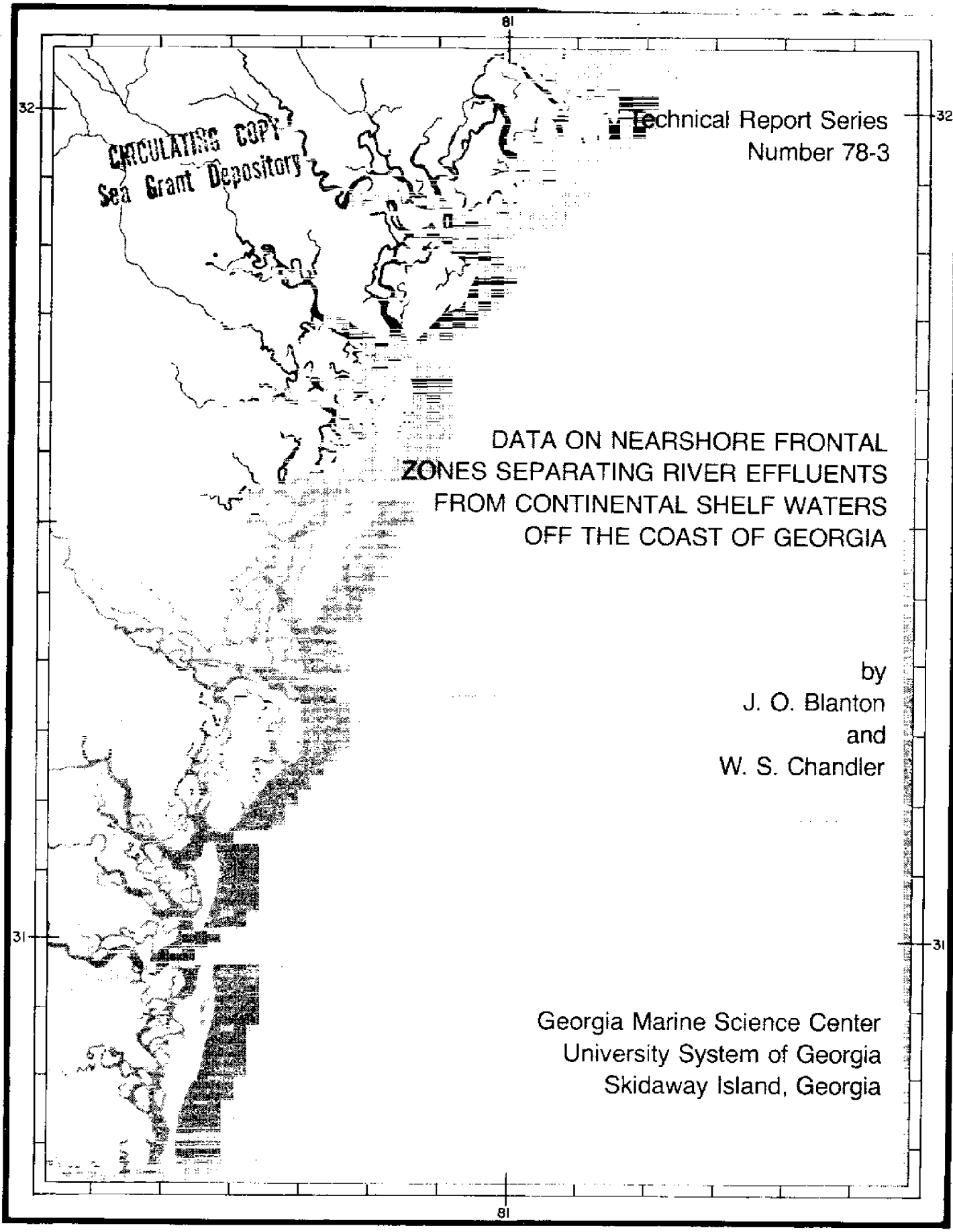

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DATA ON NEARSHORE FRONTAL ZONES SEPARATING RIVER EFFLUENTS FROM CONTINENTAL SHELF WATERS OFF THE COAST OF GEORGIA

by
J. O. Blanton
and
W. S. Chandler

Georgia Marine Science Center
University System of Georgia
Skidaway Island, Georgia

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J. O. Blanton
and
W. S. Chandler

Skidaway Institute of Oceanography
P. O. Box 13687
Savannah, Georgia 31406

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INTRODUCTION

Three hydrographic surveys (Front Hunts 3, 4, and 5) were conducted off the inlets of Wassaw, Ossabaw, and St. Catherines during October and November 1976 and April 1977 (Figure 1). These surveys measured the density structure of the frontal zone separating coastal river runoff from the waters of the open continental shelf. A limited amount of current meter data was obtained during one 13-hour anchor station off Ossabaw.

DATA AND METHODS

Temperature, conductivity, and depth (pressure) were measured along transects perpendicular to shore (Figure 1) using a Plessey CTD system and a Beckman R/S-5 salinometer (April cruise only). These data were used to compute salinity and density (sigma-t units) from which vertical sections of temperature, salinity, and sigma-t were plotted. These plotted sections form the basis of this data report. Current measurements were made with a Bendix Q-15 current meter tethered to the anchored ship.

Conductivity, temperature, and depth data are recorded simultaneously on a Kennedy Model 1600 Incremental Magnetic Tape Recorder and on an HP7046A X-Y Recorder in case the tape contains errors. The magnetic tape is processed on the University of Georgia's CYBER 70 using software developed at Skidaway Institute. Temperature and conductivity are used to calculate salinity, and the final data is tabulated for depth, temperature, and salinity. Sigma-t and specific volume anomaly are also calculated and included in the tabulation. The final tabulations are submitted to National Oceanographic Data Center in a format specified by them.

No corrections for depth, temperature, and salinity were necessary. Depths read zero at the surface. Temperature agreed with reversing thermometers to $\pm$ 0.02^{o}C, within the stated accuracies of the two. Computed salinity and salinity from bottle samples measured by a Plessey Model 6230N Laboratory Salinometer agreed within $\pm$ 0.03^{o}/oo.

Environmental data are summarized for the times of the three cruises (Table 1). Frontal characteristics were determined from the vertical section plots found in this report. The data report consists of vertical section plots of temperature, salinity, and sigma-t for each of the cruises. Following the data plots, the hydrographic data are tabulated. The tabulated data have been submitted to National Oceanographic Data Center, Washington, D. C.

SUMMARY OF RESULTS

Front Hunt 3 - Fig. 2 - Table 1

This cruise mapped the vertical distribution of the frontal zone during a time of relatively low runoff. The strongest vertical density gradients were found about 10 km offshore*. Well-mixed shelf water extended out to 25 km. Multiple turbidity fronts were found on the surface throughout. Wind stress was weak and probably had little influence on the structure and width of the frontal zone.

Front Hunt 4 - Figs. 3 and 4 - Table 1

This cruise mapped the frontal zone during a time of low runoff. Hourly profiles of temperature, salinity, and currents were measured for a complete tidal cycle. Strongest density gradients occurred between 0 and 5 km from shore. Well-mixed shelf water was found about 11 km offshore.

The hourly profiles demonstrated the strong influence of the tides and vertical density gradients in moving salt in the onshore direction. They had little influence on alongshore movement of salt.

Front Hunt 5 - Figs. 5 and 6 - Table 1

This cruise measured the frontal zone structure off two adjacent inlets. There was little difference in structure off Ossabaw Sound and St. Catherines Sound. Freshwater discharge was relatively high, and strong solar heating of the sea water further enhanced the vertical gradients induced by the freshwater. These gradients were the strongest observed on the three cruises. Energy from tidal mixing was apparently insufficient to destroy the strong density gradient over a 30-km distance and no well-mixed shelf water was encountered.

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*Offshore distances are measured relative to the sea bouys shown in Fig. 1.

Table 1. Environmental data for Front Hunt cruises. Values for wind stress and river discharge are means over the previous 5 days.

	10/15/76 Wassaw	11/18/76 Ossabaw	4/21/77 Ossabaw	4/21/77 St. Cath.
Nearshore Frontal Characteristics				
Salinity range, turbid waters (°/oo)	31.5-33.5	31.5-33.5	29.0	31.0
Salinity range, shelf waters (°/oo)	34.5	34.2	33.0	35.0
Distance to shelf water (km)	25	11 ± 3	> 30	
Max. observed density gradient (kg/m^4)	0.40	0.90	2.9	2.4
$^{(1)}N$ (sec^{-1})	0.063	0.094	0.17	0.15
$^{(2)}R$ (km)	1.7	2.8	4.2	4.4
Tidal Data				
Range (m)	1.8	2.4	1.9	
Days before/after spring/neap	N+1	S-3	S+3	
Wind Stress				
Alongshore component ($dynes/cm^2$)	+0.05	-0.12	-0.09	
Onshore component ($dynes/cm^2$)	-0.03	-0.08	+0.20	
Savannah River (Clyo) discharge (m^3/sec)	365	250	870	

(1) $N = [(g/\rho)\ (\partial\rho/\partial z)]^{1/2}$ (2) $R = [\varepsilon g h_e / f^2]^{1/2}$ for 2-layer system. $h_e = \frac{hh'}{h+h'}$; $\varepsilon = \frac{1}{\rho'}[\rho' - \rho]$

$f = 7.7 \times 10^{-5}$ (sec^{-1}) for Savannah [$\phi = 32°N$]

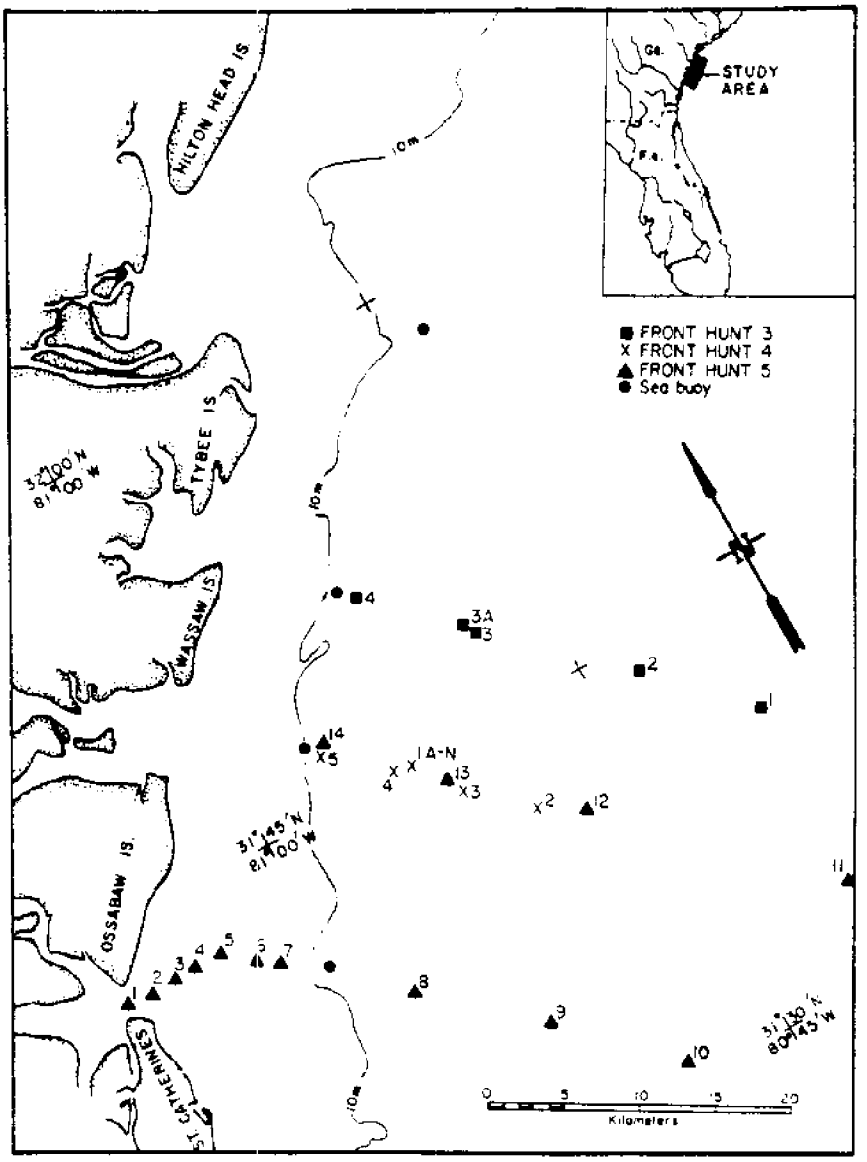

Figure 1. Station locations for Front Hunt 3, 4, and 5.

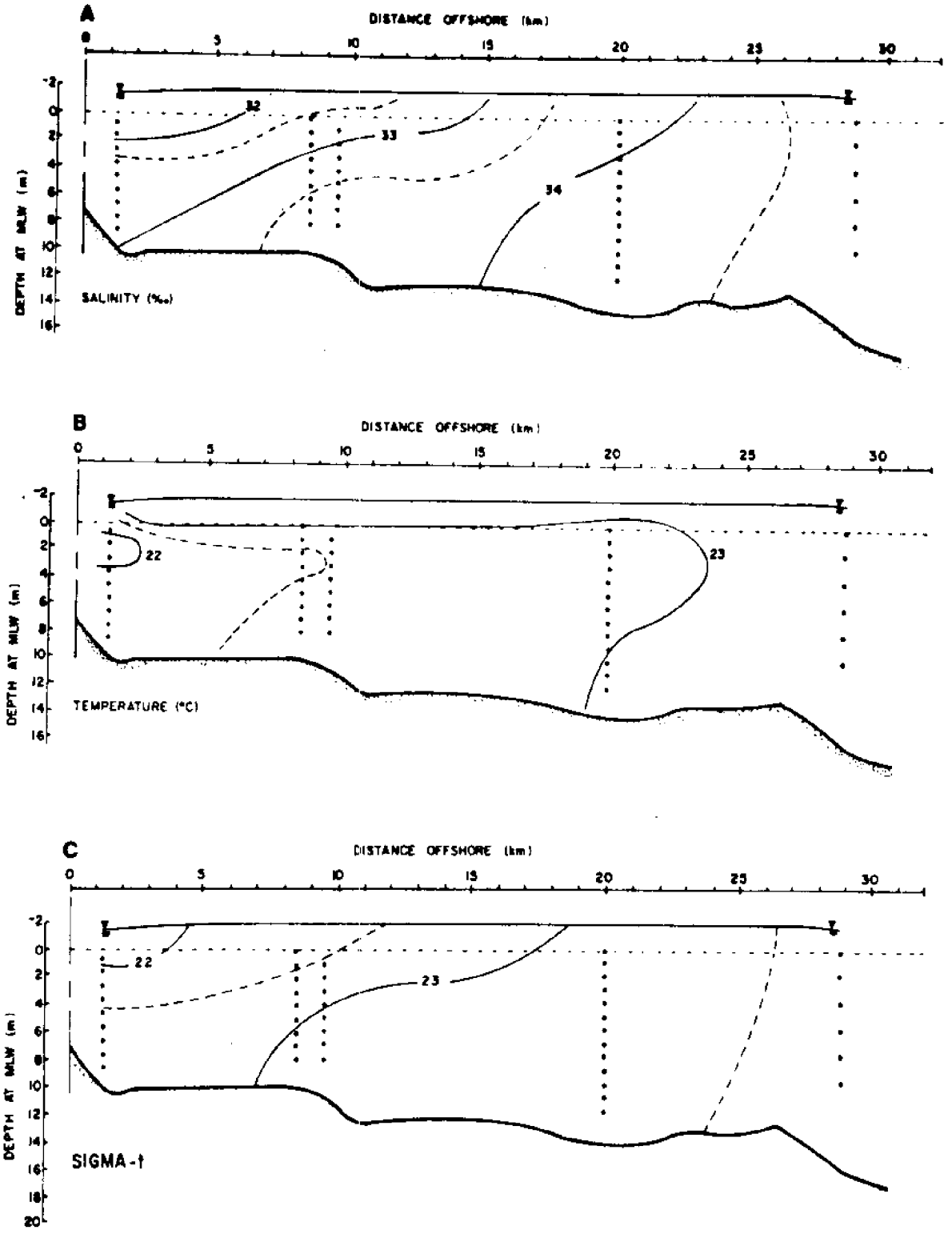

Figure 2. Vertical hydrographic section off Wassaw Sound, 15 October 1976; A, salinity; B, temperature; C, sigma-t.

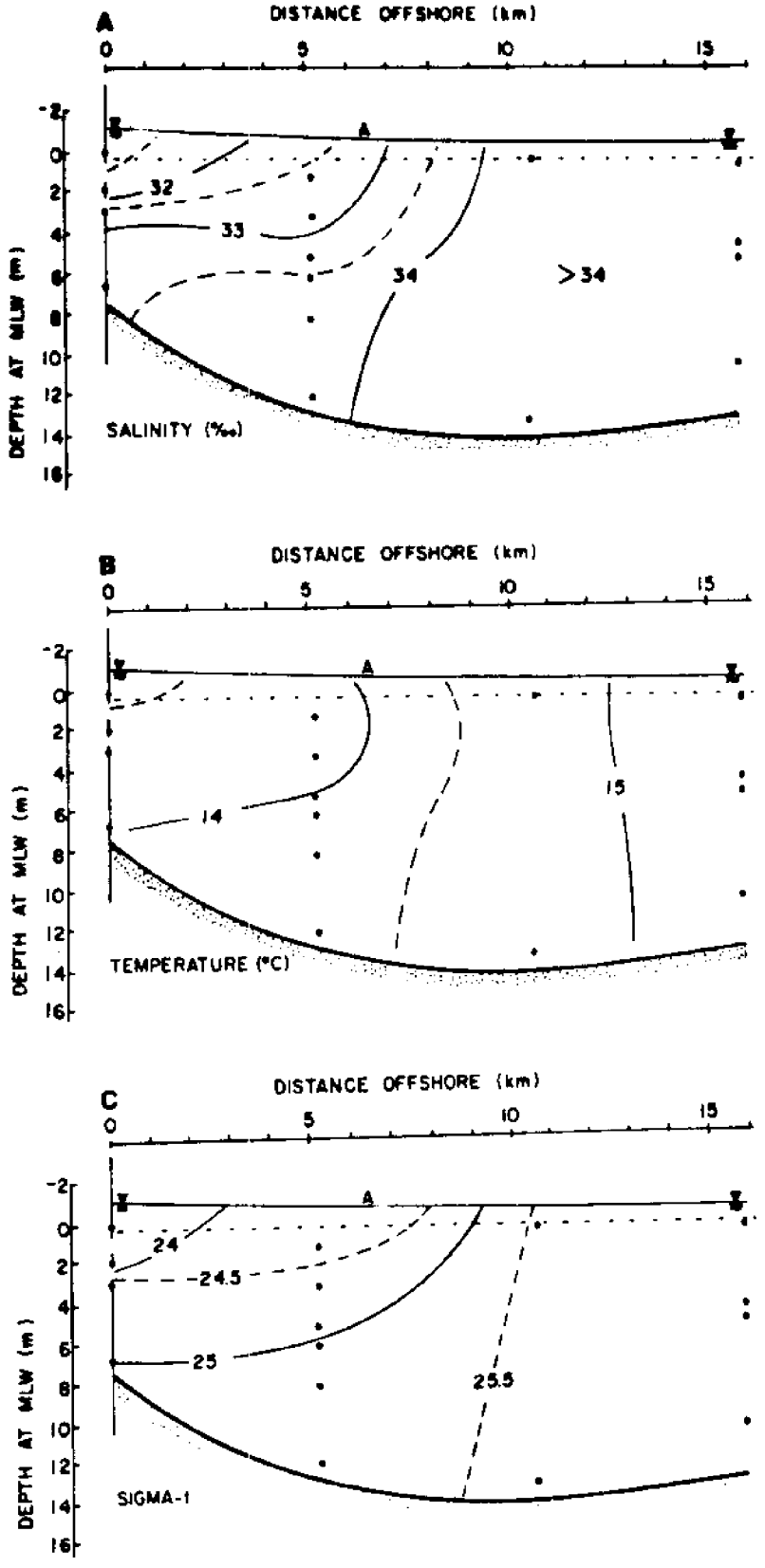

Figure 3. Vertical hydrographic section off Ossabaw Sound, 18 November 1976; A, salinity; B, temperature; C, sigma-t.

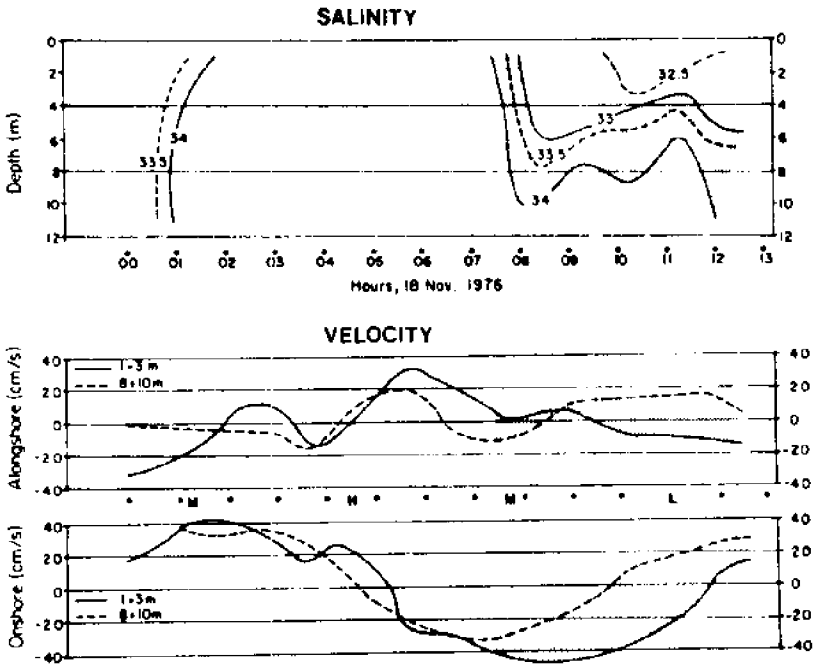

Figure 4. Time-series of salinity and velocity components at a location 6 km from the sea bouy off Ossabaw Sound, 18 November 1976.

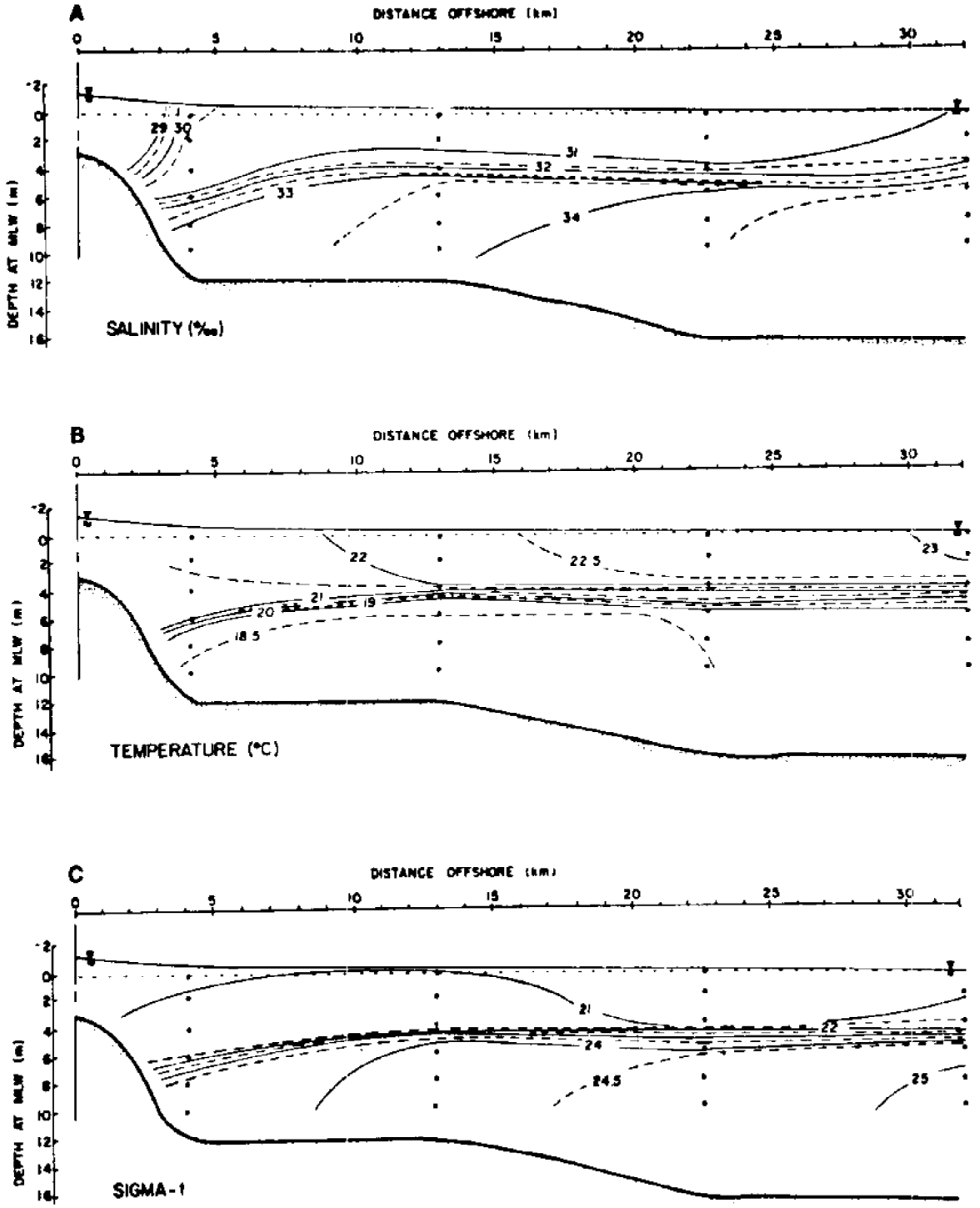

Figure 5. Vertical hydrographic section off Ossabaw Sound, 21 April 1977; A, salinity; B, temperature; C, sigma-t.

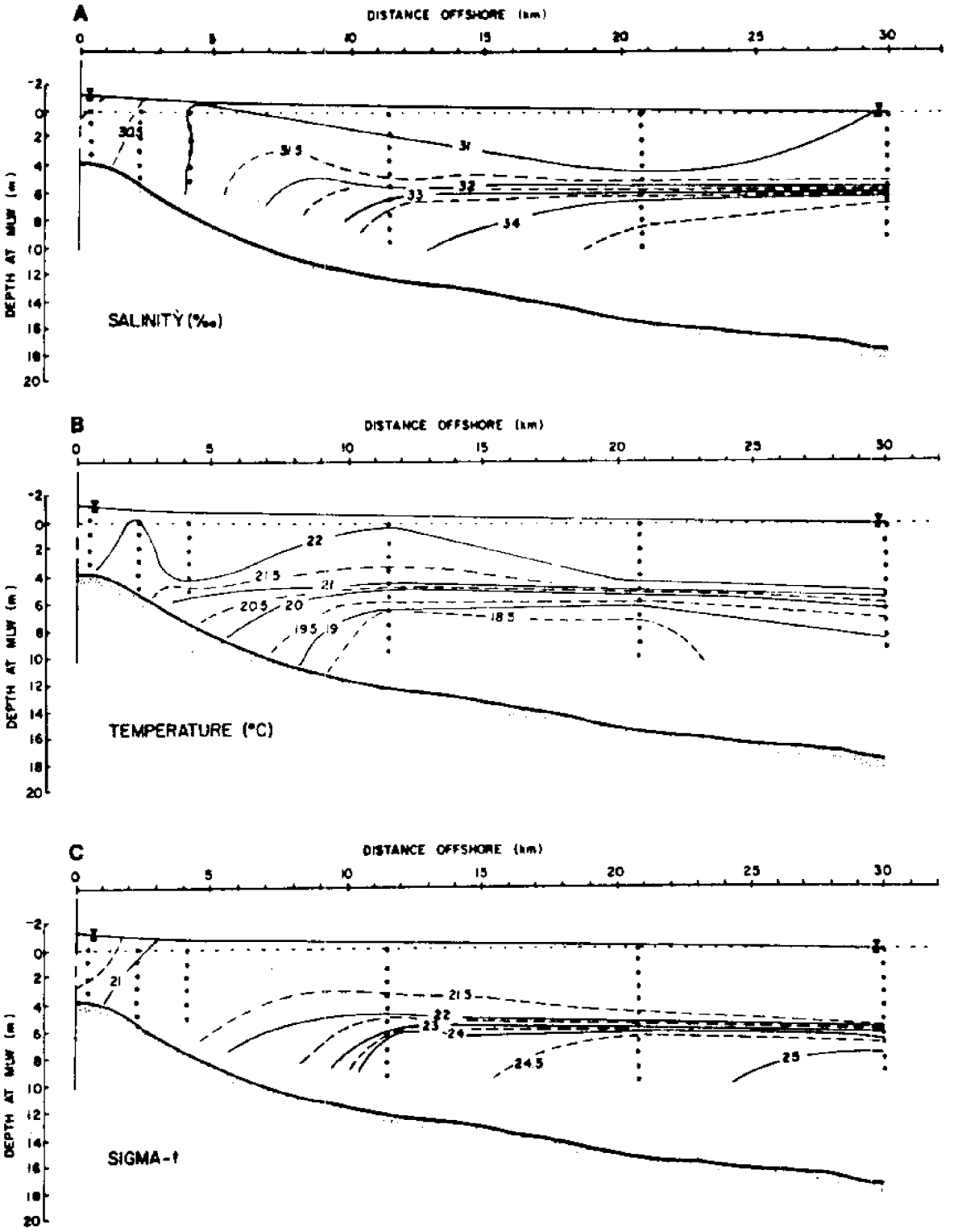

Figure 6. Vertical hydrographic section off St. Catherines Sound, 21 April 1977; A, salinity; B, temperature; C, sigma-t.

APPENDIX

STATION SUMMARY FOR FRONT HUNT 3

CRUISE	STATION	LATITUDE	LONGITUDE	YR	MN	DY	HOUR GMT	DEPTH M	CONSEC NUMBER
FH3	1	31 40.8N	80 39.0W	76	10	15	14.1	16	1
FH3	2	31 44.1N	80 42.8W	76	10	15	15.4	14	2
FH3	3	31 48.0N	80 47.7W	76	10	15	17.1	12	3
FH3	3A	31 48.5N	80 48.2W	76	10	15	18.3	12	4
FH3	4	31 51.3N	80 51.6W	76	10	15	19.5	11	5

FRONT HUNT 3 FH3 STA 001 15/ X/76 14.1 GMT CONSEC STA 1

LAT 31 40.8N LONG 80 39.0W DEPTH = 16M DIST LAST STA = 0.0 M

WEATHER DATA

WIND SPEED	= 14 KTS	SEA STATE	= 2
WIND DIRECTION	= 220	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.9 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	23.35	34.80	23.69	421	.	.	.	.	.	.
2.0	23.35	34.80	23.69	421	.	.	.	.	.	.
3.0	23.35	34.80	23.69	421	.	.	.	.	.	.
4.0	23.35	34.80	23.69	421	.	.	.	.	.	.
5.0	23.35	34.80	23.69	421	.	.	.	.	.	.
6.0	23.35	34.80	23.69	421	.	.	.	.	.	.
7.0	23.35	34.80	23.69	421	.	.	.	.	.	.
8.0	23.35	34.80	23.69	421	.	.	.	.	.	.
9.0	23.35	34.80	23.69	421	.	.	.	.	.	.
10.0	23.35	34.80	23.69	421	.	.	.	.	.	.
11.0	23.35	34.80	23.69	421	.	.	.	.	.	.
12.0	23.35	34.80	23.69	421	.	.	.	.	.	.
13.0	23.35	34.80	23.69	421	.	.	.	.	.	.

FRONT HUNT 3 FH3 STA 002 15/ X/76 15.4 GMT CONSEC STA 2

LAT 31 44.1N LONG 80 42.8W DEPTH = 14M DIST LAST STA = 8.6KM

WEATHER DATA

WIND SPEED = 14 KTS
WIND DIRECTION = 220
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1016.9 MB

SEA STATE = 2
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2%	AOU	PO4	NO3	SI
2.0	22.84	33.79	23.07	480	.	.	.	.	.	.
3.0	22.77	33.81	23.11	477	.	.	.	.	.	.
4.0	22.72	33.79	23.11	477	.	.	.	.	.	.
5.0	22.79	34.02	23.26	462	.	.	.	.	.	.
6.0	22.88	34.05	23.26	462	.	.	.	.	.	.
7.0	22.94	34.17	23.33	455	.	.	.	.	.	.
8.0	22.98	34.21	23.35	454	.	.	.	.	.	.
9.0	22.99	34.22	23.36	453	.	.	.	.	.	.
10.0	23.00	34.23	23.36	453	.	.	.	.	.	.
11.0	23.00	34.23	23.36	453	.	.	.	.	.	.
12.0	23.00	34.23	23.36	453	.	.	.	.	.	.
13.0	23.01	34.23	23.36	453	.	.	.	.	.	.
14.0	23.01	34.23	23.36	453	.	.	.	.	.	.

FRONT HUNT 3 FH3 STA 003 15/ X/76 17.1 GMT CONSEC STA 3

LAT 31 48.0N LONG 80 47.7W DEPTH = 12M DIST LAST STA = 10.6KM

WEATHER DATA
WIND SPEED = 14 KTS
WIND DIRECTION = 220
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1016.9 MB

SEA STATE = 2
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2/	AOU	PO4	NO3	SI
3.0	22.59	32.82	22.41	543	.	.	.	.	.	.
4.0	22.52	33.13	22.67	519	.	.	.	.	.	.
5.0	22.54	33.24	22.74	512	.	.	.	.	.	.
6.0	22.65	33.40	22.83	503	.	.	.	.	.	.
7.0	22.72	33.62	22.98	489	.	.	.	.	.	.
8.0	22.79	33.72	23.04	484	.	.	.	.	.	.
9.0	22.80	33.74	23.05	483	.	.	.	.	.	.
10.0	22.80	33.75	23.06	482	.	.	.	.	.	.
11.0	22.80	33.75	23.06	482	.	.	.	.	.	.
12.0	22.80	33.75	23.06	482	.	.	.	.	.	.

FRONT HUNT 3 FH3 STA 003A 15/ X/76 18.3 GMT CONSEC STA 4

LAT 31 48.5N LONG 80 48.2W DEPTH = 12M DIST LAST STA = 1.2KM

WEATHER DATA
WIND SPEED = 14 KTS
WIND DIRECTION = 220
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1016.9 MB

SEA STATE = 2
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2/	AOU	PO4	NO3	SI
2.0	23.06	32.61	22.12	571	.	.	.	.	.	.
3.0	22.70	32.75	22.33	551	.	.	.	.	.	.
4.0	22.55	32.84	22.44	541	.	.	.	.	.	.
5.0	22.54	33.14	22.67	519	.	.	.	.	.	.
6.0	22.61	33.31	22.78	508	.	.	.	.	.	.
7.0	22.72	33.43	22.84	503	.	.	.	.	.	.
8.0	22.78	33.63	22.97	490	.	.	.	.	.	.
9.0	22.80	33.71	23.02	485	.	.	.	.	.	.
10.0	22.80	33.72	23.03	484	.	.	.	.	.	.
11.0	22.80	33.74	23.05	483	.	.	.	.	.	.
12.0	22.80	33.75	23.06	482	.	.	.	.	.	.

FRONT HUNT 3 FH3 STA 004 15/ X/76 19.5 GMT CONSEC STA 5

LAT 31 51.3N LONG 80 51.6W DEPTH = 11M DIST LAST STA = 7.5KM

WEATHER DATA
WIND SPEED = 14 KTS
WIND DIRECTION = 220
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1016.9 MB

SEA STATE = 2
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
2.0	22.24	31.54	21.54	606	.	.	.	.	.	.
3.0	21.90	31.76	21.80	602	.	.	.	.	.	.
4.0	21.98	32.34	22.22	562	.	.	.	.	.	.
5.0	22.09	32.57	22.36	548	.	.	.	.	.	.
6.0	22.15	32.67	22.42	542	.	.	.	.	.	.
7.0	22.26	32.83	22.51	534	.	.	.	.	.	.
8.0	22.27	32.85	22.52	533	.	.	.	.	.	.
9.0	22.26	32.86	22.53	532	.	.	.	.	.	.
10.0	22.27	32.88	22.55	531	.	.	.	.	.	.
11.0	22.27	32.89	22.55	530	.	.	.	.	.	.

STATION SUMMARY FOR FRONT HUNT 4

CRUISE	STATION	LATITUDE	LONGITUDE	YR	MN	DY	HOUR GMT	DEPTH M	CONSEC NUMBER
FH4	1A	31 44.8N	80 53.3W	76	11	18	4.3	11	1
FH4	1B	31 44.8N	80 53.3W	76	11	18	5.3	11	2
FH4	1C	31 44.8N	80 53.3W	76	11	18	6.3	12	3
FH4	1D	31 44.8N	80 53.3W	76	11	18	7.3	12	4
FH4	1E	31 44.8N	80 53.3W	76	11	18	8.3	13	5
FH4	1F	31 44.8N	80 53.3W	76	11	18	9.3	13	6
FH4	1G	31 44.8N	80 53.3W	76	11	18	10.3	13	7
FH4	1H	31 44.8N	80 53.3W	76	11	18	11.3	13	8
FH4	1I	31 44.8N	80 53.3W	76	11	18	12.3	12	9
FH4	1J	31 44.8N	80 53.3W	76	11	18	13.3	12	10
FH4	1K	31 44.8N	80 53.3W	76	11	18	14.3	11	11
FH4	1L	31 44.8N	80 53.3W	76	11	18	15.3	11	12
FH4	1M	31 44.8N	80 53.3W	76	11	18	16.3	11	13
FH4	1N	31 44.8N	80 53.3W	76	11	18	17.3	11	14
FH4	2	31 41.8N	80 49.3W	76	11	18	18.3	14	15
FH4	3	31 43.3N	80 51.5W	76	11	18	18.7	15	16
FH4	4	31 45.3N	80 53.9W	76	11	18	19.2	14	17
FH4	5	31 47.1N	80 56.3W	76	11	18	19.5	9	18

FRONT HUNT 4 STA 1A 18/ XI/76 4.3 GMT CONSEC STA 1

LAT 31 44.8N LONG 80 53.3W DEPTH = 11M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	13.80	33.43	25.03	293	.	.	.	.	.	.
2.0	13.89	33.35	24.95	301	.	.	.	.	.	.
3.0	14.12	33.35	24.90	306	.	.	.	.	.	.
4.0	14.14	33.35	24.90	306	.	.	.	.	.	.
5.0	14.17	33.35	24.89	307	.	.	.	.	.	.
6.0	14.24	33.33	24.86	310	.	.	.	.	.	.
7.0	14.31	33.31	24.83	313	.	.	.	.	.	.
8.0	14.33	33.31	24.83	313	.	.	.	.	.	.
9.0	14.35	33.31	24.82	313	.	.	.	.	.	.
10.0	14.35	33.31	24.82	313	.	.	.	.	.	.

FRONT HUNT 4 STA 1B 18/ XI/76 5.3 GMT CONSEC STA 2

LAT 31 44.8N LONG 80 53.3W DEPTH = 11M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	14.25	33.26	24.80	315	.	.	.	.	.	.
2.0	14.32	33.26	24.79	316	.	.	.	.	.	.
3.0	14.39	33.25	24.77	318	.	.	.	.	.	.
4.0	14.42	33.27	24.78	318	.	.	.	.	.	.
5.0	14.37	33.33	24.83	312	.	.	.	.	.	.
6.0	14.39	33.30	24.81	315	.	.	.	.	.	.
7.0	14.41	33.29	24.79	316	.	.	.	.	.	.
8.0	14.42	33.29	24.79	316	.	.	.	.	.	.
9.0	14.42	33.29	24.79	316	.	.	.	.	.	.
10.0	14.43	33.28	24.78	317	.	.	.	.	.	.
11.0	14.43	33.29	24.79	317	.	.	.	.	.	.

FRONT HUNT 4 STA 1C 18/ XI/76 6.3 GMT CONSEC STA 3

LAT 31 44.8N LONG 80 53.3W DEPTH = 12M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	14.52	34.16	25.44	254	.	.	.	.	.	.
2.0	14.52	34.16	25.44	254	.	.	.	.	.	.
3.0	14.54	34.15	25.43	256	.	.	.	.	.	.
4.0	14.54	34.15	25.43	256	.	.	.	.	.	.
5.0	14.54	34.15	25.43	256	.	.	.	.	.	.
6.0	14.54	34.15	25.43	256	.	.	.	.	.	.
7.0	14.54	34.15	25.43	256	.	.	.	.	.	.
8.0	14.54	34.15	25.43	256	.	.	.	.	.	.
9.0	14.54	34.15	25.43	256	.	.	.	.	.	.
10.0	14.54	34.15	25.43	256	.	.	.	.	.	.

FRONT HUNT 4 STA 1D 18/ XI/76 7.3 GMT CONSEC STA 4

LAT 31 44.8N LONG 80 53.3W DEPTH = 12M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	14.60	34.22	25.47	252	.	.	.	.	.	.
2.0	14.60	34.24	25.48	250	.	.	.	.	.	.
3.0	14.60	34.24	25.48	250	.	.	.	.	.	.
4.0	14.60	34.24	25.48	250	.	.	.	.	.	.
5.0	14.60	34.24	25.48	250	.	.	.	.	.	.
6.0	14.60	34.25	25.49	250	.	.	.	.	.	.
7.0	14.60	34.25	25.49	250	.	.	.	.	.	.
8.0	14.60	34.25	25.49	250	.	.	.	.	.	.
9.0	14.60	34.24	25.48	250	.	.	.	.	.	.
10.0	14.60	34.25	25.49	250	.	.	.	.	.	.

FRONT HUNT 4 STA 1E 18/ XI/76 8.3 GMT CONSEC STA 5

LAT 31 44.8N LONG 80 53.3W DEPTH = 13M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED = 10 KTS	SEA STATE = 2
WIND DIRECTION = 250	WAVE DIRECTION =
AIR TEMP = . C	CLOUD TYPE =
WEATHER CODE = X0	CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1016.6 MB	VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	14.68	34.31	25.52	247	.	.	.	.	.	.
2.0	14.68	34.31	25.52	247	.	.	.	.	.	.
3.0	14.68	34.31	25.52	247	.	.	.	.	.	.
4.0	14.68	34.31	25.52	247	.	.	.	.	.	.
5.0	14.68	34.31	25.52	247	.	.	.	.	.	.
6.0	14.68	34.32	25.53	246	.	.	.	.	.	.
7.0	14.68	34.31	25.52	247	.	.	.	.	.	.
8.0	14.68	34.32	25.53	246	.	.	.	.	.	.
9.0	14.68	34.32	25.53	246	.	.	.	.	.	.
10.0	14.68	34.31	25.52	247	.	.	.	.	.	.

FRONT HUNT 4 STA 1F 18/ XI/76 9.3 GMT CONSEC STA 6

LAT 31 44.8N LONG 80 53.3W DEPTH = 13M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED = 10 KTS	SEA STATE = 2
WIND DIRECTION = 250	WAVE DIRECTION =
AIR TEMP = . C	CLOUD TYPE =
WEATHER CODE = X0	CLOUD AMOUNT =
BAROMETRIC PRESSURE = 1016.6 MB	VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	14.68	34.33	25.54	245	.	.	.	.	.	.
2.0	14.68	34.33	25.54	245	.	.	.	.	.	.
3.0	14.69	34.33	25.53	245	.	.	.	.	.	.
4.0	14.69	34.33	25.53	245	.	.	.	.	.	.
5.0	14.69	34.33	25.53	246	.	.	.	.	.	.
6.0	14.69	34.33	25.53	246	.	.	.	.	.	.
7.0	14.69	34.34	25.54	245	.	.	.	.	.	.
8.0	14.69	34.34	25.54	245	.	.	.	.	.	.
9.0	14.69	34.34	25.54	245	.	.	.	.	.	.
10.0	14.69	34.35	25.55	244	.	.	.	.	.	.
11.0	14.70	34.34	25.54	245	.	.	.	.	.	.

FRONT HUNT 4 STA 1G 18/ XI/76 10.3 GMT CONSEC STA 7

LAT 31 44.8N LONG 80 53.3W DEPTH = 13M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	14.65	34.32	25.54	245	.	.	.	.	.	.
2.0	14.65	34.33	25.54	245	.	.	.	.	.	.
3.0	14.64	34.34	25.55	244	.	.	.	.	.	.
4.0	14.65	34.32	25.54	245	.	.	.	.	.	.
5.0	14.65	34.33	25.54	245	.	.	.	.	.	.
6.0	14.65	34.33	25.54	245	.	.	.	.	.	.
7.0	14.63	34.35	25.56	243	.	.	.	.	.	.
8.0	14.66	34.33	25.54	245	.	.	.	.	.	.
9.0	14.67	34.35	25.55	244	.	.	.	.	.	.
10.0	14.68	34.33	25.54	245	.	.	.	.	.	.
11.0	14.68	34.33	25.54	245	.	.	.	.	.	.

FRONT HUNT 4 STA 1H 18/ XI/76 11.3 GMT CONSEC STA 8

LAT 31 44.8N LONG 80 53.3W DEPTH = 13M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	14.59	34.25	25.49	249	.	.	.	.	.	.
2.0	14.59	34.25	25.49	249	.	.	.	.	.	.
3.0	14.59	34.26	25.50	249	.	.	.	.	.	.
4.0	14.59	34.26	25.50	249	.	.	.	.	.	.
5.0	14.60	34.27	25.51	248	.	.	.	.	.	.
6.0	14.60	34.26	25.50	249	.	.	.	.	.	.
7.0	14.60	34.26	25.50	249	.	.	.	.	.	.
8.0	14.61	34.27	25.51	248	.	.	.	.	.	.
9.0	14.61	34.27	25.51	248	.	.	.	.	.	.
10.0	14.62	34.27	25.50	249	.	.	.	.	.	.

FRONT HUNT 4 STA 11 18/ XI/76 12.3 GMT CONSEC STA 9

LAT 31 44.8N LONG 80 53.3W DEPTH = 12M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	14.30	34.02	25.38	260	.	.	.	.	.	.
2.0	14.30	34.02	25.38	260	.	.	.	.	.	.
3.0	14.30	34.04	25.39	259	.	.	.	.	.	.
4.0	14.34	34.10	25.43	255	.	.	.	.	.	.
5.0	14.38	34.10	25.42	256	.	.	.	.	.	.
6.0	14.40	34.11	25.43	256	.	.	.	.	.	.
7.0	14.39	34.12	25.44	255	.	.	.	.	.	.
8.0	14.42	34.12	25.43	255	.	.	.	.	.	.
9.0	14.45	34.14	25.44	255	.	.	.	.	.	.
10.0	14.45	34.15	25.45	254	.	.	.	.	.	.

FRONT HUNT 4 STA 1J 18/ XI/76 13.3 GMT CONSEC STA 10

LAT 31 44.8N LONG 80 53.3W DEPTH = 12M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	13.68	33.29	24.95	301	.	.	.	.	.	.
2.0	13.69	33.28	24.94	302	.	.	.	.	.	.
3.0	13.70	33.29	24.94	302	.	.	.	.	.	.
4.0	13.83	33.34	24.95	301	.	.	.	.	.	.
5.0	14.12	33.67	25.15	282	.	.	.	.	.	.
6.0	14.14	33.75	25.20	277	.	.	.	.	.	.
7.0	14.31	33.89	25.28	270	.	.	.	.	.	.
8.0	14.35	33.96	25.32	266	.	.	.	.	.	.
9.0	14.36	33.97	25.33	265	.	.	.	.	.	.
10.0	14.36	33.99	25.34	264	.	.	.	.	.	.
11.0	14.37	34.02	25.36	262	.	.	.	.	.	.

FRONT HUNT 4 STA 1K 18/ XI/76 14.3 GMT CONSEC STA 11

LAT 31 44.8N LONG 80 53.3W DEPTH = 11M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2/	AOU	PO4	NO3	SI
1.0	13.32	32.64	24.52	342	.	.	.	.	.	.
2.0	13.33	32.63	24.51	343	.	.	.	.	.	.
3.0	13.34	32.67	24.54	340	.	.	.	.	.	.
4.0	13.49	32.97	24.74	321	.	.	.	.	.	.
5.0	13.69	33.20	24.87	308	.	.	.	.	.	.
6.0	13.99	33.60	25.12	285	.	.	.	.	.	.
7.0	14.25	33.97	25.35	263	.	.	.	.	.	.
8.0	14.34	33.97	25.33	265	.	.	.	.	.	.
9.0	14.35	34.02	25.37	261	.	.	.	.	.	.
10.0	14.36	34.03	25.37	261	.	.	.	.	.	.

FRONT HUNT 4 STA 1L 18/ XI/76 15.3 GMT CONSEC STA 12

LAT 31 44.8N LONG 80 53.3W DEPTH = 11M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2/	AOU	PO4	NO3	SI
1.0	13.13	32.08	24.12	380	.	.	.	.	.	.
2.0	13.14	32.10	24.14	378	.	.	.	.	.	.
3.0	13.19	32.27	24.26	367	.	.	.	.	.	.
4.0	13.39	32.90	24.70	324	.	.	.	.	.	.
5.0	13.65	33.40	25.04	293	.	.	.	.	.	.
6.0	14.09	33.73	25.20	277	.	.	.	.	.	.
7.0	14.10	33.75	25.21	276	.	.	.	.	.	.
8.0	14.17	33.81	25.24	273	.	.	.	.	.	.
9.0	14.33	34.01	25.36	262	.	.	.	.	.	.

FRONT HUNT 4 STA 1M 18/ XI/76 16.3 GMT CONSEC STA 13

LAT 31 44.8N LONG 80 53.3W DEPTH = 11M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	ADU	PO4	NO3	SI
1.0	13.43	32.39	24.30	363	.	.	.	.	.	.
2.0	13.43	32.42	24.33	360	.	.	.	.	.	.
3.0	13.57	32.72	24.53	341	.	.	.	.	.	.
4.0	13.83	33.32	24.94	302	.	.	.	.	.	.
5.0	14.00	33.63	25.14	283	.	.	.	.	.	.
6.0	14.24	33.83	25.25	273	.	.	.	.	.	.
7.0	14.33	34.01	25.36	262	.	.	.	.	.	.
8.0	14.33	34.01	25.36	262	.	.	.	.	.	.
9.0	14.33	34.01	25.36	262	.	.	.	.	.	.
10.0	14.33	34.01	25.36	262	.	.	.	.	.	.
11.0	14.33	34.01	25.36	262	.	.	.	.	.	.

FRONT HUNT 4 STA 1N 18/ XI/76 17.3 GMT CONSEC STA 14

LAT 31 44.8N LONG 80 53.3W DEPTH = 11M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	ADU	PO4	NO3	SI
1.0	13.69	32.57	24.39	354	.	.	.	.	.	.
2.0	13.66	32.64	24.45	349	.	.	.	.	.	.
3.0	13.63	32.73	24.52	342	.	.	.	.	.	.
4.0	13.62	32.81	24.59	336	.	.	.	.	.	.
5.0	13.75	33.06	24.75	320	.	.	.	.	.	.
6.0	14.04	33.26	24.85	311	.	.	.	.	.	.
7.0	14.25	33.88	25.28	270	.	.	.	.	.	.
8.0	14.27	33.93	25.32	266	.	.	.	.	.	.
9.0	14.30	33.95	25.33	265	.	.	.	.	.	.
10.0	14.31	33.98	25.35	264	.	.	.	.	.	.
11.0	14.31	33.98	25.35	264	.	.	.	.	.	.

FRONT HUNT 4 STA 2 18/ XI/76 18.3 GMT CONSEC STA 15

LAT 31 41.2N LONG 80 49.3W DEPTH = 14M DIST LAST STA = 9.2KM

WEATHER DATA
WIND SPEED = 10 KTS
WIND DIRECTION = 250
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1016.6 MB

SEA STATE = 2
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2/	AOU	PO4	NO3	SI
1.0	15.14	34.45	25.53	246	.	.	.	.	.	.
2.0	15.16	34.44	25.52	247	.	.	.	.	.	.
3.0	15.13	34.45	25.53	246	.	.	.	.	.	.
4.0	15.13	34.44	25.52	247	.	.	.	.	.	.
5.0	15.16	34.45	25.52	246	.	.	.	.	.	.
6.0	15.12	34.46	25.54	245	.	.	.	.	.	.
7.0	15.11	34.46	25.54	245	.	.	.	.	.	.
8.0	15.11	34.46	25.54	245	.	.	.	.	.	.
9.0	15.10	34.47	25.55	244	.	.	.	.	.	.
10.0	15.10	34.47	25.55	244	.	.	.	.	.	.
11.0	15.10	34.47	25.55	244	.	.	.	.	.	.

FRONT HUNT 4 STA 3 18/ XI/76 18.7 GMT CONSEC STA 16

LAT 31 43.3N LONG 80 51.6W DEPTH = 15M DIST LAST STA = 5.3KM

WEATHER DATA
WIND SPEED = 10 KTS
WIND DIRECTION = 250
AIR TEMP = . C
WEATHER CODE = X0
BAROMETRIC PRESSURE = 1016.6 MB

SEA STATE = 2
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2/	AOU	PO4	NO3	SI
1.0	14.93	34.48	25.60	239	.	.	.	.	.	.
2.0	14.93	34.47	25.59	240	.	.	.	.	.	.
3.0	14.93	34.46	25.58	241	.	.	.	.	.	.
4.0	14.92	34.46	25.58	241	.	.	.	.	.	.
5.0	14.92	34.46	25.58	241	.	.	.	.	.	.
6.0	14.92	34.45	25.58	242	.	.	.	.	.	.
7.0	14.92	34.45	25.58	242	.	.	.	.	.	.
8.0	14.92	34.44	25.57	242	.	.	.	.	.	.
9.0	14.92	34.43	25.56	243	.	.	.	.	.	.
10.0	14.92	34.43	25.56	243	.	.	.	.	.	.
11.0	14.91	34.43	25.56	243	.	.	.	.	.	.
12.0	14.91	34.42	25.56	244	.	.	.	.	.	.
13.0	14.91	34.42	25.56	244	.	.	.	.	.	.
14.0	14.91	34.41	25.55	244	.	.	.	.	.	.

FRONT HUNT 4 STA 4 18/ XI/76 19.2 GMT CONSEC STA 17

LAT 31 45.3N LONG 80 53.9W DEPTH = 14M DIST LAST STA = 5.2KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	13.77	32.66	24.44	349	.	.	.	.	.	.
2.0	13.75	32.67	24.45	348	.	.	.	.	.	.
3.0	13.70	32.73	24.51	343	.	.	.	.	.	.
4.0	13.67	32.86	24.62	333	.	.	.	.	.	.
5.0	13.72	33.07	24.77	318	.	.	.	.	.	.
6.0	13.93	32.73	24.46	347	.	.	.	.	.	.
7.0	14.12	33.70	25.17	280	.	.	.	.	.	.
8.0	14.19	33.75	25.19	278	.	.	.	.	.	.
9.0	14.24	33.82	25.24	274	.	.	.	.	.	.
10.0	14.25	33.85	25.26	272	.	.	.	.	.	.
11.0	14.26	33.88	25.28	270	.	.	.	.	.	.
12.0	14.27	33.89	25.29	269	.	.	.	.	.	.
13.0	14.27	33.89	25.29	269	.	.	.	.	.	.

FRONT HUNT 4 STA 5 18/ XI/76 19.5 GMT CONSEC STA 18

LAT 31 47.1N LONG 80 56.3W DEPTH = 9M DIST LAST STA = 5.0KM

WEATHER DATA

WIND SPEED	= 10 KTS	SEA STATE	= 2
WIND DIRECTION	= 250	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X0	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1016.6 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
2.0	13.36	31.45	23.59	430	.	.	.	.	.	.
3.0	13.43	31.61	23.70	420	.	.	.	.	.	.
4.0	13.80	32.87	24.60	335	.	.	.	.	.	.
5.0	13.93	33.09	24.74	321	.	.	.	.	.	.
6.0	13.97	33.28	24.88	308	.	.	.	.	.	.
7.0	14.00	33.37	24.94	302	.	.	.	.	.	.
8.0	14.00	33.48	25.03	294	.	.	.	.	.	.

STATION SUMMARY FOR FRONT HUNT 5

CRUISE	STATION	LATITUDE	LONGITUDE	YR	MN	DY	HOUR GMT	DEPTH M	CONSEC NUMBER
FH5	1	31 42.6N	81 8.3W	77	4	21	15.0	9	1
FH5	2	31 42.5N	81 7.1W	77	4	21	15.3	19	2
FH5	3	31 42.4N	81 6.0W	77	4	21	15.6	17	3
FH5	4	31 42.6N	81 4.9W	77	4	21	15.8	9	4
FH5	5	31 42.4N	81 3.7W	77	4	21	16.1	5	5
FH5	6	31 41.7N	81 2.9W	77	4	21	16.3	6	6
FH5	7	31 41.2N	81 1.9W	77	4	21	16.6	9	7
FH5	8	31 37.8N	80 57.6W	77	4	21	17.5	13	8
FH5	9	31 34.4N	80 53.3W	77	4	21	18.1	16	9
FH5	10	31 30.9N	80 49.1W	77	4	21	18.9	17	10
FH5	11	31 33.3N	80 40.0W	77	4	21	19.7	17	11
FH5	12	31 40.7N	80 47.7W	77	4	21	20.5	17	12
FH5	13	31 44.1N	80 52.0W	77	4	21	21.0	13	13
FH5	14	31 47.5N	80 56.3W	77	4	21	21.5	13	14

FRONT HUNT 5 FH5 STA 001 21/ IV/77 15.0 GMT CONSEC STA 1

LAT 31 42.6N LONG 81 8.3W DEPTH = 9M DIST LAST STA = 0.0KM

WEATHER DATA

WIND SPEED	= 12 KTS	SEA STATE	= 3
WIND DIRECTION	= 130	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X1	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1023.0 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	23.00	27.80	18.51	918	.	.	.	.	.	.
2.0	22.90	27.70	18.46	922	.	.	.	.	.	.
3.0	23.00	27.60	18.36	932	.	.	.	.	.	.
4.0	23.00	27.50	18.29	940	.	.	.	.	.	.
5.0	23.00	27.60	18.36	932	.	.	.	.	.	.
6.0	23.00	27.70	18.44	925	.	.	.	.	.	.
7.0	22.50	28.00	18.80	890	.	.	.	.	.	.
8.0	22.60	28.00	18.77	893	.	.	.	.	.	.
9.0	22.50	28.00	18.80	890	.	.	.	.	.	.

FRONT HUNT 5 FH5 STA 002 21/ IV/77 15.3 GMT CONSEC STA 2

LAT 31 42.5N LONG 81 7.1W DEPTH = 19M DIST LAST STA = 1.9KM

WEATHER DATA

WIND SPEED	= 12 KTS	SEA STATE	= 3
WIND DIRECTION	= 130	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X1	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1023.0 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	22.70	28.70	19.27	844	.	.	.	.	.	.
2.0	22.70	28.50	19.12	859	.	.	.	.	.	.
3.0	22.70	28.60	19.20	852	.	.	.	.	.	.
4.0	22.60	28.60	19.22	849	.	.	.	.	.	.
5.0	22.50	28.80	19.40	832	.	.	.	.	.	.
6.0	22.30	28.80	19.46	827	.	.	.	.	.	.
7.0	22.30	28.90	19.53	820	.	.	.	.	.	.
8.0	22.30	29.00	19.61	812	.	.	.	.	.	.
9.0	22.20	29.10	19.71	802	.	.	.	.	.	.
10.0	22.20	29.10	19.71	802	.	.	.	.	.	.
11.0	22.30	29.30	19.83	791	.	.	.	.	.	.
12.0	22.20	29.30	19.86	788	.	.	.	.	.	.

FRONT HUNT 5 FH5 STA 003 21/ IV/77 15.6 GMT CONSEC STA 3

LAT 31 42.4N LONG 81 6.0W DEPTH = 17M DIST LAST STA = 1.7KM

WEATHER DATA
WIND SPEED = 12 KTS
WIND DIRECTION = 130
AIR TEMP = . C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1023.0 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2%	AOU	PO4	NO3	SI
1.0	22.50	29.10	19.63	810	.	.	.	.	.	.
2.0	22.70	29.10	19.57	815	.	.	.	.	.	.
3.0	22.60	29.20	19.68	806	.	.	.	.	.	.
4.0	22.30	29.30	19.83	790	.	.	.	.	.	.
5.0	22.30	29.20	19.76	798	.	.	.	.	.	.
6.0	22.10	29.60	20.12	763	.	.	.	.	.	.
7.0	22.10	29.70	20.19	756	.	.	.	.	.	.
8.0	22.10	29.70	20.19	756	.	.	.	.	.	.
9.0	22.10	29.60	20.12	764	.	.	.	.	.	.
10.0	22.00	29.70	20.22	754	.	.	.	.	.	.
11.0	22.00	29.70	20.22	754	.	.	.	.	.	.
12.0	22.10	29.80	20.27	749	.	.	.	.	.	.

FRONT HUNT 5 FH5 STA 004 21/ IV/77 15.8 GMT CONSEC STA 4

LAT 31 42.6N LONG 81 4.9W DEPTH = 9M DIST LAST STA = 1.8KM

WEATHER DATA
WIND SPEED = 12 KTS
WIND DIRECTION = 130
AIR TEMP = . C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1023.0 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2%	AOU	PO4	NO3	SI
1.0	22.40	29.80	20.18	757	.	.	.	.	.	.
2.0	22.40	29.80	20.18	757	.	.	.	.	.	.
3.0	22.50	29.50	19.93	781	.	.	.	.	.	.
4.0	22.00	29.90	20.37	739	.	.	.	.	.	.
5.0	22.00	30.00	20.45	732	.	.	.	.	.	.
6.0	21.90	30.20	20.62	715	.	.	.	.	.	.
7.0	21.80	30.20	20.65	712	.	.	.	.	.	.

FRONT HUNT 5 FH5 STA 005 21/ IV/77 16.1 GMT CONSEC STA 5

LAT 31 42.4N LONG 81 3.7W DEPTH = 5M DIST LAST STA = 1.9KM

WEATHER DATA
WIND SPEED = 12 KTS
WIND DIRECTION = 130
AIR TEMP = . C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1023.0 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	22.50	30.00	20.31	745	.	.	.	.	.	.
2.0	22.30	30.00	20.36	740	.	.	.	.	.	.
3.0	22.30	30.00	20.36	740	.	.	.	.	.	.
4.0	22.20	30.10	20.47	730	.	.	.	.	.	.

FRONT HUNT 5 FH5 STA 006 21/ IV/77 16.3 GMT CONSEC STA 6

LAT 31 41.7N LONG 81 2.9W DEPTH = 6M DIST LAST STA = 1.8KM

WEATHER DATA
WIND SPEED = 12 KTS
WIND DIRECTION = 130
AIR TEMP = . C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1023.0 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	22.00	30.50	20.82	695	.	.	.	.	.	.
2.0	21.60	30.60	21.01	678	.	.	.	.	.	.
3.0	21.60	30.70	21.08	671	.	.	.	.	.	.
4.0	21.60	30.70	21.08	671	.	.	.	.	.	.
5.0	21.60	30.70	21.08	671	.	.	.	.	.	.
6.0	21.60	30.70	21.08	671	.	.	.	.	.	.

FRONT HUNT 5 FH5 STA 007 21/ IV/77 16.6 GMT CONSEC STA 7

LAT 31 41.2N LONG 81 1.9W DEPTH = 9M DIST LAST STA = 1.8KM

WEATHER DATA
WIND SPEED = 12 KTS
WIND DIRECTION = 130
AIR TEMP = . C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1023.0 MB

SEA STATE = 3
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2/	AOU	PO4	NO3	SI
1.0	22.00	31.00	21.20	659	.	.	.	.	.	.
2.0	22.10	30.90	21.10	669	.	.	.	.	.	.
3.0	22.00	31.00	21.20	659	.	.	.	.	.	.
4.0	21.90	31.00	21.23	657	.	.	.	.	.	.
5.0	22.00	31.00	21.20	659	.	.	.	.	.	.
6.0	21.40	31.00	21.36	644	.	.	.	.	.	.

FRONT HUNT 5 FH5 STA 008 21/ IV/77 17.5 GMT CONSEC STA 8

LAT 31 37.8N LONG 80 57.6W DEPTH = 13M DIST LAST STA = 9.3KM

WEATHER DATA
WIND SPEED = 15 KTS
WIND DIRECTION = 130
AIR TEMP = . C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1023.0 MB

SEA STATE = 4
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2/	AOU	PO4	NO3	SI
1.0	22.00	30.90	21.13	666	.	.	.	.	.	.
2.0	21.90	31.00	21.23	657	.	.	.	.	.	.
3.0	21.70	31.00	21.28	651	.	.	.	.	.	.
4.0	21.40	31.20	21.52	629	.	.	.	.	.	.
5.0	21.10	31.30	21.67	614	.	.	.	.	.	.
6.0	19.70	32.00	22.57	538	.	.	.	.	.	.
7.0	18.30	33.50	24.06	386	.	.	.	.	.	.
8.0	18.20	33.60	24.16	376	.	.	.	.	.	.
9.0	18.20	33.50	24.09	383	.	.	.	.	.	.
10.0	18.20	33.60	24.16	376	.	.	.	.	.	.

FRONT HUNT 5 FH5 STA 009 21/ IV/77 18.1 GMT CONSEC STA 9

LAT 31 34.4N LONG 80 53.3W DEPTH = 16M DIST LAST STA = 9.3KM

WEATHER DATA
WIND SPEED = 15 KTS
WIND DIRECTION = 130
AIR TEMP = . C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1023.0 MB

SEA STATE = 4
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	22.70	30.70	20.78	700	.	.	.	.	.	.
2.0	22.70	30.70	20.78	700	.	.	.	.	.	.
3.0	22.70	30.70	20.78	700	.	.	.	.	.	.
4.0	22.40	30.70	20.86	692	.	.	.	.	.	.
5.0	21.80	31.30	21.48	632	.	.	.	.	.	.
6.0	18.70	33.40	23.89	402	.	.	.	.	.	.
7.0	18.50	34.40	24.70	325	.	.	.	.	.	.
8.0	18.40	34.40	24.72	323	.	.	.	.	.	.
9.0	18.40	34.60	24.88	308	.	.	.	.	.	.
10.0	18.40	34.60	24.88	308	.	.	.	.	.	.

FRONT HUNT 5 FH5 STA 010 21/ IV/77 18.9 GMT CONSEC STA 10

LAT 31 30.9N LONG 80 49.1W DEPTH = 17M DIST LAST STA = 9.3KM

WEATHER DATA
WIND SPEED = 15 KTS
WIND DIRECTION = 130
AIR TEMP = . C
WEATHER CODE = X1
BAROMETRIC PRESSURE = 1023.0 MB

SEA STATE = 4
WAVE DIRECTION =
CLOUD TYPE =
CLOUD AMOUNT =
VISIBILITY CODE =

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	22.80	31.10	21.05	673	.	.	.	.	.	.
2.0	22.80	31.20	21.13	666	.	.	.	.	.	.
3.0	22.80	31.20	21.13	666	.	.	.	.	.	.
4.0	22.60	31.20	21.19	661	.	.	.	.	.	.
5.0	22.00	31.80	21.81	601	.	.	.	.	.	.
6.0	20.20	34.30	24.19	374	.	.	.	.	.	.
7.0	19.10	34.80	24.85	310	.	.	.	.	.	.
8.0	18.90	35.00	25.06	291	.	.	.	.	.	.
9.0	18.90	35.00	25.06	291	.	.	.	.	.	.
10.0	18.80	35.00	25.08	289	.	.	.	.	.	.

FRONT HUNT 5 FH5 STA 011 21/ IV/77 19.7 GMT CONSEC STA 11

LAT 31 33.3N LONG 80 40.0W DEPTH = 17M DIST LAST STA = 15.0KM

WEATHER DATA

WIND SPEED	= 15 KTS	SEA STATE	= 4
WIND DIRECTION	= 130	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X1	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1023.0 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	23.10	31.00	20.89	689	.	.	.	.	.	.
2.0	23.10	31.00	20.89	689	.	.	.	.	.	.
3.0	22.80	31.10	21.05	673	.	.	.	.	.	.
4.0	22.00	31.90	21.88	594	.	.	.	.	.	.
5.0	19.20	34.70	24.75	320	.	.	.	.	.	.
6.0	18.90	34.80	24.90	306	.	.	.	.	.	.
7.0	18.80	34.90	25.01	296	.	.	.	.	.	.
8.0	18.70	34.90	25.03	294	.	.	.	.	.	.
9.0	18.70	34.90	25.03	294	.	.	.	.	.	.
10.0	18.80	35.00	25.08	289	.	.	.	.	.	.

FRONT HUNT 5 FH5 STA 012 21/ IV/77 20.5 GMT CONSEC STA 12

LAT 31 40.7N LONG 80 47.7W DEPTH = 17M DIST LAST STA = 18.3KM

WEATHER DATA

WIND SPEED	= 12 KTS	SEA STATE	= 4
WIND DIRECTION	= 130	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X1	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1023.0 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	22.70	30.50	20.63	714	.	.	.	.	.	.
2.0	22.70	30.50	20.63	714	.	.	.	.	.	.
3.0	22.60	30.60	20.73	704	.	.	.	.	.	.
4.0	22.10	30.70	20.95	684	.	.	.	.	.	.
5.0	20.20	32.80	23.05	483	.	.	.	.	.	.
6.0	18.80	34.20	24.47	347	.	.	.	.	.	.
7.0	18.50	34.40	24.70	325	.	.	.	.	.	.
8.0	18.50	34.40	24.70	325	.	.	.	.	.	.
9.0	18.60	34.40	24.67	327	.	.	.	.	.	.
10.0	18.50	34.50	24.78	318	.	.	.	.	.	.

FRONT HUNT 5 FH5 STA 013 21/ IV/77 21.0 GMT CONSEC STA 13

LAT 31 44.1N LONG 80 52.0W DEPTH = 13M DIST LAST STA = 9.3KM

WEATHER DATA

WIND SPEED	= 12 KTS	SEA STATE	= 3
WIND DIRECTION	= 130	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X1	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1023.0 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	22.30	30.80	20.97	682	.	.	.	.	.	.
2.0	22.30	30.90	21.04	674	.	.	.	.	.	.
3.0	22.30	31.00	21.12	667	.	.	.	.	.	.
4.0	22.00	31.00	21.20	659	.	.	.	.	.	.
5.0	18.80	33.50	23.94	398	.	.	.	.	.	.
6.0	18.50	33.70	24.17	376	.	.	.	.	.	.
7.0	18.50	33.80	24.24	369	.	.	.	.	.	.
8.0	18.50	33.80	24.24	369	.	.	.	.	.	.
9.0	18.50	33.80	24.24	369	.	.	.	.	.	.
10.0	18.50	33.90	24.32	361	.	.	.	.	.	.

FRONT HUNT 5 FH5 STA 014 21/ IV/77 21.5 GMT CONSEC STA 14

LAT 31 47.5N LONG 80 56.3W DEPTH = 13M DIST LAST STA = 9.3KM

WEATHER DATA

WIND SPEED	= 12 KTS	SEA STATE	= 2
WIND DIRECTION	= 130	WAVE DIRECTION	=
AIR TEMP	= . C	CLOUD TYPE	=
WEATHER CODE	= X4	CLOUD AMOUNT	=
BAROMETRIC PRESSURE	= 1023.0 MB	VISIBILITY CODE	=

OBSERVATIONS

Z	T	S	D	SVA	O2	O2'	AOU	PO4	NO3	SI
1.0	21.70	30.60	20.98	680	.	.	.	.	.	.
2.0	21.60	30.60	21.01	678	.	.	.	.	.	.
3.0	21.60	30.60	21.01	678	.	.	.	.	.	.
4.0	21.40	30.60	21.06	673	.	.	.	.	.	.
5.0	21.40	30.60	21.06	673	.	.	.	.	.	.
6.0	21.00	30.90	21.40	641	.	.	.	.	.	.
7.0	18.90	32.60	23.23	465	.	.	.	.	.	.
8.0	18.50	33.00	23.63	427	.	.	.	.	.	.
9.0	18.50	33.00	23.63	427	.	.	.	.	.	.
10.0	18.40	33.00	23.66	424	.	.	.	.	.	.