OCEANOGRAPHICAL STATION LIST

VOLUME 72

INVESTIGATIONS BY F.R.V. *MARELDA* ON THE EASTERN AUSTRALIAN TUNA GROUNDS IN 1965

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

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MELBOURNE, 1968

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When citing this station list, abbreviate as follows:
CSIRO Aust. Oceanogr. Stn List 72.

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Investigations by F.R.V. Marelda on the Eastern Australian Tuna Grounds in 1965

I. INTRODUCTION

This report records the data collected during the 1965 cruises of F.R.V. Marelda (M1/65-M8/65).

These cruises were planned to investigate hydrological conditions on the tuna grounds, and to troll and tag tuna. Track charts and station positions are shown in Figures 1-7. There is no track chart for Cruise 1. A description of F.R.V. Marelda is given in CSIRO Aust. (1968).

II. WORK ACCOMPLISHED

Table 1 gives details of cruise dates, number of stations worked, and number of tuna trolled and tagged for each cruise. Scientific staff for each cruise were Messrs R. Greig and G. Reid.

III. METHOD OF COLLECTION AND ANALYSIS OF SAMPLES

1. Physics

Temperature.—Water temperatures were taken with deep-sea reversing-thermometers. Two protected thermometers were used on each water-bottle with an unprotected thermometer added to three of the four deepest water-bottles. Temperatures are considered accurate to $\pm$ 0.08 degC.

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

Thermometric Depth.—Depth calculations were made by the second method described by La Fond (1951), plotting thermometric depth against the difference between thermometric and wire depths. Depths are considered accurate to within about 5%.

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

TABLE 1

DETAILS OF CRUISES AND WORK DONE

Cruise	Dates	Number of Stations Occupied	Hydrology 1	Hydrology 2	BT	Tuna Trolled 1	Tuna Trolled 2	Tuna Trolled 3	Tuna Trolled 4	Tuna Tagged 1	Tuna Tagged 2
M1/65	Jan. 1-2	13	2	11	2	0	0	0	0	0	0
M2/65	Jan. 5-8	17	17	0	17	0	3	1	23	0	2
M3/65	Jan. 10-20	21	10	11	10	3	2	1	15	3	2
M4/65	Feb. 3-Mar. 14	20	0	17	3	8	8	13	10	8	8
M5/65	Mar. 16-28	10	0	0	10	52	0	17	0	47	0
M6/65	Apr. 1-19	20	0	20	0	14	0	5	0	13	0
M7/65	Apr. 25-30	10	0	0	10	0	0	1	0	0	0
M8/65	May 4-24	11	0	11	0	1	0	0	0	0	0

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

BT Bathythermographs

Tuna Trolled and Tagged 1 Southern bluefin tuna 2 Yellowfin tuna 3 Albacore 4 Striped tuna

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 about $\pm$ 0.05‰.

Dissolved Oxygen.—A version of the standard Winkler method was used to determine the amount of dissolved oxygen in the sea-water 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) -

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

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

IV. TRACK CHARTS

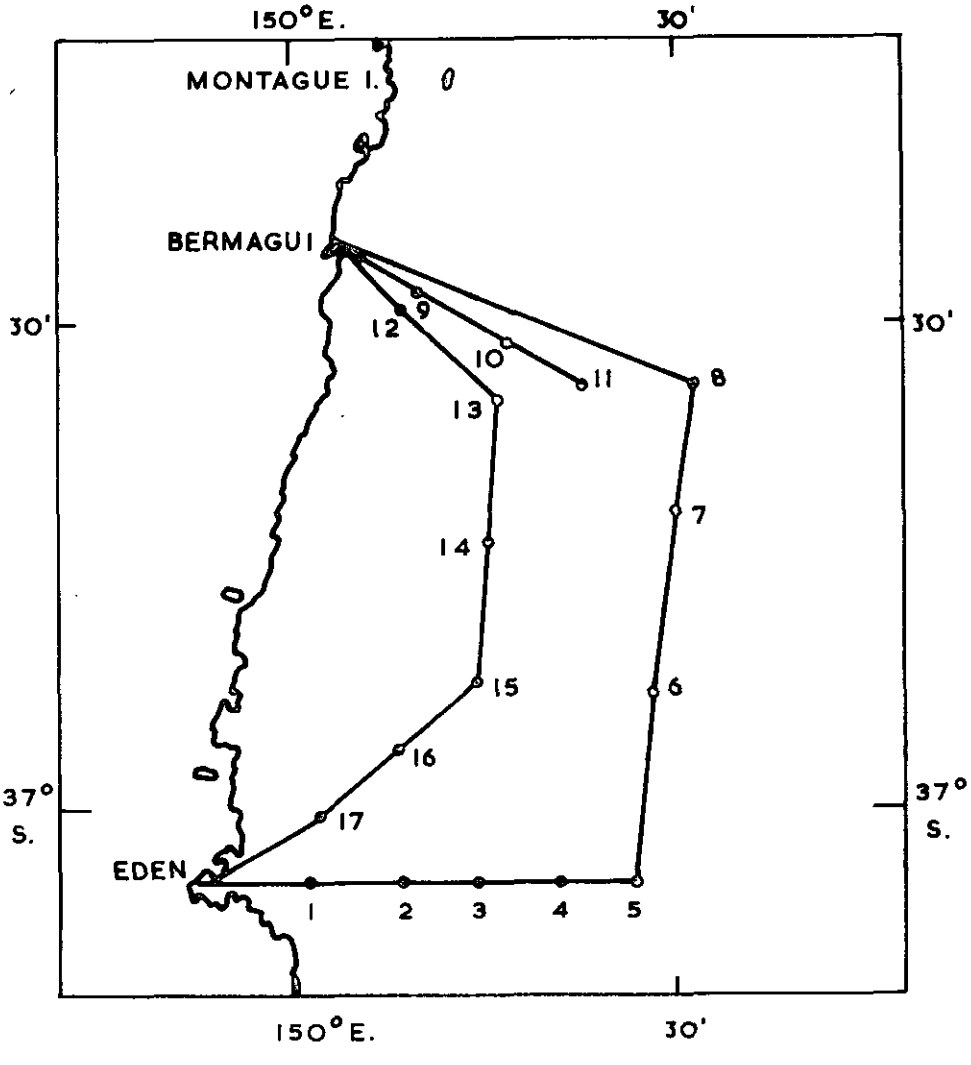

Fig. 1.- Track chart Cruise M 2/65

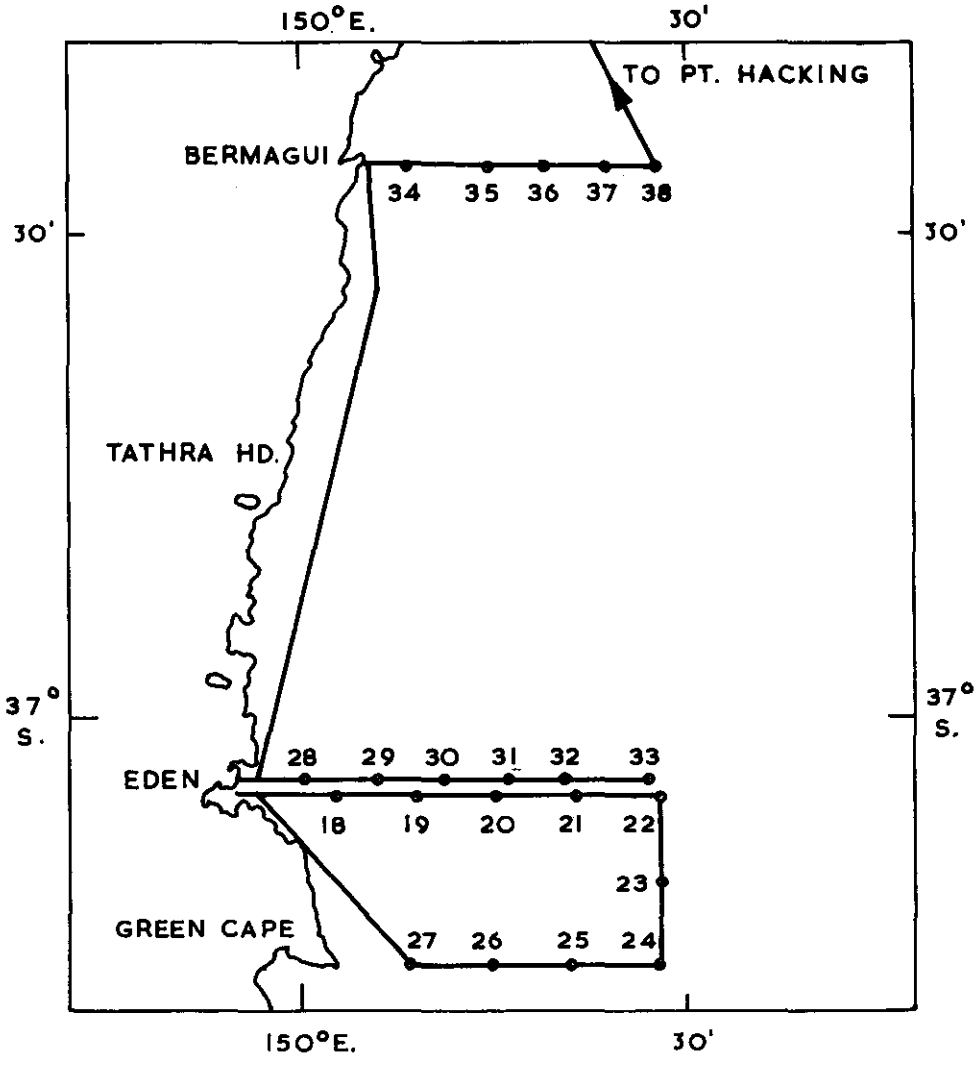

Fig. 2.- Track chart Cruise M 3/65

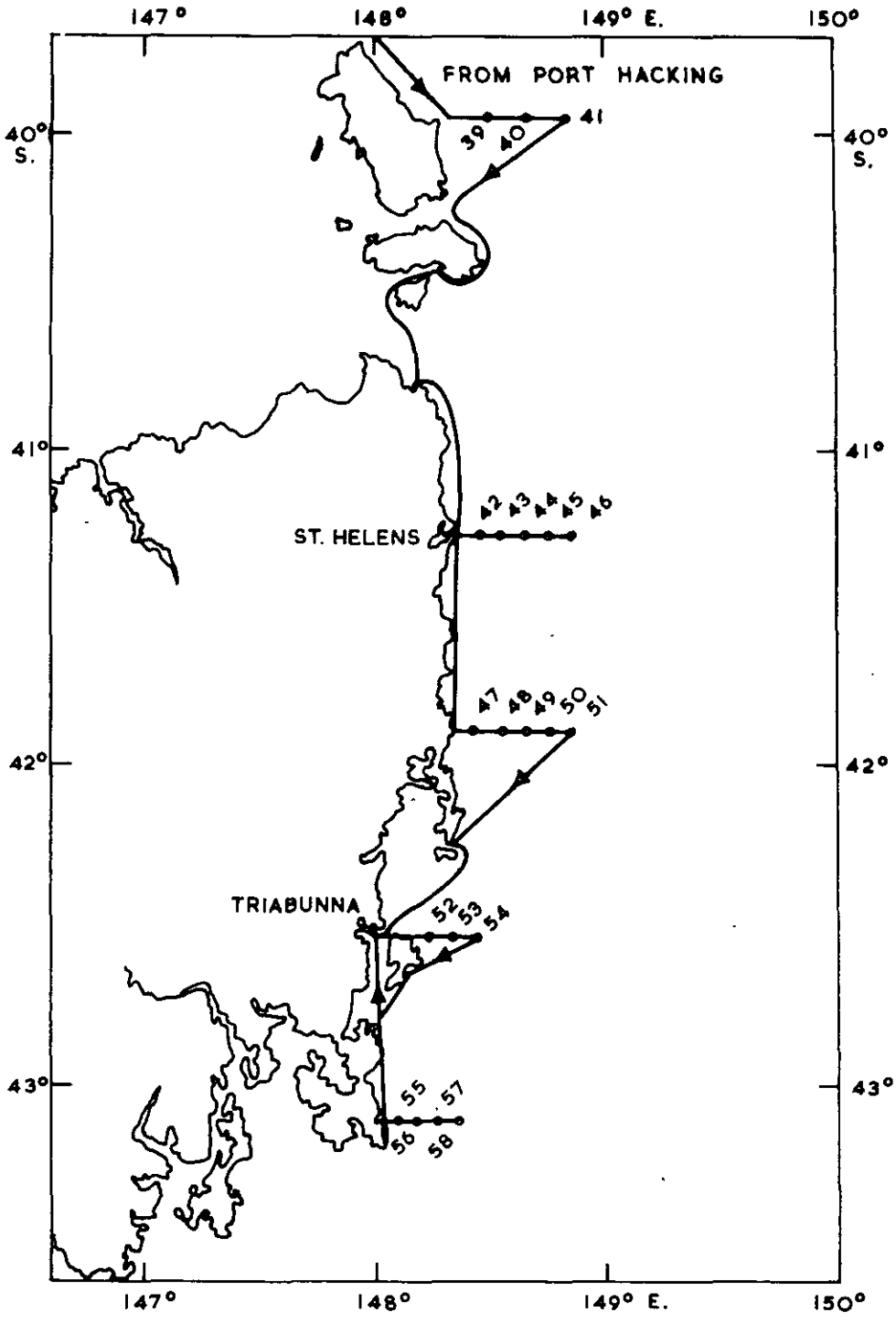

Fig. 3.– Track chart Cruise M 4/65

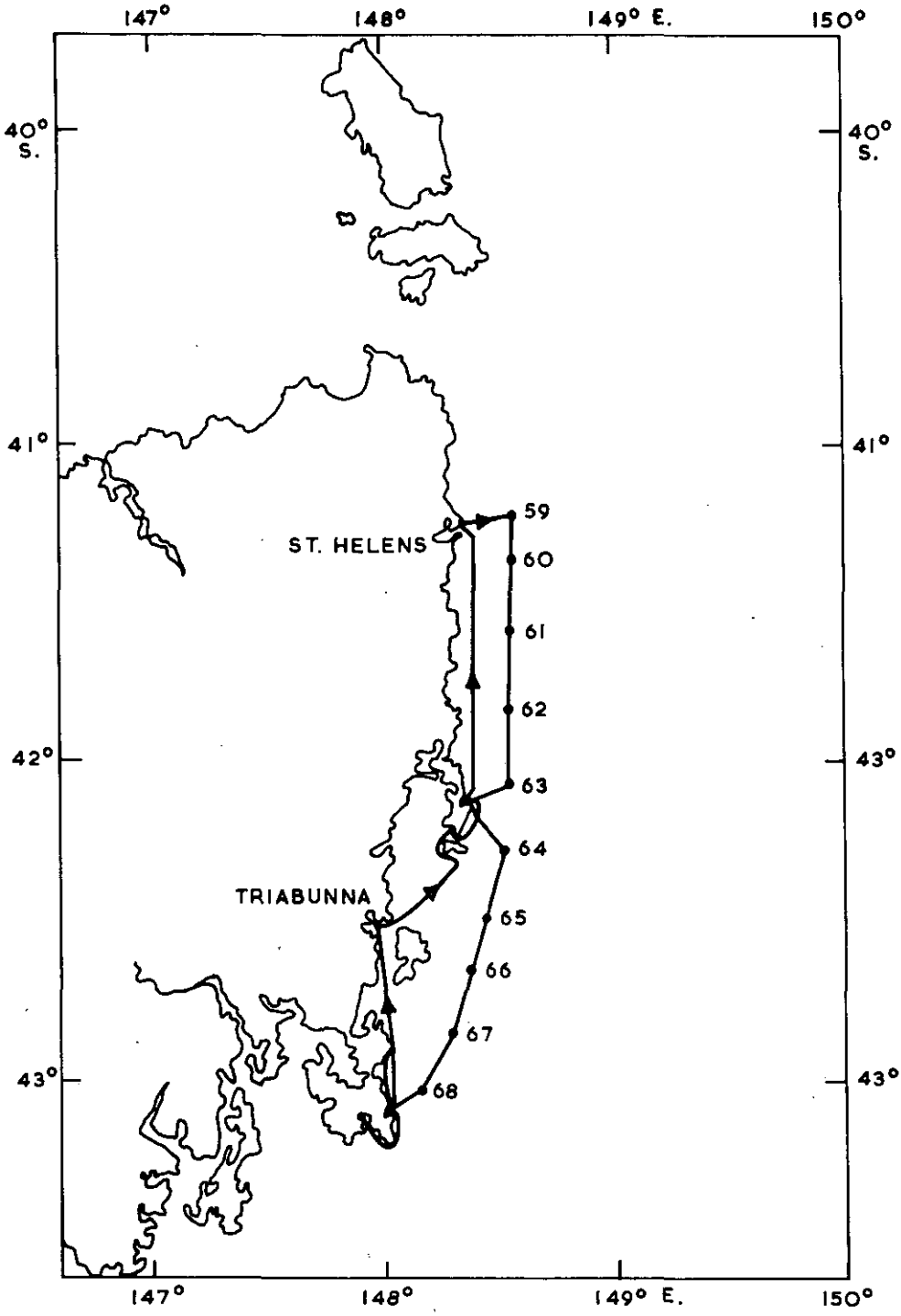

Fig. 4.-Track chart Cruise M 5/65

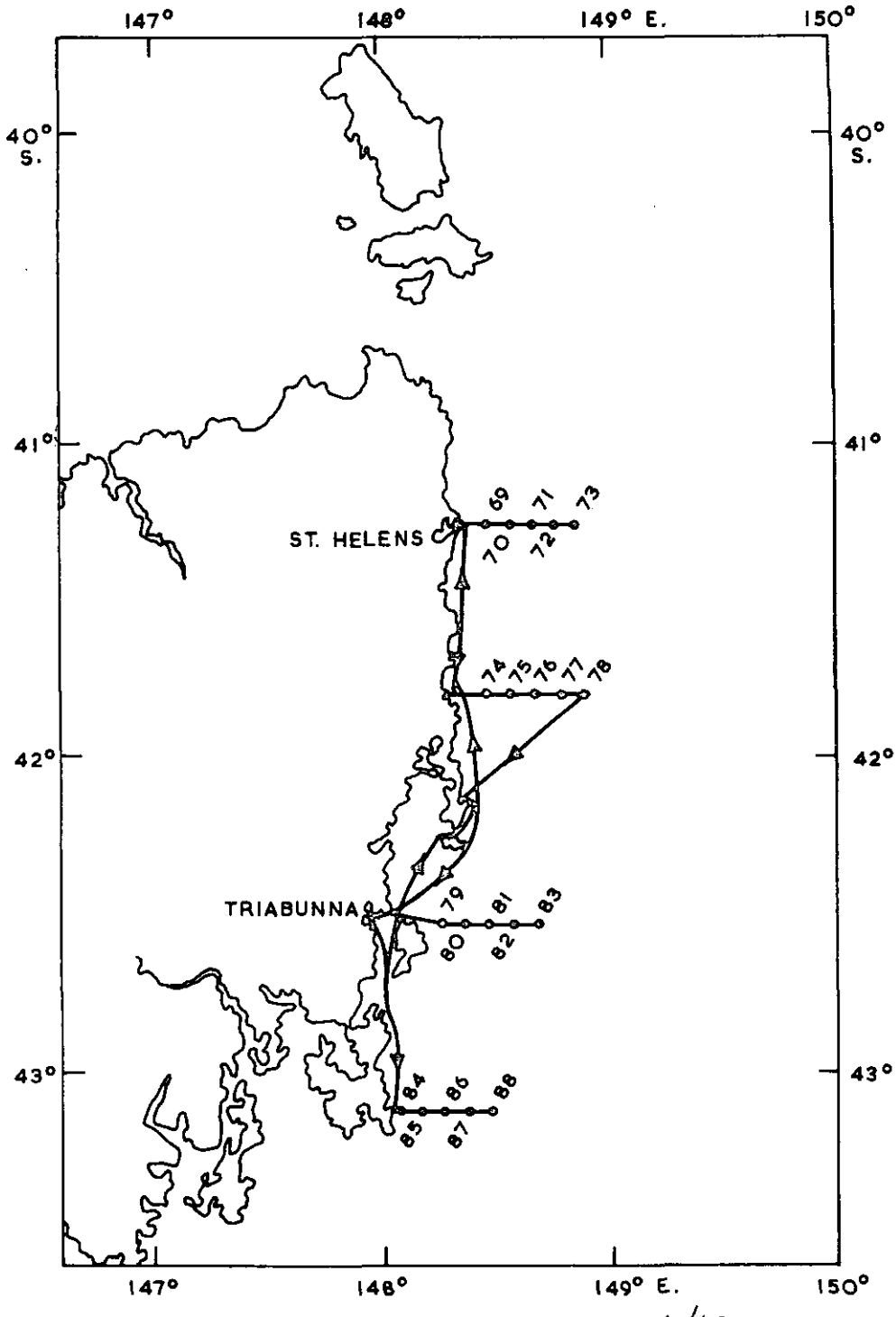

Fig. 5.- Track chart Cruise M 6/65

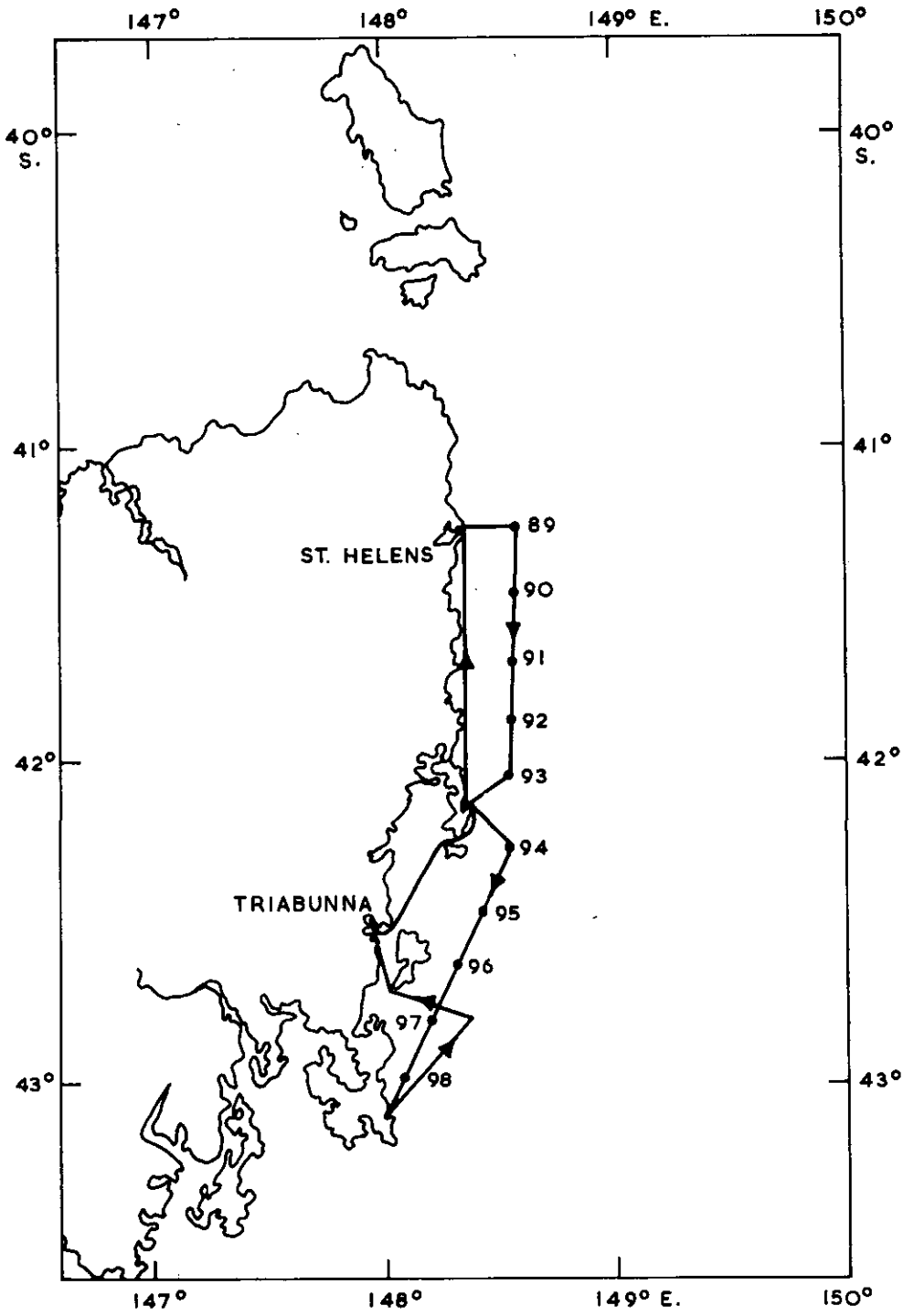

Fig. 6.-Track chart Cruise M 7/65

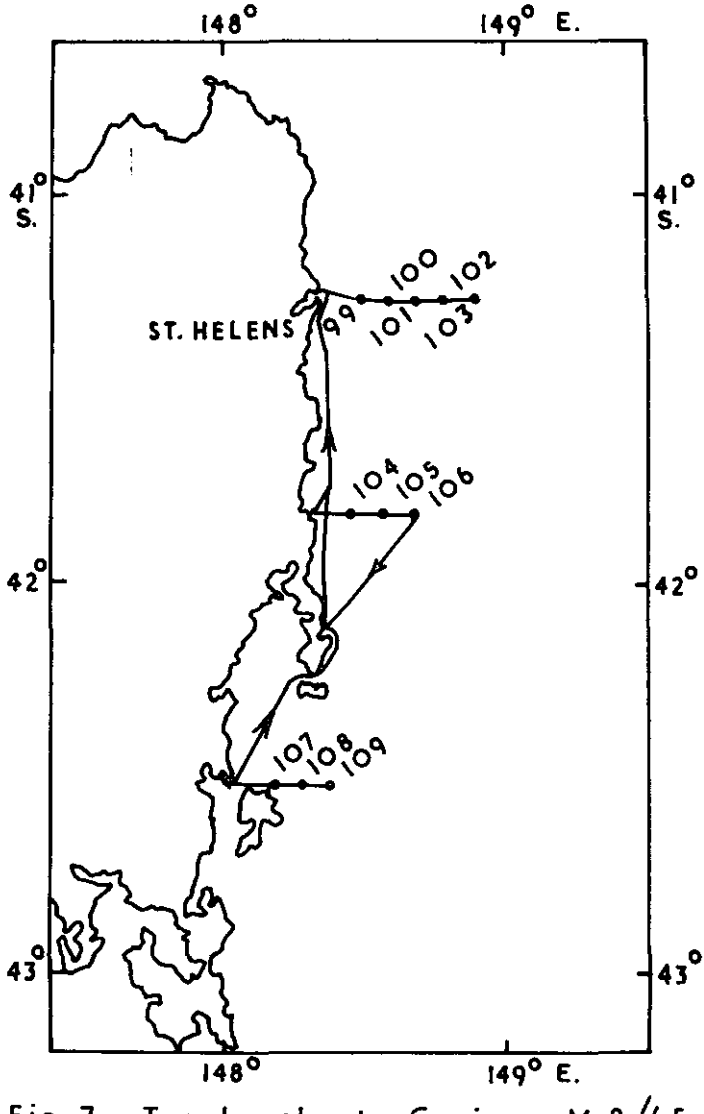

Fig. 7:- Track chart Cruise M 8/65

V. DATA

The data were processed in a C.D.C. 3600 Computer.

EXPLANATION OF HEADINGS

Parts 1 and 2	Hydrology
STATION	Gives the station identification. For example, M1/5/65 signifies the 5th station worked by Marelda in 1965, on her 1st cruise for that year
DATE	Given as day/month/year
TIME	Given as 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. Navy Hydrogr. Office (1955)
VIS.	Visibility is coded using Table 4 in U.S. Navy Hydrogr. Office (1955)
SEA DIR. AMT.	Sea direction and amount are coded using Tables 5 and 8 in U.S. Navy Hydrogr. Office (1955)
SWELL DIR. AMT.	Sea swell direction and amount are coded using Tables 6 and 8 in U.S. Navy Hydrogr. Office (1955)
BAROM. or ATMOS. PRESSURE	Atmospheric pressure given in millibars

WIRE ANGLES CAST1 CAST2 CAST3	Wire angles are measured at the surface and expressed in degrees for each cast
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

*, ***, or a blank indicates no data available

DATA

PART 1

HYDROLOGY

SURFACE SAMPLES

VESSEL	CRUISE	STATION NUMBER	YR.	MTH.	DAY	TIME	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND DN.	WIND AMT.	SEA DN.	SEA AMT.	SWELL DN.	SWELL AMT.	WEA.	VIS.	BAROM.
38	1	1	65	1	1	0535	K 36 25 S	150 09 E	18,2	35,52	36	2	36	2	08	2	01	7	1023,0
38	1	2	65	1	1	0630	K 36 25 S	150 14 E	17,8	35,55	36	2	36	2	08	2	01	7	1023,0
38	1	3	65	1	1	0720	K 36 25 S	150 19 E	19,4	35,59	36	2	36	2	08	2	02	7	1023,0
38	1	4	65	1	1	0815	K 36 25 S	150 24 E	20,4	35,61	36	2	36	2	08	2	02	7	1023,0
38	1	5	65	1	1	0915	K 36 25 S	150 29 E	20,7	35,62	36	2	36	2	08	2	02	7	1021;0
38	1	6	65	1	1	1140	K 36 39 S	150 22 E	17,1	35,75D	36	4	36	3	08	2	01	7	1020,0
38	1	7	65	1	1	1345	K 36 48 S	150 10 E	16,5		36	3	36	2	08	2	02	7	1019,0
38	1	8	65	1	2	0715	K 37 04 S	150 00 E	17,0	35,46	18	1	18	1	09	2	02	7	1016,0
38	1	9	65	1	2	0810	K 37 04 S	150 05 E	16,6	35,46	18	2	18	1	09	2	02	7	1015,0
38	1	10	65	1	2	0910	K 37 04 S	150 10 E	16,4	35,57D	14	3	14	1	09	2	02	7	1015,0
38	1	11	65	1	2	1005	K 37 04 S	150 15 E	16,8	35,50	14	3	14	2	09	2	02	7	1015,0
38	1	12	65	1	2	1110	K 37 04 S	150 20 E	17,3	35,50	14	4	14	2	09	2	02	7	1015,0
38	1	13	65	1	2	1215	K 37 04 S	150 25 E	17,6	35,64	16	5	16	3	09	2	02	7	1015,0
38	2	14	65	1	5	0515	K 37 03 S	150 03 E	16,9	35,44	14	1	00	0	00	0	02	7	1021,0
38	2	15	65	1	5	0615	K 37 03 S	150 08 E	16,8	35,52	14	1	00	0	00	0	02	7	1020,0
38	2	16	65	1	5	0715	K 37 03 S	150 15 E	16,9	35,52	00	0	00	0	00	0	02	7	1020,0
38	2	17	65	1	5	0805	K 37 03 S	150 21 E	17,9	35,55	05	1	05	1	00	0	02	7	1020,0
38	2	18	65	1	5	0850	K 37 03 S	150 27 E	20,1	35,68	02	2	02	1	00	0	02	7	1020,0
38	2	19	65	1	5	1100	K 36 52 S	150 27 E	19,9	35,68	02	2	02	1	00	0	01	7	1019,0
38	2	20	65	1	5	1315	K 36 40 S	150 27 E	20,9	35,68	02	3	02	2	00	0	02	7	1017,0
38	2	21	65	1	5	1530	K 36 30 S	150 27 E	21,2	35,71	02	1	02	2	05	2	02	7	1015,0
38	2	22	65	1	6	0610	K 36 28 S	150 12 E	19,0	35,57	14	2	14	1	05	2	01	7	1017,0
38	2	23	65	1	6	0700	K 36 32 S	150 16 E	18,9	35,59	14	3	14	2	05	2	01	7	1018,0
38	2	24	65	1	6	0800	K 36 34 S	150 23 E	19,6	35,64	18	4	18	2	05	2	01	7	1018,0
38	2	25	65	1	8	0600	K 36 28 S	150 10 E	19,5	35,59	23	3	23	2	14	2	01	7	1025,0
38	2	26	65	1	8	0705	K 36 35 S	150 16 E	20,2	35,71	23	3	23	2	14	2	01	7	1025,0
38	2	27	65	1	8	0820	K 36 43 S	150 15 E	18,4	35,70	23	1	23	1	14	2	01	7	1025,0
38	2	28	65	1	8	0935	K 36 52 S	150 15 E	18,4	35,68	18	1	18	1	14	2	01	7	1025,0
38	2	29	65	1	8	1050	K 36 56 S	150 09 E	17,8	35,59	16	1	16	0	14	2	01	7	1025,0
38	2	30	65	1	8	1200	K 37 01 S	150 04 E	17,4	35,57	14	1	14	1	14	2	01	7	1024,0
38	3	31	65	1	10	0600	K 37 04 S	150 04 E	18,6	35,59	23	1	23	1	09	2	01	7	1012,0
38	3	32	65	1	10	0655	K 37 04 S	150 09 E	19,8	35,68	18	1	18	1	14	2	01	7	1012,0
38	3	33	65	1	10	0750	K 37 04 S	150 16 E	20,2	35,70	18	1	18	1	14	2	01	7	1012,0
38	3	34	65	1	10	0840	K 37 04 S	150 21 E	20,0	35,68	18	1	18	1	14	2	01	7	1012,0
38	3	35	65	1	10	0940	K 37 03 S	150 28 E	20,0	35,68	16	1	16	1	14	2	01	7	1010,0
38	3	36	65	1	10	1050	K 37 10 S	150 28 E	19,1	35,64	14	1	14	1	14	2	01	7	1010,0
38	3	37	65	1	10	1150	K 37 15 S	150 28 E	19,2	35,68	14	1	14	1	14	2	01	7	1010,0
38	3	38	65	1	10	1245	K 37 15 S	150 22 E	19,1	35,68	14	1	14	1	14	2	01	7	1008,0
38	3	39	65	1	10	1345	K 37 15 S	150 17 E	18,5	35,59	14	1	14	1	14	2	01	7	1008,0
38	3	40	65	1	10	1445	K 37 15 S	150 09 E	19,0	35,64	14	1	14	1	14	2	01	7	1007,0

D - PROPERTY DOUBTFUL I - PROPERTY INTERPOLATED

VESSEL	CRUISE	STATION NUMBER	YR.	MTH.	DAY	TIME	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND DN.	WIND AMT.	SEA DN.	SEA AMT.	SWELL DN.	SWELL AMT.	WEA.	VIS.	BAROM.
38	3	41	65	1	14	0545	K 37 04 S	150 00 E	16.8	35,52	23	1	00	0	14	2	01	7	1019.0
38	3	42	65	1	14	0640	K 37 04 S	150 05 E	17.3	35,57	23	1	23	1	14	2	02	7	1019.0
38	3	43	65	1	14	0730	K 37 04 S	150 10 E	17.0	35,53	20	2	20	1	14	2	01	7	1020.0
38	3	44	65	1	14	0825	K 37 04 S	150 15 E	17.2	35,55	20	2	20	1	14	2	01	7	1020.0
38	3	45	65	1	14	0915	K 37 04 S	150 20 E	17.5	35,57	20	2	20	2	16	2	02	7	1020.0
38	3	46	65	1	14	1020	K 37 04 S	150 25 E	18.3	35,59	18	3	18	2	16	2	01	7	1020.0
38	3	47	65	1	19	0540	K 36 25 S	150 09 E	18.4	35,57	18	2	18	2	09	3	02	7	1011.0
38	3	48	65	1	19	0640	K 36 25 S	150 14 E	19.5	35,62	18	2	18	2	09	3	02	7	1011.0
38	3	49	65	1	19	0755	K 36 25 S	150 19 E	20.0	35,64	16	1	16	1	09	2	01	7	1010.0
38	3	50	65	1	19	0845	K 36 25 S	150 24 E	20.1	35,64	09	1	14	1	09	2	01	7	1009.0
38	3	51	65	1	19	0940	K 36 25 S	150 29 E	20.1	35,66	09	1	14	1	09	2	01	7	1009.0
38	4	52	65	2	21	0750	K 39 57 S	148 31 E	17.6	35,61	04	2	04	2	09	1	01	7	1017.0
38	4	53	65	2	21	0915	K 39 57 S	148 40 E	17.5	35,52	04	3	04	2	09	2	01	7	1016.0
38	4	54	65	2	21	1035	K 39 57 S	148 48 E	17.9	35,53	04	3	04	2	09	2	01	7	1016.0
38	4	55	65	2	28	0715	K 41 16 S	148 28 E	16.0	35,16	36	2	36	2	09	1	02	7	1025.0
38	4	56	65	2	28	0820	K 41 16 S	148 35 E	16.7	35,32	34	1	34	2	09	1	02	7	1026.0
38	4	57	65	2	28	0925	K 41 16 S	148 42 E	17.1	35,46	34	1	34	2	09	1	02	7	1026.0
38	4	58	65	2	28	1045	K 41 16 S	148 49 E	17.3	35,44	34	1	34	2	09	1	02	7	1026.0
38	4	59	65	2	28	1200	K 41 16 S	148 56 E	17.5	35,46	34	1	34	2	09	1	02	7	1026.0
38	4	60	65	3	2	0620	K 41 52 S	148 28 E	16.0	35,07	36	1	36	1	02	1	01	7	1019.0
38	4	61	65	3	2	0720	K 41 52 S	148 35 E	16.4	35,19	36	1	36	2	02	1	01	7	1019.0
38	4	62	65	3	2	0820	K 41 52 S	148 42 E	17.3	35,48	36	1	36	2	02	1	01	7	1019.0
38	4	63	65	3	2	0935	K 41 52 S	148 49 E	17.2	35,46N	36	1	36	2	02	1	01	7	1018.0
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38	4	65	65	3	5	0810	K 42 32 S	148 05 E	15.7	35,01	36	1	36	2	14	2	02	7	1012.0
38	4	66	65	3	5	0920	K 42 32 S	148 12 E	14.6	34,90	36	1	36	2	05	2	02	7	1012.0
38	4	67	65	3	5	1030	K 42 32 S	148 19 E	14.3	34,92	36	2	36	2	05	3	02	7	1011.0
38	4	68	65	3	12	0700	K 43 09 S	148 05 E	14.1	34,85	27	1	27	1	05	3	03	7	998.0
38	4	69	65	3	12	0800	K 43 09 S	148 11 E	14.1	34,92	36	1	36	1	05	3	03	7	998.0
38	4	70	65	3	12	0905	K 43 09 S	148 18 E	13.9	34,94	36	1	36	1	05	3	61	7	998.0
38	4	71	65	3	12	1015	K 43 09 S	148 25 E	13.8	34,97	23	1	23	2	05	3	61	7	998.0
38	5	72	65	3	20	0840	K 41 16 S	148 35 E	15.6	35,08	34	2	34	2	09	1	01	7	1018.0
38	5	73	65	3	20	1030	K 41 20 S	148 35 E	15.4	35,16	01	5	30	2	09	1	02	7	1016.0
38	5	74	65	3	20	1220	K 41 35 S	148 35 E	15.3	35,14	09	1	16	2	05	1	02	7	1015.0
38	5	75	65	3	20	1425	K 41 50 S	148 35 E	15.1	35,26	36	1	36	2	05	1	02	7	1013.0
38	5	76	65	3	20	1630	K 42 05 S	148 35 E	15.1	35,07	36	1	36	2	05	1	02	7	1012.0
38	5	77	65	3	22	0900	K 42 19 S	148 34 E	15.2	35,28	27	1	27	1	14	2	02	7	1020.0
38	5	78	65	3	22	1100	K 42 29 S	148 30 E	14.4	34,99	27	1	27	2	14	2	02	7	1019.0
38	5	79	65	3	22	1300	K 42 40 S	148 25 E	14.6	35,01	32	1	32	1	18	2	02	7	1017.0
38	5	80	65	3	22	1500	K 42 51 S	148 17 E	14.4	34,96	27	1	27	1	18	2	02	7	1016.0

D PROPERTY DOUBTFUL

N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
L 1/ 42/63	10/ 4/63	1225 H	34 26 S	115 01 E

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

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	22.30	35.490	24.52	***	***	***	***	***
1	20	22.20	***	***	***	***	***	***	***
1	40	20.30	***	***	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
L 1/ 43/63	10/ 4/63	1400 H	34 27 S	115 12 E

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

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.60	35.710	24.89	***	***	***	***	***
1	20	21.60	***	***	***	***	***	***	***
1	40	21.40	***	***	***	***	***	***	***

VESSEL	CRUISE	STATION NUMBER	YR.	MTH.	DAY	TIME	LATITUDE	LONGITUDE	TEMP.	SALINITY	WIND DN.	WIND AMT.	SEA DN.	SEA AMT.	SWELL DN.	SWELL AMT.	WEA.	VIS.	BAROM.
38	8	121	65	5	24	0950	K 42 32 S	148 21 E	12.8	34.97	32	3	32	3	14	1	01	7	1018.0
38	8	122	65	5	24	1050	K 42 32 S	148 28 E	12.9	34.99	32	4	32	3	14	1	01	7	1017.0

DATA

PART 2

HYDROLOGY

SUBSURFACE SAMPLES

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 1/ 1/65	1/ 1/65	0535 K	36 25 S	150 09 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
60	***	***	36	2	*	*	*	7	36	2	08	2	1023.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.24	35.520	25.63	5.25	98	***	***	***
1	10	17.79	35.530	25.75	5.33	99	***	***	***
1	20	17.38	35.550	25.86	***	***	***	***	***
1	30	17.11	35.590	25.96	5.26	96	***	***	***
1	40	17.08	35.520	25.91	***	***	***	***	***
1	50	16.76	35.520	25.99	5.21	94	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 1/ 2/65	1/ 1/65	0630 K	36 25 S	150 14 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
121	***	***	36	2	*	*	*	7	36	2	08	2	1023.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.83	35.550	25.75	5.22	97	***	***	***
1	10	17.85	35.530	25.73	5.24	97	***	***	***
1	20	17.76	35.610	25.82	***	***	***	***	***
1	75	15.92D	35.520D	26.18	***	***	***	***	***
1	100D	15.75	35.520	26.22	5.11	91	***	***	***

D PROPERTY DOUBTFUL I PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 1/ 3/65	1/ 1/65	0720 K	36 25 S	150 19 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
157	***	***	36	2	*	*	*	7	36	2	08	2	1023.0	15	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.40	35.590	25.39	5.10	97	***	***	***
1	10	18.94	35.500	25.44	5.21	99	***	***	***
1	20	18.56	35.530	25.56	***	***	***	***	***
1	30	17.94	35.660D	25.81	5.26	98	***	***	***
1	40	17.79	35.520	25.74	***	***	***	***	***
1	50	17.50	35.640D	25.90	5.28	97	***	***	***
1	75	16.19	35.520	26.12	***	***	***	***	***
1	100	15.64	35.520	26.25	5.08	90	***	***	***
1	150	15.61	35.500	26.24	5.06	90	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 1/ 4/65	1/ 1/65	0815 K	36 25 S	150 24 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
732	***	***	36	2	*	*	*	7	36	2	08	2	1023.0	30	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.41	35.610	25.14	5.06	99	***	***	***
1	25	20.41	35.610	25.14	***	***	***	***	***
1	220D	14.52	35.430	26.42	5.12	89	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 1/ 5/65	1/ 1/65	0915 K	36 25 S	150 29 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	***	***	36	2	*	*	*	7	36	2	08	2	1021.0	40	5	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	20.66	35.620	25.08	5.05	99	***	***	***
2	25	20.58	35.640	25.11	***	***	***	***	***
2	50	19.78	35.610	25.30	4.99	96	***	***	***
2	75	18.41D	35.590D	25.64	***	***	***	***	***
1	260D	13.88	35.460	26.59	5.13	88	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 1/ 8/65	2/ 1/65	0715 K	37 04 S	150 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
52	***	***	18	1	*	*	*	7	18	1	09	2	1016.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.97	35.460	25.89	5.40	98	***	***	***
1	10	16.46	35.500	26.04	5.49	99	***	***	***
1	20	16.08	35.500	26.13	***	***	***	***	***
1	30	15.99	35.500	26.15	5.49	98	***	***	***
1	40	15.94	35.500N	26.16	***	***	***	***	***
1	50	15.94	35.500	26.16	5.41	96	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 1/ 9/65	2/ 1/65	0810 K	37 04 S	150 05 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
79	***	***	18	2	*	*	*	7	18	1	09	2	1015.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.56	35.460	25.99	5.44	98	***	***	***
1	10	16.49	35.460N	26.01	5.44	98	***	***	***
1	20	16.42	35.460	26.02	***	***	***	***	***
1	30	16.17	35.460	26.08	5.47	98	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 1/ 10/65	2/ 1/65	0910 K	37 04 S	150 10 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
95	***	***	14	3	*	*	*	7	14	1	09	2	1015.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.44	35.570D	26.10	5.44	98	***	***	***
1	10	16.47	35.460	26.01	5.45	98	***	***	***
1	20	16.34	35.520	26.09	***	***	***	***	***
1	30	16.22	35.460	26.07	5.44	97	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 1/ 11/65	2/ 1/65	1005 K	37 04 S	150 15 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
115	***	***	14	3	*	*	*	7	14	2	09	2	1015.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.77	35.500	25.97	5.44	99	***	***	***
1	10	16.61	35.500	26.01	5.50	99	***	***	***
1	20	16.42	35.440	26.01	***	***	***	***	***
1	30	16.32	35.450N	26.04	5.50	99	***	***	***
1	40	16.26	35.460	26.06	***	***	***	***	***
1	50	16.08	35.460	26.10	5.52	99	***	***	***
1	75	15.69	35.500	26.22	***	***	***	***	***
1	100	15.56	35.610	26.33	5.38	95	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 1/ 12/65	2/ 1/65	1110 K	37 04 S	150 20 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
238	***	***	14	4	*	*	*	7	14	2	09	2	1015.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.30	35.500	25.84	5.49	101	***	***	***
1	25	16.65	35.500	26.00	***	***	***	***	***
1	50	15.77	35.500	26.20	5.47	97	***	***	***
1	75	15.08	35.520	26.37	***	***	***	***	***
1	100	15.04	35.520	26.38	5.29	93	***	***	***
1	125	15.03	35.520	26.38	***	***	***	***	***
1	150	14.97	***	***	5.25	***	***	***	***
1	175	14.75	35.530	26.45	***	***	***	***	***
1	200	14.55	35.530	26.50	5.21	90	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 1/ 13/65	2/ 1/65	1215 K	37 04 S	150 25 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	***	***	16	5	*	*	*	7	16	3	09	2	1015.0	25	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.59	35.640	25.88	5.38	99	***	***	***
1	23	17.02	35.500	25.91	***	***	***	***	***
1	45	15.67	35.500	26.23	5.49	97	***	***	***
1	67	14.92	35.500	26.39	***	***	***	***	***
1	90	14.84	35.520	26.43	5.24	91	***	***	***
1	136	14.56	35.570	26.53	***	***	***	***	***
1	174	14.26	***	***	5.29	***	***	***	***
1	262	13.15	35.460	26.74	5.06	85	***	***	***
1	436	9.74	34.870	26.91	4.88	76	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 3/ 41/65	14/ 1/65	0545 K	37 04 S	150 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
62	***	***	23	1	*	*	*	7	00	0	14	2	1019.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.83	35.520	25.97	***	***	***	***	***
1	10	16.85	35.550	25.99	***	***	***	***	***
1	20	16.84D	35.520D	25.97	***	***	***	***	***
1	30	16.84D	35.530D	25.98	***	***	***	***	***
1	40	16.83D	35.990D	26.02	***	***	***	***	***
1	50	16.83D	35.930D	25.98	***	***	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 3/ 42/65	14/ 1/65	0640 K	37 04 S	150 05 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
91	***	***	23	1	*	*	*	7	23	1	14	2	1019.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.31	35.570	25.89	5.39	99	***	***	***
1	10	17.31	35.550	25.88	5.42	99	***	***	***
1	20	17.32	35.550	25.88	***	***	***	***	***
1	30	17.31	35.570	25.90	5.37	98	***	***	***
1	40	17.31D	35.530D	25.86	***	***	***	***	***
1	50D	17.28	35.530	25.87	5.32	97	***	***	***
1	70D	17.08	35.550	25.93	5.35	98	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 3/ 43/65	14/ 1/65	0730 K	37 04 S	150 10 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
95	***	***	20	2	*	*	*	7	20	1	14	2	1020.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.01	35.530	25.94	***	***	***	***	***
1	10	17.06	35.520	25.92	***	***	***	***	***
1	20	17.05	35.590	25.97	***	***	***	***	***
1	30	16.96	35.620D	26.02	***	***	***	***	***
1	40	16.93	35.520	25.95	***	***	***	***	***
1	50	16.92	35.520	25.95	***	***	***	***	***
1	75	16.78	35.520	25.98	***	***	***	***	***
1	90	16.74	35.690	26.05	***	***	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 3/ 44/65	14/ 1/65	0825 K	37 04 S	150 15 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
113	***	***	20	2	*	*	*	7	20	1	14	2	1020.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.20	35.550	25.91	5.38	98	***	***	***
1	10	17.19	35.530	25.89	5.39	99	***	***	***
1	20	17.16	35.530	25.90	***	***	***	***	***
1	30	17.15	35.530	25.90	5.38	98	***	***	***
1	40	17.08	35.530	25.92	***	***	***	***	***
1	75	16.90	35.530	25.96	***	***	***	***	***
1	100D	16.71	35.520	26.00	5.25	95	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 3/ 45/65	14/ 1/65	0915 K	37 04 S	150 20 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
220	***	***	20	2	*	*	*	7	20	2	16	2	1020.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.46	35.570	25.86	***	***	***	***	***
1	25	17.28	35.550	25.89	***	***	***	***	***
1	50	17.20	35.530	25.89	***	***	***	***	***
1	75	16.34	35.920	26.09	***	***	***	***	***
1	100	15.97	35.500	26.16	***	***	***	***	***
1	125	15.00	35.430	26.32	***	***	***	***	***
1	150	14.49	35.410	26.42	***	***	***	***	***
1	175	14.11	35.460	26.54	***	***	***	***	***
1	200	13.85	35.370	26.52	***	***	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 3/ 46/65	14/ 1/65	1020 K	37 04 S	150 25 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	***	***	18	3	*	*	*	7	18	2	16	2	1020.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.27	35.590	25.68	5.23	98	***	***	***
1	25	18.16	35.660 D	25.76	***	***	***	***	***
1	50	17.94	35.570	25.74	5.23	97	***	***	***
1	75	17.55	***	***	***	***	***	***	***
1	100	16.12	35.480	26.11	5.22	93	***	***	***
1	150	13.54	35.340	26.56	***	***	***	***	***
1	200	13.32	35.340	26.61	4.99	84	***	***	***
1	300	12.82	35.280	26.66	4.97	83	***	***	***
1	500	9.43	34.790	26.90	4.82	75	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 3/ 47/65	19/ 1/65	0540 K	36 25 S	150 09 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
59	***	***	18	2	*	*	*	7	18	2	09	3	1011.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	18.39	35.570	25.63	5.11	96	***	***	***
1	10	17.52	35.640	25.90	4.98	92	***	***	***
1	20	16.62	35.460	25.97	***	***	***	***	***
1	30	12.53	35.190	26.65	4.71	78	***	***	***
1	40	11.49	35.120	26.80	***	***	***	***	***
1	50	11.46	***	***	4.78	***	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 3/ 48/65	19/ 1/65	0640 K	36 25 S	150 14 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
110	***	***	18	2	*	*	*	7	18	2	09	3	1011.0	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	19.50	35.620	25.39	***	***	***	***	***
1	10	19.43	35.620	25.40	***	***	***	***	***
1	20	19.08	35.610	25.48	***	***	***	***	***
1	30	17.57	35.570	25.83	***	***	***	***	***
1	40	16.92	35.590	26.00	***	***	***	***	***
1	50	16.21	35.500	26.10	***	***	***	***	***
1	75	11.39	35.080	26.79	***	***	***	***	***
1	100	11.22	35.050	26.79	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 3/ 49/65	19/ 1/65	0755 K	36 25 S	150 19 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
159	***	***	16	1	*	*	*	7	16	1	09	2	1010.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.02	35.640	25.26	5.13	99	***	***	***
1	10	19.97	35.680	25.31	5.06	98	***	***	***
1	20	20.01	35.640	25.27	***	***	***	***	***
1	30	20.00N	35.640	25.27	5.11	99	***	***	***
1	40	19.99	35.620	25.25	***	***	***	***	***
1	50D	19.73	35.610	25.32	5.16	99	***	***	***
1	75	15.95	35.440	26.12	***	***	***	***	***
1	100	14.72	35.390	26.35	4.57	79	***	***	***
1	150	11.55	35.100	26.77	4.83	78	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 3/ 50/65	19/ 1/65	0845 K	36° 25 S	150 24 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
732	***	***	09	1	*	*	*	7	14	1	09	2	1009.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.12	35.640	25.24	***	***	***	***	***
1	25	20.01	35.660	25.28	***	***	***	***	***
1	50	18.60	35.570	25.58	***	***	***	***	***
1	75	16.29	35.440	26.04	***	***	***	***	***
1	100	14.58	35.390	26.38	***	***	***	***	***
1	150	13.29	35.300	26.58	***	***	***	***	***
1	200	12.72	35.280	26.68	***	***	***	***	***
1	300	11.31	35.050	26.78	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 3/ 51/65	19/ 1/65	0940 K	36 25 S	150 29 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	***	***	09	1	*	*	*	7	14	1	09	2	1009.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.14	35.660	25.25	5.11	99	***	***	***
1	25	19.94	35.660	25.30	***	***	***	***	***
1	50	18.21	35.570	25.67	5.04	94	***	***	***
1	75	16.41	35.480	26.04	***	***	***	***	***
1	100	15.18	35.410	26.27	5.05	89	***	***	***
1	150	12.91	35.170	26.56	***	***	***	***	***
1	200	12.70	35.350	26.74	4.94	82	***	***	***
1	300	11.49	35.100	26.78	4.94	80	***	***	***
1	500	9.62	34.830	26.90	4.84	75	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 55/65	28/ 2/65	0715 K	41 16 S	148 28 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
110	***	***	36	2	*	*	*	7	36	2	09	1	1025.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	15.95	35.160	25.90	5.52	98	***	***	***
1	10	15.92N	35.170N	25.91	5.57	99	***	***	***
1	20	15.89	35.190	25.94	5.60	100	***	***	***
1	30	15.03	35.100	26.06	5.59	98	***	***	***
1	40	14.08	35.190	26.33	5.40	92	***	***	***
1	80	12.73D	35.070D	26.52	5.01D	83	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 56/65	28/ 2/65	0820 K	41 16 S	148 35 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
117	***	***	34	1	*	*	*	7	34	2	09	1	1026.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.74	35.320	25.84	5.43	98	***	***	***
1	10	16.78	35.480D	25.95	5.47	99	***	***	***
1	20	16.72	35.370	25.88	5.46	99	***	***	***
1	30	16.26	35.370	25.99	5.40	97	***	***	***
1	40	15.71	35.390	26.13	5.33	95	***	***	***
1	50	14.97	35.410	26.31	5.20	91	***	***	***
1	75	13.45	35.250	26.51	5.03	85	***	***	***
1	100	13.01	35.250	26.60	4.91	82	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 57/65	28/ 2/65	0925 K	41 16 S	148 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
595	***	***	34	1	*	*	*	7	34	2	09	1	1026.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.10	35.460	25.86	5.40	98	***	***	***
1	25	17.07	35.440	25.85	5.22	95	***	***	***
1	50	15.52	35.410	26.19	5.18	92	***	***	***
1	75	14.75	35.410	26.36	5.12	89	***	***	***
1	100	14.05	35.410	26.51	5.01	86	***	***	***
1	150	13.19	35.390	26.67	4.74	80	***	***	***
1	175	13.09D	35.340D	26.66	5.07D	85	***	***	***
1	260	12.11D	35.250D	26.78	5.08D	84	***	***	***
1	430	10.13D	34.940D	26.90	4.90D	77	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 58/65	28/ 2/65	1045 K	41 16 S	148 49 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1134	***	***	34	1	*	*	*	7	34	2	09	1	1026.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.31	35.440	25.80	5.25	96	***	***	***
1	25	17.25	35.440	25.81	5.36	98	***	***	***
1	50	16.02	35.390	26.06	5.26	94	***	***	***
1	75	14.02	35.350	26.47	4.86	83	***	***	***
1	100	13.40	35.320	26.58	4.67	79	***	***	***
1	150	12.66	35.230	26.66	4.69	78	***	***	***
1	200	12.15	35.160	26.70	4.60	76	***	***	***
1	300	11.30	35.160	26.86	5.07	82	***	***	***
1	500	8.98	34.690	26.90	5.05	77	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 59/65	28/ 2/65	1200 K	41 16 S	148 56 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	***	***	34	1	*	*	*	7	34	2	09	1	1026.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.55	35.460	25.75	5.32	98	***	***	***
1	25	17.45	35.520	25.82	5.36	98	***	***	***
1	50	15.16	35.520	26.35	4.87	85	***	***	***
1	75	14.24	35.350	26.42	4.65	80	***	***	***
1	100	13.60	35.350	26.56	4.59	78	***	***	***
1	150	12.66	35.260	26.68	4.80	80	***	***	***
1	200	12.05	35.190	26.74	4.81	79	***	***	***
1	300	11.15	35.070	26.82	5.17	83	***	***	***
1	500	9.24	34.780	26.93	4.91	76	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 60/65	2/ 3/65	0620 K	41 52 S	148 28 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
82	***	***	36	1	*	*	*	7	36	1	02	1	1019.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.00	35.070	25.82	5.51	98	***	***	***
1	10	15.95	35.080	25.84	5.51	98	***	***	***
1	20	15.96	35.190D	25.92	5.57	99	***	***	***
1	30	15.94	35.100	25.86	5.58	99	***	***	***
1	40	15.68	35.140	25.95	5.52	98	***	***	***
1	50	14.99	35.080	26.05	5.47	95	***	***	***
1	75	13.17	35.070	26.43	5.06	85	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 61/65	2/ 3/65	0720 K	41 52 S	148 35 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
113	***	***	36	1	*	*	*	7	36	2	02	1	1019.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	16.44	35.190	25.81	5.48	98	***	***	***
1	10	16.46	35.190	25.80	5.48	99	***	***	***
1	20	16.45	35.230	25.84	5.51	99	***	***	***
1	30	16.46	35.230	25.84	5.48	99	***	***	***
1	40	16.40	35.260	25.87	5.46	98	***	***	***
1	50	15.66	35.350	26.11	5.38	95	***	***	***
1	75	13.73	35.250	26.45	5.14	87	***	***	***
1	100	12.98	35.190	26.56	5.08	85	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 62/65	2/ 3/65	0820 K	41 52 S	148 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
1061	***	***	36	1	*	*	*	7	36	2	02	1	1019.0	10	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.32	35.480	25.82	5.35	98	***	***	***
1	25	17.27	35.480	25.84	4.90	90	***	***	***
1	50	16.56	35.480	26.00	5.30	96	***	***	***
1	75	14.55	35.370	26.37	5.15	89	***	***	***
1	100	13.65	35.520D	26.68	4.93	84	***	***	***
1	150	12.91	35.340	26.69	5.05	84	***	***	***
1	220	11.67D	35.170D	26.80	5.19D	84	***	***	***
1	420	9.93D	34.880D	26.89	4.80D	75	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 63/65	2/ 3/65	0935 K	41 52 S	148 49 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1463	***	***	36	1	*	*	*	7	36	2	02	1	1018.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.23	35.460N	25.83	5.33	97	***	***	***
1	25	17.24	35.460	25.83	5.34	98	***	***	***
1	50	16.58	35.430	25.96	5.28	95	***	***	***
1	75	16.47	35.460	26.01	5.30	95	***	***	***
1	100	14.54	35.350	26.36	4.74	82	***	***	***
1	150	12.55	35.350	26.77	4.86	81	***	***	***
1	200	12.08	***	***	5.02	***	***	***	***
1	300	10.98	35.070	26.85	5.14	82	***	***	***
1	500	9.20	34.760	26.92	4.96	76	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 64/65	2/ 3/65	1055 K	41 52 S	148 56 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1829	***	***	36	1	*	*	*	7	36	2	02	1	1016.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	17.61	35.480	25.75	5.31	98	***	***	***
1	25	16.07	35.350	26.02	5.53	99	***	***	***
1	50	15.40	35.410	26.22	5.54	98	***	***	***
1	75	13.71	35.190	26.41	5.43	92	***	***	***
1	100	13.27	35.250	26.55	5.10	86	***	***	***
1	150	12.72	35.300	26.70	5.21	87	***	***	***
1	200	12.23	35.250	26.76	5.21	86	***	***	***
1	300	10.94	35.210	26.97	5.35	86	***	***	***
1	500	8.87	34.720	26.94	5.36	82	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 65/65	5/ 3/65	0810 K	42 32 S	148 05 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
75	***	***	36	1	*	*	*	7	36	2	14	2	1012.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	15.66	35.010	25.85	5.64	100	***	***	***
1	10	15.55	35.010	25.88	5.64	99	***	***	***
1	20	15.27	35.010	25.94	5.64	99	***	***	***
1	30	14.74	35.010	26.05	5.64	98	***	***	***
1	40	14.32	34.970	26.11	5.52	95	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 66/65	5/ 3/65	0920 K	42 32 S	148 12 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
104	***	***	36	1	*	*	*	7	36	2	05	2	1012.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.60	34.900	26.00	5.71	99	***	***	***
1	10	14.53	34.900	26.01	5.75	99	***	***	***
1	20	14.44	34.940	26.07	5.76	99	***	***	***
1	30	14.15	34.900	26.10	5.70	98	***	***	***
1	40	13.94	34.900	26.14	5.60	95	***	***	***
1	50	13.91	34.900	26.15	5.62	96	***	***	***
1	75	13.37	35.030	26.36	5.60	94	***	***	***
1	100	12.78	35.010	26.46	5.41	90	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 67/65	5/ 3/65	1030 K	42 32 S	148 19 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
126	***	***	36	2	*	*	*	7	36	2	05	3	1011.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.34	34.920	26.07	5.81	100	***	***	***
1	10	14.25	34.920	26.09	5.87	101	***	***	***
1	20	14.23	34.900	26.08	5.81	100	***	***	***
1	30	14.07	34.900	26.11	5.71	98	***	***	***
1	40	13.77	34.920	26.19	5.65	96	***	***	***
1	50	13.73	34.990	26.26	5.64	96	***	***	***
1	75	13.48	34.970	26.29	5.64	95	***	***	***
1	100	12.69	35.010	26.48	5.36	89	***	***	***
1	120	12.08	35.030	26.62	5.25	86	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 68/65	12/ 3/65	0700 K	43 09 S	148 05 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
95	***	***	27	1	*	*	*	7	27	1	05	3	998.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.11	34.850	26.07	5.53	95	***	***	***
1	10	14.01	34.920	26.14	5.56	95	***	***	***
1	20	13.95	34.920	26.15	5.53	94	***	***	***
1	30	13.99	34.920	26.15	5.53	94	***	***	***
1	40	13.96D	34.920D	26.15	5.58*	95	***	***	***
1	50	13.95D	35.050D	26.25	5.54*	95	***	***	***
1	75	13.93D	34.960D	26.19	5.56*	95	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 69/65	12/ 3/65	0800 K	43 09 S	148 11 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
119	***	***	36	1	*	*	*	7	36	1	05	3	998.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.06	34.920	26.13	5.58	95	***	***	***
1	10	14.04	34.920	26.14	5.58	95	***	***	***
1	20	13.98	34.920	26.15	5.58	95	***	***	***
1	30	13.88	34.960	26.20	5.57	95	***	***	***
1	40	13.88	34.960	26.20	5.47	93	***	***	***
1	50	13.86	34.960	26.20	5.53	94	***	***	***
1	75	13.80	34.960	26.22	5.54	94	***	***	***
1	100	13.79	34.960	26.22	5.53	94	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 70/65	12/ 3/65	0905 K	43 09 S	148 18 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
366	***	***	36	1	*	*	*	7	36	1	05	3	998.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.88	34.940	26.19	5.60	95	***	***	***
1	25	13.76	34.940	26.21	5.54	94	***	***	***
1	50	13.68	34.940	26.23	5.54	94	***	***	***
1	75	13.64	34.940	26.24	5.53	94	***	***	***
1	100	13.52	34.940	26.26	5.47	92	***	***	***
1	150	13.38	34.940	26.29	5.41	91	***	***	***
1	200	13.24	34.940	26.32	5.40	91	***	***	***
1	300	11.38	34.970	26.70	5.30	86	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 4/ 71/65	12/ 3/65	1015 K	43 09 S	148 25 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
***	***	***	23	1	*	*	*	7	23	2	05	3	998.0	15	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.79	34.970	26.23	5.58	95	***	***	***
1	23	13.76	34.960	26.22	5.58	95	***	***	***
1	45	13.82	34.960	26.21	5.59	95	***	***	***
1	67	13.77	34.960	26.22	5.58	95	***	***	***
1	90	13.56	34.960	26.27	5.53	94	***	***	***
1	135	12.34	34.960	26.51	5.19	86	***	***	***
1	180	12.07	34.990	26.59	5.19	85	***	***	***
1	270	11.21	34.990	26.75	5.29	85	***	***	***
1	450	9.62	34.810	26.89	5.25	82	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 82/65	3/ 4/65	0820 K	41 16 S	148 28 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
110	***	***	32	2	*	*	*	7	34	1	14	1	1020.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.34	35.000	26.13	5.59	96	***	***	***
1	10	14.37	35.010	26.13	5.62	97	***	***	***
1	20	14.36	34.990	26.12	5.62	97	***	***	***
1	30	14.34	34.960	26.10	5.59	96	***	***	***
1	40	14.36	34.970	26.11	5.62	97	***	***	***
1	50	14.34	35.050	26.17	5.61	97	***	***	***
1	75	14.28	35.050	26.18	5.51	95	***	***	***
1	100	14.23	35.050	26.20	5.40	93	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 83/65	3/ 4/65	0925 K	41 16 S	148 35 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
121	***	***	34	3	*	*	*	7	34	2	14	1	1020.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.73	35.160	26.17	5.68	99	***	***	***
1	10	14.76	35.160	26.16	5.68	99	***	***	***
1	20	14.72	35.160	26.17	5.68	99	***	***	***
1	30	14.66	35.230 D	26.24	5.57	97	***	***	***
1	40	14.23	35.070	26.21	5.31	91	***	***	***
1	50	14.01	35.070	26.26	5.33	91	***	***	***
1	75	13.81	35.070	26.30	5.28	90	***	***	***
1	100	13.73	35.070	26.32	5.28	90	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 84/65	3/ 4/65	1025 K	41 16 S	148 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
732	***	***	34	3	*	*	*	7	34	2	14	1	1019.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	15.05	35.260	26.18	5.54	97	***	***	***
1	25	15.01	35.260	26.19	5.54	97	***	***	***
1	50	15.04	35.260	26.18	5.51	96	***	***	***
1	75	15.01	35.260	26.19	5.51	96	***	***	***
1	100	15.02	35.320	26.23	5.46	95	***	***	***
1	150	13.36	35.170	26.47	5.20	88	***	***	***
1	200	12.88D	35.170D	26.57	5.17D	86	***	***	***
1	300	11.96D	35.250D	26.81	5.21D	85	***	***	***
1	500	10.23D	34.920D	26.87	4.97D	78	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 85/65	3/ 4/65	1135 K	41 16 S	148 49 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1170	***	***	34	3	*	*	*	7	34	2	14	1	1019.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	15.22	35.280	26.16	5.48	96	***	***	***
1	25	15.17	35.280	26.17	5.45	96	***	***	***
1	50	15.20	35.280	26.16	5.31	93	***	***	***
1	75	15.18	35.320	26.20	5.40	95	***	***	***
1	100	14.50D	35.160D	26.22	5.24	91	***	***	***
1	150	12.65	35.250	26.68	5.17	86	***	***	***
1	200	11.88	35.140	26.74	5.19	85	***	***	***
1	300	10.60	34.940	26.82	5.47	87	***	***	***
1	500	8.98	34.720	26.92	5.17	79	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 86/65	3/ 4/65	1245 K	41 16 S	148 56 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	***	***	34	3	*	*	*	7	34	2	14	1	1018.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	15.01	35.170	26.12	5.62	98	***	***	***
1	25	14.89	35.170	26.14	5.58	97	***	***	***
1	50	14.96	35.170	26.13	5.53	96	***	***	***
1	75	14.76	35.170	26.17	5.37	93	***	***	***
1	100	13.58D	35.070D	26.35	5.28	89	***	***	***
1	150	11.99	35.140	26.72	5.23	86	***	***	***
1	200	11.57	35.160	26.81	5.25	85	***	***	***
1	300	10.71	34.990	26.84	5.37	86	***	***	***
1	437	9.07	34.740	26.92	5.15	79	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 87/65	8/ 4/65	0730 K	41 52 S	148 28 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
82	***	***	36	1	*	*	*	7	32	1	16	1	1038.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.98	34.960	26.18	5.57	95	***	***	***
1	10	13.97	34.960	26.18	5.57	95	***	***	***
1	20	13.96	34.990	26.21	5.55	95	***	***	***
1	30	13.97	34.990	26.20	5.45	93	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 88/65	8/ 4/65	0835 K	41 52 S	148 35 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
117	***	***	36	2	*	*	*	7	36	1	16	1	1038.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.13	35.070	26.23	5.63	96	***	***	***
1	10	14.19	35.070	26.22	5.62	96	***	***	***
1	20	14.18	35.070	26.22	5.62	96	***	***	***
1	30	14.15	35.070	26.23	5.72	98	***	***	***
1	40	14.12	35.050	26.22	5.57	95	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 89/65	8/ 4/65	0940 K	41 52 S	148 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1189	***	***	02	3	*	*	*	7	02	3	16	1	1038.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.43	35.080	26.18	5.62	97	***	***	***
1	25	14.44	35.080	26.17	5.59	96	***	***	***
1	50	14.66	35.170	26.19	5.51	96	***	***	***
1	75	14.51	35.250	26.29	5.45	94	***	***	***
1	100	13.74	35.140	26.37	5.28	90	***	***	***
1	150	12.83	35.170	26.58	5.23	87	***	***	***
1	200	12.00	35.170	26.74	5.20	85	***	***	***
1	300	11.01	34.990	26.79	5.32	85	***	***	***
1	500	9.01	34.700	26.90	5.11	78	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 90/65	8/ 4/65	1105 K	41 52 S	148 49 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1463	***	***	02	2	*	*	*	7	02	2	16	1	1037.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.97	34.900	26.13	5.75	98	***	***	***
1	25	13.89	34.900	26.15	5.62	96	***	***	***
1	50	13.91	34.900	26.15	5.71	97	***	***	***
1	75	13.90	34.900	26.15	5.74	98	***	***	***
1	100	13.05	34.960	26.37	5.40	90	***	***	***
1	150	12.00	35.160	26.73	5.19	85	***	***	***
1	200	11.43	35.070	26.77	5.30	86	***	***	***
1	300	10.57	34.960	26.84	5.25	83	***	***	***
1	500	8.86	34.700	26.93	5.16	79	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 91/65	8/ 4/65	1215 K	41 52 S	148 56 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1646	***	***	02	3	*	*	*	7	02	2	16	1	1036.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.06	34.900	26.12	5.72	98	***	***	***
1	25	14.02	34.900	26.12	5.75	98	***	***	***
1	50	13.93	34.900	26.14	5.64	96	***	***	***
1	75	12.81	34.900	26.37	5.41	90	***	***	***
1	100	12.43	35.230	26.70	5.12	85	***	***	***
1	150	11.86	35.230	26.81	5.14	84	***	***	***
1	200	11.23	35.050	26.79	5.38	87	***	***	***
1	300	10.30	34.880	26.83	5.13	81	***	***	***
1	500	8.61	34.670	26.94	5.10	77	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 92/65	13/ 4/65	0910 K	42 32 S	148 14 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
79	***	***	14	2	*	*	*	7	14	1	09	3	1028.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.07	34.970	26.17	5.64	96	***	***	***
1	10	14.03	34.970	26.18	5.61	96	***	***	***
1	20	14.03	35.030	26.22	5.67	97	***	***	***
1	30	14.06	35.030	26.22	5.70	97	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 93/65	13/ 4/65	1015 K	42 32 S	148 21 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
104	***	***	10	2	*	*	*	7	10	1	09	3	1027.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.06	35.030	26.22	5.70	97	***	***	***
1	10	14.01	35.030	26.23	5.71	98	***	***	***
1	20	14.01	35.030	26.23	5.67	97	***	***	***
1	30	13.99	35.030	26.23	5.64	96	***	***	***
1	40	13.94	35.030	26.24	5.56	95	***	***	***
1	50	13.92	35.030	26.25	5.53	94	***	***	***
1	75	13.90	35.030	26.25	5.59	95	***	***	***
1	100	13.09	35.100	26.47	5.31	89	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 94/65	13/ 4/65	1125 K	42 32 S	148 28 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2	WIRE ANGLES CAST3
165	***	***	10	2	*	*	*	7	10	1	09	3	1027.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.06	35.050	26.23	5.65	97	***	***	***
1	10	13.99	35.050	26.25	5.59	95	***	***	***
1	20	13.99	35.010	26.22	5.61	96	***	***	***
1	30	13.97	35.010	26.22	5.71	97	***	***	***
1	40	13.97	35.030	26.23	5.65	96	***	***	***
1	50	13.98	35.030	26.23	5.68	97	***	***	***
1	110	13.78D	34.970D	26.23	5.58 D	95	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 95/65	13/ 4/65	1240 K	42 32 S	148 35 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	***	***	09	2	*	*	*	7	10	2	09	3	1025.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.29	34.960	26.11	5.71	98	***	***	***
1	25	14.17	34.960	26.14	5.72	98	***	***	***
1	50	14.01	34.960	26.17	5.75	98	***	***	***
1	75	13.85	35.190D	26.38	5.71	97	***	***	***
1	100	13.45	35.050	26.36	5.44	92	***	***	***
1	150	11.96	35.050	26.65	5.24	86	***	***	***
1	200	11.64	35.070	26.73	5.28	86	***	***	***
1	300	10.45	34.870	26.79	5.47	87	***	***	***
1	500	8.69	34.610	26.88	5.51	84	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 96/65	13/ 4/65	1350 K	42 32 S	148 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	***	***	10	2	*	*	*	7	10	2	09	3	1024.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.10	34.880	26.09	5.74	98	***	***	***
1	25	13.97	34.880	26.12	5.72	98	***	***	***
1	50	14.01	34.940	26.16	5.70	97	***	***	***
1	75	13.92	34.940	26.18	5.67	97	***	***	***
1	100	12.88	35.070	26.49	5.13	86	***	***	***
1	150	12.33	35.210	26.71	5.08	84	***	***	***
1	200	11.14	34.990	26.76	5.25	84	***	***	***
1	300	9.86	34.760	26.81	5.54	87	***	***	***
1	500	8.84	34.690	26.92	5.16	79	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 97/65	15/ 4/65	0705 K	43 09 S	148 05 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
102	***	***	27	1	*	*	*	3	27	1	09	3	1010.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.85	34.960	26.21	5.60	95	***	***	***
1	10	13.77	34.960	26.22	5.61	95	***	***	***
1	20	13.77	35.010 D	26.26	5.59	95	***	***	***
1	30	13.76	34.960	26.22	5.58	95	***	***	***
1	40	13.74	34.960	26.23	5.47	93	***	***	***
1	50	13.67	34.960	26.24	5.53	94	***	***	***
1	75	13.47	34.960	26.28	5.57	94	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 98/65	15/ 4/65	0805 K	43 09 S	148 12 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
152	***	***	32	1	*	*	*	3	32	1	09	3	1010.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.91	34.960	26.19	5.75	98	***	***	***
1	10	13.94	34.960	26.19	5.75	98	***	***	***
1	20	13.89	34.960	26.20	5.67	97	***	***	***
1	30	13.88	34.960	26.20	5.64	96	***	***	***
1	40	13.86	34.960	26.20	5.58	95	***	***	***
1	50	13.87	34.960	26.20	5.59	95	***	***	***
1	75	13.83	35.050	26.28	5.56	95	***	***	***
1	100	13.65	***	***	5.56	***	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 99/65	15/ 4/65	0905 K	43 09 S	148 19 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
914	***	***	02	1	*	*	*	3	02	1	09	3	1010.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.88	34.970	26.21	5.75	98	***	***	***
1	25	13.93	35.010	26.23	5.64	96	***	***	***
1	50	13.76	35.010	26.26	5.67	96	***	***	***
1	75	13.97	35.120	26.30	5.69	97	***	***	***
1	100	13.76	35.120	26.35	5.96	95	***	***	***
1	150	12.04	35.120	26.69	5.17	85	***	***	***
1	200	11.31	35.070	26.79	5.20	84	***	***	***
1	290	9.87	34.810	26.84	5.50	86	***	***	***
1	470	9.04	34.720	26.91	5.20	80	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 100/65	19/ 4/65	1015 K	43 09 S	148 26 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	***	***	02	2	*	*	*	4	02	1	09	3	1009.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.01	34.970	26.18	5.76	98	***	***	***
1	25	13.84	34.990	26.23	5.72	97	***	***	***
1	50	13.70	35.030	26.29	5.66	96	***	***	***
1	75	13.18	35.030	26.40	5.54	93	***	***	***
1	100	12.73	35.170	26.60	5.14	86	***	***	***
1	150	12.07	35.170	26.73	5.14	84	***	***	***
1	200	11.56	35.100	26.77	5.20	84	***	***	***
1	300	10.23	34.900	26.85	5.37	85	***	***	***
1	500	8.51	34.650	26.94	5.48	83	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 6/ 101/65	15/ 4/65	1123 K	43 09 S	148 33 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	***	***	02	2	*	*	*	7	02	1	09	3	1008.0	*	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.25	34.990	26.14	5.79	99	***	***	***
1	25	14.19	34.990	26.16	5.71	98	***	***	***
1	50	13.78	34.960	26.22	5.71	97	***	***	***
1	75	13.59	35.050	26.33	5.76	98	***	***	***
1	100	13.16	35.350	26.65	5.09	86	***	***	***
1	150	12.38	35.300	26.77	5.17	86	***	***	***
1	200	11.62	***	***	5.26	***	***	***	***
1	300	10.56	34.970	26.85	5.34	85	***	***	***
1	500	8.57	34.650	26.93	5.65	86	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 8/ 112/65	7/ 5/65	0740 K	41 16 S	148 28 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
110	***	***	09	2	*	*	*	7	09	2	09	1	1038.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.41	34.970	26.30	5.71	96	***	***	***
1	10	13.42	34.970	26.30	***	***	***	***	***
1	20	13.43	34.970	26.30	***	***	***	***	***
1	30	13.43	34.970	26.30	***	***	***	***	***
1	40	13.43	34.970	26.30	***	***	***	***	***
1	50	13.44	34.960	26.29	5.80	98	***	***	***
1	75	13.44	34.960	26.29	***	***	***	***	***
1	100	13.42	34.970	26.30	5.80	98	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 8/ 113/65	7/ 5/65	0850 K	41 16 S	148 35 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
115	***	***	09	3	*	*	*	7	09	2	09	1	1038.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.38	34.970	26.31	5.87	99	***	***	***
1	10	13.38	34.970	26.31	***	***	***	***	***
1	20	13.38	34.990	26.33	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 8/ 114/65	14/ 5/65	0935 K	41 16 S	148 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
549	***	***	20	1	*	*	*	7	00	0	05	2	1020.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.37	35.010	26.34	5.80	98	***	***	***
1	25	13.33	34.970	26.32	***	***	***	***	***
1	50	13.39	35.030	26.36	5.76	97	***	***	***
1	75	13.28	35.030	26.38	***	***	***	***	***
1	100	12.57	35.050	26.53	5.36	89	***	***	***
1	150	12.46	35.030	26.54	***	***	***	***	***
1	200	12.05	34.970	26.57	5.26	86	***	***	***
1	300	10.53	35.010	26.89	5.36	85	***	***	***
1	500	9.28	34.720	26.87	5.20	80	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 8/ 115/65	14/ 5/65	1045 K	41 16 S	148 49 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1189	***	***	00	0	*	*	*	7	00	0	05	2	1020.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.46	35.250	26.30	5.70	98	***	***	***
1	25	14.39	35.250	26.32	***	***	***	***	***
1	50	14.40	35.250	26.31	5.65	97	***	***	***
1	75	14.38	35.260	26.33	***	***	***	***	***
1	100	13.85	35.160	26.36	5.58	95	***	***	***
1	150	11.86	35.080	26.70	***	***	***	***	***
1	400	9.37D	34.780D	26.91	5.18D	80	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 8/ 116/65	14/ 5/65	1155 K	41 16 S	148 56 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
***	***	***	36	1	*	*	*	7	00	0	05	2	1020.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	14.16	35.080	26.23	5.70	98	***	***	***
1	25	14.01	35.190D	26.35	***	***	***	***	***
1	50	14.02	35.120	26.29	5.71	98	***	***	***
1	75	14.00	35.120	26.30	***	***	***	***	***
1	100	13.82	35.140	26.35	5.70	97	***	***	***
1	150	11.85	35.170	26.77	***	***	***	***	***
1	200	11.49	35.080	26.77	5.30	86	***	***	***
1	300	10.17	34.870	26.84	5.50	87	***	***	***
1	500	8.54	34.670	26.95	5.09	77	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 8/ 117/65	17/ 5/65	0650 K	41 52 S	148 28 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
82	***	***	27	1	*	*	*	7	36	2	14	1	1009.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.14	34.960	26.35	5.77	97	***	***	***
1	10	13.13	34.960	26.35	***	***	***	***	***
1	20	13.13	34.940	26.34	***	***	***	***	***
1	30	13.12	34.920	26.33	***	***	***	***	***
1	40	13.14	34.970	26.36	***	***	***	***	***
1	50	13.13	34.970	26.36	5.81	97	***	***	***
1	75	13.13	34.970	26.36	5.79	97	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 8/ 118/65	17/ 5/65	0750 K	41 52 S	148 35 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
115	***	***	27	2	*	*	*	7	36	2	36	2	1009.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	13.04	34.920	26.34	5.82	97	***	***	***
1	10	13.04	34.920	26.34	***	***	***	***	***
1	20	13.04	34.940	26.36	***	***	***	***	***
1	30	13.06	34.940	26.35	***	***	***	***	***
1	40	13.08	34.960	26.36	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 8/ 119/65	17/ 5/65	0850 K	41 52 S	148 42 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
1097	***	***	23	2	*	*	*	7	36	2	36	3	1011.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	12.99	34.990	26.40	5.98	100	***	***	***
1	25	13.04	34.940	26.36	5.87	98	***	***	***
1	50	13.21	34.960	26.34	5.81	98	***	***	***
1	75	13.22	34.960	26.34	5.82	98	***	***	***
1	100	13.26	34.920	26.30	5.82	98	***	***	***
1	150	13.23 D	35.050 D	26.40	5.70 D	96	***	***	***
1	200	12.59	35.120	26.99	5.35	89	***	***	***
1	300	10.77	34.940	26.79	5.41	86	***	***	***
1	500	8.89	34.670	26.90	5.65	86	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 8/ 120/65	24/ 5/65	0845 K	42 32 S	148 14 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
75	***	***	32	2	*	*	*	7	32	2	14	1	1018.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	12.54	34.940	26.46	5.80	96	***	***	***
1	10	12.52	34.970	26.48	5.80	96	***	***	***
1	20	12.51	34.960	26.48	5.81	96	***	***	***
1	50	12.49 D	34.940 D	26.47	5.76 D	95	***	***	***

D PROPERTY DOUBTFUL N PROPERTY INTERPOLATED

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 8/ 121/65	24/ 5/65	0950 K	42 32 S	148 21 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
102	***	***	32	3	*	*	*	7	32	3	14	1	1018.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	12.84	34.970	26.42	5.80	97	***	***	***
1	10	12.89	34.970	26.41	5.75	96	***	***	***
1	20	12.82	35.030	26.47	5.78	96	***	***	***
1	30	12.84	35.030	26.47	5.77	96	***	***	***
1	40	12.82	35.030	26.47	5.81	97	***	***	***
1	50	12.87	35.030	26.46	5.81	97	***	***	***
1	75	12.85	35.010	26.45	5.78	96	***	***	***
1	100	12.84	34.990	26.43	5.76	96	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
M 8/ 122/65	24/ 5/65	1050 K	42 32 S	148 28 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	CAST2	CAST3
123	***	***	32	4	*	*	*	7	32	3	14	1	1017.0	0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	12.93	34.990	26.42	5.77	96	***	***	***
1	10	12.95	34.990	26.41	5.74	96	***	***	***
1	20	12.93	34.990	26.42	5.66	95	***	***	***
1	30	12.94	34.990	26.42	5.74	96	***	***	***
1	40	12.90	35.050	26.47	5.79	97	***	***	***
1	50	12.96	35.030	26.44	5.78	97	***	***	***
1	75	12.91	34.990	26.42	5.74	96	***	***	***
1	100	12.93	35.030	26.45	5.76	96	***	***	***

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

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(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 Rottnest 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
66. Temperature and salinity observations from Australian tuna fishing vessels in 1963
67. Investigations by F.R.V. *Investigator* on the South Australian tuna grounds in 1964
68. Investigations by F.R.V. *Marelda* on the eastern Australian tuna grounds in 1964
69. Temperature and salinity observations from Australian tuna fishing vessels in 1964
70. Investigations by F.R.V. *Investigator* on the South Australian tuna grounds in 1965
71. Investigations by F.V. *Estelle Star* in South Australian and New South Wales waters in 1965
72. Investigations by F.R.V. *Marelda* on the eastern Australian tuna grounds in 1965
73. Investigations by F.V. *Degei* in Queensland waters in 1965
74. Temperature and salinity observations from Australian tuna fishing vessels in 1965
75. Investigations by F.V. *Degei* in New South Wales, South, and Western Australian waters in 1966
76. Investigations by F.V. *Estelle Star* in South and Western Australian waters in 1966
77. Temperature and salinity observations from Australian tuna fishing vessels in 1966
78. Drift bottle releases and recoveries in Bass Strait and adjacent waters, 1958–1962
79. Drift bottle releases and recoveries in Western Australia, 1956–1957
80. Investigations by F.R.V. *Lancelin* in Western Australian waters in 1963