSURE CAST1 CAST2 CAST3							
DEPTH MET DRY							
119 *** ** 36 5 * * * * 7 36 2 14 2 1021.0 * * * *							
CASST DEPTH	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INORG. P	TOTAL P	NITRATE
1 0 17.28	35.320	25.71	***	***	***	***	***
1 10 17.30	35.340	25.72	***	***	***	***	***
1 20 17.35	35.370	25.73	***	***	***	***	***
1 30 17.50	35.410	25.73	5.19	95	***	***	***
1 40 17.63	35.400	25.69	***	***	***	***	***
1 50 17.57	35.440	25.73	4.89	90	***	***	***
1 75 17.66	35.120	25.47	***	***	***	***	***
1 100 17.89	35.460	25.72	4.66	86	***	***	***

* PROPERTY DOUTFUL
 * PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE					
7/ 156/63	27/ 7/63	0900 K	33 17 S	151 56 E					
SONIC AIR TEMP.	WIND DIR, SP.	WIND ANEM. HEIGHT	CLOUD TYPE	AMT.	VIS.	SEA DIR, AMT.	SWELL DIR, AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
139 ***	*** 34 3	*	*	*	7	36 2	14 2	1021.0	* * *
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE	
1	18.46	35.080	25.24	***	***	***	***	***	
10	18.43	35.440	25.52	***	***	***	***	***	
1	18.42	35.480*	25.51	***	***	***	***	***	
1	18.40	35.440	25.53	5.25	98	***	***	***	
1	18.46	35.440*	25.51	***	***	***	***	***	
1	18.44	35.440	25.52	5.27	99	***	***	***	
1	18.35	35.440	25.54	***	***	***	***	***	
1	18.25	35.480	25.60	5.15	96	***	***	***	
1	18.19	35.510	25.63	5.03	94	***	***	***	

STATION	DATE	TIME	LATITUDE	LONGITUDE					
7/ 157/63	27/ 7/63	1010 K	33 17 S	152 03 E					
SONIC AIR TEMP.	WIND DIR, SP.	WIND ANEM. HEIGHT	CLOUD TYPE	AMT.	VIS.	SEA DIR, AMT.	SWELL DIR, AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
146 ***	*** 34 3	*	*	*	7	36 2	14 2	1021.0	* * *
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE	
1	18.61	35.440	25.47	***	***	***	***	***	
1	18.63	35.440	25.47	***	***	***	***	***	
1	18.61	35.440	25.48	***	***	***	***	***	
1	18.60	35.480	25.51	5.14	97	***	***	***	
1	18.62	35.490	25.51	***	***	***	***	***	
1	18.60	35.490	25.51	5.19	98	***	***	***	
1	18.57	35.500	25.53	***	***	***	***	***	
1	18.60	35.500	25.52	5.19	98	***	***	***	
1	18.49	35.500	25.55	5.03	94	***	***	***	

* PROPERTY DOUBTFUL
* PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 M 7/164/63 28/7/63 0955 K 32 27 S 152 50 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 123 *** ** 34 4 * * * * 7 34 3 14 2 1015.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 18.08 35.490 25.65 *** *** *** ***
 1 10 18.10 35.480 25.63 *** *** *** ***
 1 20 18.04 35.480 25.65 *** *** *** ***
 1 30 18.11 35.490 25.64 4.80 *** *** *** ***
 1 40 17.89 35.480 25.68 *** *** *** ***
 1 50 17.60 35.500 25.77 5.17 *** *** *** ***
 1 75 17.26 35.490 25.85 *** *** *** ***
 1 100 16.61 35.440 25.96 87 *** *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 M 7/165/63 28/7/63 1055 K 32 27 S 152 55 E

SONIC AIR TEMP. WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 220 *** ** 34 4 * * * * 7 34 3 14 2 1014.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 18.10 35.500 25.65 *** *** *** ***
 1 25 17.67 35.500 25.70 *** *** *** ***
 1 50 17.69 35.520 25.76 5.14 *** *** *** ***
 1 75 14.98 35.480 25.90 *** *** *** ***
 1 100 16.19 35.440 26.06 4.75 *** *** *** ***
 1 125 15.61 35.400 26.16 *** *** *** ***
 1 150 14.87 35.350 26.29 4.30 *** *** *** ***
 1 175 14.81 35.340 26.29 *** *** *** ***
 1 200 14.53 35.300 26.32 79 *** *** *** ***

STATION N 7/ 166/63 DATE 28/ 7/63 TIME 1155 K LATITUDE 32 27 S LONGITUDE 153 00 E

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

762 *** *** 36 4 * * * * 7 36 3 14 2 1012.0 20 * *

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

1	0	17.91	35.550	25.73	***	***	***	***	***	***
1	25	17.77	35.500	25.73	***	***	***	***	***	***
1	50	17.14	35.480	25.87	5.39	98	***	***	***	***
1	75	16.56	35.460	25.99	***	***	***	***	***	***
1	100	16.28	35.420	26.18	5.05	91	***	***	***	***
1	150	15.30	35.400	26.23	***	***	***	***	***	***
1	200	14.25	35.310	26.39	79	74	***	***	***	***
1	300	12.16	35.080	26.64	4.50	74	***	***	***	***
1	500	9.17	34.670	26.85	4.52	70	***	***	***	***

STATION N 7/ 167/63 DATE 29/ 7/63 TIME 0630 K LATITUDE 31 50 S LONGITUDE 152 50 E

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

59 *** *** 36 2 * * * * 7 36 2 05 1 1011.0 * * *

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

1	0	17.69	35.480	25.73	***	***	***	***	***	***
1	10	17.76	35.480	25.72	***	***	***	***	***	***
1	30	17.70	35.460*	25.72	***	***	***	***	***	***
1	30	17.57	35.440	25.73	5.14	95	***	***	***	***
1	40	17.49	35.440	25.75	***	***	***	***	***	***
1	50	17.35	35.440	25.78	4.13	76	***	***	***	***

* PROPERTY DOUBTFUL
 + PROPERTY INTERPOLATED

STATION N 7/ 168/63 DATE 29/ 7/63 TIME 0715 K LATITUDE 31 50 S LONGITUDE 152 55 E

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

93 *** ** 36 2 * * * * 7 36 2 05 1 1011.0 * * * *

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

1 0 18.11 35.500 *** 25.65 *** *** ***

1 10 18.08 35.470 *** 25.63 *** *** ***

1 20 18.09 35.470 *** 25.63 *** *** ***

1 30 18.00 35.460 *** 25.64 90 4.86 *** *** ***

1 40 17.76 35.440 *** 25.69 *** *** ***

1 50 17.53 35.430 *** 25.74 82 4.47 *** *** ***

1 75 15.64 35.390 *** 26.15 74 4.20 *** *** ***

STATION N 7/ 169/63 DATE 29/ 7/63 TIME 0805 K LATITUDE 31 50 S LONGITUDE 153 00 E

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

102 *** ** 34 2 * * * * 7 34 1 05 1 1012.0 * * * *

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

1 0 18.08 35.450 *** 25.62 *** *** ***

1 10 18.11 35.480 *** 25.63 *** *** ***

1 20 17.80 35.540 *** 25.75 *** *** ***

1 30 17.53 35.530 *** 25.81 87 4.75 *** *** ***

1 40 17.41 35.480 *** 25.80 *** *** ***

1 50 18.06 35.440 *** 25.88 83 4.59 *** *** ***

1 75 18.64 35.390 *** 26.15 *** *** ***

1 90 15.65 35.390 *** 26.14 79 4.47 *** *** ***

STATION M 7/ 170/63 DATE 29/ 7/63 TIME 0907 K LATITUDE 31 50 S LONGITUDE 153 05 E

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

165 *** ** 34 2 * * * 7 34 1 05 1 1012.0 * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN X SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.11	35.460	25.62	***	***	***	***	***
1	10	17.95	35.530	25.71	***	***	***	***	***
1	20	17.60	35.480	25.76	***	***	***	***	***
1	30	17.28	35.450	25.81	4.57	84	***	***	***
1	40	17.15	35.450	25.84	***	***	***	***	***
1	50	16.87	35.440	25.90	4.69	85	***	***	***
1	75	16.71	35.410	25.92	***	***	***	***	***
1	100	16.05	35.410	26.07	4.47	80	***	***	***
1	150	14.63	35.300	26.30	4.48	78	***	***	***

STATION M 7/ 171/63 DATE 29/ 7/63 TIME 1000 K LATITUDE 31 50 S LONGITUDE 153 10 E

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

274 *** ** 34 2 * * * 7 34 1 05 1 1012.0 * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN X SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.43	35.900	25.52	***	***	***	***	***
1	25	18.31	35.500	25.60	***	***	***	***	***
1	50	17.70	35.500	25.75	4.80	89	***	***	***
1	75	16.56	35.490	26.01	***	***	***	***	***
1	100	16.26	35.480	26.07	4.47	80	***	***	***
1	150	15.23	35.370	26.23	***	***	***	***	***
1	200	14.58	35.300	26.31	4.50	78	***	***	***
1	250	12.86	35.130	26.54	4.58	76	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 F 7/ 172/63 29/ 7/63 1025 K 31 50 S 153 14 E

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

841 *** ** 36 3 * * * 7 36 2 05 1 1012.0 * * *

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

1 0 18.13 35.500 25.64 *** ** ** **

1 25 18.01 35.500 25.67 *** ** ** **

1 50 17.98 35.510 25.68 *** 100 *** ** **

1 75 17.16 35.500 25.88 *** ** ** **

1 100 14.70 35.500 25.99 98 *** ** **

1 150 16.06 35.500 26.13 *** ** ** **

1 200 19.02 35.370 26.27 83 *** ** **

1 300 17.48 35.100 26.59 77 *** ** **

1 500 8.92 34.670 26.89 70 *** ** **

STATION DATE TIME LATITUDE LONGITUDE
 F 7/ 176/63 1/ 8/63 0735 K 34 05 S 151 13 E

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

68 *** ** 27 3 * * * 7 27 1 14 1 1024.0 * * *

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

1 0 16.91 35.410 25.87 *** ** ** **

1 10 16.92 35.400 25.86 *** ** ** **

1 20 16.91 35.390 25.85 *** ** ** **

1 30 16.89 35.390 25.86 95 5.25 *** ** **

1 40 16.90 35.400 25.86 *** ** ** **

1 50 16.91 35.400 25.86 94 5.19 *** ** **

STATION DATE TIME LATITUDE LONGITUDE
 Y 7/ 177/63 1/ 8/63 0840 K 34 05 S 151 18 E

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

132 *** ** 27 3 * * * 7 27 1 14 1 1024.0 * * * *

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

1	0	17.31	35.440	25.79	***	***	***	***	***	***	***
1	10	17.33	35.440	25.79	***	***	***	***	***	***	***
1	20	17.32	35.440	25.79	***	***	***	***	***	***	***
1	30	17.25	35.440	25.81	5.11	93	***	***	***	***	***
1	40	17.22	35.410	25.80	***	***	***	***	***	***	***
1	50	17.15	35.410	25.81	5.19	95	***	***	***	***	***
1	75	16.88	35.370	25.84	***	***	***	***	***	***	***
1	100	16.74	35.370	25.86	5.11	92	***	***	***	***	***
1	125	16.58	35.350	25.90	4.80	87	***	***	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 Y 7/ 178/63 1/ 8/63 0930 K 34 05 S 151 23 E

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

146 *** ** 27 3 * * * 7 27 2 14 1 1024.0 * * * *

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

1	0	18.06	35.550	25.70	***	***	***	***	***	***	***
1	10	18.10	35.550	25.69	***	***	***	***	***	***	***
1	20	18.11	35.500	25.64	***	***	***	***	***	***	***
1	30	18.06	35.500	25.66	5.09	95	***	***	***	***	***
1	40	18.12	35.530	25.67	***	***	***	***	***	***	***
1	50	18.11	35.500	25.65	5.08	95	***	***	***	***	***
1	75	17.87	35.520	25.72	***	***	***	***	***	***	***
1	100	17.43	35.500	25.81	4.52	83	***	***	***	***	***
1	125	16.82	35.410	25.89	4.66	84	***	***	***	***	***

STATION	DATE	TIME	LATITUDE		LONGITUDE				
P 7/ 161763	1/ 8/63	1240 K	34 05 S		151 37 E				
SONIC AIR TEMP. WIND. ANEM. CLOUD SWELL. ATMOS. WIRE ANGLES									
DEPTH WET DRY DIR. SP.	HEIGHT	TYPE	AMT.	DIR. AMT.	PRESSURE	CAS1 CAS2 CAS3			
512 *** ** 27 3	*	*	*	14 1	1022.0	* * *			
CAS1	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.91	35.550	25.73	***	***	***	***	***
1	25	17.86	35.530	25.73	***	***	***	***	***
1	50	17.90	35.520	25.71	9.98	103	***	***	***
1	75	17.82	35.520	25.73	***	***	***	***	***
1	100	17.83	35.510	25.72	5.39	100	***	***	***
1	130	16.66	35.450	25.96	***	***	***	***	***
1	200	15.68	35.370	26.12	4.75	84	***	***	***
1	300	12.79	35.170	26.58	4.80	80	***	***	***
1	500	10.06	35.030	26.98	4.80	75	***	***	***

STATION	DATE	TIME	LATITUDE		LONGITUDE				
P 8/ 182763	14/ 8/63	0657 K	34 05 S		151 13 E				
SONIC AIR TEMP. WIND. ANEM. CLOUD SWELL. ATMOS. WIRE ANGLES									
DEPTH WET DRY DIR. SP.	HEIGHT	TYPE	AMT.	DIR. AMT.	PRESSURE	CAS1 CAS2 CAS3			
64 *** ** 27 2	*	*	*	05 3	1017.0	* * *			
CAS1	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.34	35.390	25.99	***	***	***	***	***
1	10	16.36	35.440	26.02	***	***	***	***	***
1	20	16.30	35.440	26.03	***	***	***	***	***
1	30	16.35	35.440	26.02	4.99	90	***	***	***
1	40	16.31	35.440	26.03	***	***	***	***	***
1	50	16.21	35.440	26.06	4.82	86	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE			
M R 183/63	14/ 8/63	0745 K	34 05 S	151 18 E			
SONIC AIR TEMP.	WIND DIR, SP.	WIND ANEM. HEIGHT	CLOUD TYPE AMT.	SEA DIR, AMT.	SWELL DIR, AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
130 ***	*** 28 2	* * *	* * *	7 28 1	05 3	1018.0	* * *
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CAYGEN % SAT.	INORG. P	TOTAL P NITRATE
1	0 16.87	35.500	25.95	***	***	***	***
1	10 16.88	35.500	25.95	***	***	***	***
1	20 16.85	35.500	25.95	***	***	***	***
1	30 16.85	35.530	25.97	5.25	95	***	***
1	40 16.84	35.530	25.98	***	***	***	***
1	50 16.81	35.520	26.02	4.68	85	***	***
1	75 16.31	35.520	26.09	***	***	***	***
1	100 16.36	35.500	26.07	4.74	85	***	***
1	125 16.33	35.480	26.06	4.65	84	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M R 184/63	14/ 8/63	0840 K	34 05 S	151 23 E

SONIC AIR TEMP.	WIND DIR, SP.	WIND ANEM. HEIGHT	CLOUD TYPE AMT.	SEA DIR, AMT.	SWELL DIR, AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3
140 ***	*** 28 2	* * *	* * *	7 28 1	05 3	1018.0	* * *
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	UXYGEN % SAT.	INORG. P	TOTAL P NITRATE
1	0 17.00	35.500	25.92	***	***	***	***
1	10 16.98	35.900	25.92	***	***	***	***
1	20 16.94	35.550	25.97	***	***	***	***
1	30 16.97	35.550	25.96	5.27	96	***	***
1	40 16.81	35.530	25.98	***	***	***	***
1	50 16.75	35.590	26.04	4.71	85	***	***
1	75 16.53	35.520	26.04	***	***	***	***
1	100 16.54	35.520	26.04	4.71	85	***	***
1	125 16.23	35.440	26.05	4.65	83	***	***

STATION DATE TIME LATITUDE LONGITUDE
 N 8/ 187/63 14/ 8/63 1142 K 34 05 S 151 37 E

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

732 *** ** 28 2 * * * 7 28 2 05 3 1017.0 * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INORG. P	TOTAL P	NITRATE
1	0	14.06	35.620	25.75	***	***	***	***	***
1	25	18.04	35.610	25.75	***	***	***	***	***
1	50	17.66	35.590	25.83	4.20	78	***	***	***
1	75	17.36	35.520	25.84	***	***	***	***	***
1	100	17.21	35.570	25.92	5.02	92	***	***	***
1	150	17.05	35.610	25.99	***	***	***	***	***
1	200	14.79	35.530	25.99	4.91	89	***	***	***
2	300	14.29	35.340	24.41	4.34	75	***	***	***
2	500	10.46	34.900	24.81	4.45	70	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 N 8/ 188/63 19/ 8/63 0610 K 34 40 S 150 55 E

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

68 *** ** 18 1 * * * 7 18 1 14 1 1021.0 * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INORG. P	TOTAL P	NITRATE
1	0	15.63	35.390	26.15	***	***	***	***	***
1	10	15.47	35.430	26.17	***	***	***	***	***
1	20	15.67	35.430	26.17	***	***	***	***	***
1	30	15.55	35.410	26.18	4.68	83	***	***	***
1	40	15.47	35.410	26.20	***	***	***	***	***
1	50	15.52	35.370*	26.16	4.65	82	***	***	***

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE					
M 8/ 199/63	19/ 8/63	0700 K	34 40 S	151 00 E					
SONIC AIR TEMP.	WIND	ANEM.	CLOUD	WIRE ANGLES					
DEPTH MET DRY	DIR. SP.	HEIGHT	TYPE	CAST1 CAST2 CAST3					
123 ***	13 3	*	* * *	* * *					
		VIS.	SEA DIR. AMT.	ATMOS. PRESSURE					
		7	18 2 14 1	1021.0					
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.95	35.530	25.95	***	***	***	***	***
1	10	16.95	35.530	25.95	***	***	***	***	***
1	20	16.93	35.530	25.95	***	***	***	***	***
1	30	16.61	35.530	26.03	5.53	100	***	***	***
1	40	14.35	35.500	26.07	***	***	***	***	***
1	50	14.16	35.460	26.08	5.13	92	***	***	***
1	75	18.95	35.430	26.11	***	***	***	***	***
1	100	18.76	35.430	26.15	4.79	85	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
M 8/ 190/63	19/ 8/63	0750 K	34 40 S	151 05 E					
SONIC AIR TEMP.	WIND	ANEM.	CLOUD	WIRE ANGLES					
DEPTH MET DRY	DIR. SP.	HEIGHT	TYPE	CAST1 CAST2 CAST3					
139 ***	13 3	*	* * *	* * *					
		VIS.	SEA DIR. AMT.	ATMOS. PRESSURE					
		7	18 2 14 1	1022.0					
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.88	35.530	25.73	***	***	***	***	***
1	10	17.88	35.520	25.72	***	***	***	***	***
1	20	17.76	35.530+	25.75	***	***	***	***	***
1	30	17.53	35.530+	25.81	5.05	93	***	***	***
1	40	17.29	35.550	25.89	***	***	***	***	***
1	50	17.25	35.530	25.88	4.77	87	***	***	***
1	75	17.22	35.930+	25.89	***	***	***	***	***
1	100	17.26	35.520	25.87	4.91	90	***	***	***
1	125	17.23	35.520	25.86	4.85	89	***	***	***

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION 19/ 8/63 19/ 8/63 DATE 0945 K 34 40 S LATITUDE 151 10 E LONGITUDE

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

220 *** ** 13 4 * * * 7 18 3 14 1 1022.0 * * * * *

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

1	0	17.75	35.440	25.69	***	***	***	***	***	***	***
1	25	17.76	35.440	25.69	***	***	***	***	***	***	***
1	50	17.72	35.590	25.81	5.05	93	***	***	***	***	***
1	75	17.70	35.610	25.83	***	***	***	***	***	***	***
1	100	17.44	35.920	25.83	5.13	94	***	***	***	***	***
1	125	17.48	35.970	25.85	***	***	***	***	***	***	***
2	150	17.25	35.530	25.88	4.85	89	***	***	***	***	***
2	175	17.04	35.150	25.91	***	***	***	***	***	***	***
2	200	14.93	35.430	25.88	4.60	84	***	***	***	***	***

STATION 19/ 8/63 19/ 8/63 DATE 0948 K 34 40 S LATITUDE 151 15 E LONGITUDE

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

457 *** ** 18 4 * * * 7 18 3 14 1 1023.0 * * * * *

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

1	0	14.00	35.930	25.70	***	***	***	***	***	***	***
1	25	17.91	35.550	25.73	***	***	***	***	***	***	***
1	50	17.97	35.550	25.72	5.05	94	***	***	***	***	***
1	75	17.94	35.550	25.73	***	***	***	***	***	***	***
1	100	17.48	35.920+	25.84	4.85	89	***	***	***	***	***
2	150	17.41	35.550	25.86	***	***	***	***	***	***	***
2	200	17.37	35.550	25.87	4.79	88	***	***	***	***	***
2	300	15.63	35.340	26.11	4.20	74	***	***	***	***	***

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE		LONGITUDE	
N 8/ 193/63	19/ 8/63	1053 K	34	40 S	151	20 E
SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES						
DEPTH MET DRY DIR. SP.	DIR. SP.	HEIGHT	TYPE	AMT.	DIR. AMT.	DIR. AMT.
968 *** **	1d 3	*	*	*	14 1	1023.0
VIS. SEA ATMOS. PRESSURE CAST1 CAST2 CAST3						
					7 18 2	* * *
CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN CAYGEN % SAT. INORG. P TOTAL P NITRATE						
1	0	16.04	35.550	25.70	***	***
1	25	16.01	35.610	25.76	***	***
1	50	17.90	35.620	25.78	93	***
1	75	17.94	35.620	25.78	***	***
1	100	17.98	35.620	25.77	95	***
1	150	17.99	35.610	25.76	***	***
2	200	17.50	35.610	25.88	78	***
2	300	8.93	34.650	26.88	68	***
2	500	7.27	34.560	27.05	61	***

STATION	DATE	TIME	LATITUDE		LONGITUDE	
N 8/ 195/63	20/ 8/63	0605 K	35	07 S	150	50 E
SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES						
DEPTH MET DRY DIR. SP.	DIR. SP.	HEIGHT	TYPE	AMT.	DIR. AMT.	DIR. AMT.
110 *** **	27 1	*	*	*	14 2	1022.0
VIS. SEA ATMOS. PRESSURE CAST1 CAST2 CAST3						
					7 27 *	* * *
CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN CAYGEN % SAT. INORG. P TOTAL P NITRATE						
1	0	15.61	35.520	26.25	***	***
1	10	15.64	35.520	26.25	***	***
1	20	15.63	35.500	26.23	***	***
1	30	15.61	35.460	26.21	90	***
1	40	15.68	35.440	26.18	***	***
1	50	15.33	35.440	26.26	88	***
1	75	13.27	35.260	26.56	***	***
1	100	12.12	35.230	26.76	80	***

STATION DATE TIME LATITUDE LONGITUDE
 N 8/ 196/63 20/ 8/63 0700 K 35 07 S 150 55 E

SONIC AIR TEMP. WIND ANEM. CLOUD SIGMA-T ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT. VIS. DIR. AMT. DIR. AMT. PRESSURE CASTI CAS2 CAS3

135 *** ** 27 1 * * * * 7 27 1 14 2 1023.0 * * * *

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

1 0 17.10 35.610 25.98 *** ** ** **

1 10 14.95 35.550 25.96 *** ** ** **

1 20 14.78 35.530 25.99 *** ** ** **

1 30 14.70 35.520 26.00 94 *** ** ** **

1 40 14.43 35.480 25.99 *** ** ** **

1 50 14.54 35.460 25.99 92 *** ** ** **

1 75 14.54 35.480 25.99 *** ** ** **

1 100 14.37 35.520 26.08 90 *** ** ** **

1 125 11.14 35.350 26.65 83 *** ** ** **

STATION DATE TIME LATITUDE LONGITUDE
 N 8/ 197/63 20/ 8/63 0750 K 35 07 S 151 00 E

SONIC AIR TEMP. WIND ANEM. CLOUD SIGMA-T ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT. VIS. DIR. AMT. DIR. AMT. PRESSURE CASTI CAS2 CAS3

165 *** ** 00 0 * * * * 7 * * * 14 2 1023.0 * * * *

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

1 0 17.62 35.610 25.85 *** ** ** **

1 10 17.63 35.610 25.85 *** ** ** **

1 20 17.58 35.610 25.86 *** ** ** **

1 30 17.55 35.990 25.85 95 *** ** ** **

1 40 17.51 35.550 25.83 *** ** ** **

1 50 17.46 35.530 25.83 93 *** ** ** **

1 75 14.53* 35.570* 26.08 *** ** ** **

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 N 8/ 198/63 20/ 8/63 0840 K 35 07 S 151 05 E

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

786 *** 04 1 * * * 7 * * 14 2 1023.0 * * *
 CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN CXYGEN % SAT, INORG. P TOTAL P NITRATE
 1 0 17.50 35.570 25.85 *** *** ***
 1 25 17.50 35.570 25.85 *** *** ***
 1 50 17.45 35.550 25.85 5.08 93 *** *** ***
 1 75 17.37 35.530 25.84 *** *** ***
 1 100 17.34 35.530 25.86 5.10 94 *** *** ***
 1 150 17.10 35.550 25.92 *** *** ***
 2 200 14.93* 35.550* 25.97 4.82* 88 *** *** ***
 2 300 12.26* 35.190* 24.71 4.77* 79 *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 N 8/ 199/63 20/ 8/63 0950 K 35 07 S 151 10 E

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

1372 *** 04 1 * * * 7 * * 14 2 1023.0 * 15 *
 CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN CXYGEN % SAT, INORG. P TOTAL P NITRATE
 1 0 17.83 35.610 25.80 *** *** ***
 1 25 17.51 35.610 25.80 *** *** ***
 1 50 17.56 35.570 25.81 5.16 95 *** *** ***
 1 75 17.59 35.590 25.84 *** *** ***
 1 100 17.55 35.610 25.87 5.27 97 *** *** ***
 1 150 17.13 35.590 25.95 *** *** ***
 2 200 14.06 35.920 26.15 4.43 79 *** *** ***
 2 300 14.16 35.350 26.44 4.40 76 *** *** ***
 2 500 9.94 34.870 26.88 4.46 70 *** *** ***

* PROPERTY DOUBTFUL
 + PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 M 8/ 200/63 20/ 8/63 1025 K 35 07 S 151 15 E

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

*** *** 04 1 * * * 7 * * 14 2 1023.0 15 * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.09	35.1610	25.74	***	***	***	***	***
1	25	17.93	35.1570	25.74	***	***	***	***	***
1	50	17.85	35.1570	25.76	5.08	94	***	***	***
1	75	17.82	35.1610	25.90	***	***	***	***	***
1	100	17.70	35.1620	25.84	5.19	96	***	***	***
1	150	17.42	35.1620	25.91	***	***	***	***	***
2	200	14.16	35.1520	26.13	4.46	80	***	***	***
2	300	13.92	35.1300	26.45	4.43	76	***	***	***
2	500	10.58	34.920	26.81	4.57	73	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 M 8/ 203/63 21/ 8/63 0620 K 35 50 S 150 17 E

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

73 *** 32 2 * * * 7 32 1 14 2 1020.0 * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.69	35.1530	26.24	***	***	***	***	***
1	10	19.66	35.1530	26.25	***	***	***	***	***
1	20	19.26	35.1500	26.32	***	***	***	***	***
1	30	13.95	35.1300	24.53	4.74	80	***	***	***
1	40	13.33	35.1350	26.62	***	***	***	***	***
1	50	13.24	35.1430	26.70	5.05	85	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 N R/ 204/63 21/ 8/63 0707 K 35 50 S 150 22 E

SONIC AIR TEMP, WIND ANEM, CLOUD SWELL ATMOS, WIRE ANGLER
 DEPTH NET DRY DIR, SP, HEIGHT TYPE AMT, DIR, AMT, PRESSURE CAST1 CAST2 CAST3

115 *** ** 2 * * * 7 32 1 14 2 1020.0 * * * *

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

1 0 19.44 35.440 26.23 *** *** ***

1 10 19.44 35.460 26.25 *** *** ***

1 20 19.19 35.460 26.30 *** *** ***

1 30 14.70 35.440 26.39 90 *** *** ***

1 40 14.09 35.390 26.49 *** *** ***

1 50 13.21 35.300 26.60 82 *** *** ***

1 75 13.06 35.430 26.73 *** *** ***

1 100 12.79 35.390 26.75 92 *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 P 8/ 205/63 21/ 8/63 0755 K 35 50 S 150 27 E

SONIC AIR TEMP, WIND ANEM, CLOUD SWELL ATMOS, WIRE ANGLER
 DEPTH NET DRY DIR, SP, HEIGHT TYPE AMT, DIR, AMT, PRESSURE CAST1 CAST2 CAST3

133 *** ** 1 * * * 7 32 1 14 2 1020.0 * * * *

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

1 0 19.80 35.500 26.19 *** *** ***

1 10 19.80 35.500 26.20 *** *** ***

1 20 19.64 35.480 26.22 *** *** ***

1 30 15.21 35.440 26.28 91 *** *** ***

1 40 14.36 35.410 26.44 *** *** ***

1 50 14.01 35.430 26.53 92 *** *** ***

1 75 13.17 35.370 26.66 *** *** ***

1 100 12.64 35.370 26.77 91 *** *** ***

1 125 12.87 35.520 26.84 93 *** *** ***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
Y 8/ 206/63	21/ 8/63	0645 K	35 50 S	150 22 E					
SONIC AIR TEMP.	WIND DIR. SP.	WIND ANEM. HEIGHT	CLOUD TYPE AMT.	SEA DIR. AMT. PRESSURE	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3			
DEPTH ***	36 2 *	* *	* *	7 36 1 14 2	1021.0	* * *			
CST	DEPTH	TEMP.	SALINITY	SIGMA=t	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.03	35.920	26.16	***	***	***	***	***
1	10	14.01	35.920	26.16	***	***	***	***	***
1	20	15.40	35.840	26.23	***	***	***	***	***
1	30	14.63	35.810	26.38	4.99	87	***	***	***
1	40	14.24	35.810	26.47	***	***	***	***	***
1	50	14.08	35.840	26.53	5.70	98	***	***	***
1	75	13.20	35.820	26.62	***	***	***	***	***
1	100	12.31	35.800	26.78	5.25	87	***	***	***
1	125	12.44	35.840	26.78	5.30	88	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
Y 8/ 207/63	21/ 8/63	0935 K	35 50 S	150 37 E					
SONIC AIR TEMP.	WIND DIR. SP.	WIND ANEM. HEIGHT	CLOUD TYPE AMT.	SEA DIR. AMT. PRESSURE	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3			
DEPTH ***	36 1 *	* *	* *	7 04 2 14 2	1020.0	* 10 *			
CST	DEPTH	TEMP.	SALINITY	SIGMA=t	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	15.45	35.860	26.24	***	***	***	***	***
1	25	15.20	35.860	26.30	***	***	***	***	***
1	50	14.74	35.830	26.38	5.22	91	***	***	***
1	75	13.76	35.870	26.54	***	***	***	***	***
1	100	13.00	35.870	26.70	5.33	89	***	***	***
1	150	12.32	35.800	26.78	***	***	***	***	***
2	200	12.24	35.800	26.79	***	***	***	***	***
2	300	12.62*	35.840*	26.83	5.22	86	***	***	***
2	500	11.51	35.880	26.92	5.33	89	***	***	***

* PROPERTY DOUBTFUL
+ PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 * 8/ 208/63 21/ 8/63 1045 K 35 50 S 150 42 E

SONIC AIR TEMP, WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 WET DRY DIR, SP, HEIGHT TYPE AMT, DIR, AMT, PRESSURE CAST1 CAST2 CAST3
 *** ** 04 3 * * * * 7 04 2 14 2 1020.0 15 * *

CST DEPTH TEMP, SALINITY SIGMA-t OXYGEN CXYGEN % SAT, INORG. P TOTAL P NITRATE
 1 0 15.97 35.460 26.113 *** *** ***
 1 25 15.87 35.460 26.115 *** *** ***
 1 50 15.77 35.460 26.117 93 *** *** ***
 1 75 15.12 35.440 26.130 *** *** ***
 1 100 13.77 35.320 26.150 83 *** *** ***
 1 150 11.80 35.170 26.178 *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 * 8/ 211/63 23/ 8/63 0615 K 36 25 S 150 09 E

SONIC AIR TEMP, WIND ANEM. CLOUD VIS. SEA SWELL ATMOS. WIRE ANGLES
 WET DRY DIR, SP, HEIGHT TYPE AMT, DIR, AMT, PRESSURE CAST1 CAST2 CAST3
 *7 *** ** 25 1 * * * * 7 00 0 04 3 1019.0 * * *

CST DEPTH TEMP, SALINITY SIGMA-t OXYGEN CXYGEN % SAT, INORG. P TOTAL P NITRATE
 1 0 13.53 35.440 26.164 *** *** ***
 1 10 13.53 35.500 26.169 *** *** ***
 1 20 13.46 35.460 26.167 *** *** ***
 1 30 13.29 35.460 26.171 92 *** *** ***
 1 40 13.02 35.480 26.178 *** *** ***
 1 50 13.03 35.480 26.178 91 *** *** ***

STATION P 8/ 219/63 DATE 24/ 8/63 TIME 0615 K LATITUDE 37 04 S LONGITUDE 150 00 E

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

66 *** ** 24 2 * * * 7 24 1 14 2 1023.0 * * * *

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

1 0 13.12 35.480 26.76 *** ** ** ** **

1 10 13.15 35.460 26.74 *** ** ** ** * * *

1 20 13.08 35.460 26.75 *** ** ** ** * * *

1 30 13.02 35.460 26.76 5.70 96 *** ** ** ** * * *

1 40 13.00* 35.530* 26.82 *** ** ** ** * * *

1 50 13.05* 35.460 26.76 5.98 100 *** ** ** ** * * *

STATION P 8/ 220/63 DATE 24/ 8/63 TIME 0700 K LATITUDE 37 04 S LONGITUDE 150 05 E

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

60 *** ** 24 1 * * * 7 24 1 14 2 1023.0 * * * *

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

1 0 13.46 35.430 26.65 *** ** ** ** * * *

1 10 13.43 35.440 26.66 *** ** ** ** * * *

1 20 13.42 35.340 26.59 *** ** ** ** * * *

1 30 13.52 35.260 26.71 5.44 90 *** ** ** ** * * *

1 40 11.93 35.190 26.77 *** ** ** ** * * *

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION N 8/ 221/63 DATE 24/ 8/63 TIME 0742 K LATITUDE 37 04 S LONGITUDE 150 10 E

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

95 *** ** 24 1 * * * * 7 00 0 14 2 1024.0 * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.49	35.440	26.65	***	***	***	***	***
1	10	13.48	35.440	26.65	***	***	***	***	***
1	20	13.39	35.440	26.67	***	***	***	***	***
1	30	12.53	35.320	26.75	93	***	***	***	***
1	40	11.87	35.170	26.76	***	***	***	***	***
1	50	11.61	35.170	26.81	88	***	***	***	***

STATION N 8/ 222/63 DATE 24/ 8/63 TIME 0835 K LATITUDE 37 04 S LONGITUDE 150 15 E

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

121 *** ** 00 0 * * * * 7 00 0 14 2 1024.0 * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.65	35.430	26.61	***	***	***	***	***
1	10	13.60	35.430	26.62	***	***	***	***	***
1	20	13.56	35.430	26.63	***	***	***	***	***
1	30	13.49	35.430	26.64	6.18	105	***	***	***
1	40	13.38	35.440	26.67	***	***	***	***	***
1	50	13.17	35.460	26.73	6.27	106	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 # 8/ 212/63 23/ 8/63 0710 K 36 25 S 150 14 E

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

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN X SAT,	INORG. P	TOTAL P	NITRATE
1	0	13.62	35.440	26.62	***	***	***	***	***
1	10	***	35.460	***	***	***	***	***	***
1	20	13.37	35.480	26.71	***	***	***	***	***
1	30	13.24	35.500	26.75	6.03	102	***	***	***
1	40	13.25	35.500	26.75	***	***	***	***	***
1	50	13.16	35.500	26.77	5.87	99	***	***	***
1	75	12.83	35.460	26.80	***	***	***	***	***
1	100	12.81	35.460	26.81	5.87	98	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 # 8/ 213/63 23/ 8/63 0805 K 36 25 S 150 19 E

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

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN X SAT,	INORG. P	TOTAL P	NITRATE
1	0	14.26	35.440	26.49	***	***	***	***	***
1	10	14.16	35.460	26.51	***	***	***	***	***
1	20	14.04	35.480	26.54	***	***	***	***	***
1	30	13.55	35.410	26.62	5.75	98	***	***	***
1	40	13.00	35.340	26.68	***	***	***	***	***
1	50	12.82	35.280	26.66	5.14	87	***	***	***
1	100	12.43*	35.260*	26.73	5.25*	87	***	***	***

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 # 8/ 24/63 23/ 8/63 0900 K 36 25 S 150 24 E

SONIC AIR TEMP. WIND ANEM. CLOUD WIRE ANGL
 DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. SEA DIR. AMT. PRESSURE CAST1 CAST2 CAST3

1024 *** ** 15 2 * * * 7 15 2 14 3 1021.0 * 15 *

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

1	0	14.38	35.460	26.26	***	***	***	***	***	***	***
1	25	14.39	35.410	26.44	***	***	***	***	***	***	***
1	50	13.81	35.410	26.56	5.50	94	***	***	***	***	***
1	75	13.36	35.350	26.60	***	***	***	***	***	***	***
1	100	12.75	35.260	26.66	9.16	86	***	***	***	***	***
1	150	11.91	35.170	26.76	***	***	***	***	***	***	***
2	200	11.39	35.080	26.84	5.41	87	***	***	***	***	***
2	500	10.32*	34.990*	26.91	5.44*	86	***	***	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 # 8/ 215/63 23/ 8/63 1010 K 36 25 S 150 29 E

SONIC AIR TEMP. WIND ANEM. CLOUD WIRE ANGL
 DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. SEA DIR. AMT. PRESSURE CAST1 CAST2 CAST3

*** ** 15 2 * * * 7 15 2 14 3 1022.0 * * *

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

1	0	13.59	35.500	26.22	***	***	***	***	***	***	***
1	25	13.24	35.500	26.32	***	***	***	***	***	***	***
1	50	14.41	35.440	26.46	5.27	91	***	***	***	***	***
1	75	13.54	35.350	26.57	***	***	***	***	***	***	***
1	100	13.19	35.300	26.60	5.13	86	***	***	***	***	***
1	150	12.57	35.210	26.72	***	***	***	***	***	***	***
2	200	11.08	35.100	26.86	5.19	83	***	***	***	***	***
2	500	8.95	34.700	26.91	5.30	81	***	***	***	***	***

* PROPERTY DOUBTFUL
 + PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 Y 8/ 223/63 24/ 8/63 0935 K 37 04 S 150 20 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 238 *** 04 1 * * * * 7 00 0 14 2 1024.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN CYGEN % SAT. INCRG. P TOTAL P NITRATE
 1 0 14.26 35.440 26.49. *** *** ***
 1 25 13.87 35.430 *** *** ***
 1 50 13.72 35.440 26.50 *** *** ***
 1 75 13.26 35.440 26.60 6.23 106 *** *** ***
 1 100 13.04 35.440 26.70 *** *** ***
 1 125 12.60 35.390 26.74 6.03 101 *** *** ***
 1 150 *** 35.260 26.79 *** *** ***
 1 *** 3.39 *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 Y 8/ 224/63 24/ 8/63 1030 K 37 04 S 150 25 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 *** 04 2 * * * * 7 04 1 14 2 1024.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN CYGEN % SAT. INCRG. P TOTAL P NITRATE
 1 0 15.19 35.460 26.30 *** *** ***
 1 25 14.59 35.440 26.42 *** *** ***
 1 50 14.10 35.440 26.52 5.89 101 *** *** ***
 1 75 13.49 35.370 26.60 *** *** ***
 1 100 13.00 35.350 26.67 5.33 89 *** *** ***
 1 150 11.42 35.080 26.78 *** *** ***
 2 200 11.25 35.070 26.81 *** *** ***
 2 300 *** 34.880 26.81 5.16 83 *** *** ***
 2 500 *** 35.080* 5.30 *** *** ***
 *** 5.58 *** *** ***

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 * 9/248/63 17/ 9/63 0625 K 36 25 S 150 09 E

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

59 *** ** 2 * * * 7 26 1 14 2 1002.0 * * * *

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

1	0	13.56	35.410	26.61	***	***	***	***	***	***	***
1	10	13.57	35.410	26.61	***	***	***	***	***	***	***
1	20	13.53	35.410	26.62	***	***	***	***	***	***	***
1	30	13.51	35.410	26.62	6.65	113	***	***	***	***	***
1	40	13.45	35.410	26.64	***	***	***	***	***	***	***
1	50	13.37	35.410	26.65	6.22	105	***	***	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 * 9/249/63 17/ 9/63 0710 K 36 25 S 150 14 E

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

119 *** ** 2 * * * 7 26 1 14 2 1002.0 * * * *

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

1	0	13.52	35.410	26.62	***	***	***	***	***	***	***
1	10	13.52	35.410	26.62	***	***	***	***	***	***	***
1	20	13.48	35.410	26.64	***	***	***	***	***	***	***
1	30	13.42	35.410	26.64	6.53	110	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE											
9/ 250/63	17/ 9/63	0805 K	36 25 S	150 19 E											
SONIC AIR TEMP.	WIND DIR.	SP. WIND	ANEM. HEIGHT	CLOUD TYPE	AMT.	VIS.	SEA DIR.	AMT.	SWELL DIR.	AMT.	ATMOS. PRESSURE	CAST1	CAST2	CAST3	WIRE ANGLES
DEPTH ***	***	23	5	*	*	7	23	2	14	2	1004.0	*	*	*	*
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CAYGEN % SAT.	INORG. P	TOTAL P	NITRATE						
1	0	15.27	35.480	26.30	***	***	***	***	***						
1	10	15.09	35.440	26.31	***	***	***	***	***						
1	20	14.68	35.430	26.39	***	***	***	***	***						
1	30	14.20	35.410	26.47	6.53	112	***	***	***						
1	40	13.71	35.410	26.58	***	***	***	***	***						
1	50	13.62	35.410	26.60	6.20	105	***	***	***						
1	75	13.54	35.430	26.63	***	***	***	***	***						
1	100	13.04	35.430	26.74	6.47	109	***	***	***						
1	150	12.91	35.390	26.73	6.22	104	***	***	***						

STATION	DATE	TIME	LATITUDE	LONGITUDE											
9/ 251/63	19/ 9/63	0830 K	36 25 S	150 24 E											
SONIC AIR TEMP.	WIND DIR.	SP. WIND	ANEM. HEIGHT	CLOUD TYPE	AMT.	VIS.	SEA DIR.	AMT.	SWELL DIR.	AMT.	ATMOS. PRESSURE	CAST1	CAST2	CAST3	WIRE ANGLES
DEPTH ***	***	27	2	*	*	7	27	1	14	4	1019.0	*	15	*	*
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE						
1	0	15.92	35.920	26.18	***	***	***	***	***						
1	25	15.42	35.990	26.35	***	***	***	***	***						
1	50	14.91	35.430	26.43	5.70	99	***	***	***						
1	75	14.37	35.430	26.46	***	***	***	***	***						
1	100	13.50	35.350	26.58	5.64	96	***	***	***						
1	150	13.02	35.390	26.73	***	***	***	***	***						
2	200	12.39	35.340	26.80	5.75	95	***	***	***						
2	300	12.39	35.350	26.80	6.00	99	***	***	***						
2	500	12.25	35.350	26.83	5.83	96	***	***	***						

* PROPERTY DOUBTFUL
* PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE		LONGITUDE	
P 9/ 252/63	19/ 9/63	0945 K	36	25 S	150	29 E
SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES						
DEPTH MET DRY DIR, SP.	HEIGHT	DIR, AMT.	DIR, AMT.	DIR, AMT.	PRESSURE	CAST1 CAST2 CAST3
*** ** 18 2	*	* *	14	4	1020.0	0 10 *
CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE						
1 0	16.22	35.590	26.17	**	**	**
1 25	16.16	35.590	26.18	**	**	**
1 50	15.92	35.520	26.18	99	**	**
1 75	14.43	35.480	26.40	**	**	**
1 100	13.91	35.410	26.54	103	**	**
1 150	13.08	35.410	26.71	**	**	**
2 200	12.70	35.410	26.79	99	**	**
2 300	12.38	35.350	26.81	99	**	**
2 500	11.47	35.210	26.87	96	**	**

STATION	DATE	TIME	LATITUDE		LONGITUDE	
P 9/ 255/63	21/ 9/63	0625 K	35	50 S	150	17 E
SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES						
DEPTH MET DRY DIR, SP.	HEIGHT	DIR, AMT.	DIR, AMT.	DIR, AMT.	PRESSURE	CAST1 CAST2 CAST3
64 *** ** 23 1	*	* *	14	3	1027.0	* * *
CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE						
1 0	14.39	35.480	26.49	**	**	**
1 10	14.05	35.410	26.51	**	**	**
1 20	13.88	35.440	26.57	**	**	**
1 30	13.86	35.410	26.55	102	**	**
1 40	13.84	35.410	26.55	**	**	**
1 50	13.49	35.410	26.55	101	**	**

STATION	DATE	TIME	LATITUDE	LONGITUDE					
N 9/ 256/63	21/ 9/63	0715 K	35 50 S	150 22 E					
SONIC AIR TEMP. WIND	ANEM.	CLOUD	SWELL	ATMOS.	WIRE ANGLES				
DEPTH WET DRY DIR. SP.	HEIGHT	TYPE AMT.	DIR. AMT.	PRESSURE	CAST1 CAST2 CAST3				
121 *** ** 23 1	*	*	14 3	1027.0	* * *				
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.42	35.410	26.56	***	***	***	***	***
1	10	13.78	35.410	26.57	***	***	***	***	***
1	20	13.77	35.430	26.59	***	***	***	***	***
1	30	13.73	35.410	26.58	6.00	102	***	***	***
1	40	13.76	35.430	26.59	***	***	***	***	***
1	50	13.66	35.410	26.59	5.95	101	***	***	***
1	75	13.62	35.410	26.60	***	***	***	***	***
1	100	13.64	35.410	26.60	5.95	101	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
N 9/ 257/63	21/ 9/63	0805 K	35 50 S	150 27 E					
SONIC AIR TEMP. WIND	ANEM.	CLOUD	SWELL	ATMOS.	WIRE ANGLES				
DEPTH WET DRY DIR. SP.	HEIGHT	TYPE AMT.	DIR. AMT.	PRESSURE	CAST1 CAST2 CAST3				
137 *** ** 27 1	*	*	14 3	1029.0	* * *				
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.56	35.430	26.42	***	***	***	***	***
1	10	14.45	35.430	26.44	***	***	***	***	***
1	20	14.32	35.410	26.45	***	***	***	***	***
1	30	14.26	35.430	26.48	6.22	107	***	***	***
1	40	14.08	35.410	26.51	***	***	***	***	***
1	50	14.01	35.410	26.52	6.11	105	***	***	***
1	75	13.70	35.410	26.58	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE				
N 9/ 258/63	21/ 9/63	0900 K	35 50 S	150 32 E				
SONIC AIR TEMP, WIND DIR, SP, WIND ANEM, CLOUD AMT, VIS, SEA DIR, AMT, SWELL DIR, AMT, ATMOS, WIRE ANGLES DEPTH WET DRY	23 1 * * * * *	6 23 1 14 3	1028.0	* * *				
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	35.520	26.21	***	***	***	***	***
1	10	35.520	26.26	***	***	***	***	***
1	20	35.480	26.36	***	***	***	***	***
1	30	35.900	26.44	5.86	102	***	***	***
1	40	35.430	26.45	***	***	***	***	***
1	50	35.410	26.44	6.42	111	***	***	***
1	75	35.410	26.45	***	***	***	***	***
1	100	35.410	26.47	6.03	104	***	***	***
1	125	35.410	26.61	6.06	103	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE				
N 9/ 259/63	21/ 9/63	0955 K	35 50 S	150 37 E				
SONIC AIR TEMP, WIND DIR, SP, WIND ANEM, CLOUD AMT, VIS, SEA DIR, AMT, SWELL DIR, AMT, ATMOS, WIRE ANGLES DEPTH WET DRY	18 1 * * * * *	7 18 1 14 3	1028.0	* 10 *				
CAST DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	35.500	26.12	***	***	***	***	***
1	25	35.500	26.15	***	***	***	***	***
1	50	35.590	26.23	5.78	103	***	***	***
1	75	35.410	26.32	***	***	***	***	***
1	100	35.430	26.51	5.89	101	***	***	***
1	150	35.460	26.68	***	***	***	***	***
2	200	35.410	26.69	6.11	103	***	***	***
2	300	35.350	26.74	6.06	101	***	***	***
2	500	34.870	26.86	5.17	61	***	***	***

STATION 9/ 260/63 DATE 21/ 9/63 TIME 1110 K LATITUDE 35 50 S LONGITUDE 150 42 E

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

*** ** 04 1 * * * * 7 00 0 14 3 1028.0 * 10 *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.26	35.570	26.14	***	***	***	***	***
1	25	16.09	35.550	26.17	***	***	***	***	***
1	50	16.02	35.520	26.16	5.92	106	***	***	***
1	75	16.00	35.590	26.22	***	***	***	***	***
1	100	15.76	35.500	26.20	5.81	103	***	***	***
1	150	13.52	35.370	26.59	***	***	***	***	***
2	200	13.34	35.410	26.66	101	***	***	***	***
2	300	11.89	35.140	26.74	85	***	***	***	***
2	500	9.29	34.760	26.90	4.89	75	***	***	***

STATION 9/ 263/63 DATE 26/ 9/63 TIME 0600 K LATITUDE 35 07 S LONGITUDE 150 50 E

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

102 *** ** 04 2 * * * * 7 04 2 14 4 1035.0 * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	15.51	35.460	26.14	***	***	***	***	***
1	10	15.00	35.440	26.13	***	***	***	***	***
1	20	15.89	35.500	26.17	***	***	***	***	***
1	30	15.71+	35.480	26.20	5.53	98	***	***	***
1	40	15.52	35.430	26.21	***	***	***	***	***
1	50	14.92	35.410	26.32	5.04	88	***	***	***
1	75	13.85	35.340	26.90	***	***	***	***	***
1	100	13.17	35.280	26.59	4.84	81	***	***	***

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION P 9/ 264/63 DATE 26/ 9/63 TIME 0720 K LATITUDE 35 07 S LONGITUDE 150 55 E

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

137 *** ** 04 2 * * * * 7 04 2 14 4 1035.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-t OXYGEN CXYGEN % SAT, INORG. P TOTAL P NITRATE

1	0	15.60	35.500	26.20	***	***	***	***	***	***
1	10	15.76	35.480	26.19	***	***	***	***	***	***
1	20	15.74	35.480	26.19	***	***	***	***	***	***
1	30	15.73	35.480	26.20	5.58	99	***	***	***	***
1	40	15.71	35.550	26.25	***	***	***	***	***	***
1	50	15.79	35.520	26.21	5.61	100	***	***	***	***
1	75	15.11	35.430	26.30	***	***	***	***	***	***
1	100	13.56	35.320	26.54	5.10	87	***	***	***	***
1	125	12.92	35.230	26.61	4.98	83	***	***	***	***

STATION P 9/ 265/63 DATE 26/ 9/63 TIME 0815 K LATITUDE 32 07 S LONGITUDE 151 00 E

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

157 *** ** 04 2 * * * * 7 04 2 14 4 1035.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-t OXYGEN CXYGEN % SAT, INORG. P TOTAL P NITRATE

1	0	15.59	35.530	26.27	***	***	***	***	***	***
1	10	15.60	35.500	26.24	***	***	***	***	***	***
1	20	15.50	35.500	26.26	***	***	***	***	***	***
1	30	15.25	35.520	26.34	5.64	99	***	***	***	***
1	40	15.39	35.480	26.32	***	***	***	***	***	***
1	50	15.23	35.480	26.31	5.58	98	***	***	***	***
1	75	14.09	35.370	26.47	***	***	***	***	***	***
1	100	13.54	35.280	26.52	4.98	84	***	***	***	***
1	125	13.09	35.260	26.59	5.13	86	***	***	***	***

STATION	DATE	TIME	LATITUDE		LONGITUDE				
M 9/ 266/63	26/ 9/63	0910 K	35	07 S	151	05 E			
SONIC AIR TEMP.	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE	AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES
DEPTH MET	DRY	06 2	*	*	7	06 2	14 4	1035.0	* * *
713 ***	***	06 2	*	*	7	06 2	14 4	1035.0	* * *
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	15.30	35.480	26.29	***	***	***	***	***
1	25	15.18	35.520	26.35	***	***	***	***	***
1	50	15.06	35.480	26.35	5.75	101	***	***	***
1	75	14.25	35.350	26.42	***	***	***	***	***
1	100	13.66	35.320	26.52	4.96	84	***	***	***
1	150	13.28	35.320	26.60	***	***	***	***	***
1	200	12.49	35.230	26.69	5.13	85	***	***	***
1	300	11.58	35.160	26.81	4.96	81	***	***	***
1	500	9.08	34.690	26.88	4.76	73	***	***	***

STATION	DATE	TIME	LATITUDE		LONGITUDE				
M 9/ 267/63	26/ 9/63	1020 K	35	07 S	151	10 E			
SONIC AIR TEMP.	WIND DIR. SP.	ANEM. HEIGHT	CLOUD TYPE	AMT.	VIS. DIR. AMT.	SEA DIR. AMT.	SWELL DIR. AMT.	ATMOS. PRESSURE	WIRE ANGLES
DEPTH MET	DRY	06 3	*	*	7	08 2	14 4	1034.0	* * *
1170 ***	***	06 3	*	*	7	08 2	14 4	1034.0	* * *
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	15.38	35.520	26.31	***	***	***	***	***
1	25	15.24	35.520	26.34	***	***	***	***	***
1	50	15.12	35.520	26.36	5.84	102	***	***	***
1	75	14.81	35.500	26.42	***	***	***	***	***
1	100	14.57	35.430	26.42	5.87	102	***	***	***
1	150	13.36	35.340	26.60	***	***	***	***	***
2	200	12.42	35.230	26.70	5.36	89	***	***	***
2	300	11.61	35.140	26.79	5.27	86	***	***	***
2	500	9.38	34.780	26.90	5.18	80	***	***	***

STATION 9/ 268/63 DATE 26/ 9/63 TIME 1130 K LATITUDE 35 07 S LONGITUDE 151 15 E

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

*** ** 05 2 * * * 7 05 2 14 4 1033.0 * * *

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

1	0	15.44	35.480	26.26	***	***	***	***	***	***
1	25	15.16	35.500	26.34	***	***	***	***	***	***
1	50	15.08	35.500	26.36	5.95	104	***	***	***	***
1	75	15.03	35.460	26.34	***	***	***	***	***	***
1	100	14.24	35.430	26.49	5.92	102	***	***	***	***
1	150	13.47	35.340	26.58	***	***	***	***	***	***
1	200	12.90	35.320	26.68	5.47	91	***	***	***	***
1	300	11.44	35.070	26.77	6.18	100	***	***	***	***
1	500	9.31	34.870	26.99	5.53	85	***	***	***	***

STATION 9/ 270/63 DATE 30/ 9/63 TIME 0650 K LATITUDE 34 05 S LONGITUDE 151 13 E

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

73 *** ** 36 1 * * * 7 36 1 04 1 1022.0 * * *

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

1	0	14.03	35.560	25.86	***	***	***	***	***	***
1	10	14.02	35.340	26.02	***	***	***	***	***	***
1	20	13.80	35.410	26.17	***	***	***	***	***	***
1	30	14.45	35.370	26.31	5.07	88	***	***	***	***
1	40	14.27	35.340	26.41	***	***	***	***	***	***
1	50	14.17	35.340	26.43	4.96	85	***	***	***	***

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 * 9/ 275/63 30/ 9/63 1150 K 34 05 S 151 37 E

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

549 *** ** 36 2 * * 7 36 2 04 4 1020.0 * * *

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

1	0	16.42	35.900	26.03	***	***	***	***	***
1	25	15.86	35.900	26.18	***	***	***	***	***
1	50	15.70	35.480	26.20	6.07	108	***	***	***
1	75	15.42+	35.480	26.24	***	***	***	***	***
1	100	15.33	35.480	26.29	6.01	106	***	***	***
1	150	13.55	35.300	26.53	***	***	***	***	***
1	200	12.71	35.230	26.65	5.16	86	***	***	***
1	300	11.06	35.030	26.80	5.24	84	***	***	***
1	500	4.87	34.690	26.92	4.98	76	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 * 10/ 290/63 14/10/63 0610 K 36 25 S 150 09 E

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

60 *** ** 20 3 * * 7 20 2 14 4 1030.0 * * *

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

1	0	14.72	35.410	26.37	***	***	***	***	***
1	10	14.71	35.410	26.37	***	***	***	***	***
1	20	14.67	35.410	26.38	***	***	***	***	***
1	30	14.65	35.430	26.40	4.79	83	***	***	***
1	40	14.54	35.390	26.39	***	***	***	***	***
1	50	14.51	35.390	26.40	5.25	91	***	***	***

* PROPERTY DOUBTFUL
 + PROPERTY INTERPOLATED

STATION M 10/ 293/63 DATE 14/10/63 TIME 0905 K LATITUDE 36 25 S LONGITUDE 150 24 E

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

823 *** ** 18 4 * * * 7 18 3 14 4 1030.0 * 15 *
 CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 14.80 35.590 26.03 *** ** ** ** **
 1 25 14.81 35.590 26.03 *** ** ** ** *
 1 50 14.64 35.570 26.05 94 *** ** ** ** *
 1 75 14.14 35.590 26.19 *** ** ** ** *
 1 100 15.98 35.570 26.21 5.30 *** ** ** ** *
 1 150 15.46 35.530 26.29 *** ** ** ** *
 2 200 14.71 35.440 26.39 86 *** ** ** ** *
 2 300 12.99 35.340 26.68 82 *** ** ** ** *
 2 500 9.91 34.900 26.91 74 *** ** ** ** *

STATION M 10/ 294/63 DATE 14/10/63 TIME 1020 K LATITUDE 36 25 S LONGITUDE 150 29 E

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

*** ** 18 4 * * * 7 18 3 14 4 1031.0 * * *
 CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 14.67 35.590 26.02 *** ** ** ** *
 1 25 14.85 35.590 26.02 98 *** ** ** ** *
 1 50 14.64 35.610 26.04 *** ** ** ** *
 1 75 14.16 35.570 26.17 5.42 *** ** ** ** *
 1 125 15.05 35.530 26.18 *** ** ** ** *
 2 175 14.43 35.430 26.45 86 *** ** ** ** *
 2 275 12.65 35.230 26.66 75 *** ** ** ** *

STATION		DATE		TIME		LATITUDE		LONGITUDE		
P 10/ 297/63		15/10/63		0535 N		35 50 S		150 17 E		
SONIC AIR TEMP.	WIND	ANEM.	CLOUD	VIS.	SEA	SWELL	ATMOR.	WIRE ANGLES		
DEPTH MET DRY	DIR. SP.	HEIGHT	TYPE	DIR. AMT.	DIR. AMT.	DIR. AMT.	PRESSURE	CAST1 CAST2 CAST3		
60 ***	18	4	*	*	7	18	3	1030.0	0 * *	
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN	K SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.47	35.930	26.06	***	***	***	***	***	***
1	10	14.49	35.930	26.06	***	***	***	***	***	***
1	20	14.47	35.930	26.06	***	***	***	***	***	***
1	30	14.34	35.900	26.07	5.35	96	***	***	***	***
1	40	13.17	35.410	26.27	***	***	***	***	***	***
1	50	13.67	35.320	26.52	4.73	80	***	***	***	***

STATION		DATE		TIME		LATITUDE		LONGITUDE		
P 10/ 298/63		15/10/63		0630 K		35 50 S		150 22 E		
SONIC AIR TEMP.	WIND	ANEM.	CLOUD	VIS.	SEA	SWELL	ATMOS.	WIRE ANGLES		
DEPTH MET DRY	DIR. SP.	HEIGHT	TYPE	DIR. AMT.	DIR. AMT.	DIR. AMT.	PRESSURE	CAST1 CAST2 CAST3		
121 ***	18	4	*	*	7	18	3	1031.0	0 * *	
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN	K SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.65	35.970	26.05	***	***	***	***	***	***
1	10	16.62	35.990	26.07	***	***	***	***	***	***
1	20	14.63	35.990	26.07	***	***	***	***	***	***
1	30	16.60	35.990	26.08	5.47	99	***	***	***	***
1	40	14.60	35.990	26.08	***	***	***	***	***	***
1	50	16.62	35.990	26.07	5.34	97	***	***	***	***
1	75	14.93	35.440	26.34	***	***	***	***	***	***
1	100	14.68	35.440	26.40	4.84	84	***	***	***	***

STATION	DATE	TIME	LATITUDE			LONGITUDE			
M 10/ 299/63	15/10/63	0730 K	35 50 S			150 27 E			
SONIC AIR TEMP.	WIND DIR.	SP.	WIND DIR.	SEA DIR.	AMT.	SWELL DIR.	AMT.	ATMOS. PRESSURE	
DEPTH MET	DRY	WET	DRY	DIR.	AMT.	DIR.	AMT.	CAST1 CAST2 CAST3	
135 ***	***	18	4	*	*	14	3	1031.0 * * *	
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.72	35.590	26.05	***	***	***	***	***
1	10	16.72	35.590	26.05	***	***	***	***	***
1	20	16.69	35.620	26.08	***	***	***	***	***
1	30	16.73	35.610	26.06	5.30	96	***	***	***
1	40	16.72	35.610	26.07	***	***	***	***	***
1	50	16.75	35.620	26.06	5.31	96	***	***	***
1	75	16.84	35.550	26.22	***	***	***	***	***

STATION	DATE	TIME	LATITUDE			LONGITUDE			
M 10/ 300/63	15/10/63	0840 K	35 50 S			150 32 E			
SONIC AIR TEMP.	WIND DIR.	SP.	WIND DIR.	SEA DIR.	AMT.	SWELL DIR.	AMT.	ATMOS. PRESSURE	
DEPTH MET	DRY	WET	DRY	DIR.	AMT.	DIR.	AMT.	CAST1 CAST2 CAST3	
146 ***	***	18	4	*	*	14	3	1032.0 * * *	
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.52	35.570	26.08	***	***	***	***	***
1	10	16.52	35.590	26.10	***	***	***	***	***
1	20	16.46	35.590	26.11	***	***	***	***	***
1	30	16.42	35.590	26.12	5.47	99	***	***	***
1	40	16.48	35.590	26.11	***	***	***	***	***
1	50	16.45	35.590	26.11	5.31	96	***	***	***
1	75	16.09	35.530	26.15	***	***	***	***	***
1	100	15.75	35.500	26.21	***	88	***	***	***
1	125	15.26	35.460	26.29	5.01	88	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 10/ 301/63	15/10/63	0945 K	35 50 S	150 37 E
SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES				
DEPTH MET DRY DIR. SP. DIR. AMT. HEIGHT TYPE AMT.	VIS. SEA DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3			
549 *** ** 18 5 * * * * *	7 18 3 14 3 1032.0 * 20 *			
CAST DEPTH TEMP. SALINITY SIGMA-T	OXYGEN OXYGEN % SAT. INORG. P	TOTAL P	NITRATE	
1 0 16.64	*** 26.08	***	***	
1 25 16.62	*** 26.08	***	***	
1 50 16.93	5.36 26.18	***	***	
1 75 15.71	*** 26.24	96	***	
1 100 15.51	*** 26.28	***	***	
1 150 14.41	*** 26.49	92	***	
1 180 14.24	*** 26.51	***	***	
2 285 12.64	5.47 26.51	94	***	
2 474 9.76	4.73 26.66	79	***	
	4.67 26.91	73	***	

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 10/ 303/63	17/10/63	0525 K	35 07 S	150 50 E
SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES				
DEPTH MET DRY DIR. SP. DIR. AMT. HEIGHT TYPE AMT.	VIS. SEA DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3			
106 *** ** 32 2 * * * * *	7 32 1 09 2 1028.0 * * *			
CAST DEPTH TEMP. SALINITY SIGMA-T	OXYGEN OXYGEN % SAT. INORG. P	TOTAL P	NITRATE	
1 0 16.30	*** 26.01	***	***	
1 10 16.29	*** 26.01	***	***	
1 20 16.27	*** 26.06	***	***	
1 30 16.30+	5.53 26.13	99	***	
1 40 16.20+	*** 26.14	***	***	
1 50 16.04	*** 26.15	92	***	
1 75 14.34	*** 26.30	***	***	
1 100 14.36	4.84 26.45	83	***	

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE		LONGITUDE	
P 10/ 304/63	17/10/63	0617 K	35 07 S		150 55 E	
SONIC AIR TEMP, WIND	ANEM, CLOUD	VIS, SEA	SHELL		ATMOS, WIRE ANGLES	
DEPTH MET DRY DIR, SP, HEIGHT	TYPE AMT,	DIR, AMT, DIR, AMT, PRESSURE	DIR, AMT, PRESSURE		CAST1 CAST2 CAST3	
137 *** ** 34 2 *	* * *	7 34 1 09 2	1028.0		* * *	
CAST DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INORG, P
1	0	35.590	26.13	***	***	***
1	10	35.570	26.11	***	***	***
1	20	35.570	26.13	***	***	***
1	30	35.560*	26.13	100	***	***
1	40	35.550	26.12	***	***	***
1	50	35.520	26.10	95	***	***
1	75	35.530	26.22	***	***	***
1	100	35.500	26.40	78	***	***
1	125	35.460	26.47	93	***	***

STATION	DATE	TIME	LATITUDE		LONGITUDE	
P 10/ 305/63	17/10/63	0705 K	35 07 S		151 00 E	
SONIC AIR TEMP, WIND	ANEM, CLOUD	VIS, SEA	SHELL		ATMOS, WIRE ANGLES	
DEPTH MET DRY DIR, SP, HEIGHT	TYPE AMT,	DIR, AMT, DIR, AMT, PRESSURE	DIR, AMT, PRESSURE		CAST1 CAST2 CAST3	
105 *** ** 36 3 *	* * *	7 36 2 09 2	1029.0		* * *	
CAST DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT,	INORG, P
1	0	35.530	26.12	***	***	***
1	10	35.530	26.12	***	***	***
1	20	35.530	26.17	***	***	***
1	30	35.530	26.26	5.47	97	***
1	40	35.530	26.30	***	***	***
1	50	35.460	26.33	5.47	96	***
1	75	35.480	24.49	***	***	***
1	100	35.410	26.54	89	***	***
1	125	35.430	26.57	89	***	***

* * PROPERTY DOUBTFUL
* * PROPERTY INTERPOLATED

STATION M 10/ 306/63 DATE 17/10/63 TIME 0900 K LATITUDE 35 07 S LONGITUDE 151 09 E

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

732 *** ** 36 4 * * * 7 36 2 09 2 1029.0 * 10 * *

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

1	0	15.92	35.500	26.16	***	***	***	***	***	***	***
1	25	15.93	35.520	26.18	***	***	***	***	***	***	***
1	50	15.16	35.440	26.29	5.37	94	***	***	***	***	***
1	75	14.55	35.460	26.44	***	***	***	***	***	***	***
1	100	13.96	35.420	26.53	4.90	84	***	***	***	***	***
1	150	13.41	35.350	26.60	***	***	***	***	***	***	***
1	200	12.51	35.260	26.71	4.79	79	***	***	***	***	***
1	300	11.10	35.050	26.81	4.80	77	***	***	***	***	***
1	500	9.08	34.780	26.95	4.64	71	***	***	***	***	***

STATION M 10/ 307/63 DATE 17/10/63 TIME 0910 K LATITUDE 35 07 S LONGITUDE 151 10 E

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

1097 *** ** 36 4 * * * 7 36 2 09 2 1030.0 * * * *

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

1	0	15.90	35.530	26.18	***	***	***	***	***	***	***
1	25	15.43	35.500	26.19	***	***	***	***	***	***	***
1	50	14.95	35.480	26.37	5.36	94	***	***	***	***	***
1	100	14.67	35.480	26.43	5.20	90	***	***	***	***	***
1	150	13.85	35.440	26.58	***	***	***	***	***	***	***
1	200	12.78	35.300	26.69	5.01	84	***	***	***	***	***
1	300	11.43	35.100	26.79	4.80	78	***	***	***	***	***
1	500	8.81	34.740	26.96	4.56	70	***	***	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 N 10/ 308/63 17/10/63 1025 K 35 07 S 151 15 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. VIS. SEA DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 *** ** 36 4 * * * 7 36 2 09 2 1030.0 * * * *

CST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 14.01 351500 26.15 *** *** *** ***
 1 25 15.82 351530 26.21 *** *** *** ***
 1 50 14.98 351500 26.38 5.30 *** *** *** ***
 1 75 14.79* 351500 26.42 *** *** *** ***
 1 100 14.60 351480 26.45 5.47 *** *** *** ***
 1 150 13.92 351440 26.56 *** *** *** ***
 1 200 12.64 351320 26.73 5.13 *** *** *** ***
 1 300 11.22 35070 26.81 4.81 *** *** *** ***
 1 500 8.45 34630 26.94 4.67 *** *** *** ***

121

STATION DATE TIME LATITUDE LONGITUDE
 N 10/ 318/63 19/10/63 0505 K 34 05 S 151 13 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. VIS. SEA DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 73 *** ** 14 1 * * * 7 00 0 09 3 1024.0 * * * *

CST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 14.56 351430 25.97 *** *** *** ***
 1 10 14.54 351440 25.98 *** *** *** ***
 1 20 14.41 351410 25.99 *** *** *** ***
 1 30 15.62 351440 26.19 5.10 *** *** *** ***
 1 40 15.40 351480 26.27 *** *** *** ***
 1 50 15.16 351410 26.27 4.74 *** *** *** ***

STATION DATE TIME LONGITUDE
 P 10/ 311/63 18/10/63 0545 K 34 40 S 151 00 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY SP. DIR. SP. HEIGHT TYPE AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 117 *** ** 02 3 * * * 7 02 2 08 2 1027.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 16.65 35.480 25.98 *** ** ** ** **
 1 10 14.63 35.920 26.02 *** ** ** ** *
 1 20 14.59 35.590 26.06 *** ** ** ** *
 1 30 14.60 35.570 26.06 5.27 101 *** ** ** ** *
 1 40 14.58 35.550 26.05 *** ** ** ** *
 1 50 14.55 35.550 26.06 5.94 100 *** ** ** ** *
 1 75 15.61 35.500 26.24 *** ** ** ** *
 1 100 14.46 35.410 26.42 4.69 81 *** ** ** ** *

STATION DATE TIME LONGITUDE
 P 10/ 312/63 18/10/63 0635 K 34 40 S 151 05 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY SP. DIR. SP. HEIGHT TYPE AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 137 *** ** 02 3 * * * 7 02 2 08 2 1027.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 16.49 35.520 26.00 *** ** ** ** *
 1 10 16.70 35.570 26.04 *** ** ** ** *
 1 20 14.65 35.550 26.04 *** ** ** ** *
 1 30 14.64 35.550 26.04 5.54 100 *** ** ** ** *
 1 40 14.39 35.520 26.07 *** ** ** ** *
 1 50 16.42 35.500 26.05 5.36 97 *** ** ** ** *
 1 75 15.59 35.500 26.24 *** ** ** ** *
 1 100 14.33 35.370 26.42 4.73 82 *** ** ** ** *
 1 125 13.46 35.340 26.54 4.69 80 *** ** ** ** *

STATION DATE TIME LATITUDE LONGITUDE
 P 10/ 313/63 18/10/63 0759 K 34 40 S 151 10 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. VIS. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 212 *** ** 36 3 * * * 7 36 2 08 2 1028.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN CYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 14.65 35.930 26.02 *** ** ** ** ** **
 1 25 14.44 35.900 26.12 *** ** ** ** *
 1 50 14.10 35.970 26.18 5.36 *** ** ** ** *
 1 75 14.74 35.900 26.21 *** ** ** ** *
 1 100 14.07* 35.430 26.33 4.81 *** ** ** ** *
 1 135 13.93* 35.320 26.47 *** ** ** ** *
 1 167 13.39* 35.320 26.58 4.46 *** ** ** ** *

STATION DATE TIME LATITUDE LONGITUDE
 P 10/ 314/63 18/10/63 0848 K 34 40 S 151 15 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. VIS. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 366 *** ** 36 4 * * * 7 36 .3 08 2 1028.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN CYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 14.66 35.950 26.04 *** ** ** ** *
 1 25 14.51 35.930 26.05 *** ** ** ** *
 1 50 14.65 35.920 26.25 5.30 *** ** ** ** *
 1 100 15.40* 35.920 26.29 5.41 *** ** ** ** *
 1 150 14.18* 35.390 26.47 *** ** ** ** *
 1 200 13.34* 35.320 26.59 4.79 *** ** ** ** *
 1 300 11.15* 35.050 26.81 4.61 *** ** ** ** *

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 P 10/ 315/63 18/10/63. 0945 K 34 40 S 151 20 E

SONIC AIR TEMP, WIND ANEM. CLOUD VIS, SEA SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR, SP. HEIGHT TYPE AMT. DIR, AMT. DIR, AMT. PRESSURE CAST1 CAST2 CAST3
 1097 *** ** 36 4 * * * 7 .36 3 08 2 1028.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT, INORO, P TOTAL P NITRATE
 1 0 14.60 35.550 26.05 ** ** ** ** ** **
 1 25 16.36 35.550 26.11 *** ** ** **
 1 50 15.56 35.500 26.25 5.24 *** 93 *** **
 1 75 14.47 35.410 26.42 *** ** ** **
 1 100 13.91 35.390 26.52 4.95 *** 85 *** **
 1 150 13.51 35.340 26.57 *** ** ** **
 2 200 12.93 35.300 26.66 4.93 *** 83 *** **
 2 300 11.85 35.170 26.77 4.83 *** 79 *** **
 2 500 9.26 34.790 26.93 4.67 *** 72 *** **

STATION DATE TIME LATITUDE LONGITUDE
 P 10/ 310/63 18/10/63 0500 K 34 40 S 150 55 E

SONIC AIR TEMP, WIND ANEM. CLOUD VIS, SEA SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR, SP. HEIGHT TYPE AMT. DIR, AMT. DIR, AMT. PRESSURE CAST1 CAST2 CAST3
 68 *** ** 36 2 * * * 7 32 1 08 2 1026.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT, INORO, P TOTAL P NITRATE
 1 0 14.47 35.350 25.93 *** ** ** **
 1 10 16.52 35.390 25.94 *** ** ** **
 1 20 16.47 35.520 26.06 *** ** ** **
 1 30 16.42 35.480 26.04 5.5J *** 100 *** **
 1 40 14.48 35.930 26.06 *** ** ** **
 1 50 14.51 35.520 26.05 5.50 *** 99 *** **

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION M 10/ 319/63 DATE 19/10/63 TIME 0555 K LATITUDE 34 05 S LONGITUDE 151 18 E

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

137 *** ** 36 2 * * * * 7 36 1 09 3 1024.0 * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.08	35.520	25.91	***	***	***	***	***
1	10	17.09	35.520	25.91	***	***	***	***	***
1	20	17.06	35.520	25.92	***	***	***	***	***
1	30	17.09	35.500	25.89	5.26	96	***	***	***
1	40	16.99	35.500	25.92	***	***	***	***	***
1	50	16.83	35.500	26.07	5.14	92	***	***	***
1	75	15.12	35.440	26.30	***	***	***	***	***
1	100	13.82	35.350	26.51	4.44	76	***	***	***
1	125	13.03	35.300	26.64	4.23	71	***	***	***

STATION M 10/ 320/63 DATE 19/10/63 TIME 0645 K LATITUDE 34 05 S LONGITUDE 151. 23 E

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

146 *** ** 36 2 * * * * 7 36 1 09 3 1025.0 * * * *

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.24	35.550	25.90	***	***	***	***	***
1	10	17.28	35.530	25.87	***	***	***	***	***
1	20	17.21	35.530	25.89	***	***	***	***	***
1	30	17.22	35.500	25.86	5.49	100	***	***	***
1	40	17.20	35.530	25.89	***	***	***	***	***

STATION	DATE	TIME	LATITUDE		LONGITUDE	
M 10/ 321/63	19/10/63	0735 K	34	05 S	151	28 E
SONIC AIR TEMP, WIND, ANEM, CLOUD, SWELL, ATMOS, WIRE ANGLES						
DEPTH	DRY	DIR, SP,	DIR, APT,	DIR, AMT,	DIR, AMT,	DIR, AMT,
195	***	36 2	*	* * *	1025.0	* * *
CAST DEPTH TEMP, SALINITY SIGMA-t OXYGEN OXYGEN % SAT, INORG, P TOTAL P NITRATE						
1	0	17.25	35.480	25.84	***	***
1	10	17.24	35.480	25.84	***	***
1	20	17.13	35.520	25.90	***	***
1	30	16.43	35.520	26.07	89	***
1	40	14.08	35.530	26.15	***	***
1	50	15.93	35.530	26.19	85	***
1	75	14.97	35.440	26.34	***	***
1	100	14.01	35.350	26.47	79	***
1	140	13.26	35.320	26.61	78	***

STATION	DATE	TIME	LATITUDE		LONGITUDE	
M 10/ 322/63	19/10/63	0830 K	34	05 S	151	33 E
SONIC AIR TEMP, WIND, ANEM, CLOUD, SWELL, ATMOS, WIRE ANGLES						
DEPTH	DRY	DIR, SP,	DIR, APT,	DIR, AMT,	DIR, AMT,	DIR, AMT,
311	***	36 2	*	* * *	1025.0	* * *
CAST DEPTH TEMP, SALINITY SIGMA-t OXYGEN OXYGEN % SAT, INORG, P TOTAL P NITRATE						
1	0	17.46	35.370	25.71	***	***
1	25	17.06	35.530	25.92	***	***
1	50	16.15	35.530	26.14	98	***
1	75	15.76	35.570	26.26	***	***
1	100	14.93	35.430	26.34	86	***
1	150	13.32	35.340	26.61	***	***
1	200	12.65	35.230	26.60	80	***
1	300	10.69	34.900	26.77	73	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
K 10/ 323/63	19/10/63	0930 K	34 05 S	151 37 E					
SONIC AIR TEMP, WIND DIR, SP, ANEM, CLOUD SWELL ATMOS, WIRE ANGLES									
DEPTH MET DRY	DIR, SP,	HEIGHT	TYPE AMT,	VIS, SEA DIR, AMT, DIR, AMT, PRESSURE CAST1 CAST2 CAST3					
640 ***	36 2	*	* * 09 3	1025.0 * * *					
CAST	DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INORG, P	TOTAL P	NITRATE
1	0	17.73	35.550	25.78	***	***	***	***	***
1	25	17.43	35.590	25.88	***	***	***	***	***
1	50	16.29	35.520	26.10	5.59	97	***	***	***
1	75	15.73	35.530	26.23	***	85	***	***	***
1	100	14.99	35.460	26.35	4.89	***	***	***	***
1	150	13.63	35.390	26.58	***	81	***	***	***
1	200	12.88	35.260	26.84	4.85	75	***	***	***
1	300	10.98	34.970	26.77	4.67	71	***	***	***
1	500	9.07	34.700	26.89	4.65	71	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
P 12/ 345/63	16/11/63	0530 K	37 04 S	150 00 E					
SONIC AIR TEMP, WIND DIR, SP, ANEM, CLOUD SWELL ATMOS, WIRE ANGLES									
DEPTH MET DRY	DIR, SP,	HEIGHT	TYPE AMT,	VIS, SEA DIR, AMT, DIR, AMT, PRESSURE CAST1 CAST2 CAST3					
62 ***	23 2	*	* * 14 2	1022.0 * * *					
CAST	DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INORG, P	TOTAL P	NITRATE
1	0	16.69	35.440	25.90	***	***	***	***	***
1	10	16.93	35.440	25.89	***	***	***	***	***
1	20	16.64	35.410	25.93	***	99	***	***	***
1	30	16.26	35.320	25.95	5.50	***	***	***	***
1	40	15.58	35.100	25.94	***	92	***	***	***
1	50	15.31	35.500	26.31	5.20	92	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 12/ 346/63	16/11/63	0615 K	37 04 S	150 05 E
SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES				
DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT.	VIS. SEA DIR. AMT. DIR. AMT. PRESSURE	CAS1 CAS2 CAS3		
79 *** 20 4 * * * 7 20 2 14 2 1022.0 * * *	OXYGEN OXYGEN % SAT. INCRG. P	TOTAL P	NITRATE	
CAS1 DEPTH TEMP.	SALINITY SIGMA-T			
1 0 17.16	35.500*	25.88	***	***
1 10 17.16	35.500	25.87	***	***
1 20 14.97	35.460	25.89	***	***
1 30 14.13	35.410	26.05	94	***
1 40 13.49	35.340	26.14	***	***
1 50 13.11	35.320	26.21	91	***
1 70 15.09	35.320*	26.22	90	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 12/ 347/63	16/11/63	0710 K	37 04 S	150 10 E
SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES				
DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT.	VIS. SEA DIR. AMT. DIR. AMT. PRESSURE	CAS1 CAS2 CAS3		
97 *** 20 4 * * * 7 20 3 14 2 1023.0 * * *	OXYGEN OXYGEN % SAT. INCRG. P	TOTAL P	NITRATE	
CAS1 DEPTH TEMP.	SALINITY SIGMA-T			
1 0 16.99	35.550	25.96	***	***
1 10 16.95	35.500	25.93	***	***
1 20 16.96	35.500	25.93	***	***
1 30 16.97*	35.430	25.87	103	***
1 65 14.51*	35.280	26.31	***	***
1 80 14.46*	35.250	26.30	93	***

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 * PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 N 12/ 348/63 21/11/63 0715 K 37 04 S 150 15 E

SONIC AIR TEMP. WIND ANEM. SWELL ATMOS. WIRE ANGLES
 WET DRY DIR, SP. DIR, SP. HEIGHT TYPE AMT. VIS. SEA DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 121 *** 05 1 * * * 7 04 1 10 1 1022.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT, INORG. P TOTAL P NITRATE
 1 0 14.26 35.590 25.68 *** ** ** ** **
 1 10 16.16 35.550 25.67 *** ** ** ** *
 1 20 17.81 35.480 25.70 *** ** ** ** *
 1 30 17.58 35.440 25.73 *** 97 *** ** *
 1 40 16.62 35.410 25.94 *** ** ** ** *
 1 50 15.60 35.350 26.13 84 *** ** ** *
 1 75 14.56 35.300 26.32 *** ** ** ** *
 1 100 13.49 35.190 26.46 72 *** ** ** ** *

STATION DATE TIME LATITUDE LONGITUDE
 N 12/ 349/63 21/11/63 0855 K 37 04 S 150 20 E

SONIC AIR TEMP. WIND ANEM. SWELL ATMOS. WIRE ANGLES
 WET DRY DIR, SP. DIR, SP. HEIGHT TYPE AMT. VIS. SEA DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 220 *** 04 2 * * * 7 04 1 10 1 1022.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT, INORG. P TOTAL P NITRATE
 1 0 14.48 35.530 25.58 *** ** ** ** *
 1 1 14.27 35.590 25.67 *** ** ** ** *
 1 50 17.22 35.610 25.95 4.96 *** ** ** ** *
 1 75 16.72 35.570 26.04 *** ** ** ** *
 1 100 15.69 35.410 26.15 85 *** ** ** *
 1 125 15.44 35.410 26.21 *** ** ** *
 1 150 14.83 35.350 26.30 4.54 *** ** ** *
 1 175 13.91 35.280 26.44 *** ** ** *
 1 200 13.60 35.190 26.52 74 *** ** ** *
 1 200 13.60 35.190 26.52 74 *** ** ** *

STATION DATE TIME LATITUDE LONGITUDE
 N 12/ 350/63 21/11/63 1010 K 37 04 S 150 25 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR, SP. HEIGHT TYPE AMT. VIS. SEA DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 *** ** 04. 3 * * * * 7 04 2 10 1 1022.0 * 15 *

CST DEPTH TEMP. SALINITY SIGMA-T OXYGEN CXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 14.33 35.640* 25.70 *** ** ***
 1 25 14.16 35.250* 25.44 *** ** ***
 1 50 17.43 35.230* 25.61 5.44 *** ** ***
 1 75 17.21 35.590 25.94 *** ** ***
 1 100 14.87 35.500 24.18 87 *** ** ***
 1 150 14.64 35.430 26.36 *** ** ***
 1 200 13.11 35.250 26.98 4.50 *** ** ***
 1 300 11.39 35.120 26.82 4.54 73 *** ** ***
 1 500 8.49 34.940 27.17 4.57 69 *** ** ***

STATION DATE TIME LATITUDE LONGITUDE
 N 12/ 355/63 23/11/63 0345 K 36 25 S 150 09 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR, SP. HEIGHT TYPE AMT. VIS. SEA DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 by *** ** 23 1 * * * * 7 23 1 14 3 1016.0 * * *

CST DEPTH TEMP. SALINITY SIGMA-T OXYGEN CXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 17.67 35.500 25.75 *** ** ***
 1 10 17.53 35.480 25.77 *** ** ***
 1 20 16.30 35.410 26.01 *** ** ***
 1 30 14.75 35.350 26.32 4.48 78 *** ** ***
 1 40 13.03 35.230 26.58 4.58 77 *** ** ***
 1 50 12.01 35.140 26.72 *** ** ***

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 * 12/ 356/63 23/11/63 0640 K 36 25 S 150 14 E

SONIC AIR TEMP, WIND ANEM, SWELL ATMOS, WIRE ANGLES
 DEPTH KET DRY DIR, SP, HEIGHT TYPE AMT, CLOUD DIR, AMT, PRESSURE CAST1 CAST2 CAST3
 119 *** ** 18 2 * * * 7 18 1 14 3 1016.0 * * * *

CAST DEPTH TEMP, SALINITY SIGMA-T OXYGEN OXYGEN % SAT, INORG. P TOTAL P NITRATE
 1 0 14.30 35.590 25.67 *** *** ***
 1 10 14.21 35.530 25.64 *** *** ***
 1 20 14.21 35.590 25.69 *** *** ***
 1 30 14.03 35.550 25.70 96 *** *** ***
 1 40 17.49* 35.500 25.80 *** *** ***
 1 50 15.82 35.480 24.18 86 *** *** ***
 1 75 13.66* 35.260 24.52 *** *** ***
 1 100 11.60 35.100 26.76 73 *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 * 12/ 357/63 23/11/63 0700 K 36 25 S 150 19 E

SONIC AIR TEMP, WIND ANEM, SWELL ATMOS, WIRE ANGLES
 DEPTH KET DRY DIR, SP, HEIGHT TYPE AMT, CLOUD DIR, AMT, PRESSURE CAST1 CAST2 CAST3
 183 *** ** 16 3 * * * 7 16 1 14 3 1016.0 * * * *

CAST DEPTH TEMP, SALINITY SIGMA-T OXYGEN OXYGEN % SAT, INORG. P TOTAL P NITRATE
 1 0 14.38 35.590 25.65 *** *** ***
 1 10 14.43 35.590 25.63 *** *** ***
 1 20 14.30 35.590 25.67 *** *** ***
 1 30 17.62 35.590 25.98 89 *** *** ***
 1 40 14.56 35.520 26.03 *** *** ***
 1 50 14.29 35.500 26.08 84 *** *** ***
 1 75 15.40 35.480 26.27 *** *** ***
 1 100 14.32 35.410 26.45 77 *** *** ***
 1 150 13.50 35.100 26.78 72 *** *** ***

* * PROPERTY DOUBTFUL
 * * PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 P 12/ 358/63 23/11/63 0850 K 36 25 S 150 24 E

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

823 *** ** 14 3 * * * 7 14 2 14 3 1017.0 * * * *

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

1	0	18.48	35.590	25.62	***	***	***	***	***	***
1	25	18.19	35.590	25.69	***	***	***	***	***	***
1	50	18.65	35.480	26.17	4.84	86	***	***	***	***
1	75	18.47	35.370*	26.17	***	***	***	***	***	***
1	100	18.65	35.410*	26.38	4.54	79	***	***	***	***
1	150	18.42	35.340	26.59	***	***	***	***	***	***
1	200	17.39	***	***	***	***	***	***	***	***
1	300	10.61	34.970	26.84	4.44	71	***	***	***	***
1	500	8.48	34.690	26.98	4.30	65	***	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 P 12/ 359/63 23/11/63 1005 K 36 25 S 150 29 E

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

*** ** 14 2 * * * 7 14 2 14 3 1017.0 * * * *

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

1	0	18.49	35.610	25.63	***	***	***	***	***	***
1	25	17.38	35.500	25.83	***	***	***	***	***	***
1	50	17.10	35.410	25.82	5.13	94	***	***	***	***
1	75	18.41	35.430	26.00	***	***	***	***	***	***
1	100	18.91	35.590	26.24	5.23	93	***	***	***	***
1	150	18.72	35.500	26.44	***	***	***	***	***	***
1	200	18.03	35.300	26.64	4.92	83	***	***	***	***
1	300	11.62	35.080	26.78	4.67	76	***	***	***	***
1	500	8.68	34.670	26.93	4.45	68	***	***	***	***

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 N 12/ 363/63 25/11/63 0520 K 35 50 S 150 17 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 68 *** ** 23 2 * * * 7 23 1 14 3 1021.0 * * *

CST DEPTH TEMP. SALINITY SIGMA-T OXYGEN CYGEN % SAT, INORG. P TOTAL P NITRATE
 1 0 14.26 35.610 25.69 *** *** ***
 1 10 14.05 35.530 25.68 *** *** ***
 1 20 17.11 35.430 25.83 *** *** ***
 1 30 15.99 35.410 26.08 81 *** *** ***
 1 40 14.60 35.340* 26.33 *** *** ***
 1 50 14.26 35.410 26.48 73 *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 Y 12/ 364/63 25/11/63 0610 K 35 50 S 150 22 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH MET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 121 *** ** 14 2 * * * 7 14 1 14 3 1022.0 * * *

CST DEPTH TEMP. SALINITY SIGMA-T OXYGEN CYGEN % SAT, INORG. P TOTAL P NITRATE
 1 0 14.82 35.550 25.51 *** *** ***
 1 10 14.79 35.530 25.50 *** *** ***
 1 20 14.75 35.550 25.52 *** *** ***
 1 30 14.08 35.520 25.67 91 *** *** ***
 1 40 17.05 35.500 25.90 *** *** ***
 1 50 15.91 35.480 26.15 87 *** *** ***
 1 75 14.25 35.370 26.44 *** *** ***
 1 100 14.06 35.340 26.45 77 *** *** ***

* PROPERTY DOUBTFUL
 + PROPERTY INTERPOLATED

STATION		DATE		TIME		LATITUDE		LONGITUDE	
# 12/ 365/63		25/11/63		0705 K		35 50 S		150 27 E	
SONIC AIR TEMP.	WIND DIR, SP,	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS, SEA DIR, AMT.	SWELL DIR, AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3		
DEPTH MET	1.4 1	*	*	7 14 1	14 3	1023.0	* * *		
134 ***	***	***	***	***	***	***	***	***	
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	INORG. P	TOTAL P	NITRATE	
1	0	18.84	35.950	25.50	***	***	***	***	
1	10	19.85	35.530	25.46	***	***	***	***	
1	20	19.71	35.970	25.55	***	***	***	***	
1	30	18.73	35.950	5.10	96	***	***	***	
1	40	18.52	35.530	25.57	***	***	***	***	
1	50	17.35	35.500	25.84	90	***	***	***	
1	75	15.37	35.440	4.91	***	***	***	***	
1	100	14.51	35.410	26.25	78	***	***	***	
1	125	13.04	35.320	26.46	76	***	***	***	

STATION		DATE		TIME		LATITUDE		LONGITUDE	
# 12/ 366/63		25/11/63		0800 K		35 50 S		150 32 E	
SONIC AIR TEMP.	WIND DIR, SP,	ANEM. HEIGHT	CLOUD TYPE AMT.	VIS, SEA DIR, AMT.	SWELL DIR, AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3		
DEPTH MET	1.4 2	*	*	7 14 1	14 3	1023.0	* * *		
146 ***	***	***	***	***	***	***	***	***	
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	INORG. P	TOTAL P	NITRATE	
1	0	19.83	35.570	25.52	***	***	***	***	
1	10	19.79	35.590	25.54	***	***	***	***	
1	20	19.79	35.590	25.54	***	***	***	***	
1	30	18.76	35.590	5.07	96	***	***	***	
1	40	18.70	35.590	25.57	***	***	***	***	
1	50	18.26	35.590	25.48	92	***	***	***	
1	75	15.36*	35.480*	26.28	86	***	***	***	
1	100	14.64*	35.390*	26.37	80	***	***	***	

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 M 12/ 367/63 25/11/63 0855 K 35 50 S 150 37 E

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

585 *** ** 14 2 * * * 7 14 1 14 3 1023.0 * * *

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

1	0	19.66	35.930	25.27	***	***	***	***	***
1	25	18.75	35.990	25.55	***	***	***	***	***
1	50	17.32	35.930	25.86	4.89	90	***	***	***
1	75	15.50	35.440	26.22	***	***	***	***	***
1	100	14.84	35.410	26.34	4.21	73	***	***	***
1	150	13.54	35.300	26.53	***	***	***	***	***
1	200	12.72	35.250	26.66	4.70	78	***	***	***
1	300	10.82	34.960	26.80	4.38	70	***	***	***
1	500	8.50	34.560	26.87	4.29	65	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 M 12/ 368/63 25/11/63 1010 K 35 50 S 150 42 E

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

1463 *** ** 12 2 * * * 7 12 1 14 3 1023.0 * * *

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

1	0	19.95	35.930	25.20	***	***	***	***	***
1	25	19.54	35.550	25.32	***	***	***	***	***
1	50	17.63	35.930	25.79	4.25	78	***	***	***
1	75	15.04	35.340	26.24	***	***	***	***	***
1	100	14.43	35.320	26.36	4.06	70	***	***	***
1	150	13.27	35.230	26.54	***	***	***	***	***
1	200	12.78	35.250	26.65	4.79	80	***	***	***
1	300	11.29	34.970	26.72	4.68	75	***	***	***
1	500	8.52	34.650	26.94	4.42	67	***	***	***

STATION		DATE		TIME		LATITUDE		LONGITUDE	
P 16/ 457/63		18/12/63		0530 K		37 04 S		150 00 E	
SONIC AIR TEMP.	WIND DIR, SP,	ANEM. HEIGHT	CLOUD TYPE	VIS. DIR, AMT,	SEA DIR, AMT,	SWELL DIR, AMT,	ATMOS. PRESSURE	CAST1 CAST2	CAST3
DEPTH MET	*** 23 3	* * *	* * *	7 23 1	14 3	1020.0	*	*	*
59	***	23	3	7	23	1	14	3	1020.0
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT,	INORG. P	TOTAL P	NITRATE
1	0	17.39	35.010	25.45	***	***	***	***	***
1	10	14.57	35.320	25.88	**	**	**	**	**
1	20	14.69	35.350	26.33	**	**	**	**	**
1	30	13.91	35.320	26.47	4.17	71	***	***	***
1	40	12.34	35.170	26.67	***	***	***	***	***
1	50	12.28	35.140	26.66	4.35	72	***	***	***

STATION		DATE		TIME		LATITUDE		LONGITUDE	
P 16/ 458/63		18/12/63		0620 K		37 04 S		150 05 E	
SONIC AIR TEMP.	WIND DIR, SP,	ANEM. HEIGHT	CLOUD TYPE	VIS. DIR, AMT,	SEA DIR, AMT,	SWELL DIR, AMT,	ATMOS. PRESSURE	CAST1 CAST2	CAST3
DEPTH MET	*** 23 3	* * *	* * *	7 23 1	14 3	1020.0	*	*	*
75	***	23	3	7	23	1	14	3	1020.0
CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT,	INORG. P	TOTAL P	NITRATE
1	0	18.46	35.140	25.28	***	***	***	***	***
1	10	18.53	35.170	25.29	**	**	**	**	**
1	20	14.49	35.190	25.80	**	**	**	**	**
1	30	14.76	35.320	26.29	4.31	75	***	***	***
1	40	12.84	35.230	26.62	***	***	***	***	***
1	50	12.84	35.230	26.62	4.46	74	***	***	***
1	70	12.85	35.230	26.62	4.56	76	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
M 16/ 459/63	18/12/63	0715 K	37 04 S	150 10 E					
SONIC AIR TEMP.	WIND DIR, SP.	WIND ANEM.	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA SWELL DIR, AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3		
DEPTH MET DRY	*** 23 2	* * *	* * *	7 23 1	14 3	1021.0	* * *		
93	***	23 2	* * *	7	23 1	14 3	1021.0		
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN X SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.02	35.830	25.44	***	***	***	***	***
1	10	18.93	35.500	25.44	***	***	***	***	***
1	20	18.82	35.440	25.42	***	***	***	***	***
1	30	17.41	35.590	25.89	5.21	96	***	***	***
1	40	16.29	35.500	26.08	***	***	***	***	***
1	50	15.47	35.410	26.20	3.72	66	***	***	***
1	75	13.86	35.140	26.50	***	***	***	***	***
1	90	13.69	35.370	26.56	4.52	77	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
M 16/ 460/63	18/12/63	0810 K	37 04 S	150 15 E					
SONIC AIR TEMP.	WIND DIR, SP.	WIND ANEM.	CLOUD TYPE AMT.	VIS. DIR. AMT.	SEA SWELL DIR, AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1 CAST2 CAST3		
DEPTH MET DRY	*** 20 2	* * *	* * *	7 20 1	14 3	1021.0	* * *		
119	***	20 2	* * *	7	20 1	14 3	1021.0		
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN X SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.68	35.590	25.31	***	***	***	***	***
1	10	19.65	35.610	25.34	***	***	***	***	***
1	20	19.63	35.970	25.31	***	***	***	***	***
1	30	19.58	35.610	25.36	5.14	99	***	***	***
1	40	17.92	35.590	25.86	***	***	***	***	***
1	50	16.08	35.590	25.96	5.13	93	***	***	***
1	75	15.45	35.440	26.23	***	***	***	***	***
1	100	14.43	35.410	26.43	4.71	81	***	***	***

STATION M 16/ 461/63 DATE 18/12/63 TIME 0915 K LATITUDE 37 04 S LONGITUDE 150 20 E

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

223 *** ** 18 1 * * * 7 18 1 14 3 1021.0 * * *

CASST DEPTH TEMP, SALINITY SIGMA-T OXYGEN OXYGEN % SAT, INORG, P TOTAL P NITRATE

1	0	20.36	35.550	25.10	***	***	***	***	***	***	***
1	25	20.25	35.570	25.15	***	***	***	***	***	***	***
1	50	18.54	35.530	25.56	4.86	91	***	***	***	***	***
1	75	16.94	35.530	25.95	***	***	***	***	***	***	***
1	100	15.74	35.500	26.21	4.10	73	***	***	***	***	***
1	125	15.66	35.500	26.23	***	***	***	***	***	***	***
1	150	15.13	35.500	26.35	4.58	80	***	***	***	***	***
1	175	14.86	35.500	26.41	***	***	***	***	***	***	***
1	200	14.38	35.410	26.44	4.52	78	***	***	***	***	***

STATION M 16/ 462/63 DATE 18/12/63 TIME 1015 K LATITUDE 37 04 S LONGITUDE 150 25 E

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

1097 *** ** 18 1 * * * 7 18 1 14 3 1021.0 * * *

CASST DEPTH TEMP, SALINITY SIGMA-T OXYGEN OXYGEN % SAT, INORG, P TOTAL P NITRATE

1	0	20.25	35.590	25.16	***	***	***	***	***	***	***
1	25	20.16	35.550	25.16	***	***	***	***	***	***	***
1	50	19.13	35.520	25.40	4.98	95	***	***	***	***	***
1	75	17.79	35.570	25.78	***	***	***	***	***	***	***
1	100	16.97	35.530	25.95	4.55	83	***	***	***	***	***
1	150	15.43	35.520	26.29	***	***	***	***	***	***	***
1	200	14.25	35.390	26.45	4.52	78	***	***	***	***	***
1	300	12.68	35.260	26.68	4.83	80	***	***	***	***	***
1	500	8.66	34.700	26.96	4.35	66	***	***	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 P 16/ 466/63 19/12/63 0500 K 36 25 S 150 09 E

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

60 ***	***	27	1	*	*	*	7	00	0	14	2	1019.0	*	*	*
CAST	DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INORG, P	TOTAL P	NITRATE						
1	0	17.65	34.760	25.19	***	***	***	***	***						
1	10	17.66	35.210	25.48	***	***	***	***	***						
1	20	16.92	35.340	25.81	***	***	***	***	***						
1	30	16.56*	35.340	25.90	86	***	***	***	***						
1	40	16.19	35.350	25.99	***	***	***	***	***						
1	50	14.29	35.260	26.34	75	***	***	***	***						

STATION DATE TIME LATITUDE LONGITUDE
 P 16/ 467/63 19/12/63 0550 K 36 25 S 150 14 E

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

123 ***	***	23	1	*	*	*	7	00	0	14	2	1019.0	*	*	*
CAST	DEPTH	TEMP,	SALINITY	SIGMA-T	OXYGEN	CXYGEN % SAT,	INORG, P	TOTAL P	NITRATE						
1	0	19.13	35.320	25.25	***	***	***	***	***						
1	10	19.14	35.430	25.33	***	***	***	***	***						
1	20	17.70	35.590	25.82	***	***	***	***	***						
1	30	16.46	35.570	26.05	97	***	***	***	***						
1	40	15.77	35.550	26.24	***	***	***	***	***						
1	50	14.79	35.460	26.39	63	***	***	***	***						

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 P 16/ 468763 19/12/63 0645 K 36 25 S 150 19 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. VIS. DIR..AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 165 *** ** 18 1 * * * * 7 00 0 14 2 1019.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 19.14 35.390 25.30 *** *** ***
 1 10 19.04 35.480 25.40 *** *** ***
 1 20 19.05 35.500 25.41 *** *** ***
 1 30 17.59 35.530 25.80 5.27 *** *** ***
 1 40 16.77 35.530 25.99 *** *** ***
 1 50 16.14 35.460 26.09 4.23 *** *** ***
 1 75 14.93 35.440 26.34 *** *** ***
 1 100 14.43 35.370 26.40 *** *** ***
 1 150 13.21 35.300 26.60 4.63 *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 P 16/ 469763 19/12/63 0740 K 36 25 S 150 24 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. VIS. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 914 *** ** 18 1 * * * * 7 00 0 14 2 1020.0 * * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 19.04 35.570 25.46 *** *** ***
 1 25 18.69 35.570 25.55 *** *** ***
 1 50 16.64 35.530 26.02 4.82 *** *** ***
 1 75 15.46 35.440 26.23 *** *** ***
 1 100 14.72 35.410 26.37 4.39 *** *** ***
 1 150 13.71 35.370 26.55 *** *** ***
 1 200 12.46 35.190 26.66 4.54 *** *** ***
 1 300 11.60 35.010 26.69 4.88 *** *** ***
 1 500 8.55 34.690 26.97 4.35 *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 N 16/ 470/63 19/12/63 0915 K 36 25 S 150 29 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 *** ** 00 0 * * * 7 00 0 14 2 1020.0 * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 10.25 35.620 25.45 *** *** *** ***
 1 25 17.69 35.620 25.84 *** *** *** ***
 1 50 14.07 35.520 26.15 *** *** *** ***
 1 75 *** 35.520 *** *** *** ***
 1 100 *** 35.460 *** 4.75 *** *** *** ***
 1 200 12.71 35.210 26.63 *** *** *** ***
 1 300 11.47 35.100 26.83 *** *** *** ***
 1 500 4.39 34.650 24.96 *** *** *** ***

STATION DATE TIME LATITUDE LONGITUDE
 N 16/ 473/63 20/12/63 0940 K 35 50 S 150 17 E

SONIC AIR TEMP. WIND ANEM. CLOUD SWELL ATMOS. WIRE ANGLES
 DEPTH WET DRY DIR. SP. HEIGHT TYPE AMT. DIR. AMT. DIR. AMT. PRESSURE CAST1 CAST2 CAST3
 60 *** ** 23 1 * * * 7 00 0 14 2 1021.0 * * *

CAST DEPTH TEMP. SALINITY SIGMA-T OXYGEN OXYGEN % SAT. INORG. P TOTAL P NITRATE
 1 0 10.12 34.740 24.81 *** *** *** ***
 1 10 14.98 34.990 25.04 *** *** *** ***
 1 20 15.45 35.260 *** *** *** ***
 1 30 14.35 35.230 24.31 4.38 *** *** *** ***
 1 40 14.46 35.350 26.58 *** *** *** ***
 1 50 13.35 35.340 26.60 *** *** *** ***

STATION M 16/ 474/63 DATE 20/12/63 TIME 0625 K LATITUDE 35 50 S LONGITUDE 150 22 E

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

119 *** ** 23 1 * * * * 7 00 0 14 2 1021.0 * * * *

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

1 0 19.84 35.390 25.12 *** ** ** **

1 10 19.65 35.350 25.14 *** ** ** **

1 20 19.34 35.480 25.32 *** ** ** **

1 30 16.35 35.410 26.00 4.32 *** ** ** **

1 40 15.35 35.390 26.21 *** ** ** **

1 50 14.63 35.320 26.32 4.21 *** ** ** **

1 75 13.37 35.300 26.57 *** ** ** **

1 100 12.79 35.260 26.65 4.18 *** ** ** **

STATION P 16/ 475/63 DATE 20/12/63 TIME 0715 K LATITUDE 35 50 S LONGITUDE 150 27 E

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

132 *** ** 23 1 * * * * 7 00 0 14 2 1023.0 * * * *

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

1 0 19.89 35.440 25.15 *** ** ** **

1 10 19.65 35.410 25.19 *** ** ** **

1 20 19.53 35.390 25.20 *** ** ** **

1 30 18.38 35.390 25.49 9.5 *** ** ** **

1 95 13.17* 35.230* 26.56 4.35 *** ** ** **

1 75 14.05* 35.350* 26.46 4.29 *** ** ** **

1 50 15.11* 35.440* 26.31 *** ** ** **

* PROPERTY DOUBTFUL
 * PROPERTY INTERPOLATED

STATION DATE TIME LATITUDE LONGITUDE
 P 16/ 476/63 20/12/63 0815 K 35 50 S 150 32 E

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

157 *** ** 20 1 * * * * 7 00 0 14 2 1023.0 * * * *

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

1	0	19.94	35.480	25.16	***	***	***	***	***	***	***
1	10	10.55	35.410	25.21	***	***	***	***	***	***	***
1	20	10.46	35.410	25.23	***	***	***	***	***	***	***
1	30	10.49	35.390	25.29	5.03	96	***	***	***	***	***
1	40	17.29	35.390	25.76	***	***	***	***	***	***	***
1	50	14.44	35.330	24.07	4.74	85	***	***	***	***	***
1	75	14.83	35.440	26.37	***	***	***	***	***	***	***
1	100	13.99	35.300	26.44	4.15	71	***	***	***	***	***
1	125	13.17	35.260	26.58	4.37	73	***	***	***	***	***

STATION DATE TIME LATITUDE LONGITUDE
 P 16/ 477/63 20/12/63 0905 K 35 50 S 150 37 E

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

1006 *** ** 00 0 * * * * 7 00 0 14 2 1023.0 * * * *

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

1	0	20.00	35.480	25.15	***	***	***	***	***	***	***
1	25	19.14	35.460	25.35	***	***	***	***	***	***	***
1	50	17.81	35.520	25.93	5.09	93	***	***	***	***	***
1	75	15.51	35.440	26.21	***	***	***	***	***	***	***
1	100	14.62	35.430	26.40	4.14	77	***	***	***	***	***
1	150	13.57	35.390	26.60	***	***	***	***	***	***	***
1	200	12.87	35.350	26.71	4.95	83	***	***	***	***	***
1	300	11.34	35.120	26.82	4.69	76	***	***	***	***	***
1	500	9.58	34.690	26.96	4.39	67	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE					
# 16/ 478/63	20/12/63	1015 K	35 50 S	150 42 E					
SONIC AIR TEMP.	WIND DIR.	SP. WIND DIR.	AMT. WIND DIR.	SEA DIR.	VIS.	SWELL DIR.	AMT. SWELL DIR.	ATMOS. PRESSURE	WIRE ANGLES
DEPTH WET DRY	00 0	00 0	0 0	0 0	7 00 0	14 2	1023.0	* * *	
*** **	00 0	00 0	0 0	0 0	7 00 0	14 2	1023.0	* * *	
CST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	10.66	35.530	25.27	***	***	***	***	***
1	25	18.81	35.570	25.52	***	***	***	***	***
1	50	16.10	35.400	26.10	89	***	***	***	***
1	75	15.21	35.480	26.31	***	***	***	***	***
1	100	14.24	35.390	26.46	4.31	74	***	***	***
1	150	13.50	35.370	26.60	***	***	***	***	***
1	200	12.97	35.350	26.69	77	77	***	***	***
1	300	11.08	35.030	26.81	4.52	73	***	***	***
1	500	8.72	34.810	27.03	4.63	71	***	***	***

OCEANOGRAPHICAL STATION LISTS

1. Hydrological and planktological observations by F.R.V. *Warreen* in south-eastern Australian waters, 1938-39
2. Hydrological and planktological observations by F.R.V. *Warreen* in south-eastern Australian waters, 1940-42
3. Hydrological and planktological observations by F.R.V. *Warreen* in south-western Australian waters, 1947-50
4. Onshore hydrological investigations in eastern Australia, 1942-50
5. Estuarine hydrological investigations in eastern Australia, 1940-50. Queensland: Nerang and Coomera Rivers, Moreton Bay and Brisbane River, Logan River, Dunwich Oyster Lease; New South Wales: Richmond River, Clarence River, Macleay River, Hastings River, Manning River, Port Stephens, Tilligerry Creek, Hawkesbury River
6. Estuarine hydrological investigations in eastern Australia, 1940-50. New South Wales: Middle Harbour and Port Jackson, Georges River-Botany Bay
7. Estuarine hydrological investigations in eastern Australia, 1940-50. New South Wales: Port Hacking, Lake Illawarra, Shoalhaven River, Jervis Bay, Clyde River, Moruya River, Tuross River, Wagonga Inlet; Victoria: Port Phillip; Tasmania: Tamar River, Derwent River, Huon River, D'Entrecasteaux Channel, Pittwater, Lake Dobson (freshwater), Penna Dam (freshwater)
8. Hydrological investigations in south-western Australia, 1944-50
9. Records of twenty-four hourly hydrological observations at selected stations in eastern Australian estuarine systems, 1942-50. Queensland: Logan River; New South Wales: Richmond River, Clarence River, Macleay River, Hastings River, Manning River, Port Stephens, Hawkesbury River, Georges River, Port Hacking, Clyde River, Tuross River; Tasmania: Tamar River, Derwent River
10. Records of twenty-four hourly hydrological observations at Shell Point, Georges River, New South Wales, 1942-50
11. Analyses of bottom deposits in eastern Australia, 1946-50
12. Estuarine hydrological investigations in eastern and south-western Australia, 1951
13. Analysis of bottom deposits in eastern and south-western Australia, 1951 and records of twenty-four hourly hydrological observations at selected stations in eastern Australian estuarine systems, 1951
14. Onshore hydrological investigations in eastern and south-western Australia, 1951
15. Estuarine hydrological investigations in eastern and south-western Australia, 1952
16. Analysis of bottom deposits in eastern and south-western Australia, 1952 and records of twenty-four hourly hydrological observations at selected stations in eastern Australian estuarine systems, 1952
17. Onshore hydrological investigations in eastern and south-western Australia, 1952
18. Onshore hydrological investigations in eastern and south-western Australia, 1953
19. Onshore planktological investigations in eastern Australia, 1945-54
20. Surface sampling in the Tasman Sea, 1953
21. Estuarine hydrological investigations in eastern and south-western Australia, 1953
22. Further onshore planktological investigations in eastern Australia, 1945-54
23. Planktological investigations made by F.R.V. *Derwent Hunter* in eastern Australian waters, 1952-54
24. Onshore hydrological investigations in eastern and south-western Australia, 1954
25. Surface sampling in the Tasman Sea, 1954
26. Estuarine hydrological investigations in eastern and south-western Australia, 1954
27. Onshore and oceanic hydrological investigations in eastern and south-western Australia, 1955
28. Surface sampling in the Tasman and Coral Seas, 1955
29. Estuarine hydrological investigations in eastern and south-western Australia, 1955
30. Onshore and oceanic hydrological investigations in eastern and south-western Australia, 1956
31. Surface sampling in the Tasman and Coral Seas and the south-eastern Indian Ocean, 1956
32. Estuarine hydrological investigations in eastern and south-western Australia, 1956
33. Coastal hydrological investigations in eastern and south-western Australia, 1957
34. Coastal hydrological investigations at Port Hacking, New South Wales, 1957
35. Coastal hydrological investigations at Eden, New South Wales, 1957

OCEANOGRAPHICAL STATION LISTS

(Continued)

36. Surface sampling in the Tasman and Coral Seas, 1957
37. Hydrological investigations from F.R.V. *Derwent Hunter*, 1957
38. Coastal hydrological investigations in the New South Wales tuna fishing area, 1958
39. Surface sampling in the Coral and Tasman Seas, 1958
40. Coastal hydrological investigations in south-eastern Australia, 1958
41. Oceanic investigations in eastern Australian waters, F.R.V. *Derwent Hunter*, 1958
42. Coastal investigations at Port Hacking, New South Wales, 1958
43. Oceanic investigations in eastern Australia, H.M.A. Ships *Queenborough*, *Quickmatch*, and *Warrego*, 1958
44. Oceanic observations in Antarctic waters, M.V. *Magga Dan*, 1959
45. Coastal hydrological investigations in eastern Australia, 1959
46. Coastal hydrological investigations in the New South Wales tuna fishing area, 1959
47. Coastal investigations at Port Hacking, New South Wales, 1959
48. Oceanic investigations in eastern Australian waters, F.R.V. *Derwent Hunter*, 1959
49. Coastal hydrological sampling Rottneest Island, W.A., and Port Moresby, Papua, during the I.G.Y. (1957-58), and surface sampling in the Tasman and Coral Seas, 1959
50. Surface sampling in the Coral and Tasman Seas, 1960
51. Coastal hydrological investigations in eastern Australia, 1960
52. Coastal investigations at Port Hacking, New South Wales, 1960
53. Coastal hydrological investigations in the New South Wales tuna fishing area, 1960
54. Investigations by F.R.V. *Derwent Hunter* on the eastern Australian tuna grounds in 1961
55. Investigations by F.R.V. *Weerutta* on the South Australian tuna grounds in 1961
56. Investigations by F.R.V. *Marelda* on the eastern Australian tuna grounds in 1961
57. Investigations by F.V. *Estelle Star* in Western Australian waters in 1961
58. Temperature observations from Australian tuna fishing vessels in 1961
59. Investigations by F.R.V. *Derwent Hunter* on the eastern Australian tuna grounds in 1962
60. Investigations by F.R.V. *Investigator* on the South Australian tuna grounds in 1962
61. Investigations by F.R.V. *Marelda* on the eastern Australian tuna grounds in 1962
62. Investigations by F.V. *Estelle Star* in Western Australian waters in 1962
63. Temperature and salinity observations from Australian tuna fishing vessels in 1962
64. Investigations by F.R.V. *Investigator* on the South Australian tuna grounds in 1963
65. Investigations by F.R.V. *Marelda* on the eastern Australian tuna grounds in 1963