

UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL AND CHEMICAL DATA

CCOFI Cruise 6203-4
15 March - 2 May 1962

SIO Reference 63-9
15 February 1963

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Sponsored by

Marine Research Committee

SIO Reference 63-9

15 February 1963

Approved for distribution:

F N Spiess

F. N. Spiess
Acting Director

CONTENTS

List of Figures	ii
Introduction	iii
Personnel	vii
Tabulated Data	51
Distribution List	111

FIGURES

1. CCOFI Cruise 6203-4, station positions
2. Horizontal distribution of dynamic height anomaly (0 over 500 d-bar)
3. Horizontal distribution of temperature at 10 meters
4. Horizontal distribution of salinity at 10 meters
5. Horizontal distribution of temperature at 200 meters
6. Horizontal distribution of salinity at 200 meters

INTRODUCTION

The data presented in this report were collected by the RV Black Douglas of the Bureau of Commercial Fisheries and the RV Horizon of the Scripps Institution of Oceanography on Cruise 6203-4 of the California Cooperative Oceanic Fisheries Investigations program. The first two figures in this cruise numbering system represent the year of the cruise; the last two figures, the month. In the case of quarterly cruises the last figures are hyphenated. The cruises preceding this one in the series are 6107-8 and 6108 (Scripps Institution report, SIO Ref. 62-16), 6109 and 6110-11 (SIO Ref. 62-17) and 6201-2 (SIO Ref. 62-26).

The data are tabulated at observed depths; the interpolated and computed values are tabulated at standard depths and are accompanied by charts of horizontal distribution. The presentation of data in this report does not constitute publication; however, the data contained in this report have been carefully edited and no modifications should be necessary before final publication.

STANDARD PROCEDURES

Processing of the data was carried out using the method described by Klein.^{1/} Certain approximations have been introduced for the determination of the integrated pressure terms which may result in errors whose maximum values are less than 0.5 dynamic centimeter at 0 over 200 decibars, 1.0 dynamic centimeter at 0 over 500 decibars, and 2.0 dynamic centimeters at 0 over 1000 decibars. The 125-meter level was introduced into the integration to obtain greater accuracy in the determination of ΔD .

To indicate degree of accuracy, temperatures are recorded in tenths of a degree when obtained by bucket thermometer, thermograph, or bathythermograph, while temperatures from reversing thermometers are recorded in hundredths of a degree. The salinity values obtained by salinometer are recorded to three decimal places, provided they meet accepted standards. The third decimal place has been offset to emphasize that the accuracy of the observations is not to one unit in that place, but that the values recorded "have a reproducibility of $\pm 0.004\%$ salinity at the 95 percent probability level, and a probable accuracy of $\pm 0.01\%$ salinity or better at the same level of probability."^{2/} The values are recorded to two decimal places when obtained by chlorinity titration, or by salinometer where only one determination

^{1/}Klein, Hans T. A new technique for processing physical oceanographic data. MS.

^{2/}Quotation from Department of Oceanography, University of Washington, Tech. Rep. No. 66, UW Ref. 60-18, October 1960.

per sample was obtained, or where there is doubt concerning the accuracy of a particular sample, or of all samples on a station. The accuracy of all samples obtained by salinometer and recorded to two decimal places is believed to be equal to or better than those obtained by manual titration.

Extrapolated values and values interpolated between remote observations are entered within parentheses. A hyphen is used to indicate a missing observed value. The time is the time of messenger release. When more than one cast was made on a station, messenger times and wire angles are given in the order of increasing depth. A line is left blank between the observed data of each cast.

On stations where more than one cast is lowered, the various property curves may not agree perfectly. This discrepancy may be caused by changes in geographical position, real property changes with time, slight error in measurement, or a combination of these factors. Stations with overlapping casts have the following footnote: Overlapping casts; reconciliation of property curves when necessary.

FOOTNOTES

Laboratory personnel, before titrating the salinity samples, note any possible imperfections in the sealing of the bottles as follows:

Loose bottle cap: The cap is definitely loose so that it could be moved with very little applied pressure. The salinity values obtained from these samples may be usable depending on time and/or conditions of storage.

Possible evaporation: Either the cap was sealed with less than usual pressure, the bottle edge chipped, the rubber washer cracked, or the bale broke on opening, etc.

Use of the above values in interpolation depends upon consistency with other values of salinity and other properties, and these footnotes are supplemented with "falls on property curve" or "does not fall on property curve," depending upon whether the property curve was drawn through the value or not.

In addition to footnotes, three special notations are used without footnotes because their meaning is always the same.

To indicate a premature or a delayed reversal of the water-sampling device which results in certain depth and property errors, the following notation is used.

p: pretrip or posttrip.

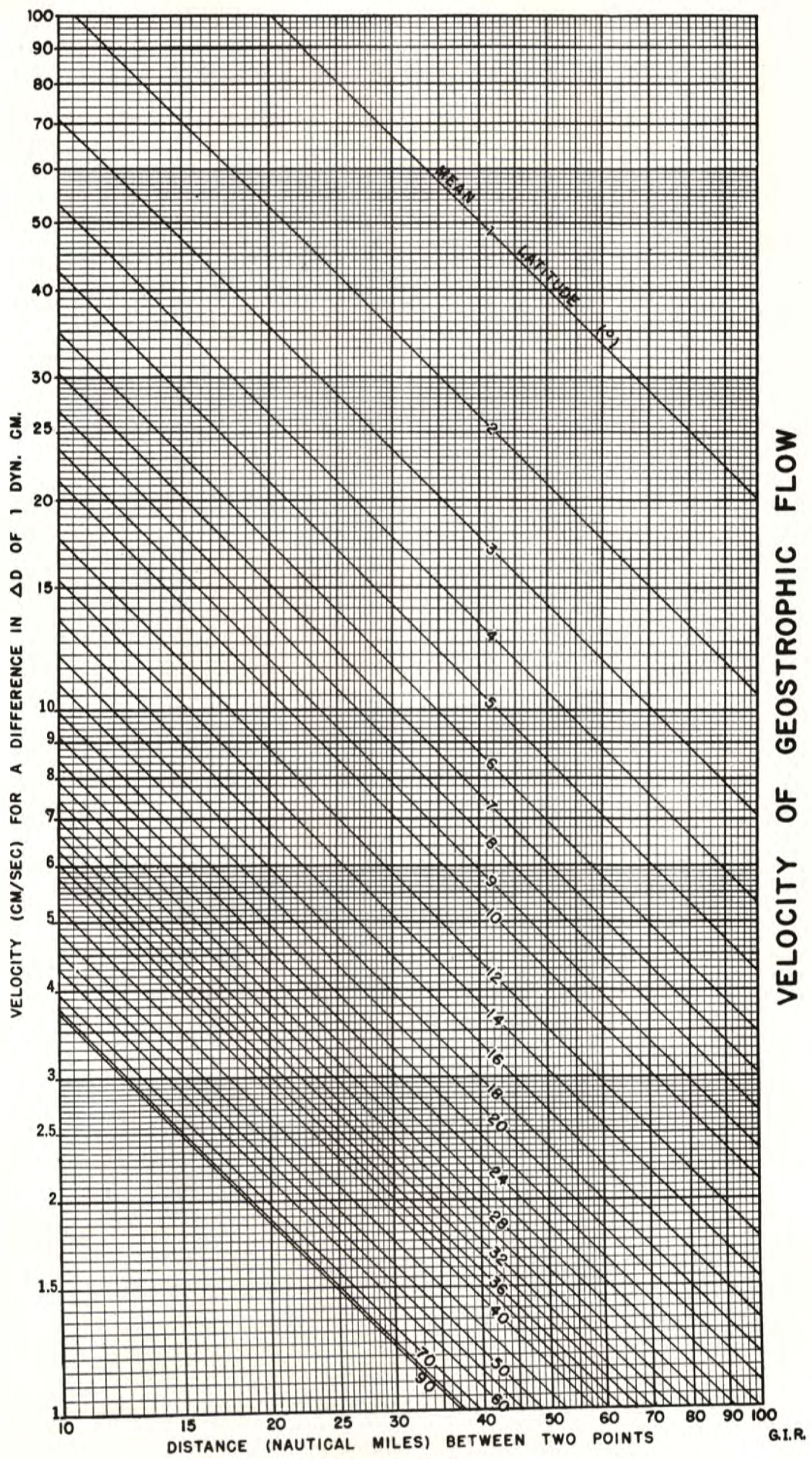
Values which are not drawn through because they seem to be in error without apparent reason are indicated by one of the following notations.

r: rejected value (value seems to be definitely wrong),

u: uncertain value (value may be correct; occasionally it can influence the drawing of the property curve).

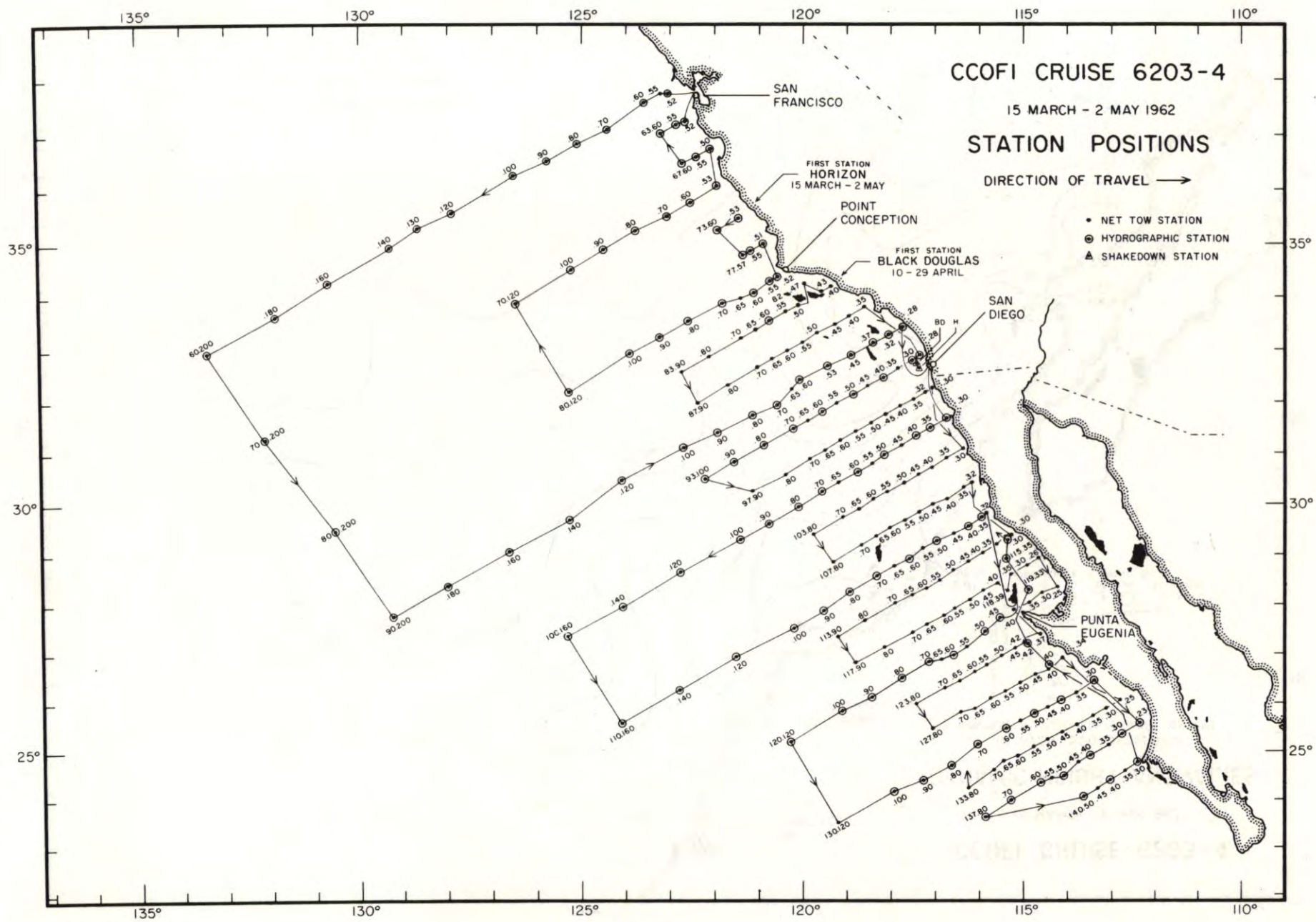
FORMAT

These data are typed in the format of the University of California Press publication, Oceanic Observations of the Pacific. So that these pages can be used as copy for the 1962 volume, the first page of Cruise 6203-4 data is numbered 51.



VELOCITY OF GEOSTROPHIC FLOW

G.I.R.



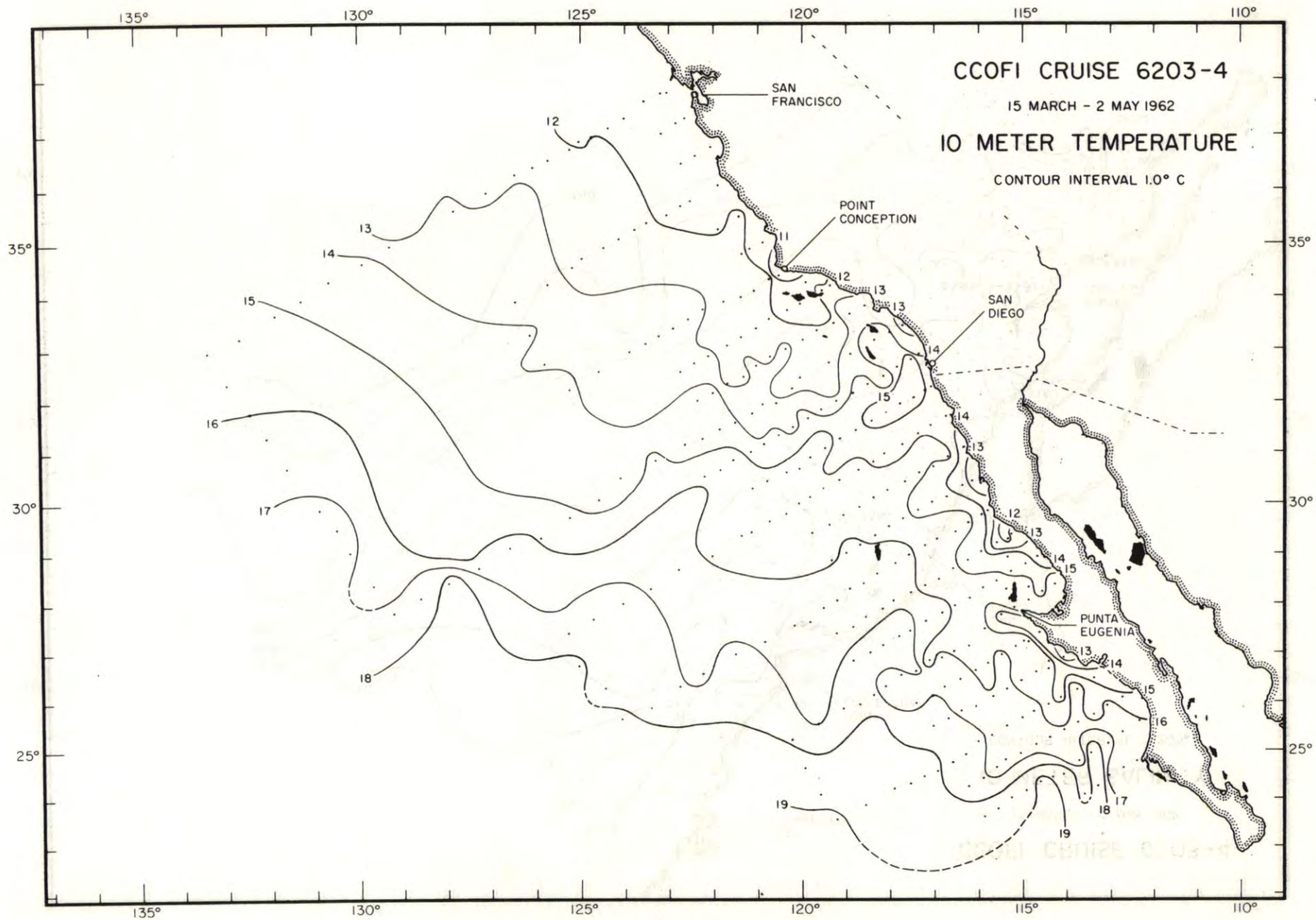


FIGURE 3

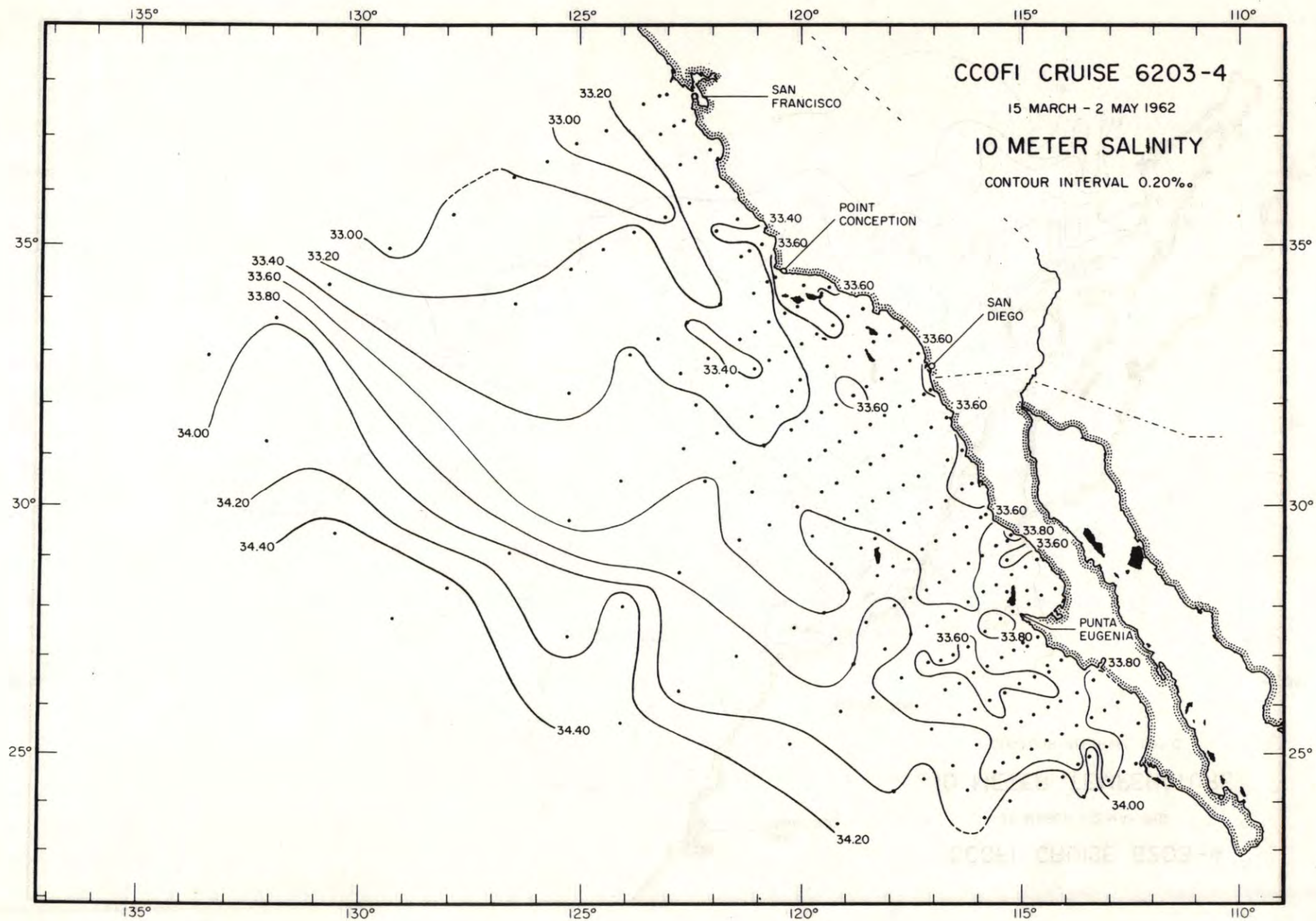


FIGURE 4

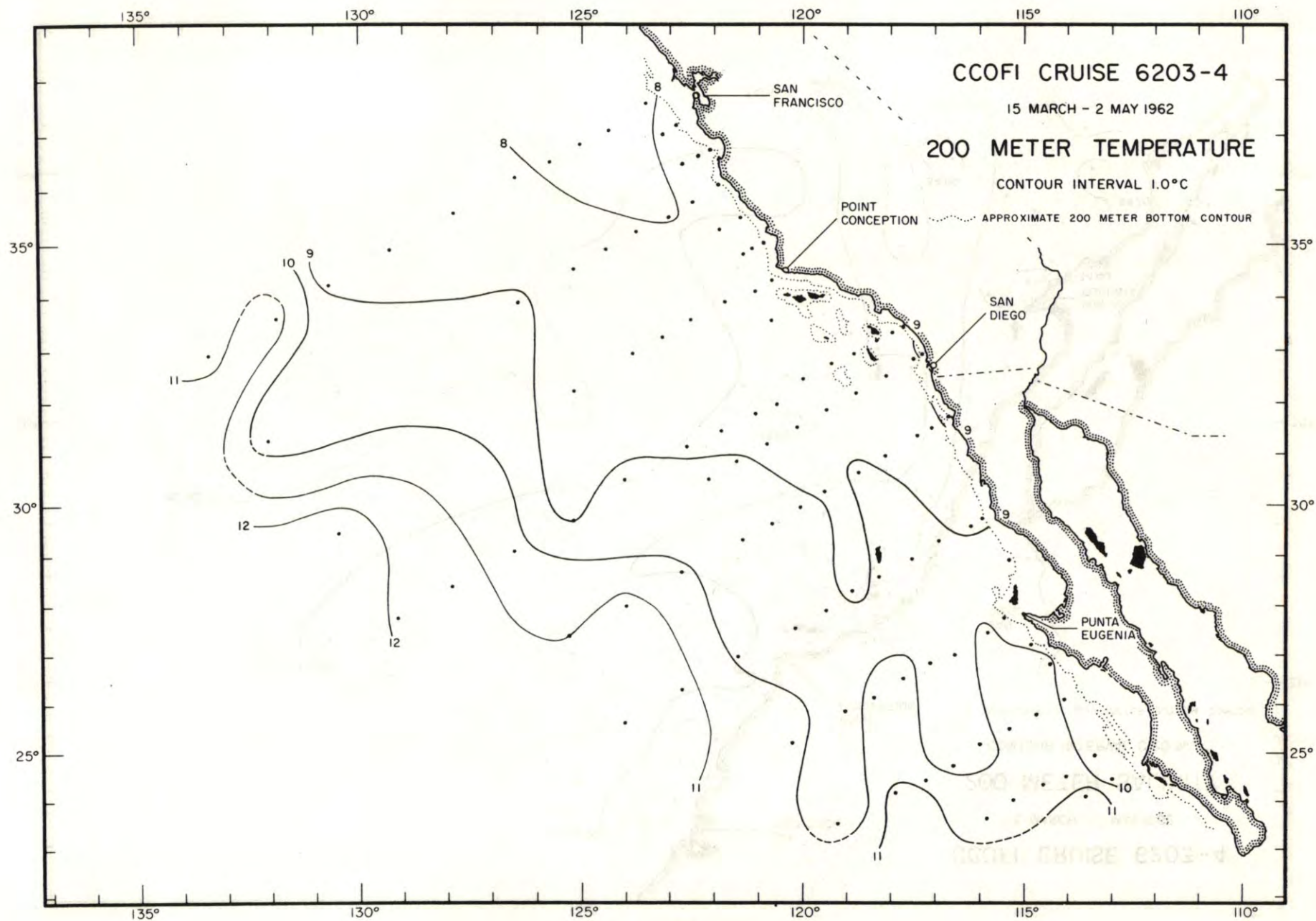


FIGURE 5

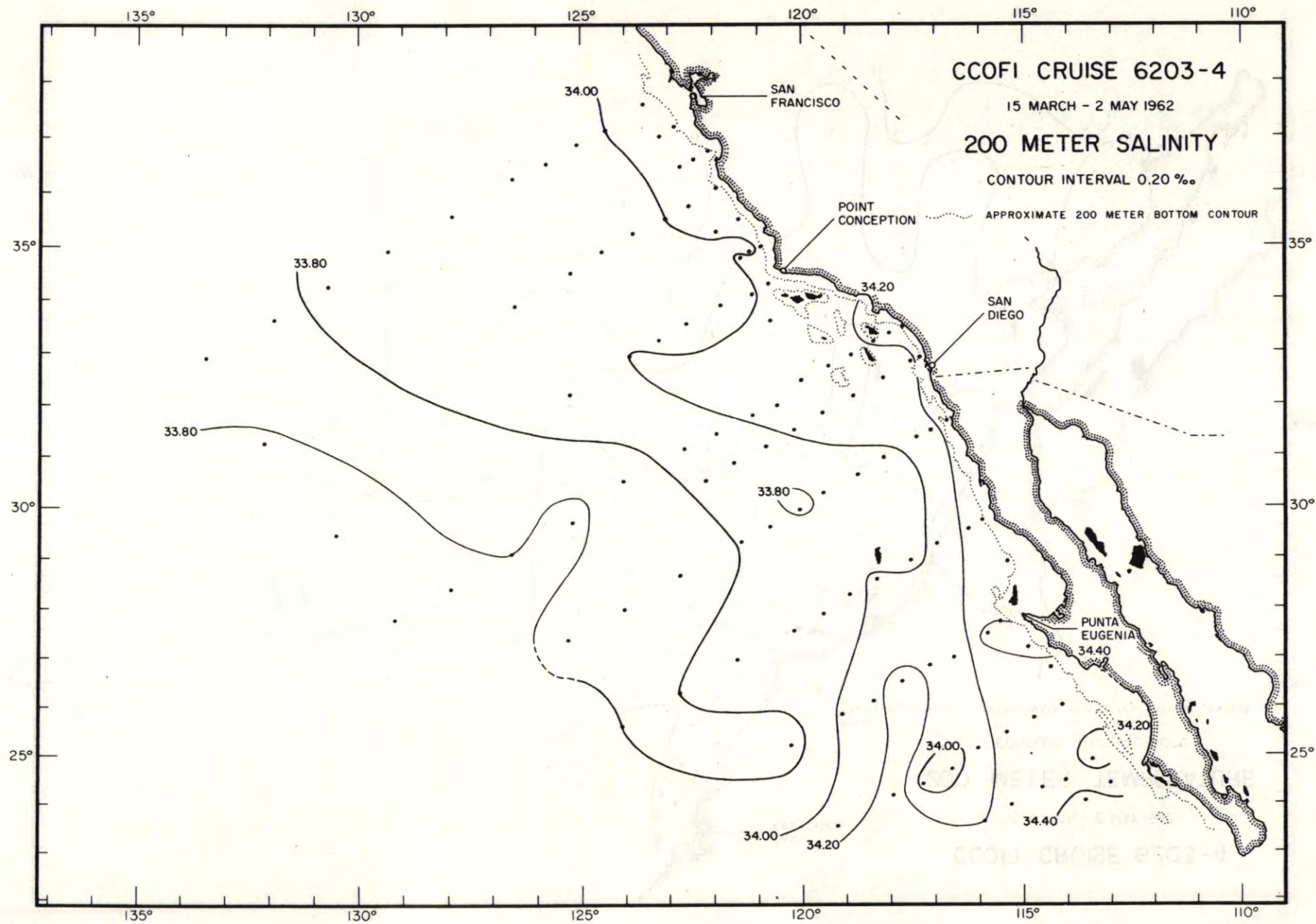


FIGURE 6

PERSONNEL

SHIPS' CAPTAINS

^{Forster}
~~Forrester~~, Charles W., RV Black Douglas
Hopkins, Marvin F., RV Horizon

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

RV Black Douglas

Farrar, Lloyd J., Fishery Technician, Bureau of Commercial Fisheries
*Hester, Arthur W., Senior Marine Technician
Leong, Roderick J. H., Fishery Biologist, Bureau of Commercial Fisheries
*Metoyer, Jack D., Fishery Aid, Bureau of Commercial Fisheries

RV Horizon

Lawson, Jan B., Senior Marine Technician
Brennen, Robert E., Senior Marine Technician
**Bryan, Walter R., Marine Technician
***Farrell, David E., Marine Technician
Grow, Harry S., Marine Technician
**Hart, Joe T., Marine Technician
**Hester, Arthur W., Senior Marine Technician
***Hines, Dean D., Marine Technician
Hixson, Doyle P., Marine Technician
Hodnett, Haley L., Marine Technician
*****McGowan, Dr. John A., Assistant Research Biologist
***Pine, James S., Senior Marine Technician
Wagner, Vaughn M., Fishery Aid, Bureau of Commercial Fisheries
****Welles, George L., Marine Technician
Young, Anthony W., Marine Technician

*Lines 83 to 97 only.

**San Diego to San Diego via San Francisco only.

***San Diego to San Diego via Cedros Island only.

****San Francisco to San Diego via Cedros Island only.

*****San Diego to San Francisco only.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
CCOF1
6203-4

HORIZON; March 26, 1962; 1853 GCT; 37°48'N, 123°04'W; sounding, 43 fm; wind, 310°, force 3; weather, fog; sea, very rough; wire angle, 06°.

60.52

0	11.36	33.25	-	261	0	11.36	33.25		25.37	261	0.00
10	11.08	33.25	-	257	10	11.08	33.25		25.42	257	0.03
20	10.56	33.40	6.00	237	20	10.56	33.40	6.00	25.63	237	0.05
30	10.50	33.41	5.75	235	30	10.50	33.41	5.75	25.65	235	0.07
50	9.81	33.71	3.52	202	50	9.81	33.71	3.52	26.00	202	0.12
70	9.08	33.87	2.34	179	75	(8.90)	(33.90)	(2.16)	(26.29)	(174)	(0.17)

HORIZON; March 27, 1962; 0110 GCT; 37°06.5'N, 123°37'W; sounding, 1820 fm; wind, 310°, force 3; weather, overcast; sea, very rough; wire angle, 14°.

60.60

1	11.56	33.33 9	6.08	258	0	(11.56)	(33.34)	(6.08)	(25.40)	(258)	(0.00)
11	11.40	33.32 0	6.15	257	10	11.41	33.32	6.14	25.42	257	0.03
30	10.92	33.31 4	6.07	249	20	10.94	33.32	6.08	25.50	249	0.05
50	10.88	33.35 1	5.96	246	30	10.92	33.31	6.07	25.50	250	0.08
69	10.73	33.50 4	5.21	232	50	10.88	33.35	5.96	25.53	246	0.13
94	9.36	33.75 7	3.17	191	75	10.61	33.53	4.98	25.72	228	0.19
117	8.65	33.84 4	3.22	174	100	9.09	33.79	3.18	26.18	185	0.24
146	8.41	33.92 4	2.76	165	125	8.57	33.87	3.13	26.32	171	0.28
175	8.22	34.00 1	2.31	156	150	8.41	33.94	2.72	26.40	163	0.32
219	7.62	34.05 0	1.90	144	200	7.86	34.03	2.07	26.55	149	0.40
262	7.32	34.09 9	1.42	136	250	7.41	34.08	1.52	26.66	139	0.48
316	6.74	34.08 8	1.29	130	300	6.88	34.09	1.32	26.74	131	0.55
403	6.20	34.15 2	0.71	118	400	6.21	34.15	0.75	26.88	118	0.68
524	5.26	34.20 9	0.39	103	500	5.42	34.19	0.44	27.01	106	0.80
649	4.74	34.31 4	0.25	89	600	4.89	34.26	0.27	27.12	95	0.90
784	4.33	34.39 9	0.25	79	700	4.59	34.35	0.25	27.23	85	1.00
920	3.86	34.42 5	0.29	72	800	4.22	34.40	0.26	27.31	77	1.09
1075	3.56	34.47 1	0.47	66	1000	3.68	34.45	0.37	27.40	68	1.25
1229	3.20	34.50 4	0.55	60	1200	3.26	34.50	0.53	27.48	61	1.40
1402	2.86	34.52 6	0.80	55	1500	2.68	34.54	0.88	27.57	53	1.59
1604	2.48	34.55 4	0.97	50	2000	1.98	34.61	1.55	27.68	42	1.87
1854	2.10	34.59 3	1.31	44							
2102	1.90	34.62 1	1.87	41							

HORIZON; March 27, 1962; 1310 GCT; 37°08'N, 124°25'W; sounding, 2100 fm; wind, 330°, force 5; weather, drizzle; sea, very rough; wire angle, 17°.

60.70

1	11.58	33.15 1	6.23	273	0	(11.58)	(33.15)	(6.23)	(25.25)	(273)	(0.00)
10	11.58	33.14 1	6.25	273	10	11.58	33.14	6.25	25.24	273	0.03
30	11.38	33.17 7	6.15	267	20	11.52	33.15	6.22	25.26	272	0.05
39	11.32	33.19 3	6.08	265	30	11.38	33.18	6.15	25.31	267	0.08
54	11.32	33.22 7	5.97	262	50	11.32	33.21	6.00	25.35	264	0.13
69	10.68	33.33 2	5.31	244	75	10.07	33.40	4.82	25.71	229	0.20
93	9.16	33.62 2	3.84	198	100	8.96	33.70	3.58	26.13	189	0.25
112	8.66	33.80 6	3.30	177	125	8.49	33.88	3.19	26.34	169	0.29
131	8.43	33.90 4	3.14	166	150	8.18	33.97	2.82	26.46	158	0.34
151	8.17	33.97 4	2.80	158	200	7.56	34.00	2.41	26.57	147	0.41
180	7.84	33.99 5	2.50	151	250	7.04	34.06	1.72	26.69	136	0.49
213	7.38	34.00 7	2.37	144	300	6.48	34.03	1.81	26.75	131	0.55
242	7.16	34.05 9	1.71	137	400	5.72	34.09	1.04	26.89	117	0.68
290	6.62	34.03 8	1.83	132	500	5.02	34.14	0.68	27.01	105	0.80
343	6.04	34.04 7	1.49	124	600	(5.14)	(34.29)	(0.29)	(27.12)	(95)	(0.91)
426	5.58	34.11 7	0.90	113							
508	4.99	34.14 9	0.67	104							
590	5.14	34.27 8	0.34	96							

SIO

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6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ_T	Z	T	S	O ₂	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

60.80

HORIZON; March 27, 1962; 1919 GCT; 36°54'N, 125°05'W; sounding, 2280 fm; wind, 280°, force 1; weather, partly cloudy; sea, rough; wire angle, 07°.

0	12.12	33.15 9	6.12	282	0	12.12	33.16	6.12	25.16	281	0.00
10	11.88	33.16 4	6.14	277	10	11.88	33.16	6.14	25.20	277	0.03
31	11.38	33.15 4	6.18	269	20	11.70	33.16	6.17	25.24	274	0.06
51	11.27	33.15 4	6.15	267	30	11.40	33.15	6.18	25.29	270	0.08
80	10.42	33.19 9	5.79	249	50	11.28	33.15	6.16	25.31	267	0.14
96	9.62	33.38 8	4.75	223	75	10.45	33.18	5.85	25.48	251	0.20
121	8.86	33.74 6	3.47	185	100	9.49	33.45	4.50	25.85	216	0.26
151	8.09	33.84 7	3.08	166	125	8.75	33.76	3.39	26.21	182	0.31
180	7.64	33.93 9	2.78	153	150	8.14	33.86	3.08	26.38	166	0.35
226	7.01	33.98 5	2.54	141	200	7.35	33.96	2.66	26.57	147	0.43
270	6.72	34.02 0	2.00	134	250	6.86	34.01	2.28	26.68	137	0.51
325	6.02	34.00 8	1.81	127	300	6.33	34.01	1.87	26.75	130	0.58
414	5.24	34.05 1	1.25	114	400	5.35	34.04	1.36	26.90	117	0.70
538	4.69	34.18 0	0.46	99	500	4.82	34.14	0.62	27.04	103	0.82
668	4.40	34.31 6	0.23	86	600	4.55	34.25	0.30	27.15	92	0.92
806	4.02	34.39 3	0.25	76	700	4.31	34.34	0.21	27.25	83	1.02
946	3.68	34.44 6	0.37	69	800	4.04	34.39	0.24	27.32	76	1.10
1103	3.40	34.49 4	0.60	63	1000	3.59	34.46	0.43	27.42	67	1.26
1261	3.04	34.52 9	0.81	57	1200	3.19	34.52	0.72	27.51	59	1.40
1439	2.74	34.55 4	0.99	52	1500	2.62	34.56	1.08	27.59	51	1.59
1648	2.35	34.58 1	1.33	47	2000	2.00	34.62	1.65	27.69	41	1.87
1899	2.08	34.61 0	1.55	43							
2152	1.89	34.62 5	1.79	40							

60.90

HORIZON; March 27, 1962; 0708 GCT; 36°34.5'N, 125°46'W; sounding, 2400 fm; wind, 320°, force 3; weather, drizzle; sea, missing; wire angle, 06°.

0	12.58	32.94 1	5.97	306	0	12.58	32.94	5.97	24.90	306	0.00
10	12.02	32.91 4	6.05	298	10	12.02	32.91	6.05	24.98	298	0.03
30	11.40	32.90 8	6.11	287	20	11.65	32.91	6.10	25.05	292	0.06
40	11.24	32.90 9	6.09	285	30	11.40	32.91	6.11	25.10	287	0.09
55	10.90	32.89 0	6.06	280	50	11.04	32.90	6.07	25.16	282	0.15
71	10.41	33.00 2	5.77	264	75	10.47	33.04	5.74	25.36	262	0.21
96	9.88	33.28 0	5.27	235	100	9.85	33.31	5.21	25.68	232	0.28
116	9.17	33.44 6	4.67	211	125	9.07	33.53	4.37	25.98	204	0.33
135	8.92	33.67 3	3.71	191	150	8.32	33.81	3.54	26.31	172	0.38
155	8.23	33.84 4	3.54	168	200	7.64	33.96	3.32	26.53	151	0.46
185	7.96	33.96 5	3.58	155	250	6.82	33.96	2.73	26.65	140	0.54
220	7.22	33.95 5	2.90	146	300	6.16	33.98	2.34	26.75	131	0.61
250	6.82	33.95 5	2.73	141	400	5.84	34.13	0.85	26.91	115	0.73
300	6.16	33.98 3	2.34	130	500	5.40	34.21	0.45	27.02	104	0.85
355	6.22	34.09 9	1.02	122	600	4.99	34.29	0.30	27.14	94	0.95
440	5.58	34.15 5	0.67	111							
525	5.34	34.23 7	0.38	102							
610	4.95	34.29 6	0.29	93							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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6203-4

HORIZON; March 28, 1962; 1410 GCT; 36°17'N, 126°31'W; sounding, 2460 fm; wind, 330°, force 3; weather, partly cloudy; sea, rough; wire angle, 11°.

60100

0	12.88	33.03 8	5.98	304	0	12.88	33.04	5.98	24.92	304	0.00
10	12.86	33.01 5	5.98	306	10	12.86	33.02	5.98	24.91	305	0.03
29	11.80	32.89 8	6.12	295	20	11.89	32.90	6.11	25.00	297	0.06
49	11.68	32.90 1	6.05	293	30	11.79	32.90	6.11	25.02	295	0.09
70	11.58	32.89 7	6.09	291	50	11.68	32.90	6.06	25.04	293	0.15
94	10.56	32.98 6	5.96	267	75	11.47	32.90	6.07	25.08	289	0.22
119	10.38	33.27 0	5.67	244	100	10.53	33.05	5.90	25.36	262	0.29
147	9.30	33.56 4	4.37	205	125	10.27	33.34	5.48	25.63	237	0.35
176	8.47	33.77 6	3.60	177	150	9.18	33.60	4.20	26.02	200	0.41
219	7.98	33.94 6	3.22	157	200	8.13	33.88	3.37	26.40	164	0.50
263	7.29	33.95 2	3.05	147	250	7.47	33.95	3.11	26.55	150	0.58
316	6.81	34.02 5	2.03	135	300	6.97	34.00	2.33	26.66	139	0.66
403	6.05	34.10 3	1.01	120	400	6.08	34.10	1.07	26.85	121	0.79
524	5.40	34.21 5	0.43	104	500	5.53	34.19	0.49	26.99	107	0.91
650	4.80	34.29 0	0.31	92	600	5.01	34.26	0.32	27.11	96	1.02
787	4.36	34.39 7	0.33	79	700	4.64	34.34	0.31	27.21	86	1.12
924	3.94	34.43 6	0.38	72	800	4.32	34.40	0.32	27.30	78	1.21
1080	3.50	34.47 0	0.55	65	1000	3.73	34.45	0.47	27.40	69	1.37
1235	3.13	34.50 8	0.67	59	1200	3.20	34.50	0.61	27.49	60	1.52
1410	2.78	34.52 6	0.80	55	1500	2.63	34.54	0.94	27.57	52	1.71
1614	2.44	34.56 7	1.15	49	2000	1.98	34.60	1.58	27.67	43	1.99
1861	2.12	34.59 4	1.40	44							
2110	1.90	34.61 6	1.73	41							

HORIZON; March 29, 1962; 0503 GCT; 35°35'N, 127°54'W; sounding, 2020 fm; wind, 040°, force 1; weather, cloudy; sea, rough; wire angle, 02°.

60120

0	13.27	33.05 8	6.06	310	0	13.27	33.06	6.06	24.86	310	0.00
11	13.00	33.05 4	6.05	305	10	13.01	33.05	6.05	24.90	306	0.03
31	12.78	33.08 9	6.02	299	20	12.80	33.07	6.04	24.96	301	0.06
41	12.70	33.09 3	5.98	297	30	12.78	33.09	6.03	24.98	299	0.09
51	12.52	33.05 4	6.01	297	50	12.53	33.06	6.00	25.00	296	0.15
65	12.17	33.00 4	6.09	294	75	11.80	33.02	6.12	25.11	286	0.22
81	11.73	33.02 7	6.11	284	100	10.36	33.32	5.21	25.60	239	0.29
100	10.36	-	5.21	-	125	9.60	33.58	4.29	25.93	208	0.35
126	9.55	33.59 1	4.25	207	150	8.89	33.81	3.55	26.23	180	0.40
146	8.96	33.78 5	3.58	183	200	8.17	33.96	3.34	26.45	159	0.48
177	8.60	33.91 5	3.42	168	250	7.50	34.00	2.75	26.58	146	0.56
207	8.03	33.96 4	3.32	156	300	6.70	34.02	2.11	26.71	134	0.63
237	7.62	33.98 0	3.15	149	400	5.80	34.09	0.95	26.88	118	0.76
277	7.20	34.04 5	1.97	139	500	5.00	34.15	0.62	27.02	104	0.88
337	5.93a)	33.98 3	2.29	128							
413	5.78	34.11 3	0.87	116							
487	5.00	34.12 9	0.68	106							
568	5.04	34.25 1	0.30	97							

a) Alternate value, 5.99°C, not used in interpolation.

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6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

60.130

HORIZON; March 29, 1962; 1149 GCT;^{a)} 35°18'N, 128°40'W; sounding, 2540 fm; wind, 300°, force 1; weather, partly cloudy; sea, missing; wire angle, 01°.

438	6.17	34.15 1	0.71	118
441	6.14	34.15 2	0.73	117
444	6.15	34.15 4	0.71	117
469	5.94	34.16 0	0.67	114
472	5.94	34.16 1	0.65	114
475	5.95	34.16 6	0.64	114
500	5.86	34.19 9	0.51	111
503	5.84	34.19 8	0.51	110
506	5.82	34.19 8	0.52	110
531	5.74	34.22 0	0.47	108
534	5.68	34.21 7	0.45	107
537	5.68	34.21 7	0.44	107
562	5.48	34.21 8	0.45	105
565	5.46	34.21 0	0.41	105
569	5.46	34.21 2	0.45	105
593	5.21	34.22 1	0.37	101
596	5.19	34.22 5	0.35	101
599	5.22	34.23 0	0.35	101

60.140

HORIZON; March 29, 1962; 1655 GCT; 34°57'N, 129°19'W; sounding, 2515 fm; wind, 310°, force 1; weather, partly cloudy; sea, rough; wire angle, 04°.

0	13.06	32.99 0	6.05	311	0	13.06	32.99	6.05	24.85	311	0.00
10	13.03	32.97 6	6.02	312	10	13.03	32.98	6.02	24.84	311	0.03
30	12.33	32.97 2	5.99	299	20	12.39	32.98	6.00	24.97	300	0.06
50	12.23	32.96 7	5.95	298	30	12.33	32.97	5.99	24.97	299	0.09
71	12.04	33.01 8	5.84	291	50	12.23	32.97	5.95	24.99	297	0.15
96	10.66	33.22 1	5.34	252	75	11.98	33.03	5.80	25.09	289	0.23
121	10.26	33.38 3	4.81	233	100	10.59	33.24	5.26	25.50	249	0.29
152	9.45	33.70 5	3.41	197	125	10.12	33.45	4.57	25.74	226	0.35
181	9.12	33.89 8	2.48	177	150	9.49	33.70	3.48	26.04	198	0.41
227	8.63	34.03 2	1.79	160	200	8.92	33.96	2.08	26.34	170	0.50
272	8.32	34.12 6	1.79	148	250	8.47	34.09	1.80	26.51	153	0.58
326	7.87	34.17 3	1.28	138	300	8.10	34.16	1.51	26.62	143	0.66
416	7.05	34.20 6	0.93	125	400	7.21	34.20	0.98	26.78	127	0.80
542	5.60	34.18 6	0.56	108	500	6.00	34.19	0.66	26.93	113	0.93
671	4.97	34.29 8	0.32	93	600	5.28	34.23	0.40	27.05	102	1.04
811	4.40	34.37 9	0.31	81	700	4.83	34.32	0.30	27.18	90	1.14
952	4.04	34.43 1	0.39	73	800	4.44	34.38	0.30	27.27	81	1.24
1111	3.60	34.47 1	0.56	66	1000	3.89	34.44	0.44	27.37	71	1.41
1271	3.20	34.52 0	0.78	59	1200	3.38	34.51	0.70	27.48	61	1.56
1448	2.86	34.53 8	0.97	54	1500	2.78	34.54	1.00	27.56	54	1.76
1657	2.50	34.56 8	1.19	49	2000	2.04	34.61	1.52	27.68	42	2.04
1912	2.13	34.60 0	1.45	44							
2166	1.90	34.61 8	1.82	41							

a) Test cast.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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HORIZON; March 30, 1962; 0637 GCT; 34°16'N, 130°41.5'W; sounding, 2660 fm; wind, 160°, force 3; weather, cloudy; sea, missing; wire angle, 09°.

60.160

0	14.41	33.27 8	5.79	316	0	14.41	33.28	5.79	24.79	316	0.00
10	14.09	33.26 7	5.73	311	10	14.09	33.27	5.73	24.85	311	0.03
30	13.63	33.26 4	5.89	302	20	13.85	33.27	5.80	24.90	306	0.06
61	12.99	33.19 5	5.90	295	30	13.63	33.26	5.89	24.94	302	0.09
70	12.96	33.20 5	5.89	294	50	13.18	33.22	5.90	25.00	297	0.15
85	12.90	33.20 4	5.84	293	75	12.93	33.21	5.87	25.04	293	0.23
100	12.82	33.37 3	5.49	279	100	12.82	33.37	5.49	25.19	279	0.30
115	11.88	33.41 9	5.37	258	125	11.20	33.42	5.20	25.53	246	0.37
139	10.30	33.45 4	4.99	229	150	9.72	33.52	4.89	25.86	214	0.42
159	9.34	33.59 4	4.83	203	200	8.81	33.90	4.12	26.31	172	0.52
189	9.02	33.87 1	4.54	178	250	7.99	33.96	3.40	26.48	156	0.61
219	8.40	33.92 0	3.56	165	300	6.91	33.95	3.37	26.63	142	0.68
249	8.00	33.96 8	3.38	156	400	5.82	34.01	1.87	26.82	124	0.82
298	6.94	33.95 3	3.38	142	500	5.11	34.08	1.00	26.96	111	0.94
352	6.26	33.97 6	2.47	132	600	4.91	34.22	0.39	27.09	98	1.05
436	5.52	34.03 2	1.47	119							
528	5.00	34.10 0	0.86	108							
604	4.89	34.22 6	0.38	98							

HORIZON; March 30, 1962; 1846 GCT; 33°38'N, 131°54'W; sounding, 2637 fm; wind, 290°, force 3; weather, overcast; sea, very rough; wire angle, 25°.

60.180

0	15.46	33.98 4	5.47	286	0	15.46	33.98	5.47	25.10	287	0.00
8	15.39	33.97 5	5.48	286	10	15.38	33.99	5.48	25.13	284	0.03
63	15.08	34.05 6	5.55	273	20	15.38	34.00	5.49	25.14	284	0.06
114	15.42	34.20 8	5.56	269	30	15.38	34.02	5.50	25.15	282	0.09
128	15.40	34.21 3	5.37	268	50	15.18	34.04	5.52	25.21	276	0.14
146	15.50	34.25 1	5.29	268	75	15.14	34.09	5.55	25.26	272	0.21
164	13.34	33.84 2	5.25a)	254	100	15.35	34.18	5.57	25.28	270	0.28
191	11.91	33.77 1	5.12	233	125	15.41	34.21	5.45	25.29	269	0.35
212	10.90	33.76 6	4.96	216	150	15.25	34.21	5.28	25.33	265	0.41
248	10.02	33.91 2	4.76	190	200	11.45	33.76	5.05	25.75	225	0.54
286	9.46	33.99 4	4.66	175	250	10.00	33.91	4.74	26.12	190	0.65
326	8.60	34.01 2	4.33	161	300	9.19	34.00	4.57	26.33	171	0.74
399	7.02	33.96 9	3.50	142	400	7.02	33.97	3.46	26.63	142	0.90
497	5.76	34.03 6	1.49	122	500	5.74	34.04	1.44	26.85	121	1.04
600	5.12	34.14 7	0.57	106	600	5.12	34.15	0.57	27.01	106	1.16
707	4.60	34.25 1	0.32	93	700	4.63	34.24	0.34	27.14	94	1.27
828	4.28	34.33 9	0.24	83	800	4.34	34.32	0.25	27.23	85	1.36
968	3.89	34.41 7	0.33	73	1000	3.79	34.43	0.37	27.38	71	1.53
1105	3.45	34.46 6	0.47	65	1200	3.23	34.49	0.62	27.48	61	1.68
1264	3.10	34.51 3	0.75	58	1500	2.72	34.55	0.99	27.57	52	1.88
1450	2.80	34.54 1	0.93	54							
1678	2.43	34.57 7	1.20	48							
1908	2.10	-	1.49	-							

a) Alternate value, 5.33 ml/L, not used in interpolation.

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6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

60.200

HORIZON; March 31, 1962; 0940 GCT; 32°55'N, 133°28'W; sounding, 2760 fm; wind, 060°, force 3; weather, rain; sea, rough; wire angle, 06°.

0	15.53	33.88 8	5.55	295	0	15.53	33.89	5.55	25.02	295	0.00
10	15.54	33.87 7	5.55	296	10	15.54	33.88	5.55	25.01	296	0.03
30	15.50	33.92 2	5.55	292	20	15.51	33.90	5.56	25.03	294	0.06
60	15.53	33.96 4	5.48	289	30	15.50	33.92	5.55	25.05	292	0.09
70	15.64	34.00 8	5.45	289	50	15.51	33.94	5.52	25.06	291	0.15
86	15.65	34.02 6	5.44	287	75	15.64	34.01	5.45	25.09	288	0.22
100	15.84	34.10 0	5.43	286	100	15.84	34.10	5.43	25.11	286	0.29
115	15.12	33.94 1	5.50	282	125	14.78	33.92	5.47	25.21	277	0.36
140	14.08	33.90 6	5.28	264	150	13.38	33.85	5.12	25.45	254	0.43
159	12.72	33.78 8	4.99	246	200	10.64	33.72	4.72	25.86	215	0.55
189	11.08	33.72 4	4.77	222	250	9.46	33.95	4.66	26.24	179	0.65
219	10.04	33.75 2	4.57	202	300	8.29	33.99	4.08	26.46	158	0.74
249	9.46	33.94 4	4.67	179	400	6.72	33.98	2.79	26.68	137	0.89
298	8.32	33.99 9	4.10	158	500	5.69	34.06	1.36	26.87	119	1.02
353	7.36	33.97 4	3.47	146	600	5.08	34.15	0.68	27.01	105	1.14
438	6.24	34.00 4	2.14	130							
523	5.53	34.07 8	1.14	116							
609	5.02	34.16 5	0.62	104							

63.52

HORIZON; March 23, 1962; 0920 GCT; 37°16'N, 122°40'W; sounding, 50 fm; wind, 300°, force 6; weather, cloudy; sea, rough; wire angle, 10°.

0	11.10	33.31 0	6.46	253	0	11.10	33.31	6.46	25.46	253	0.00
10	11.10	33.30 7	6.54	253	10	11.10	33.31	6.54	25.46	253	0.03
20	11.13	33.31 2	6.45	253	20	11.13	33.31	6.45	25.46	253	0.05
30	11.12	33.30 5	6.40	253	30	11.12	33.30	6.40	25.45	254	0.08
50	11.10	33.32 2	6.30	252	50	11.10	33.32	6.30	25.47	252	0.13
74	10.31	33.63 7	3.95	215	75	(10.24)	(33.66)	(3.83)	(25.89)	(212)	(0.19)

63.55

HORIZON; March 22, 1962; 1925 GCT; 37°11.5'N, 122°52'W; sounding, 190 fm; wind, 300°, force 5; weather, cloudy; sea, rough; wire angle, 10°.

0	11.08	33.33 1	6.22	251	0	11.08	33.33	6.22	25.48	251	0.00
10	11.09	33.33 1	6.15	251	10	11.09	33.33	6.15	25.48	251	0.03
30	10.92	33.37 5	5.89	245	20	11.02	33.35	6.03	25.51	248	0.05
49	10.63	33.47 6	4.92	232	30	10.92	33.38	5.89	25.55	244	0.07
74	9.52	33.79 2	2.93	191	50	10.62	33.48	4.88	25.68	232	0.12
99	9.22	33.87 5	2.55	180	75	9.50	33.79	2.91	26.11	191	0.18
124	8.88	33.97 9	2.15	168	100	9.22	33.88	2.53	26.23	180	0.22
162	8.60	34.00 4	1.86	161	125	8.88	33.98	2.14	26.36	167	0.27
202	8.16	34.07 3	1.71	150	150	8.70	33.99	1.92	26.40	164	0.31
252	7.68	34.12 6	1.07	139	200	8.18	34.07	1.73	26.54	151	0.39
					250	7.70	34.12	1.08	26.65	140	0.46

63.60

HORIZON; March 22, 1962; 0401 GCT; 37°02.5'N, 123°12.5'W; sounding, 1395 fm; wind, 300°, force 6; weather, overcast; sea, high; wire angle, 25°.

0	11.33	33.32 5	6.20	255	0	11.33	33.32	6.20	25.43	256	0.00
9	11.36	33.32 2	6.13	256	10	11.35	33.32	6.12	25.43	256	0.03
32	11.19	33.36 5	6.01	250	20	11.33	33.33	6.10	25.44	255	0.05
40	10.85	33.43 7	5.67	239	30	11.22	33.36	6.03	25.48	251	0.08
54	10.81	33.47 5	5.40	235	50	10.83	33.46	5.50	25.63	237	0.13
68	10.58	33.65 6	3.65	218	75	10.32	33.71	3.30	25.91	210	0.18
90	9.92	33.81 3	2.77	196	100	9.75	33.86	2.50	26.12	190	0.23
108	9.64	33.88 4	2.38	186	125	9.45	33.92	2.26	26.22	181	0.28
126	9.44	33.92 4	2.25	180	150	9.07	34.01	1.93	26.35	168	0.32
151	9.04	34.01 0	1.93	168	200	8.58	34.09	1.64	26.49	155	0.41
177	8.78	34.05 8	1.77	160	250	8.20	34.14	1.38	26.59	146	0.48
212	8.48	34.10 0	1.60	153	300	7.73	34.15	1.18	26.67	138	0.56
238	8.28	34.12 9	1.41	148	400	6.89	34.19	0.79	26.82	124	0.69
278	7.99	34.14 4	1.25	142	500	5.71	34.19	0.55	26.97	109	0.82
334	7.32	34.15 4	1.06	132							
419	6.75	34.19 3	0.71	122							
499	5.71	34.19 1	0.56	109							
567	5.54	34.25 2	0.37	103							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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6203-4

HORIZON; March 22, 1962; 1329 GCT; 36°47'N, 122°05'W; sounding, 520 fm; wind, 170°, force 7; weather, drizzle; sea, high; wire angle, 24°.

67.50

0	11.58	33.26 2	6.50	264	0	11.58	33.26	6.50	25.34	265	0.00
9	11.58	33.24 8	6.47	265	10	11.58	33.25	6.46	25.33	265	0.03
32	11.46	33.34 1	5.84	256	20	11.53	33.30	6.30	25.38	261	0.05
41	11.34	33.39 6	5.46	250	30	11.49	33.33	5.90	25.41	258	0.08
54	10.56	33.64 3	3.87	219	50	10.81	33.57	4.35	25.72	228	0.13
69	10.02	33.76 6	2.96	201	75	9.84	33.80	2.81	26.06	196	0.18
92	9.40	33.87 4	2.59	183	100	9.28	33.89	2.56	26.23	180	0.23
111	9.13	33.91 5	2.52	176	125	8.93	33.97	2.30	26.34	169	0.27
129	8.86	33.98 4	2.24	167	150	8.46	34.01	2.10	26.45	159	0.31
157	8.34	-	2.04	-	200	8.08	34.08	1.72	26.56	148	0.39
183	8.18	34.05 4	1.85	152	250	7.90	34.12	1.42	26.62	143	0.47
219	8.03	34.10 7	1.56	146	300	7.44	34.16	1.20	26.72	134	0.54
246	7.92	34.11 4	1.45	144	400	6.62	34.19	0.78	26.85	121	0.67
292	7.52	34.15 3	1.25	135	500	5.93	34.22	0.57	26.97	110	0.79
351	7.06	34.17 1	0.99	128	600	5.43	34.27	0.51	27.07	100	0.90
444	6.27	34.21 2	0.65	115							
529	5.78	34.23 3	0.55	107							
602	5.42	34.27 8	0.51	100							

HORIZON; March 22, 1962; 1650 GCT; 36°38.5'N, 122°25.5'W; sounding, 1040 fm; wind, 250°, force 4; weather, cloudy; sea, very rough; wire angle, 35°.

67.55

0	11.65	33.35 1	6.18	259	0	11.65	33.35	6.18	25.39	259	0.00
8	11.64	-	6.13	-	10	11.64	33.36	6.14	25.40	258	0.03
24	11.65	33.36 3	6.10	258	20	11.65	33.36	6.11	25.40	258	0.05
49	11.58	33.37 3	5.92	256	30	11.64	33.36	6.08	25.40	258	0.08
56	11.42	33.41 5	5.58	250	50	11.57	33.38	5.89	25.43	256	0.13
68	10.70	33.57 1	4.09	227	75	10.35	33.70	3.38	25.90	211	0.19
78	10.23	33.72 4	3.23	207	100	9.83	33.81	2.70	26.07	195	0.24
89	10.08	33.76 1	2.97	202	125	9.35	33.91	2.36	26.23	180	0.29
107	9.64	-	2.53	-	150	9.06	33.95	2.18	26.31	172	0.33
120	9.40	33.90 1	2.39	181	200	8.23	34.04	1.63	26.51	153	0.41
142	9.16	33.93 2	2.26	175	250	7.90	34.12	1.40	26.62	143	0.49
164	8.86	33.99 7	2.00	166	300	7.39	34.15	1.07	26.72	134	0.56
187	8.42	34.02 6	1.63	157	400	6.48	34.18	0.66	26.86	120	0.69
224	7.96	34.07 9	1.63	147	500	(5.79)	(34.24)		(27.00)	(107)	(0.81)
261	7.86	34.13 8	1.28	141							
331	7.00	34.16 3	0.94	127							
398	6.50	34.17 5	0.69	120							
469	6.00	34.22 6	0.54	110							

HORIZON; March 22, 1962; 2127 GCT; 36°30.5'N, 122°45'W; sounding, 1540 fm; wind, 280°, force 6; weather, drizzle; sea, high; wire angle, 25°.

67.60

0	11.8	33.30 0	-	265	0	11.8	33.30		25.33	265	0.00
9	11.70	33.30 2	5.87	264	10	11.70	33.30	5.87	25.35	264	0.03
33	11.70	33.29 9	5.91	264	20	11.70	33.30	5.88	25.35	264	0.05
42	11.70	33.31 0	5.93	263	30	11.70	33.30	5.88	25.35	264	0.08
55	11.37	33.41 9	5.32	249	50	11.55	33.37	5.62	25.43	256	0.13
68	10.08	33.50 9	4.19	221	75	9.63	33.53	3.87	25.89	212	0.19
91	9.52	33.68 6	3.43	199	100	9.28	33.77	3.17	26.13	189	0.24
108	9.18	33.84 2	2.94	182	125	9.05	33.94	2.49	26.30	173	0.29
126	9.04	33.93 7	2.49	173	150	8.59	33.97	2.46	26.40	164	0.33
153	8.53	33.97 9	2.42	162	200	8.30	34.09	1.66	26.54	151	0.41
179	8.44	34.06 7	1.83	154	250	7.62	34.11	1.38	26.65	140	0.48
213	8.17	34.10 7	1.53	148	300	7.03	34.13	1.21	26.75	130	0.55
240	7.77	34.11 2	1.40	142	400	6.48	34.21	0.67	26.89	117	0.68
285	7.18	34.12 2	1.29	133	500	5.97	34.28	0.37	27.01	106	0.80
345	6.72	34.13 8	0.99	126	600	(5.43)	(34.32)	(0.29)	(27.11)	(96)	(0.91)
436	6.31	34.23 6	0.49	113							
523	5.84	34.28 8	0.34	104							
598	5.46	34.32 3	0.29	97							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

SIO
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6203-4

HORIZON; March 21, 1962; 1637 GCT; 35°33'N, 123°06.5'W; sounding, 2055 fm; wind, 330°, force 5; weather, cloudy; sea, high; wire angle, 23°.

70.70

0	11.62	32.96 5	6.15	287	0	11.62	32.96	6.15	25.10	287	0.00
9	11.62	32.94 4	6.13	289	10	11.62	32.95	6.13	25.09	288	0.03
32	11.13	32.98 4	6.06	277	20	11.60	32.95	6.12	25.09	288	0.06
60	11.04	33.15 7	6.00	263	30	11.53	32.95	6.11	25.11	287	0.09
70	10.56	33.23 2	5.56	249	50	11.07	33.09	6.04	25.30	268	0.14
88	9.99	33.42 9	4.72	225	75	10.38	33.28	5.31	25.57	243	0.21
101	9.35	33.59 6	3.96	203	100	9.37	33.49	3.97	25.90	211	0.26
115	9.15	33.68 6	3.63	193	125	9.00	33.75	3.50	26.16	186	0.31
141	8.74	33.85 3	3.38	175	150	8.62	33.90	3.33	26.34	170	0.36
158	8.50	33.93 2	3.34	165	200	7.94	34.00	2.83	26.52	152	0.44
185	8.10	33.98 0	3.52	156	250	7.39	34.04	2.14	26.63	142	0.52
216	7.78	34.01 5	2.24	149	300	6.50	34.03	1.88	26.74	131	0.59
243	7.50	34.03 9	2.15	143	400	5.93	34.11	0.99	26.88	118	0.72
289	6.57	34.00 9	2.03	133	500	5.35	34.18	0.60	27.01	106	0.83
346	6.32	34.08 7	1.25	124	600	(5.04)	(34.26)	(0.42)	(27.11)	(97)	(0.94)
438	5.66	34.12 9	0.84	113							
521	5.27	34.20 3	0.55	103							
590	5.06	34.25 8	0.43	97							

HORIZON; March 21, 1962; 0929 GCT; 35°15'N, 123°49'W; sounding, 2174 fm; wind, 340°, force 6; weather, cloudy; sea, high; wire angle, 17°.

70.80

1	12.60	33.22 2	5.92	286	0	(12.60)	(33.22)	(5.92)	(25.11)	(286)	(0.00)
10	12.61	33.20 9	5.74	287	10	12.61	33.21	5.74	25.10	287	0.03
28	12.63	33.21 5	5.58	287	20	12.62	33.21	5.65	25.10	287	0.06
52	12.62	33.21 2	5.69	287	30	12.63	33.21	5.60	25.10	287	0.09
70	12.58	33.23 7	5.65	284	50	12.62	33.21	5.67	25.10	287	0.14
93	11.10	33.34 4	4.96	250	75	12.51	33.25	5.60	25.15	282	0.22
166	9.88	33.51 9	4.11	217	100	10.68	33.39	4.71	25.60	240	0.28
144	9.18	33.76 2	3.57	188	125	9.59	33.62	3.88	25.96	205	0.34
172	8.88	33.87 2	3.32	175	150	9.11	33.79	3.52	26.17	185	0.39
213	8.30	34.00 4	2.50	157	200	8.50	33.97	2.77	26.41	163	0.47
256	7.70	34.06 1	1.81	144	250	7.77	34.05	1.88	26.58	146	0.55
308	7.26	34.10 1	1.39	135	300	7.33	34.10	1.45	26.69	137	0.63
394	6.45	34.14 9	0.87	121	400	6.42	34.15	0.85	26.85	121	0.76
507	5.89	34.25 1	0.37	107	500	5.94	34.25	0.38	26.99	108	0.88
632	4.82	34.27 0	0.34	93	600	5.03	34.26	0.35	27.11	97	0.99
766	4.55	34.36 9	0.29	83	700	4.67	34.32	0.32	27.20	88	1.09
900	4.12	34.43 2	0.43	74	800	4.46	34.39	0.30	27.27	81	1.18
1055	3.68	34.46 5	0.62	67	1000	3.84	34.46	0.55	27.40	69	1.35
1210	3.30	34.49 5	0.62	62	1200	3.33	34.49	0.62	27.47	62	1.50
1382	2.92	34.52 1	0.72	56	1500	2.73	34.54	0.86	27.56	53	1.70
1586	2.60	34.55 9	1.18	51	2000	2.03	34.61	2.00	27.68	42	1.98
1836	2.22	34.58 9	1.70	45							
2086	1.94	34.62 0	3.01	41							

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6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

70.90

HORIZON; March 21, 1962; 0335 GCT; 34°54'N, 124°30.5'W; sounding, 2380 fm; wind, 360°, force 7; weather, cloudy; sea, high; wire angle, 10°.

1	12.73	33.24	2	5.94	287	0	(12.73)	(33.24)	(5.94)	(25.10)	(287)	(0.00)
11	12.74	33.23	3	5.94	287	10	12.74	33.23	5.94	25.09	288	0.03
46	12.76	33.23	7	5.95	288	20	12.75	33.23	5.95	25.09	288	0.06
76	12.48	33.20	7	5.87	285	30	12.76	33.23	5.95	25.09	288	0.09
96	11.58	33.29	8	5.33	262	50	12.73	33.23	5.91	25.10	287	0.14
110	10.84	33.40	3	4.84	241	75	12.49	33.21	5.87	25.13	285	0.22
125	10.08	33.52	6	4.25	220	100	11.51	33.30	5.29	25.38	260	0.28
144	9.67	33.69	4	3.49	201	125	10.08	33.53	4.25	25.81	219	0.35
164	9.19	33.80	0	3.30	185	150	9.52	33.73	3.41	26.06	196	0.40
194	8.80	33.94	9	2.60	169	200	8.70	33.97	2.53	26.38	165	0.49
217	8.42	33.99	8	2.40	159	250	8.00	34.04	2.13	26.54	150	0.57
241	8.09	34.02	4	2.22	153	300	7.42	34.07	1.74	26.65	140	0.65
275	7.75	34.05	4	1.96	146	400	6.59	34.14	0.94	26.82	124	0.78
314	7.22	34.07	4	1.61	137	500	5.84	34.20	0.58	26.96	110	0.91
363	6.86	34.11	7	1.23	129	600	(5.34)	(34.28)	(0.32)	(27.09)	(98)	(1.02)
431	6.36	34.16	3	0.70	119							
514	5.75	34.20	5	0.56	109							
599	5.34	34.27	8	0.32	99							

70.100

HORIZON; March 20, 1962; 2103 GCT; 34°32'N, 125°14'W; sounding, 2560 fm; wind, 330°, force 8; weather, cloudy; sea, high; wire angle, 16°.

0	12.67	33.22	4	5.80	287	0	12.67	33.22	5.80	25.10	287	0.00
10	12.72	33.20	7	5.79	289	10	12.72	33.21	5.79	25.08	289	0.03
48	12.65	33.21	3	5.86	287	20	12.71	33.21	5.81	25.08	289	0.06
81	12.56	33.25	1	5.79	283	30	12.69	33.21	5.82	25.09	288	0.09
99	11.76	33.26	8	5.31	267	50	12.64	33.21	5.86	25.10	287	0.14
112	11.28	33.50	3	5.04	241	75	12.61	33.24	5.83	25.13	285	0.22
129	10.00	33.55	7	4.71	216	100	11.72	33.28	4.29	25.33	266	0.29
147	9.52	33.67	1	4.35	200	125	10.28	33.54	4.79	25.79	222	0.35
163	9.18	33.77	6	4.38	187	150	9.44	33.69	4.35	26.04	197	0.40
189	8.80	33.86	6	3.86	175	200	8.65	33.90	3.90	26.33	170	0.49
215	8.44	33.95	1	4.00	163	250	7.87	33.97	3.60	26.51	154	0.58
237	8.06	33.96	9	3.77	156	300	7.50	34.05	2.24	26.62	143	0.65
269	7.67	33.97	9	3.37	150	400	6.50	34.09	1.35	26.79	126	0.79
311	7.42	34.06	8	1.87	140	500	5.52	34.12	0.88	26.94	112	0.92
364	6.94	34.09	7	1.42	132	600	5.10	34.21	0.46	27.06	101	1.03
449	5.90	34.08	3	1.17	120							
541	5.31	34.15	1	0.69	108							
621	5.03	34.22	6	0.39	99							

70.120

HORIZON; March 20, 1962; 0720 GCT; 33°53'N, 126°30'W; sounding, 2560 fm; wind, 230°, force 6; weather, drizzle; sea, high; wire angle, 33°.

0	13.54	33.25	9	5.83	301	0	13.54	33.26	5.83	24.96	301	0.00
8	13.55	33.25	8	5.77	301	10	13.56	33.26	5.80	24.95	301	0.03
29	13.62	33.27	5	5.82	301	20	13.58	33.26	5.79	24.95	301	0.06
53	13.86	33.37	8	5.64	298	30	13.62	33.28	5.80	24.96	301	0.09
60	14.38	33.56	4	5.49	295	50	13.78	33.35	5.69	24.98	299	0.15
78	13.68	33.65	5	5.36a)	274	75	13.88	33.65	5.38	25.19	279	0.22
89	12.59	33.56	8	5.39a)	260	100	12.03	33.55	5.34	25.48	251	0.29
102	11.94	33.55	2	5.34	249	125	11.04	33.54	5.14	25.65	235	0.35
127	10.98	33.54	6	5.11	233	150	10.17	33.65	4.81	25.89	212	0.41
142	10.37	33.62	0	4.87	217	200	9.08	33.88	4.26	26.25	178	0.51
165	9.81	33.70	7	4.71	202	250	8.34	33.95	3.78	26.42	162	0.59
192	9.16	33.84	7	4.23	182	300	7.38	33.97	3.43	26.58	147	0.67
216	8.93	33.92	4	4.29	172	400	5.85	34.00	2.05	26.80	125	0.81
255	8.23	33.95	4	3.71	160	500	5.21	34.12	0.81	26.98	109	0.94
308	7.22	33.97	3	3.36	145							
390	5.94	33.98	5	2.19	127							
468	5.36	34.08	2	1.04	114							
536	5.09	34.16	7	0.55	104							

60

a) Alternate value, 5.56 ml/L, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
CCOF1
6203-4

HORIZON; April 1, 1962; 0114 GCT; 31°15'N, 132°08'W; sounding, 2565 fm; wind, 140°, force 2; weather, cloudy; sea, rough; wire angle, 04°.

70.200

1	16.89	34.04 7	5.32	313	0	(16.89)	(34.05)	(5.32)	(24.83)	(313)	(0.00)
11	16.28	34.16 1	5.31	291	10	16.30	34.16	5.31	25.05	292	0.03
52	16.22	34.20 6	5.42	287	20	16.28	34.16	5.31	25.06	291	0.06
93	16.06	34.24	5.34	281	30	16.27	34.17	5.32	25.07	290	0.09
113	14.40	33.99 6	5.20	264	50	16.22	34.20	5.41	25.10	287	0.15
132	12.88	33.79 7	5.20	249	75	16.18	34.23	5.39	25.13	284	0.22
163	11.20	33.73 2	4.91	223	100	15.70	34.20	5.30	25.22	276	0.29
192	10.00	33.79 2	4.63	199	125	13.42	33.87	5.20	25.45	254	0.36
212	9.74	33.87 5	4.62	188	150	11.91	33.75	5.09	25.66	234	0.42
263	8.70	34.00 8	4.27	163	200	9.86	33.82	4.63	26.08	194	0.53
303	7.88	34.00 0	3.85	151	250	8.96	33.99	4.40	26.35	168	0.62
353	7.02	33.99 0	2.79	141	300	7.95	34.00	3.90	26.52	152	0.70
433	6.07	34.02 1	1.90	126	400	6.42	34.00	2.26	26.73	132	0.85
553	5.15	34.12 1	0.81	108	500	5.51	34.07	1.28	26.90	116	0.98
683	4.53	34.24 6	0.32	92	600	4.93	34.16	0.54	27.04	103	1.10
813	4.20	34.36 9	0.25	80	700	4.46	34.26	0.30	27.17	90	1.20
953	3.80	34.42 4	0.36	72	800	4.20	34.36	0.25	27.28	80	1.29
1112	3.42	34.48 4	0.69	63	1000	3.69	34.45	0.44	27.40	69	1.46
1270	3.12	34.52 4	0.82	58	1200	3.25	34.51	0.76	27.49	60	1.60
1448	2.82	34.55 2	1.12	53	1500	2.73	34.55	1.16	27.57	52	1.80
1657	2.48	34.58 5	1.29	48	2000	2.05	34.63	1.80	27.69	41	2.08
1909	2.15	34.62 8	1.62	42							
2162	1.92	34.63 3	1.93	40							

HORIZON; March 16, 1962; 0338 GCT; 35°31.5'N, 121°28.5'W; sounding, 385 fm; wind, 050°, force 2; weather, missing; sea, very rough; wire angle, 12°.

73.53

1	12.42	33.30 3	6.33	276	0	(12.42)	(33.30)	(6.33)	(25.21)	(277)	(0.00)
11	12.18	33.28 7	6.29	273	10	12.21	33.29	6.29	25.24	274	0.03
30	11.90	33.32 0	6.11	266	20	12.02	33.29	6.23	25.28	270	0.05
40	11.73	33.35 3	5.88	260	30	11.90	33.32	6.11	25.32	266	0.08
49	11.47	33.41 0	5.60	252	50	11.45	33.42	5.59	25.49	250	0.13
64	11.20	33.48 0	5.22	242	75	10.50	33.52	4.42	25.73	227	0.19
80	10.12	33.55 8	3.98	218	100	9.54	33.72	3.35	26.05	197	0.25
98	9.55	33.70 6	3.44	198	125	9.11	33.84	2.68	26.21	181	0.29
123	9.16	33.83 3	2.77	183	150	8.72	33.95	2.29	26.36	167	0.34
142	8.78	33.92 0	2.76	170	200	8.53	34.10	1.63	26.51	153	0.42
170	8.62	34.01 9	2.12	161	250	7.81	34.14	1.30	26.65	140	0.50
199	8.56	34.09 7	1.64	154	300	7.35	34.16	1.01	26.73	132	0.57
227	8.11	34.13 8	1.35	144	400	6.59	34.22	0.52	26.88	118	0.70
265	7.64	34.13 7	1.27	138	500	5.84	34.27	0.35	27.02	105	0.81
321	7.18	34.18 1	0.97	128							
393	6.66	34.22 1	0.54	119							
465	6.04	34.24 7	0.41	109							
545	5.63	34.29 1	0.31	101							

S10

CCOF1
6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

73.60

HORIZON; March 16, 1962; 0720 GCT; 35°17'N, 121°57'W; sounding, 1160 fm; wind, 260°, force 1; weather, partly cloudy; sea, very rough; wire angle, 00°.

0	12.10	33.42 0	6.27	262	0	12.10	33.42	6.27	25.36	262	0.00
10	11.92	33.41 4	6.08	259	10	11.92	33.41	6.08	25.39	259	0.03
31	11.72	33.41 9	5.70	255	20	11.75	33.42	5.79	25.43	256	0.05
61	11.62	33.42 6	5.52	253	30	11.72	33.42	5.70	25.44	255	0.08
71	11.27	33.47 2	5.21	244	50	11.72	33.42	5.60	25.44	255	0.13
85	10.68	33.51 9	4.53	230	75	11.08	33.48	5.02	25.60	240	0.19
100	10.47	33.67 0	3.82	215	100	10.47	33.67	3.82	25.85	215	0.25
115	10.14	33.76 2	3.38	203	125	9.90	33.82	2.98	26.07	195	0.30
141	9.58	33.89 5	2.43	184	150	9.46	33.92	2.31	26.22	181	0.35
161	9.38	33.95 2	2.22	177	200	8.82	34.04	1.94	26.42	162	0.44
190	9.00	34.01 7	2.01	166	250	8.19	34.12	1.47	26.58	147	0.51
220	8.50	34.06 9	1.78	155	300	7.73	34.14	1.21	26.66	139	0.59
250	8.19	34.11 7	1.47	147	400	6.75	34.18	0.80	26.83	123	0.72
300	7.73	34.14 4	1.21	139	500	6.02	34.24	0.45	26.97	109	0.85
354	7.28	34.18 0	0.97	130	600	5.44	34.29	0.28	27.08	99	0.96
439	6.31	34.18 6	0.66	117							
524	5.90	34.25 7	0.35	107							
609	5.38	34.29 4	0.27	98							

77.51

HORIZON; March 16, 1962; 1725 GCT; 35°02.5'N, 120°56.5'W; sounding, 153 fm; wind, 110°, force 1; weather, partly cloudy; sea, very rough; wire angle, 03°.

0	11.51	33.48 4	6.42	247	0	11.51	33.48	6.42	25.52	247	0.00
10	11.46	33.49 6	6.30	245	10	11.46	33.50	6.30	25.55	245	0.02
30	10.76	33.63 2	4.65	223	20	11.40	33.51	6.15	25.56	243	0.05
50	10.04	33.71 3	3.28	205	30	10.76	33.63	4.65	25.77	223	0.07
76	9.90	33.81 4	2.95a)	196	50	10.04	33.71	3.28	25.96	205	0.12
100	8.98	33.85 3	3.02	178	75	9.91	33.81	2.95	26.06	196	0.17
125	8.76	33.90 7	2.74	171	100	8.98	33.85	3.02	26.24	179	0.21
164	8.63	33.98 6	2.42	163	125	8.76	33.91	2.74	26.32	171	0.26
204	8.36	34.05 8	1.93	154	150	8.68	33.96	2.52	26.38	166	0.30
254	8.16	34.15 7	1.24	144	200	8.38	34.05	2.00	26.49	155	0.38
					250	8.18	34.15	1.31	26.60	145	0.46

77.55

HORIZON; March 16, 1962; 1409 GCT; 34°54.5'N, 121°13.5'W; sounding, 305 fm; wind, 330°, force 1; weather, cloudy; sea, very rough; wire angle, 03°.

0	11.94	33.30 2	5.81	268	0	11.94	33.30	5.81	25.30	268	0.00
10	11.94	33.29 5	5.87	268	10	11.94	33.30	5.87	25.30	268	0.03
30	11.96	33.31 0	5.83	268	20	11.95	33.30	5.85	25.30	268	0.05
40	11.74	33.37 6	5.45	259	30	11.96	33.31	5.83	25.31	268	0.08
50	11.47	33.38 4	5.28	253	50	11.47	33.38	5.28	25.45	254	0.13
60	11.37	33.46 7	5.08	246	75	11.15	33.55	5.08	25.64	236	0.19
70	11.20	33.53 5	5.11b)	238	100	10.43	33.63	4.11	25.83	218	0.25
86	11.01	33.57 7	4.95	231	125	9.48	33.78	3.10	26.11	191	0.30
101	10.40	33.63 5	4.08	217	150	8.87	33.89	2.84	26.29	174	0.35
116	9.78	33.72 3	3.33	200	200	8.22	33.99	2.50	26.47	157	0.43
141	9.02	33.87 4	2.83	177	250	7.61	34.09	1.60	26.64	141	0.51
171	8.56	33.92 5	2.86	167	300	7.25	34.11	1.32	26.70	135	0.58
206	8.14	34.00 9	2.41	154	400	6.58	34.22	0.60	26.88	118	0.71
253	7.58	34.09 2	1.57	140	500	5.88	34.27	0.38	27.01	105	0.83
306	7.20	34.11 3	1.28	134							
411	6.50	34.22 9	0.57	116							
511	5.80	34.27 6	0.35	104							

a) Alternate value, 2.79 ml/L, not used in interpolation.

b) Alternate value, 5.20 ml/L, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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6203-4

HORIZON; March 16, 1962; 1206 GCT; 34°48.5'N, 121°22'W; sounding, 278 fm; wind, 310°, force 3; weather, partly cloudy; sea, very rough; wire angle, 08°.

77.57

0	12.10	33.29 9	6.02	271	0	12.10	33.30	6.02	25.27	271	0.00
10	12.12	33.28 7	6.04	272	10	12.12	33.29	6.04	25.26	272	0.03
29	12.04	33.34 0	6.01	267	20	12.09	33.32	6.03	25.29	269	0.05
49	11.94	33.37 5	5.79	262	30	12.04	33.34	6.00	25.31	267	0.08
75	11.40	33.40 8	5.25	250	50	11.94	33.38	5.79	25.36	262	0.13
99	10.22	33.62 7	3.79	215	75	11.40	33.41	5.25	25.49	250	0.20
124	9.32	33.82 7	2.97	185	100	10.22	33.63	3.76	25.87	214	0.26
164	8.86	33.98 0	2.41	167	125	9.31	33.83	2.96	26.17	185	0.31
204	8.29	34.03 0	2.18	155	150	9.02	33.93	2.60	26.30	173	0.35
254	7.74	34.05 2	2.01	146	200	8.36	34.03	2.20	26.48	156	0.44
303	6.98	34.08 1	1.53	133	250	7.80	34.05	2.02	26.58	147	0.51
408	6.42	34.20 3	0.70	117	300	7.02	34.08	1.59	26.71	134	0.59
					400	6.46	34.20	0.75	26.88	118	0.72

HORIZON; March 16, 1962; 2231 GCT; 34°25'N, 120°35.5'W; sounding, 100 fm; wind, 280°, force 3; weather, partly cloudy; sea, very rough; wire angle, 04°.

80.52

0	11.21	33.73 1	5.49	223	0	11.21	33.73	5.49	25.77	223	0.00
10	10.68	33.75 2	5.16	213	10	10.68	33.75	5.16	25.88	213	0.02
30	10.00	33.84 1	3.39	195	20	10.20	33.81	3.95	26.01	201	0.04
50	9.70	33.88 6	2.79	187	30	10.00	33.84	3.39	26.07	195	0.06
75	9.48	33.99 4	2.01	176	50	9.70	33.89	2.79	26.16	187	0.10
100	9.22	34.03 5	1.91	169	75	9.48	33.99	2.01	26.27	176	0.15
125	9.10	34.09 0	1.65	163	100	9.22	34.04	1.91	26.35	168	0.19
155	9.06	34.09 0	1.62	162	125	9.10	34.09	1.65	26.41	163	0.23
					150	9.07	34.09	1.62	26.42	162	0.27

HORIZON; March 17, 1962; 0214 GCT; 34°18.5'N, 120°48'W; sounding, 395 fm; wind, 250°, force 3; weather, partly cloudy; sea, very rough; wire angle, 30°.

80.55

0	12.44	33.31 0	6.01	276	0	12.44	33.31	6.01	25.21	276	0.00
8	12.14	33.30 8	6.07	271	10	12.09	33.31	6.07	25.28	270	0.03
26	11.78	33.40 8	5.97	257	20	11.85	33.36	6.02	25.37	262	0.05
34	11.43	33.47 2	5.67	246	30	11.63	33.44	5.83	25.47	252	0.08
47	11.12	33.56 9	5.27	234	50	10.90	33.57	5.04	25.70	230	0.13
61	10.64	33.62 6	4.46	221	75	9.93	33.85	3.36	26.09	193	0.18
72	9.96	33.83 5	3.45	195	100	9.55	33.91	2.70	26.20	183	0.23
98	9.58	33.90 7	2.73	184	125	9.18	33.96	2.35	26.30	173	0.27
114	9.38	33.94 0	2.61	178	150	8.86	34.05	1.79	26.42	162	0.32
130	9.11	33.97 5	2.20	171	200	8.20	34.09	1.77	26.55	149	0.40
154	8.80	34.06 1	1.75	160	250	8.06	34.18	1.16	26.64	141	0.47
179	8.44	34.06 1	1.90	155	300	7.63	34.19	1.05	26.71	134	0.54
201	8.20	34.08 7	1.77	150	400	6.85	34.22	0.68	26.85	121	0.67
235	8.23	34.18 2	1.18	143	500	(6.20)	(34.25)	(0.43)	(26.96)	(111)	(0.80)
276	7.76	34.18 3	1.15	136							
340	7.45	34.21 7	0.88	129							
411	6.76	34.22 6	0.65	120							
487	6.28	34.24 2	0.47	112							

S10

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6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

80.60

HORIZON; March 17, 1962; 0752 GCT; 34°06.5'N, 121°08'W; sounding, 1255 fm; wind, 180°, force 2; weather, cloudy; sea, missing; wire angle, 07°.

1	12.94	33.36 4	6.26	282	0	(12.94)	(33.36)	(6.26)	(25.16)	(282)	(0.00)
11	12.44	33.33 9	6.29	274	10	12.45	33.34	6.29	25.24	274	0.03
31	12.15	33.33 3	5.73	269	20	12.24	33.33	5.87	25.27	271	0.06
60	12.12	33.34 5	5.64	268	30	12.15	33.33	5.74	25.29	270	0.08
71	11.94	33.38 9	5.34	261	50	12.14	33.34	5.68	25.29	269	0.14
86	10.92	33.47 7	4.49	237	75	11.82	33.43	5.18	25.42	256	0.20
101	10.48	33.53 9	4.17	225	100	10.50	33.53	4.21	25.74	226	0.26
115	9.80	33.67 7	3.58	204	125	9.52	33.75	3.27	26.08	194	0.32
140	9.24	33.83 2	2.96	184	150	9.21	33.87	2.74	26.22	181	0.36
160	9.19	33.90 2	2.60	178	200	8.61	33.98	2.30	26.40	163	0.45
189	8.81	33.96 6	2.37	167	250	8.00	34.11	1.57	26.60	145	0.53
220	8.23	34.03 3	2.12	154	300	7.35	34.11	1.35	26.69	136	0.60
249	8.00	34.10 8	1.58	145	400	6.72	34.22	0.64	26.86	120	0.74
298	7.38	34.11 3	1.35	136	500	6.01	34.27	0.37	27.00	107	0.86
352	6.86	34.13 9	1.00	127	600	5.37	34.31	0.29	27.11	97	0.96
438	6.60	34.26 9	0.42	114							
522	5.80	34.27 0	0.36	105							
608	5.32	34.31 5	0.28	96							

80.70

HORIZON; March 17, 1962; 1526 GCT; 33°54'N, 121°50'W; sounding, 2328 fm; wind, 150°, force 5; weather, overcast; sea, very rough; wire angle, 35°.

0	12.41	33.20 3	6.04	284	0	12.41	33.20	6.04	25.14	284	0.00
10	12.42	33.20 3	6.05	284	10	12.42	33.20	6.05	25.13	284	0.03
31	12.32	33.19 8	6.08	282	20	12.39	33.20	6.07	25.14	283	0.06
47	12.35	33.21 6	5.98	282	30	12.32	33.20	6.08	25.15	282	0.09
63	12.42	33.25 3	5.86	280	50	12.35	33.21	5.95	25.15	282	0.14
85	11.63	33.44 9	4.80	251	75	12.59	33.31	5.78	25.19	279	0.21
107	10.41	33.54 9	4.20	223	100	10.72	33.52	4.37	25.69	231	0.28
135	9.48	33.70 5	3.56	197	125	9.78	33.65	3.77	25.96	206	0.33
162	8.86	33.86 2	3.08	176	150	9.09	33.80	3.26	26.19	184	0.38
196	8.45	33.94 5	2.71	164	200	8.41	33.96	2.64	26.42	162	0.47
236	8.02	34.01 4	2.29	152	250	7.83	34.03	2.15	26.56	149	0.55
290	7.28	34.06 4	1.73	139	300	7.18	34.08	1.60	26.69	136	0.62
374	6.52	34.16 1	0.90	121	400	6.39	34.19	0.76	26.88	118	0.75
501	5.91	34.29 0	0.40	104	500	5.91	34.29	0.40	27.02	104	0.87
622	5.22	34.32 9	0.31	93	600	5.36	34.33	0.32	27.12	95	0.98
754	4.56	34.35 7	0.32	84	700	4.82	34.34	0.29	27.19	88	1.08
869	4.18	34.40 8	0.45	76	800	4.39	34.37	0.38	27.27	81	1.17
1001	3.90	34.46 3	0.50	70	1000	3.90	34.46	0.50	27.39	70	1.34
1133	3.50	34.48 9	0.67	64	1200	3.33	34.51	0.77	27.49	61	1.48
1284	3.16	34.52 3	0.87	58	1500	2.79	34.55	1.06	27.57	53	1.68
1461	2.86	34.54 9	1.23	54	2000	(2.08)	(34.61)	(1.58)	(27.67)	(43)	(1.97)
1683	2.48	34.58 0	1.56	48							
1911	2.18	34.60 7	1.88	44							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

HORIZON; March 18, 1962; 0334 GCT; 33°33'N, 122°35'W; sounding, 2300 fm; wind, 140°, force 3; weather, cloudy; sea, very rough; wire angle, 19°.

80.80

1	13.23	33.42	1	5.87	283	0	(13.23)	(33.42)	(5.87)	(25.14)	(283)	(0.00)
10	13.24	33.40	4	5.79	284	10	13.24	33.40	5.79	25.13	285	0.03
48	13.27	33.40	3	5.83	285	20	13.26	33.40	5.79	25.12	285	0.06
82	13.04	33.39	7	5.60	281	30	13.27	33.40	5.79	25.12	285	0.09
101	11.61	33.47	1	4.69	250	50	13.27	33.40	5.80	25.12	285	0.14
116	10.40	33.57	5	4.00	221	75	13.12	33.40	5.64	25.15	282	0.21
134	9.72	33.73	4	3.29	199	100	11.70	33.46	4.75	25.47	252	0.28
153	9.38	33.81	0	3.04	188	125	10.01	33.66	3.64	25.93	209	0.34
172	8.94	33.89	0	2.77	175	150	9.44	33.80	3.09	26.13	189	0.39
201	8.46	33.96	1	2.61	163	200	8.47	33.96	2.61	26.41	163	0.48
230	8.23	33.98	8	2.44	157	250	7.88	34.02	2.34	26.54	150	0.56
254	7.80	34.02	5	2.31	149	300	7.21	34.06	1.76	26.67	138	0.63
287	7.42	34.04	3	1.93	142	400	6.36	34.16	0.80	26.86	120	0.77
330	6.75	34.08	2	1.39	130	500	5.88	34.25	0.42	27.00	107	0.89
383	6.42	34.14	0	0.92	122	600	5.28	34.30	0.29	27.11	96	1.00
465	6.12	34.22	9	0.50	111							
553	5.50	34.28	1	0.33	100							
627	5.16	34.31	4	0.27	94							

HORIZON; March 18, 1962; 1042 GCT; 33°13'N, 123°16'W; sounding, 2280 fm; wind, 150°, force 3; weather, cloudy; sea, very rough; wire angle, 21°.

80.90

1	13.16	33.37	9	5.87	285	0	(13.16)	(33.38)	(5.87)	(25.13)	(285)	(0.00)
10	13.16	33.37	6	5.86	285	10	13.16	33.38	5.86	25.13	285	0.03
48	12.92	33.36	0	5.83	281	20	13.16	33.38	5.86	25.13	285	0.06
66	12.84	33.35	0	5.81	281	30	13.15	33.38	5.86	25.13	284	0.09
86	11.98	33.40	8	5.10	261	50	12.90	33.36	5.82	25.16	281	0.14
108	10.70	33.54	7	4.11	228	75	12.80	33.35	5.78	25.18	280	0.21
137	9.38	33.75	2	3.42a)	192	100	11.14	33.49	4.44	25.60	240	0.28
169	8.69	33.88	8	3.26	171	125	9.89	33.67	3.61	25.95	206	0.33
196	8.30	33.96	4	2.72	160	150	9.03	33.81	3.36	26.20	182	0.38
242	7.72	34.02	7	2.12	147	200	8.24	33.97	2.66	26.45	159	0.47
284	7.34	34.05	2	1.84	140	250	7.64	34.03	2.07	26.59	146	0.55
347	6.62	34.10	2	1.19	127	300	7.15	34.06	1.69	26.68	137	0.62
445	6.18	34.20	7	0.56	114	400	6.38	34.16	0.79	26.86	120	0.76
586	5.40	34.30	8	0.26	97	500	5.88	34.25	0.41	27.00	107	0.87
726	4.80	34.38	5	0.26	85	600	5.33	34.32	0.26	27.12	95	0.98
870	4.32	34.43	5	0.37	76	700	4.90	34.37	0.27	27.21	87	1.08
1001	3.88	34.47	3	0.50	69	800	4.54	34.41	0.31	27.28	80	1.17
1150	3.48	34.50	3	0.68	63	1000	3.88	34.47	0.49	27.40	69	1.34
1298	3.16	34.53	2	0.84	58	1200	3.38	34.51	0.73	27.48	61	1.49
1467	2.80	34.56	3	1.06	52	1500	2.74	34.57	1.10	27.59	51	1.68
1666	2.44	34.58	8	1.34	47	2000	2.08	34.62	1.73	27.68	42	1.96
1908	2.16	34.61	1	1.66	43							
2153	1.98	34.63	0	1.92	40							

a) Alternate value, 3.23 ml/L, not used in interpolation.

S10

CCOF1
6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

80.100

HORIZON; March 18, 1962; 2216 GCT; 32°57'N, 123°56'W; sounding, 2150 fm; wind, 040°, force 3; weather, partly cloudy; sea, high; wire angle, 15°.

0	13.56	33.41 9	5.85	289	0	13.56	33.42	5.85	25.08	289	0.00
10	13.42	33.42 1	5.86	286	10	13.42	33.42	5.86	25.11	287	0.03
29	13.25	33.42 1	5.87	283	20	13.31	33.42	5.87	25.13	284	0.06
58	13.10	33.41 6	5.76	281	30	13.24	33.42	5.86	25.14	283	0.09
68	13.08	33.41 5	5.60	280	50	13.13	33.42	5.80	25.16	281	0.14
82	11.01	33.51 4	4.16	236	75	12.99	33.42	5.50	25.19	278	0.21
96	10.02	33.62 5	3.86	211	100	9.89	33.64	3.73	25.93	208	0.27
111	9.63	33.69 2	3.44	200	125	9.32	33.76	3.15	26.12	190	0.32
135	9.12	33.80 8	3.01	184	150	8.91	33.86	2.93	26.26	177	0.37
154	8.84	33.87 3	2.89	175	200	8.09	34.00	2.23	26.50	154	0.46
183	8.34	33.97 2	2.43	160	250	7.58	34.05	1.83	26.61	144	0.53
212	7.94	34.01 9	2.11	151	300	6.99	34.08	1.39	26.72	133	0.60
241	7.68	34.04 4	1.93	145	400	6.16	34.18	0.71	26.91	116	0.73
291	7.09	34.07 7	1.45	135	500	5.80	34.27	0.40	27.02	105	0.85
344	6.54	34.12 7	1.17	124	600	(5.24)	(34.32)	(0.31)	(27.13)	(94)	(0.95)
427	6.02	34.20 3	0.57	112							
512	5.77	34.28 1	0.39	103							
596	5.28	34.32 1	0.32	95							

80.120

HORIZON; March 19, 1962; 0925 GCT; 32°11'N, 125°17'W; sounding, 2340 fm; wind, 360°, force 6; weather, drizzle; sea, high; wire angle, 43°.

0	14.08	33.29 0	5.67	309	0	14.08	33.29	5.67	24.87	309	0.00
8	14.08	33.29 0	5.76	309	10	14.08	33.29	5.76	24.87	309	0.03
36	13.96	33.30 0	5.70	306	20	14.04	33.30	5.73	24.89	307	0.06
50	13.86	33.28 9	5.76	305	30	13.99	33.30	5.70	24.90	306	0.09
64	13.65	33.30 3	5.74	300	50	13.86	33.29	5.76	24.92	305	0.15
85	12.84	33.33 6	5.64	282	75	13.28	33.32	5.70	25.06	291	0.23
100	12.12	33.36 9	5.29	266	100	12.12	33.37	5.29	25.32	266	0.30
124	10.82	33.48 1	4.70	235	125	10.78	33.49	4.67	25.66	234	0.36
143	10.00	33.60 0	4.04	213	150	9.78	33.64	3.99	25.95	206	0.42
176	9.12	33.78 7	3.88	185	200	8.67	33.88	3.43	26.31	172	0.51
208	8.52	33.90 6	3.29	168	250	7.90	33.99	2.73	26.52	152	0.60
250	7.90	33.99 3	2.73	152	300	7.15	34.02	2.20	26.65	140	0.67
319	6.90	34.03 5	2.00	136	400	6.14	34.10	1.11	26.85	121	0.81
423	5.97	34.12 3	0.88	118	500	5.52	34.18	0.52	26.99	108	0.93
517	5.42	34.19 7	0.48	106	600	5.02	34.26	0.36	27.11	96	1.04
629	4.92	34.27 9	0.32	94	700	4.79	34.36	0.30	27.21	86	1.14
727	4.73	34.38 1	0.30	84	800	4.44	34.42	0.33	27.30	78	1.23
838	4.27	34.43 2	0.36	76	1000	3.80	34.48	0.51	27.42	67	1.39
953	3.91	34.46 5	0.47	70	1200	3.33	34.52	0.77	27.49	60	1.53
1085	3.58	34.51 0	0.66	63	1500	2.79	34.56	1.08	27.57	52	1.73
1244	3.23	34.52 1	0.83	59							
1451	2.88	34.55 3	1.03	53							
1675	2.46	34.57 7	1.28	48							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
CCOF1
6203-4

HORIZON; April 1, 1962; 2021 GCT; 29°29'N, 130°34'W; sounding, 2470 fm; wind, 340°, force 1; weather, cloudy; sea, rough; wire angle, 02°.

80.200

0	17.62	34.43	5.16	302	0	17.62	34.43	5.16	24.95	302	0.00
10	17.24	34.42	5.21	294	10	17.24	34.42	5.21	25.03	294	0.03
40	16.80	34.40	5.28	285	20	16.86	34.40	5.29	25.11	287	0.06
66	16.72	34.41	5.09	283	30	16.83	34.40	5.28	25.11	286	0.09
86	16.72	34.40	5.04	283	50	16.77	34.40	5.21	25.13	285	0.14
101	16.76	34.43	5.04	282	75	16.72	34.41	5.07	25.15	283	0.22
116	16.76	34.44 1	5.25	281	100	16.75	34.43	5.04	25.16	282	0.29
136	16.92	34.50 8	5.26	280	125	16.83	34.47	5.25	25.17	281	0.36
156	16.63	34.48 3	5.09	275	150	16.78	34.51	5.16	25.21	277	0.43
181	13.88	34.03 7	4.87	250	200	12.88	33.95	4.85	25.62	237	0.56
206	12.58	33.92 3	4.84	234	250	10.44	33.90	4.53	26.04	198	0.67
232	11.04	33.83 6	4.54	213	300	9.08	33.98	4.12	26.33	170	0.77
262	10.10	33.92 7	4.52	190	400	7.01	34.01	2.65	26.66	139	0.93
297	9.16	33.97 5	4.13	172	500	5.93	34.11	1.09	26.88	118	1.06
346	8.24	33.99 9	3.74	157							
411	6.83	34.02 5	2.42	136							
487	6.03	34.09 2	1.22	121							
567	5.47	34.17 5	0.64	108							

BLACK DOUGLAS; April 12, 1962; 0308 GCT; 33°34'N, 120°45'W; sounding, 800 fm; wind, 320°, force 3; weather, fog; sea, moderate; wire angle, 17°.

83.60

0	12.26	33.31 1	5.74	273	0	12.26	33.31	5.74	25.25	273	0.00
9	12.07	33.31 8	5.79	269	10	12.06	33.32	5.79	25.29	269	0.03
29	11.24	33.42 4	5.33	247	20	11.84	33.33	5.73	25.34	264	0.05
37	11.35	33.47 3	5.44	245	30	11.25	33.43	5.33	25.53	246	0.08
48	11.08	33.45 1	5.08	242	50	10.75	33.45	4.73	25.63	236	0.13
62	10.28	33.49 1	4.45	226	75	10.70	33.72	4.34	25.85	216	0.18
76	10.60	33.73 1	4.28	213	100	9.77	33.83	2.82	26.10	192	0.24
95	9.81	33.81 5	2.91	194	125	8.98	33.89	2.73	26.27	176	0.28
117	9.25	33.88 3	2.62	180	150	8.41	33.95	2.69	26.41	163	0.33
136	8.68	33.91 5	2.83	169	200	8.12	34.11	1.58	26.58	147	0.40
165	8.25	34.01 5	2.36	156	250	7.72	34.15	1.22	26.67	138	0.48
192	8.19	34.10 0	1.67	148	300	7.26	34.18	0.94	26.76	130	0.55
220	7.89	34.13 3	1.41	142	400	6.38	34.20	0.64	26.89	117	0.67
256	7.68	34.15 6	1.17	137	500	5.78	34.27	0.30	27.03	104	0.79
311	7.16	34.18 4	0.90	128							
381	6.50	34.19 1	0.71	119							
450	6.13	34.23 7	0.46	111							
526	5.58	34.28 1	0.25	101							

HORIZON; April 7, 1962; 1151 GCT; 33°28'N, 117°47'W; sounding, 325 fm; wind, 070°, force 3; weather, clear; sea, slight; wire angle, 00°.

90.28

0	14.52	33.54 4	6.72	299	0	14.52	33.54	6.72	24.97	299	0.00
10	12.83	33.55 7	6.35	265	10	12.83	33.56	6.35	25.33	265	0.03
30	11.14	33.67 8	3.42	226	20	11.35	33.63	3.97	25.67	233	0.05
51	10.22	33.84 7	2.43	198	30	11.14	33.68	3.42	25.74	226	0.08
76	10.11	34.00 9	2.03	184	50	10.23	33.84	2.44	26.03	199	0.12
101	9.31	34.09 7	1.86	165	75	10.12	34.01	2.04	26.18	185	0.17
126	9.22	34.21 5	1.29	155	100	9.31	34.08	1.86	26.37	167	0.21
166	9.03	34.24 9	1.10	150	125	9.22	34.21	1.30	26.48	156	0.25
206	8.75	34.29	0.92	142	150	9.11	34.24	1.16	26.53	152	0.29
256	8.60	34.30 4	0.79	139	200	8.78	34.28	0.94	26.61	144	0.37
306	7.98	34.28 5	0.76	132	250	8.63	34.30	0.82	26.65	140	0.44
411	6.84	34.29 7	0.44	115	300	8.03	34.29	0.76	26.73	132	0.51
					400	6.95	34.29	0.47	26.89	117	0.64

SIO

CCOF1
6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

90.32

HORIZON; April 7, 1962; 0721 GCT; 33°19'N, 118°02.5'W; sounding, 430 fm; wind, 280°, force 3; weather, clear; sea, missing; wire angle, 05°.

0	14.14	33.56 1	6.46	290	0	14.14	33.56	6.46	25.07	290	0.00
10	14.11	33.55 7	6.48	290	10	14.11	33.56	6.48	25.07	290	0.03
30	11.72	33.60 1	4.76	242	20	12.08	33.58	5.18	25.49	250	0.06
41	10.92	33.69 4	3.46	221	30	11.72	33.60	4.76	25.58	242	0.08
56	10.28	33.71 9	3.17	209	50	10.50	33.71	3.24	25.88	213	0.13
71	9.85	33.77 1	3.09	198	75	9.81	33.81	3.00	26.08	194	0.18
96	9.62	33.97 2	2.34	179	100	9.60	33.98	2.31	26.24	178	0.22
116	9.36	34.02 5	2.16	171	125	9.31	34.06	2.02	26.35	168	0.27
136	9.22	34.11 7	1.84	162	150	8.98	34.12	1.80	26.45	159	0.31
157	8.84	34.12 4	1.79	156	200	8.70	34.25	1.07	26.60	145	0.39
187	8.70	34.22 1	1.24	147	250	8.46	34.31	0.77	26.68	137	0.46
221	8.66	34.29 6	0.87	141	300	7.91	34.29	0.71	26.75	130	0.53
251	8.43	34.31 0	0.77	136	400	6.78	34.30	0.44	26.92	114	0.66
300	7.91	34.29 1a)	0.71	130	500	6.28	34.33	0.31	27.01	106	0.77
356	7.05	34.27 6a)	0.60	120	600	5.69	34.37	0.23	27.12	96	0.88
439	6.57	34.31 1	0.37	111							
523	6.17	34.33 3	0.29	104							
609	5.61	34.37 2	0.23	95							

90.37

HORIZON; April 7, 1962; 0424 GCT; 33°10'N, 118°23'W; sounding, 633 fm; wind, 270°, force 3; weather, clear; sea, moderate; wire angle, 27°.

0	14.46	33.52 4	6.01	299	0	14.46	33.52	6.01	24.97	300	0.00
9	14.37	33.51 6	6.04b)	298	10	14.33	33.52	6.05	25.00	297	0.03
27	13.04	33.51 6	6.18	272	20	13.68	33.52	6.11	25.13	284	0.06
35	12.46	33.52 2	5.78	261	30	12.70	33.52	5.88	25.33	266	0.09
49	12.32	33.51 3	5.78	259	50	12.31	33.51	5.78	25.39	259	0.14
61	11.19	33.58 8	3.92	234	75	10.39	33.70	3.30	25.89	212	0.20
82	10.16	33.74 2	3.19	205	100	9.88	33.81	2.97	26.06	195	0.25
98	9.90	33.81 0	2.99	196	125	9.33	33.91	2.61	26.23	179	0.30
114	9.64	33.87 0	2.76	187	150	9.23	34.06	2.01	26.37	167	0.34
130	9.22	33.94 0	2.57	176	200	8.97	34.22	1.31	26.53	151	0.42
153	9.23	34.07 8	1.96	165	250	8.62	34.28	0.98	26.63	141	0.50
182	9.12	34.19 7	1.39	155	300	7.82	34.26	0.85	26.74	131	0.57
205	8.94	34.22 8	1.31	150	400	6.87	34.29	0.48	26.90	116	0.70
247	8.68	34.28 0	1.00	142	500	6.11	34.33	0.36	27.03	104	0.81
291	7.96	34.26 0	0.87	133							
342	7.30	34.27 6	0.64	123							
434	6.64	34.29 3	0.43	113							
508	6.02	34.33 3	0.33	102							

90.45

HORIZON; April 6, 1962; 2317 GCT; 32°55.5'N, 118°54.5'W; sounding, 920 fm; wind, 270°, force 3; weather, clear; sea, rough; wire angle, 12°.

0	14.56	33.53 2	5.94	301	0	14.56	33.53	5.94	24.95	301	0.00
10	13.78	33.51 9	5.96	286	10	13.78	33.52	5.96	25.11	286	0.03
30	12.60	33.50 9	5.43	265	20	13.59	33.52	5.93	25.15	283	0.06
39	12.06	33.54 2	4.89	252	30	12.60	33.51	5.43	25.34	264	0.09
49	11.39	33.62 1	3.85	235	50	11.35	33.63	3.80	25.67	233	0.14
64	10.91	33.69 2	3.37	221	75	10.19	33.74	3.26	25.96	206	0.19
78	10.13	33.74 6	3.24	204	100	9.83	33.88	2.62	26.13	190	0.24
97	9.88	33.86 2	2.69	192	125	9.44	33.96	2.41	26.25	177	0.29
120	9.52	33.95 4	2.44	179	150	9.09	34.00	2.30	26.34	169	0.33
139	9.26	33.98 9	2.36	173	200	8.89	34.16	1.52	26.50	154	0.41
169	8.84	34.04 0	2.16	162	250	8.33	34.22	1.11	26.63	142	0.49
197	8.90	34.15 4	1.59	155	300	7.71	34.24	0.87	26.74	131	0.56
227	8.70	34.21 7	1.24	147	400	6.94	34.29	0.45	26.89	117	0.69
265	8.11	34.22 1	1.02	138	500	6.29	34.32	0.32	27.00	107	0.81
324	7.48	34.24 8	0.75	128							
399	6.96	34.29 0	0.46	117							
473	6.46	34.31 0	0.38	110							
553	5.96	34.34 2	0.25	101							

68

a) Loose bottle cap; value falls on property curve.

b) Alternate value, 5.85 ml/L, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
CCOF1
6203-4

HORIZON; April 6, 1962; 1852 GCT; 32°42.5'N, 119°25'W; sounding, 380 fm; wind, 270°, force 2; weather, clear; sea, very rough; wire angle, 02°.

90.53

1	13.00	33.51 0	5.91	272	0	(13.00)	(33.51)	(5.91)	(25.26)	(272)	(0.00)
11	12.78	33.49 9	5.92	269	10	12.80	33.50	5.91	25.29	269	0.03
31	12.72	33.50 0	5.83	267	20	12.74	33.50	5.86	25.30	268	0.05
56	11.72	33.57 6	4.44	244	30	12.73	33.50	5.86	25.31	268	0.08
66	10.98	33.64 7	3.73	226	50	12.71	33.50	5.79	25.31	267	0.13
77	10.63	33.69 2	3.44	216	75	10.68	33.68	3.49	25.83	218	0.20
92	10.30	33.74 2	3.24	207	100	10.13	33.76	3.16	25.98	203	0.25
107	10.02	33.77 1	3.09	201	125	9.50	33.85	2.74	26.16	187	0.30
132	9.35	33.90 0	2.59	181	150	9.20	34.00	2.18	26.32	171	0.34
152	9.19	34.01 6	2.14	169	200	8.78	34.14	1.61	26.50	154	0.43
178	8.92	34.09 3	1.76	160	250	8.41	34.21	1.17	26.61	143	0.50
208	8.74	34.15 4	1.56	152	300	7.87	34.23	0.88	26.71	134	0.57
238	8.54	34.20 0	1.30	146	400	7.07	34.26	0.61	26.85	121	0.71
278	8.11	34.23 2	0.94	137	500	6.37	34.31	0.32	26.98	108	0.83
337	7.49	34.23 4	0.82	129							
412	6.99	34.27 3	0.55	119							
487	6.44	34.30 5	0.33	110							
568	6.17	34.32 4	0.31	105							

HORIZON; April 6, 1962; 1158 GCT; 32°28.5'N, 120°06'W; sounding, 880 fm; wind, 310°, force 4; weather, cloudy; sea, very rough; wire angle, 12°.

90.60

1	12.42	33.39 8	5.91	269	0	(12.42)	(33.40)	(5.91)	(25.29)	(269)	(0.00)
11	12.42	33.39 1	6.05	270	10	12.42	33.39	5.98	25.28	270	0.03
30	12.23	33.40 0	5.77	266	20	12.37	33.39	5.99	25.29	269	0.05
40	11.96	33.45 4	5.62a)	257	30	12.23	33.40	5.77	25.32	266	0.08
55	11.84	33.48 5	5.56	253	50	11.88	33.48	5.61	25.45	254	0.13
70	11.59	33.49 8	4.89	247	75	11.43	33.50	4.71	25.55	244	0.20
94	10.84	33.58 2	4.00	228	100	10.67	33.64	3.72	25.80	221	0.25
113	10.27	33.73 6	3.20	207	125	9.70	33.76	3.13	26.06	196	0.31
133	9.62	33.79 3	3.11	193	150	9.17	33.82	2.73	26.19	184	0.36
152	9.04	33.93 6	2.59	173	200	8.74	34.10	1.76	26.48	156	0.44
181	8.78	34.09 0	1.78	158	250	8.11	34.20	1.12	26.65	140	0.52
216	8.24	34.09 0	1.72	150	300	7.31	34.21	0.91	26.77	128	0.59
245	8.17	34.19 3	1.18	141	400	6.45	34.27	0.47	26.94	112	0.71
293	7.41	34.20 5	0.94	130	500	5.99	34.32	0.36	27.04	103	0.83
347	6.80	34.23 2	0.59	120	600	(5.31)	(34.32)	(0.33)	(27.12)	(95)	(0.93)
430	6.31	34.29 4	0.43	109							
514	5.92	34.31 8	0.34	102							
599	5.32	34.32 2	0.33	95							

HORIZON; April 6, 1962; 0114 GCT; ^{b)} 31°57'N, 120°37'W; sounding, 2020 fm; wind, 320°, force 4; weather, haze; sea, high; wire angle, 31°.

90.70

732	4.76	34.38 7	0.28	84							
779	4.60	34.40 4	0.31	81							
825	4.44	34.42 0	0.32	78							
873	4.28	34.43 5	0.37	75							
921	4.20	34.44 8	0.40	74							
969	4.04	34.47 3	0.44	70							
1017	3.88	34.48 6	0.54	68							
1066	3.78	34.49 8	0.58	66							
1114	3.60	34.50 3	0.63	64							

a) Alternate value, 5.16 ml/L, not used in interpolation.

b) A special cast for silicate samples.

S10

CCOF1
6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

90.70

HORIZON; April 6, 1962; 0330 GCT; 31°57'N, 120°37'W; sounding, 2020 fm; wind, 320°, force 4; weather, clear; sea, high; wire angle, 26°.

0	13.02	33.35 1	5.90	284	0	13.02	33.35	5.90	25.13	284	0.00
8	13.02	33.35 1	5.92	284	10	13.02	33.35	5.92	25.13	284	0.03
31	12.76	33.32 8	5.93	281	20	12.80	33.33	5.93	25.16	281	0.06
50	12.46	33.35	5.60	274	30	12.76	33.33	5.93	25.17	281	0.08
68	12.20	33.38 4	5.52	266	50	12.46	33.35	5.60	25.24	274	0.14
90	11.29	33.53 9	4.33	239	75	11.87	33.44	5.06	25.42	256	0.21
118	10.06	33.65 7	3.81	210	100	10.82	33.58	4.10	25.72	228	0.27
148	9.12	33.88 7	2.83	178	125	9.81	33.70	3.63	25.99	203	0.32
179	8.63	33.96 5	2.60	165	150	9.08	33.89	2.82	26.26	177	0.37
219	7.99	34.04 8	2.01	149	200	8.27	34.01	2.30	26.48	156	0.46
262	7.40	34.10 3	1.52	137	250	7.55	34.09	1.64	26.65	140	0.53
323	6.74	34.13 1	1.09	126	300	6.98	34.13	1.16	26.76	130	0.60
414	5.91	34.15 3	0.67	115	400	6.02	34.15	0.72	26.90	116	0.73
549	5.44	34.27 7	0.31	100	500	5.59	34.23	0.41	27.02	105	0.85
678	4.88	34.36 4	0.25	87	600	5.23	34.32	0.25	27.13	94	0.95
816	4.42	34.41 7	0.32	78	700	4.80	34.37	0.26	27.22	86	1.05
938	4.08	34.45 9	0.42	72	800	4.48	34.41	0.32	27.29	79	1.14
1080	3.70	34.49 1	0.61	66	1000	3.90	34.47	0.51	27.40	69	1.30
1220	3.36	34.52 7	0.77	60	1200	3.42	34.52	0.73	27.48	61	1.45
1380	3.00	34.55 8	1.13	54	1500	2.77	34.57	1.20	27.58	51	1.65
1571	2.64	34.57 2	1.22	50	2000	2.10	34.62	1.84	27.68	42	1.93
1807	2.31	34.60 5	1.53	45							
2055	2.06	34.62 5	1.89	41							

90.80

HORIZON; April 5, 1962; 1941 GCT; 31°44.5'N, 121°10'W; sounding, 2000 fm; wind, 320°, force 6; weather, cloudy; sea, very rough; wire angle, 24°.

0	13.56	33.38 5	5.84	292	0	13.56	33.38	5.84	25.05	292	0.00
9	13.56	33.38 3	5.84	292	10	13.56	33.38	5.84	25.05	292	0.03
33	13.54	33.39 1	5.82	291	20	13.55	33.39	5.83	25.06	291	0.06
60	13.48	33.38 9	5.80	290	30	13.54	33.39	5.83	25.06	291	0.09
69	13.32	33.37 7	5.71	288	50	13.51	33.39	5.81	25.06	290	0.15
89	12.56	33.35 6	5.46	275	75	13.16	33.37	5.65	25.12	285	0.22
102	11.83	33.39 1	5.23	259	100	11.94	33.38	5.28	25.36	262	0.29
116	11.21	33.53 4	4.31	238	125	10.84	33.58	4.04	25.72	228	0.35
143	10.12	33.66 8	3.61	210	150	9.93	33.71	3.47	25.98	204	0.40
162	9.62	33.78 3	3.22	193	200	8.96	34.01	2.33	26.37	166	0.50
190	9.08	33.98 0	2.46	170	250	8.33	34.11	1.77	26.55	150	0.58
223	8.64	34.05 3	2.09	158	300	7.74	34.16	1.30	26.67	138	0.65
251	8.31	34.11 2	1.77	149	400	6.28	34.11	1.02	26.84	122	0.79
297	7.79	34.16 0	1.31	138	500	5.60	34.19	0.54	26.98	108	0.91
359	6.68	34.09 9	1.24	128	600	5.20	34.29	0.32	27.11	96	1.02
454	5.84	34.15 7	0.71	113							
540	5.42	34.23 1	0.43	103							
617	5.14	34.30 5	0.31	94							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

SIO
CCOFI
6203-4

HORIZON; April 5, 1962; 1347 GCT; 31°25'N, 121°57'W; sounding, 2190 fm; wind, 320°, force 7; weather, over-cast; sea, high; wire angle, 09°.

9090

1	14.30	33.42 3	5.71	304	0	(14.30)	(33.42)	(5.71)	(24.92)	(304)	(0.00)
11	14.30	33.42 9	5.64	303	10	14.30	33.43	5.65	24.93	303	0.03
36	14.24	33.42 3	5.53	302	20	14.28	33.43	5.54	24.94	303	0.06
56	14.12	33.39 9	5.50	302	30	14.26	33.43	5.53	24.94	302	0.09
76	13.29	33.38 2	5.46	287	50	14.20	33.42	5.51	24.95	302	0.15
101	12.28	33.41 1	5.15	266	75	13.27	33.38	5.46	25.11	287	0.23
131	10.95	33.50 9	4.99	235	100	12.34	33.41	5.16	25.31	267	0.30
166	9.58	33.67 3	4.30	201	125	11.23	33.49	5.03	25.58	242	0.36
201	8.86	33.86 2	4.07	176	150	10.07	33.57	4.60	25.85	216	0.42
244	8.20	33.97 6	3.55	158	200	8.87	33.86	4.07	26.27	176	0.52
294	7.64	34.01 0	2.61	147	250	8.14	33.98	3.44	26.47	157	0.60
364	6.78	34.04 5	1.83	133	300	7.54	34.01	2.54	26.58	146	0.68
468	6.06	34.15 3	0.90	116	400	6.48	34.08	1.48	26.79	127	0.82
626	5.01	34.29 5	0.36	94	500	5.82	34.19	0.71	26.96	111	0.95
774	4.42	34.38 4	0.37	81	600	5.15	34.28	0.37	27.11	96	1.06
932	3.95	34.45 2	0.53	71	700	4.69	34.33	0.32	27.20	88	1.16
1061	3.60	34.49 5	0.69	64	800	4.34	34.40	0.40	27.30	79	1.25
1228	3.28	34.52 2	0.89	59	1000	3.76	34.48	0.63	27.42	67	1.41
1386	2.96	34.54 9	1.06	54	1200	3.34	34.52	0.84	27.49	60	1.55
1564	2.65	34.57 5	1.32	50	1500	2.75	34.57	1.22	27.59	51	1.75
1771	2.33	34.59 9	1.59	46	2000	2.09	34.62	1.87	27.68	42	2.03
2026	2.08	34.62 4	1.93	42							
2283	1.92	34.63 9	2.15	39							

HORIZON; April 5, 1962; 0827 GCT; 31°07'N, 122°41'W; sounding, 2145 fm; wind, 310°, force 6; weather, over-cast; sea, rough; wire angle, 23°.

90100

0	14.48	33.46	5.71	305	0	14.48	33.46	5.71	24.92	305	0.00
9	14.48	33.46 0	5.73	305	10	14.49	33.46	5.72	24.92	305	0.03
34	14.50	33.46 0	5.70	305	20	14.50	33.46	5.71	24.91	305	0.06
44	14.49	33.46 4	5.67	304	30	14.50	33.46	5.70	24.91	305	0.09
57	14.39	33.45 7	5.67	303	50	14.48	33.46	5.66	24.92	305	0.15
70	13.96	33.44 2	5.68	295	75	13.80	33.44	5.66	25.04	292	0.23
95	13.10	33.35 0	5.60	286	100	12.86	33.45	5.54	25.24	274	0.30
114	12.22	33.43 9	5.36	263	125	11.57	33.47	5.16	25.50	249	0.37
132	11.18	33.52 0	5.00	238	150	10.23	33.60	4.54	25.84	217	0.42
161	9.73	33.65 2	4.34	205	200	8.66	33.89	3.78	26.32	171	0.52
188	8.88	33.84 7	3.94	177	250	7.67	33.97	3.21	26.53	151	0.60
228	8.14	33.95 4	3.40	159	300	7.03	33.99	2.57	26.64	141	0.68
256	7.55	33.97 5	3.15	149	400	6.05	34.10	1.16	26.86	120	0.82
303	7.00	33.99 6	2.54	140	500	5.64	34.22	0.53	27.00	106	0.93
364	6.19	34.03 3	1.66	127	600	5.11	34.29	0.37	27.12	95	1.04
459	5.84	34.19 6	0.56	111							
548	5.36	34.25 0	0.51	101							
621	5.00	34.30 4	0.27	93							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

SIO
CCOFI
6203-4

HORIZON; April 3, 1962; 1400 GCT; 29°03'N, 126°37.5'W; sounding, 2385 fm; wind, 350°, force 4; weather, overcast; sea, rough; wire angle, 16°.

90.160

1	16.36	34.02 4	5.44	303	0	(16.36)	(34.02)	(5.44)	(24.93)	(303)	(0.00)
11	16.36	34.01 5	5.47	304	10	16.36	34.02	5.46	24.93	303	0.03
30	16.28	33.98 8	5.46	304	20	16.35	34.00	5.46	24.92	304	0.06
50	15.84	33.92 1	5.52	299	30	16.28	33.99	5.46	24.93	304	0.09
69	16.04	34.01 4	5.47	297	50	15.84	33.92	5.52	24.97	299	0.15
93	16.19	34.09 7	5.43	294	75	16.09	34.04	5.45	25.01	296	0.23
117	14.75	33.89 4	5.31	278	100	16.10	34.09	5.42	25.04	292	0.30
146	13.01	33.78 1	5.10	252	125	14.24	33.86	5.25	25.28	270	0.37
175	11.20	33.70 3	4.79	225	150	12.78	33.77	5.06	25.50	249	0.44
217	9.68	33.87 6	4.37	187	200	10.21	33.80	4.53	26.00	202	0.55
260	8.57	33.96 3	3.87	164	250	8.80	33.95	4.01	26.35	168	0.65
312	7.60	34.01 1	2.63	147	300	7.79	34.01	2.82	26.55	149	0.73
398	6.62	34.01 8	1.40	133	400	6.61	34.02	1.36	26.72	133	0.88
518	5.80	34.21 0	0.59	109	500	5.92	34.20	0.64	26.95	111	1.00
642	5.01	34.27 9	0.34	95	600	5.29	34.25	0.40	27.07	100	1.12
777	4.47	34.38 2	0.35	81	700	4.75	34.33	0.34	27.19	88	1.22
913	4.08	34.44 2	0.50	73	800	4.39	34.40	0.37	27.29	79	1.31
1068	3.71	34.49 0	0.68	66	1000	3.89	34.47	0.59	27.40	69	1.47
1223	3.30	34.52 8	0.86	59	1200	3.37	34.52	0.82	27.49	60	1.62
1398	2.97	34.56 3	1.05	54	1500	2.78	34.57	1.18	27.58	51	1.82
1601	2.60	34.57 6	1.30	49	2000	2.11	34.62	1.80	27.68	42	2.10
1850	2.26	34.61 1	1.54	44							
2098	2.02	34.63 0	1.94	41							

HORIZON; April 3, 1962; 0116 GCT; 28°22'N, 128°00'W; sounding, 2450 fm; wind, 350°, force 4; weather, cloudy; sea, moderate; wire angle, 14°.

90.180

1	18.08	34.43 4	5.23	312	0	(18.08)	(34.43)	(5.23)	(24.84)	(312)	(0.00)
11	18.02	34.42 9	5.21	311	10	18.03	34.43	5.21	24.85	311	0.03
30	17.88	34.43 0	5.22	308	20	17.95	34.43	5.22	24.87	309	0.06
59	17.08	34.31 0	5.34	298	30	17.88	34.43	5.22	24.88	308	0.09
70	16.96	34.29 0	5.35	297	50	17.70	34.39	5.29	24.90	306	0.15
84	16.84	34.25 6	5.34	297	75	16.91	34.28	5.35	25.00	296	0.23
99	16.88	34.28 4	5.37	295	100	16.89	34.29	5.37	25.01	295	0.31
114	17.11	34.39 7	5.31	292	125	17.18	34.44	5.26	25.06	291	0.38
139	16.02	34.26 6	5.11	278	150	15.90	34.28	5.05	25.24	274	0.45
157	15.40	34.26 4	4.95	265	200	11.50	33.83	4.70	25.79	221	0.58
187	12.54	33.88 2	4.83	236	250	9.29	33.91	4.15	26.24	179	0.68
216	10.42	33.80 7	4.51	204	300	8.09	33.99	3.51	26.49	155	0.77
245	9.43	33.90 1	4.22	182	400	6.80	34.06	1.82	26.73	133	0.91
293	8.22	33.98 0	3.63	158	500	5.96	34.16	0.79	26.92	115	1.04
347	7.32	34.00 4	2.72	144	600	5.34	34.25	0.41	27.06	101	1.16
430	6.52	34.08 3	1.41	127							
516	5.84	34.17 3	0.71	112							
600	5.34	34.24 9	0.41	101							

SIO

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6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

90.200

HORIZON; April 2, 1962; 1117 GCT; 27°46'N, 129°15'W; sounding, 2300 fm; wind, 350°, force 3; weather, cloudy; sea, rough; wire angle, 07°.

0	17.44	34.42 4	5.42	298	0	17.44	34.42	5.42	24.98	298	0.00
10	17.42	34.44 4	5.29	296	10	17.42	34.44	5.29	25.00	296	0.03
75	17.28	34.45 1	5.33	292	20	17.37	34.45	5.30	25.02	294	0.06
136	16.76	34.40 2	5.19	284	30	17.31	34.45	5.32	25.04	293	0.09
151	15.64	34.26	5.08	270	50	17.28	34.45	5.33	25.04	292	0.15
170	13.89	34.00 3	5.05	253	75	17.28	34.46	5.33	25.05	292	0.22
190	12.62	33.89 4	5.00	237	100	17.27	34.46	5.32	25.05	291	0.29
219	10.74	33.81 1	4.58	209	125	17.20	34.46	5.30	25.07	290	0.37
239	9.87	33.84 2	4.31	193	150	15.73	34.27	5.10	25.27	271	0.44
279	8.96	33.94 2	3.97	171	200	11.99	33.85	4.90	25.72	228	0.57
324	7.81	33.99 5	3.16	151	250	9.58	33.87	4.20	26.16	186	0.67
368	7.10	34.00 9	2.50	140	300	8.41	33.97	3.60	26.42	161	0.76
447	6.14	34.09 0	1.34	122	400	6.65	34.04	1.92	26.73	132	0.91
566	5.36	34.21 6	0.54	103	500	5.76	34.15	0.89	26.93	113	1.04
685	4.74	34.32 0	0.41	89	600	5.15	34.25	0.47	27.09	99	1.16
804	4.36	34.40 5	0.47	79	700	4.69	34.33	0.42	27.20	88	1.26
942	3.98	34.46 0	0.57	71	800	4.37	34.40	0.47	27.29	79	1.35
1102	3.58	34.50 3	0.80	64	1000	3.83	34.47	0.61	27.40	68	1.51
1259	3.20	34.53 9	0.91	57	1200	3.33	34.53	0.87	27.50	59	1.66
1437	2.84	34.56 3	1.18	52	1500	2.74	34.57	1.28	27.59	51	1.85
1644	2.52	34.59 1	1.46	48	2000	2.10	34.62	1.85	27.68	42	2.13
1896	2.20	34.61 7	1.76	43							
2148	1.98	34.63 0	2.11	40							

93.28

BLACK DOUGLAS; April 14, 1962; 1034 GCT; 32°54.5'N, 117°22'W; sounding, 250 fm; wind, 320°, force 2; weather, fog; sea, moderate; wire angle, 01°.

0	15.87	33.57 4	6.09	325	0	15.87	33.57	6.09	24.70	325	0.00
10	13.51	33.56 5	6.39	278	10	13.51	33.56	6.39	25.20	278	0.03
30	11.47	33.62 8	4.02	235	20	11.98	33.59	4.77	25.52	247	0.06
49	10.95	33.69 8	3.05	221	30	11.47	33.63	4.02	25.64	235	0.08
74	9.92	33.80 2	2.84	197	50	10.93	33.70	3.03	25.80	221	0.13
100	9.58	33.95 0	2.33	180	75	9.90	33.81	2.83	26.06	196	0.18
124	9.40	-	-	-	100	9.58	33.95	2.33	26.22	180	0.23
164	9.46	34.24 3	1.14	157	125	9.40	34.08	1.72	26.35	168	0.27
203	9.20	34.28 8	0.93	149	150	9.43	34.21	1.28	26.45	159	0.31
252	8.82	34.31 5	0.79	142	200	9.23	34.29	0.95	26.55	150	0.39
302	8.25	34.30 2	0.67	134	250	8.84	34.31	0.80	26.62	142	0.47
406	6.92	34.29 3	0.44	117	300	8.27	34.30	0.68	26.70	135	0.54
					400	6.98	34.29	0.46	26.88	118	0.67

93.30

BLACK DOUGLAS; April 14, 1962; 1223 GCT; 32°50.5'N, 117°31'W; sounding, 450 fm; wind, 320°, force 3; weather, fog; sea, moderate; wire angle, 07°.

0	15.72	33.57 1	5.92	322	0	15.72	33.57	5.92	24.73	322	0.00
10	15.60	33.56 2	6.02	320	10	15.60	33.56	6.02	24.75	320	0.03
30	12.37	33.54 0	5.27	258	20	13.80	33.56	5.69	25.14	284	0.06
39	11.90	33.56 4	4.68	248	30	12.37	33.54	5.27	25.41	258	0.09
48	11.37	33.60 7	3.92	235	50	11.24	33.61	3.83	25.67	233	0.14
63	10.58	33.63 2	3.46	220	75	10.49	33.73	2.97	25.90	211	0.19
79	10.38	33.76 8	2.80	207	100	9.83	33.83	2.77	26.09	193	0.25
99	9.84	33.82 7	2.78	194	125	9.32	33.96	2.39	26.27	176	0.29
123	9.34	33.95 0	2.41	177	150	9.16	34.09	1.86	26.40	164	0.34
143	9.22	34.07 3	1.93	166	200	8.75	34.19	1.37	26.54	150	0.42
173	8.96	34.14 8	1.62	156	250	8.39	34.25	0.97	26.65	140	0.49
202	8.73	34.18 9	1.36	150	300	7.85	34.27	0.73	26.74	131	0.56
231	8.50	34.22 3	1.13	144	400	6.85	34.28	0.45	26.89	117	0.69
270	8.23	34.27 0	0.82	136	500	6.08	34.33	0.25	27.03	103	0.81
328	7.50	34.26 8	0.64	126							
401	6.84	34.28 1	0.44	117							
475	6.24	34.31 5	0.27	106							
554	5.80	34.35 3	0.24	98							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔΔ
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

BLACK DOUGLAS; April 14, 1962; 1800 GCT; 32°30'N, 118°11.5'W; sounding, 900 fm; wind, 320°, force 3; weather, fog; sea, rough; wire angle, 13°.

93.40

0	13.64	33.48 1	5.89	286	0	13.64	33.48	5.89	25.11	286	0.00
10	13.59	33.48 1	5.91	285	10	13.59	33.48	5.91	25.12	285	0.03
29	13.16	33.48 2	5.78	277	20	13.19	33.48	5.80	25.20	278	0.06
38	13.09	33.48 2	5.73	276	30	13.15	33.48	5.75	25.21	277	0.08
48	12.86	33.48 6	5.59	271	50	12.77	33.49	5.50	25.29	269	0.14
63	11.74	33.51 6	4.62	248	75	11.40	33.57	4.30	25.61	239	0.20
78	11.20	33.57 8	4.16	235	100	10.28	33.65	3.46	25.87	214	0.26
97	10.47	33.64 1	3.57	218	125	9.60	33.84	2.80	26.13	189	0.31
120	9.70	33.81 2	2.89	192	150	9.18	33.96	2.38	26.30	173	0.36
141	9.33	33.91 5	2.54	179	200	8.64	34.11	1.74	26.50	154	0.44
170	8.90	34.04 0	2.09	163	250	8.08	34.17	1.38	26.63	142	0.52
198	8.66	34.11 1	1.74	154	300	7.64	34.22	0.95	26.74	132	0.59
229	8.34	34.15 2	1.51	147	400	6.72	34.30	0.46	26.93	114	0.72
267	7.90	34.18 7	1.21	138	500	6.20	34.33	0.28	27.02	105	0.83
321	7.50	34.23 9	0.78	128							
397	6.75	34.29 7	0.47	114							
470	6.34	34.32 2	0.29	107							
547	5.98	34.35 3	0.25	100							

BLACK DOUGLAS; April 14, 1962; 2338 GCT; 32°10'N, 118°52.5'W; sounding, 800 fm; wind, 320°, force 3; weather, cloudy; sea, moderate; wire angle, 06°.

93.50

0	14.66	33.52 0	5.67	304	0	14.66	33.52	5.67	24.93	304	0.00
10	14.54	33.53 0	5.69	301	10	14.54	33.53	5.69	24.96	301	0.03
30	13.28	33.40 2	5.92	285	20	13.40	33.41	5.90	25.10	287	0.06
38	13.00	33.39 9	5.81	280	30	13.28	33.40	5.92	25.12	285	0.09
49	12.54	33.39 0	5.53	272	50	12.52	33.39	5.52	25.26	272	0.14
64	12.20	33.44 5	5.02	262	75	11.12	33.53	4.22	25.63	237	0.21
79	11.00	33.54 3	4.15	234	100	9.87	33.72	3.28	26.00	202	0.26
99	9.89	33.71 4	3.29	203	125	9.47	33.86	2.70	26.17	185	0.31
123	9.49	33.84 8	2.76	187	150	8.99	34.00	2.25	26.36	168	0.36
143	9.10	33.97 3	2.32	171	200	8.46	34.10	1.70	26.52	152	0.44
173	8.73	34.04 9	2.06	160	250	8.07	34.15	1.35	26.62	143	0.51
202	8.44	34.10 0	1.70	152	300	7.67	34.22	0.93	26.73	132	0.59
232	8.18	34.13 8	1.48	145	400	6.74	34.27	0.50	26.90	116	0.72
271	7.92	34.18 1	1.21	139	500	6.07	34.30	0.26	27.01	105	0.83
330	7.38	34.24 4	0.72	126							
403	6.72	34.26 6	0.49	116							
477	6.20	34.28 7	0.28	108							
555	5.77	34.34 7	0.26	98							

BLACK DOUGLAS; April 15, 1962; 0517 GCT; 31°50'N, 119°34'W; sounding, 1200 fm; wind, 270°, force 4; weather, cloudy; sea, moderate; wire angle, 14°.

93.60

3	13.89	33.44 7	5.88	294	0	(13.89)	(33.45)	(5.88)	(25.03)	(294)	(0.00)
11	13.89	33.44 7	5.89	294	10	13.89	33.45	5.89	25.03	294	0.03
31	13.58	33.44 3	5.92	288	20	13.78	33.45	5.91	25.06	291	0.06
41	13.42	33.45 3	5.73	284	30	13.58	33.44	5.92	25.09	288	0.09
56	13.13	33.44 4	5.72	279	50	13.25	33.45	5.72	25.16	281	0.14
70	12.79	33.43 6	5.65	273	75	12.68	33.44	5.53	25.27	271	0.21
95	11.64	33.48 6	4.55	249	100	11.35	33.51	4.43	25.57	242	0.28
113	10.37	33.56 7	4.11	221	125	10.10	33.62	3.75	25.88	213	0.34
133	10.10	33.65 6	3.64	210	150	9.56	33.76	3.39	26.08	194	0.39
153	9.43	33.77 9	3.33	191	200	8.67	34.04	2.22	26.44	160	0.48
181	8.89	33.93 0	2.85	171	250	8.20	34.15	1.43	26.60	145	0.56
220	8.47	34.10 7	1.75	152	300	7.52	34.19	1.06	26.73	132	0.63
249	8.21	34.15 4	1.43	145	400	6.75	34.31	0.48	26.93	113	0.76
298	7.54	34.19 1	1.09	133	500	6.21	34.33	0.30	27.02	105	0.87
353	7.15	34.27 5	0.56	121	600	5.66	34.36	0.36	27.11	96	0.98
435	6.50	34.32 3	0.40	109							
519	6.12	34.33 3	0.27	104							
604	5.63	34.36 3	0.37	96							

SIO

CCOFI
6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

9370

BLACK DOUGLAS; April 15, 1962; 1100 GCT; 31°30'N, 120°14'W; sounding, 2000 fm; wind, 320°, force 4; weather, cloudy; sea, rough; wire angle, 05°.

0	13.98	33.46 2	5.79	294	0	13.98	33.46	5.79	25.02	295	0.00
10	13.98	33.46 0	5.83	295	10	13.98	33.46	5.83	25.02	295	0.03
30	13.50	33.45 2	5.79	286	20	13.90	33.46	5.83	25.04	293	0.06
39	13.40	33.44 3	5.72	284	30	13.50	33.45	5.79	25.11	286	0.09
54	13.32	33.43 8	5.70	283	50	13.34	33.44	5.71	25.14	284	0.15
69	12.86	33.42 3	5.41	276	75	12.60	33.43	5.17	25.28	270	0.21
94	11.16	33.50 9	4.29	239	100	10.83	33.53	4.23	25.68	232	0.28
113	10.26	33.57 3	4.14	219	125	9.88	33.64	3.91	25.93	208	0.33
133	9.63	33.69 3	3.68	200	150	9.19	33.81	3.18	26.18	185	0.38
153	9.10	33.82 2	3.14	182	200	8.14	34.01	2.57	26.50	154	0.47
182	8.41	33.94 2	3.01	163	250	7.40	34.04	2.03	26.63	142	0.55
217	7.91	34.04 0	2.27	149	300	6.79	34.09	1.52	26.75	130	0.62
247	7.45	34.03 5	2.07	143	400	5.94	34.14	0.79	26.90	116	0.74
295	6.85	34.08 7	1.58	131	500	5.52	34.27	0.37	27.06	101	0.86
350	6.30	34.10 1	1.11	123	600	5.07	34.34	0.26	27.17	91	0.96
434	5.78	34.18 5	0.59	111							
519	5.45	34.28 8	0.31	99							
603	5.06	34.34 0	0.25	91							

9380

BLACK DOUGLAS; April 15, 1962; 1650 GCT; 31°10'N, 120°54.5'W; sounding, 2100 fm; wind, 320°, force 4; weather, cloudy; sea, rough; wire angle, 11°.

1	14.03	33.40 2	5.69	300	0	(14.03)	(33.40)	(5.69)	(24.97)	(300)	(0.00)
10	14.01	33.40 4	5.72	299	10	14.01	33.40	5.72	24.97	300	0.03
30	13.70	33.38 6	5.75	294	20	14.00	33.40	5.74	24.97	299	0.06
39	13.58	33.40 4	5.73	291	30	13.70	33.39	5.75	25.03	294	0.09
49	13.56	33.41 4	5.76	290	50	13.55	33.41	5.76	25.07	290	0.15
63	13.38	33.39 7	5.76	287	75	13.20	33.38	5.75	25.12	285	0.22
78	13.15	33.38 2	5.72	284	100	11.30	33.47	4.62	25.55	244	0.29
98	11.89	33.44 6	4.92	256	125	10.36	33.60	3.97	25.82	219	0.35
122	10.44	33.58 4	4.05	221	150	9.80	33.73	3.46	26.02	200	0.40
142	9.96	33.68 4	3.63	206	200	8.64	33.95	2.77	26.37	166	0.49
172	9.36	33.87 0	2.82	183	250	7.93	34.02	2.42	26.54	151	0.57
199	8.66	33.94 8	2.77	167	300	7.23	34.06	1.83	26.67	138	0.65
228	8.26	33.99 3	2.63	157	400	6.25	34.14	0.88	26.86	120	0.78
266	7.70	34.03 7	2.21	146	500	5.63	34.22	0.46	27.00	106	0.90
322	6.98	34.07 6	1.58	134							
394	6.30	34.13 6	0.91	121							
465	5.84	34.18 7	0.58	111							
544	5.38	34.25 5	0.36	101							

9390

BLACK DOUGLAS; April 15, 1962; 2157 GCT; 30°50'N, 121°34.5'W; sounding, 2200 fm; wind, 330°, force 4; weather, partly cloudy; sea, rough; wire angle, 17°.

0	15.81	33.57 5	5.51	324	0	15.81	33.58	5.51	24.72	323	0.00
9	15.54	33.56 3	5.53	319	10	15.52	33.56	5.53	24.77	319	0.03
28	14.73	33.48 4	5.69	308	20	15.22	33.54	5.61	24.82	314	0.06
37	14.56	33.45 5	5.65	307	30	14.68	33.47	5.69	24.88	308	0.09
47	14.46	33.45 1	5.66	305	50	14.43	33.45	5.66	24.92	304	0.16
62	14.22	33.42 2	5.65	302	75	13.76	33.39	5.68	25.01	295	0.23
76	13.70	33.38 3	5.68	295	100	12.80	33.41	5.26	25.22	276	0.30
95	12.99	33.40 5	5.35	279	125	11.76	33.48	4.83	25.47	251	0.37
118	12.06	33.46 6	4.93	258	150	10.59	33.54	4.57	25.73	227	0.43
137	11.20	33.50 7	4.69	240	200	9.11	33.81	4.00	26.19	184	0.54
165	9.98	33.58 4	4.45	214	250	8.16	33.98	2.90	26.47	157	0.62
193	9.26	33.76 0	4.18	190	300	7.60	34.05	2.15	26.61	144	0.70
220	8.70	33.91 8	3.32	169	400	6.73	34.20	0.83	26.85	121	0.84
256	8.07	33.99 0	2.83	155	500	5.84	34.24	0.48	26.99	107	0.96
310	7.51	34.07 2	1.94	141							
380	6.94	34.19 9	0.96	124							
450	6.20	34.20 4	0.64	114							
526	5.70	34.27 6	0.41	103							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
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6203-4

BLACK DOUGLAS; April 16, 1962; 0305 GCT; 30°30.5'N, 122°14'W; sounding, 2100 fm; wind, 340°, force 4; weather, cloudy; sea, moderate; wire angle, 22°.

93.100

0	15.99	33.61 1	5.46	325	0	15.99	33.61	5.46	24.70	325	0.00
9	15.98	33.60 9	5.52	325	10	15.98	33.61	5.52	24.70	325	0.03
28	15.34	33.54 5	5.54	316	20	15.40	33.55	5.53	24.79	317	0.06
51	15.20	33.54 2	5.60	313	30	15.32	33.54	5.54	24.80	316	0.10
64	15.06	33.54 0	5.54	311	50	15.21	33.54	5.60	24.82	314	0.16
87	14.14	33.39 9	5.72	302	75	14.78	33.50	5.59	24.88	308	0.24
104	13.15	33.34 1	5.61	287	100	13.36	33.34	5.67	25.06	291	0.31
122	12.61	33.43 4	5.17	270	125	12.50	33.45	5.08	25.31	267	0.38
139	11.92	33.49 9	4.81	253	150	11.33	33.53	4.60	25.59	240	0.45
165	10.32	33.60 6	4.22	218	200	9.24	33.82	3.45	26.18	185	0.56
196	9.29	33.80 5	3.50	187	250	8.48	33.96	2.82	26.41	163	0.64
222	9.04	33.86 2	3.26	179	300	7.73	34.02	2.37	26.57	148	0.72
264	8.20	33.99 5	2.67	156	400	6.54	34.13	1.10	26.82	124	0.87
311	7.58	34.03 5	2.25	145	500	6.06	34.25	0.48	26.97	109	0.99
387	6.62	34.11 6	1.22	126							
463	6.30	34.22 4	0.59	114							
542	5.74	34.28	0.40	103							

BLACK DOUGLAS; April 10, 1962; 2357 GCT; 32°46'N, 117°27'W; sounding, 285 fm; wind, 300°, force 1; weather, partly cloudy; sea, moderate; wire angle, 00°. a)

93⁶.29⁸

0	15.55	33.58 0	6.18	318							
5	15.53	33.57 1	6.18	318							
10	14.77	33.56 5	6.41	303							
15	14.02	33.54 2	6.38	289							
20	13.24	33.52 9	6.45	275							
25	12.62	33.52 4	5.78	264							
31	12.38	33.52 6	5.21	259							
35	12.04	33.54 9	4.70	251							
39	11.40	33.58 7	3.76	237							
45	11.28	33.60 4	3.76	234							
49	10.95	33.63 8	3.50	226							
55	10.74	33.68 0	3.25	219							
59	10.66	33.71 7	3.12	215							
64	10.42	33.71 4	3.16	211							
69	10.32	33.71 4	3.13	210							
74	10.13	33.75 2	3.03	204							
79	10.08	33.75 4	2.98	203							
84	10.00	33.77 9	2.94	200							

a) Shakedown station.

SIO

CCOF1
6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

942296

HORIZON; March 15, 1962; 0101 GCT; 32°41.5'N, 117°22.5'W; sounding, 180 fm; wind, 280°, force 3; weather, cloudy; sea, slight; wire angle, 12°. a)

1	13.80	33.51 6	5.93	287
6	13.80	33.50 6	5.89	288
10	13.79	33.52 3	5.80	286
15	13.56	33.50 1	5.60	283
20	13.54	33.50 2	5.75	283
25	13.36	33.50 0	5.57	280
29	13.06	33.49 1	5.50	274
34	12.56	33.49 8	5.01	265
39	11.58	33.50 5	4.36	246
44	11.72	33.57 7	3.83	244
49	10.84	33.56 0	3.94	230
54	11.09	33.65 5	3.31	227
59	10.64	33.65 1	3.61	220
64	10.59	33.73 8	3.20	212
69	10.44	33.80 6	2.91	205
74	9.96	33.74 5	3.30	202
79	9.72	33.72 4	3.45	199
84	9.54	33.74 2	3.36	195
88	9.68	33.82 7	3.00	191
93	10.18	33.98 5	2.23	187
98	10.12	34.00 8	2.15	185
103	10.02	34.03 2	2.11	181
108	9.97	34.06 4	1.97	178

100.30

HORIZON; April 12, 1962; 0217 GCT; 31°41'N, 116°45.5'W; sounding, 200 fm; wind, 330°, force 3; weather, fog; sea, moderate; wire angle, 10°.

0	14.82	33.54 0	6.11	306	0	14.82	33.54	6.11	24.91	306	0.00
10	14.78	33.53 4	5.92	305	10	14.78	33.53	5.92	24.91	305	0.03
30	12.67	33.58 5	4.93	260	20	13.80	33.54	5.46	25.12	285	0.06
49	11.16	33.73 4	3.23	222	30	12.67	33.58	4.93	25.38	261	0.09
74	9.98	33.92 4	2.45	189	50	11.01	33.76	3.14	25.83	218	0.14
100	9.60	34.00 9	2.17	176	75	9.95	33.92	2.45	26.14	188	0.19
123	9.62	34.12 1	1.75	168	100	9.60	34.01	2.17	26.27	176	0.23
163	9.52	34.18 0	1.51	162	125	9.60	34.12	1.73	26.35	168	0.28
203	9.43	34.29 6	0.94	152	150	9.55	34.16	1.57	26.39	164	0.32
252	9.06	34.34 4	0.74	143	200	9.43	34.28	0.98	26.51	154	0.40
301	8.52	34.34 4	0.53	135	250	9.08	34.34	0.76	26.61	144	0.48
					300	8.55	34.34	0.56	26.69	136	0.55

100.35

HORIZON; April 12, 1962; 0554 GCT; 31°31'N, 117°07'W; sounding, 660 fm; wind, 320°, force 4; weather, over-cast; sea, moderate; wire angle, 07°.

1	14.89	33.54 1	6.03	307	0	(14.89)	(33.54)	(6.03)	(24.89)	(307)	(0.00)
11	14.80	33.52 6	6.00	306	10	14.81	33.53	6.00	24.90	306	0.03
32	12.31	33.53 1	5.30	258	20	13.60	33.52	5.73	25.15	283	0.06
41	11.73	33.56 4	4.21	245	30	12.46	33.53	5.41	25.38	260	0.09
56	10.80	33.70 7	3.08	218	50	11.18	33.64	3.50	25.71	230	0.14
70	10.24	33.87 2	2.50	197	75	10.12	33.90	2.43	26.09	193	0.19
96	9.84	33.97 0	2.28	183	100	9.85	34.02	2.18	26.23	179	0.24
116	9.90	34.08 5	1.86	175	125	9.87	34.13	1.69	26.32	172	0.28
136	9.74	34.14 9	1.64	168	150	8.83	34.03	2.21	26.41	163	0.32
156	8.48	34.00 1	2.31	160	200	8.03	34.09	1.79	26.58	147	0.40
185	8.14	34.06 0	1.93	151	250	7.95	34.19	1.15	26.67	138	0.48
220	7.93	34.12 5	1.51	143	300	7.07	34.16	0.98	26.77	129	0.54
251	7.96	34.19 6	1.12	138	400	6.50	34.25	0.52	26.92	115	0.67
300	7.07	34.15 9	0.98	129	500	6.17	34.32	0.30	27.02	105	0.79
356	6.74	34.21 0	0.68	121	600	5.67	34.36	0.27	27.11	96	0.90
440	6.33	34.28 6	0.40	110							
525	6.08	34.34 4	0.27	102							
610	5.60	34.36 5	0.27	95							

a) Shakedown station.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

SIO
CCOFI
6203-4

HORIZON; April 12, 1962; 0926 GCT; 31°21'N, 117°26.5'W; sounding, 1024 fm; wind, 330°, force 3; weather, overcast; sea, moderate; wire angle, 08°.

100.40

1	14.94	33.53 8	6.12	308	0	(14.94)	(33.54)	(6.12)	(24.88)	(308)	(0.00)
11	14.93	33.53 8	6.20	308	10	14.93	33.54	6.18	24.88	308	0.03
31	13.16	33.50 7	6.16	275	20	14.20	33.52	6.20	25.02	295	0.06
41	12.22	33.52 0	5.02	257	30	13.30	33.51	6.19	25.20	278	0.09
56	11.60	33.59 7	3.99	240	50	11.85	33.56	4.39	25.52	247	0.14
71	10.88	33.71 7	3.21	219	75	10.67	33.74	3.05	25.87	214	0.20
96	10.06	33.89 8	2.59	192	100	10.03	33.92	2.60	26.12	190	0.25
115	9.25	33.92 7	2.66	177	125	9.00	33.93	2.60	26.30	173	0.30
135	8.90	33.95 5	2.54	170	150	8.67	34.00	2.40	26.41	163	0.34
154	8.61	34.01 4	2.63	161	200	8.19	34.07	1.98	26.54	151	0.42
184	8.30	34.04 8	2.13	154	250	7.83	34.17	1.54	26.67	138	0.49
217	8.10	34.08 9	1.83	148	300	7.55	34.24	1.25	26.76	129	0.56
246	7.86	34.15 8	1.57	139	400	6.38	34.25	0.53	26.93	113	0.69
293	7.62	34.23 7	1.32	130	500	5.89	34.31	0.37	27.04	103	0.80
347	6.77	34.21 3	0.74	121	600	(5.50)	(34.36)	(0.34)	(27.13)	(94)	(0.91)
429	6.22	34.27 6	0.47	109							
514	5.83	34.32 2	0.36	101							
599	5.50	34.36 2	0.34	94							

HORIZON; April 12, 1962; 1649 GCT; 31°00'N, 118°10'W; sounding, 950 fm; wind, 320°, force 4; weather, fog; sea, moderate; wire angle, 20°.

100.50

0	14.24	33.54 2	5.84	294	0	14.24	33.54	5.84	25.03	294	0.00
9	14.24	33.52 3	5.89	295	10	14.23	33.52	5.90	25.02	295	0.03
28	13.20	33.46 4	6.06	279	20	14.18	33.52	5.91	25.03	294	0.06
37	13.08	33.45 0	6.06	278	30	13.17	33.46	6.05	25.19	279	0.09
52	12.94	33.45	5.90	275	50	12.96	33.45	5.95	25.22	276	0.14
66	12.65	33.46 2	5.67	269	75	12.40	33.47	5.42	25.35	264	0.21
90	11.92	33.49 1	4.93	254	100	11.33	33.51	4.80	25.58	242	0.27
108	10.70	33.52 1	4.68	230	125	9.78	33.64	4.06	25.95	206	0.33
126	9.74	33.64 6	4.02	205	150	9.15	33.80	3.64	26.18	185	0.38
144	9.30	33.77	3.72	189	200	8.12	33.96	3.18	26.46	158	0.47
171	8.63	33.88 9	3.38	170	250	7.40	34.00	2.54	26.60	145	0.55
202	8.08	33.96 2	3.16	157	300	6.88	34.04	1.85	26.70	135	0.62
228	7.69	33.99 0	2.85	150	400	6.16	34.16	0.80	26.89	117	0.75
273	7.10	34.02 0	2.21	139	500	5.81	34.28	0.40	27.03	104	0.87
324	6.70	34.07 0	1.52	131							
402	6.14	34.15 9	0.77	117							
482	5.92	34.26 7	0.43	106							
563	5.45	34.30 5	0.31	98							

S10

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6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

100.60

HORIZON; April 13, 1962; 0306 GCT; 30°39'N, 118°45.5'W; sounding, 1520 fm; wind, 330°, force 4; weather, cloudy; sea, rough; wire angle, 08°.

0	15.22	33.51 3	5.66	316	0	15.22	33.51	5.66	24.80	316	0.00
10	15.22	33.51 1	5.64	316	10	15.22	33.51	5.64	24.80	316	0.03
41	15.00	33.50 0	5.65	312	20	15.18	33.51	5.64	24.81	315	0.06
65	14.48	33.46 6	5.74	304	30	15.08	33.50	5.65	24.82	314	0.09
84	13.26	33.44 9	5.36	281	50	14.52	33.47	5.74	24.92	305	0.16
100	11.73	33.55 0	4.29	246	75	14.25	33.46	5.70	24.97	300	0.23
129	10.90	33.55 1	3.68	231	100	11.73	33.55	4.29	25.53	246	0.30
159	9.79	33.65 1	3.05	206	125	10.93	33.55	3.70	25.68	232	0.36
191	9.38	33.85 6	2.67	184	150	10.02	33.61	3.18	25.88	213	0.42
233	9.20	34.16 6	1.79	158	200	9.32	33.93	2.48	26.25	178	0.52
276	8.70	34.22 0	1.38	147	250	9.00	34.20	1.60	26.51	153	0.60
326	8.02	34.25 2	0.98	135	300	8.34	34.24	1.14	26.65	140	0.68
414	7.22	34.29 5	0.63	121	400	7.37	34.29	0.68	26.83	123	0.82
538	6.00	34.31 8	0.36	103	500	6.32	34.31	0.41	26.99	108	0.94
665	5.33	34.38 6	0.27	90	600	5.66	34.35	0.28	27.10	97	1.05
798	4.74	34.43 1	0.36	81	700	5.18	34.40	0.27	27.20	88	1.15
936	4.13	34.46 2	0.53	72	800	4.73	34.43	0.36	27.28	81	1.24
1095	3.76	34.49 5	0.64	66	1000	3.98	34.48	0.57	27.40	69	1.41
1252	3.26	34.53 8	0.89	58	1200	3.42	34.52	0.80	27.48	61	1.55
1431	2.91	34.56 5	1.15	53	1500	2.80	34.57	1.21	27.58	52	1.75
1638	2.56	34.59 5	1.33	48	2000	2.03	34.63	1.84	27.69	41	2.03
1891	2.15	34.62 0	1.75	43							
2145	1.94	34.63 8	2.04	40							

100.70

HORIZON; April 13, 1962; 1411 GCT; 30°16.5'N, 119°33'W; sounding, 2100 fm; wind, 330°, force 3; weather, cloudy; sea, moderate; wire angle, 00°.

0	15.10	33.57 7	5.51	309	0	15.10	33.58	5.51	24.88	308	0.00
10	15.10	33.57 9	5.42	309	10	15.10	33.58	5.42	24.88	308	0.03
30	15.10	33.57 4	5.78	309	20	15.10	33.57	5.78	24.87	309	0.06
60	13.68	33.43 4	5.81	291	30	15.10	33.57	5.78	24.87	309	0.09
71	13.40	33.42 5	5.78	286	50	14.40	33.50	5.81	24.97	300	0.15
86	13.10	33.49 2	5.17	275	75	13.32	33.43	5.65	25.13	284	0.23
101	12.24	33.53 4	5.12a)	256	100	12.32	33.53	5.12	25.41	258	0.30
117	11.57	33.53 2	4.91	244	125	11.20	33.54	4.77	25.62	237	0.36
141	10.50	33.56 1	4.41	224	150	10.04	33.60	4.22	25.87	214	0.42
161	9.52	33.70	3.92	198	200	8.78	33.87	3.38	26.29	174	0.51
192	8.94	33.84 5	3.48	178	250	8.13	34.04	2.38	26.52	152	0.60
222	8.36	33.96 7	2.92	161	300	7.20	34.07	1.75	26.68	137	0.67
252	8.12	34.03 9	2.35	152	400	6.32		0.95			
302	7.18	34.06 9	1.70	137	500	5.68		0.51			
357	6.64	34.09 8	1.22	128	600	5.22		0.35			
442	6.04	-	0.73	-							
528	5.52	-	0.43	-							
613	5.18	-	0.34	-							

a) Alternate value, 4.86 ml/L, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
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6203-4

HORIZON; April 13, 1962; 2303 GCT; 29°58.5'N, 120°07'W; sounding, 2165 fm; wind, 300°, force 4; weather, partly cloudy; sea, moderate; wire angle, 18°.

100.80

0	15.72	33.58 6	5.50	321	0	15.72	33.59	5.50	24.75	321	0.00
9	15.35	33.59 0	5.53	313	10	15.33	33.59	5.53	24.83	313	0.03
44	15.12	33.55 8	5.55	310	20	15.27	33.58	5.53	24.84	312	0.06
76	14.53	33.45 7	5.63	306	30	15.23	33.58	5.54	24.85	311	0.09
95	14.46	33.45 6	5.58	304	50	15.02	33.54	5.57	24.86	310	0.16
114	13.76	33.37 9	5.61	296	75	14.53	33.46	5.63	24.91	306	0.23
138	12.02	33.51 0	4.87	254	100	14.42	33.45	5.58	24.92	304	0.31
166	10.46	33.60 9	4.17	220	125	13.00	33.43	5.34	25.20	278	0.38
189	9.84	33.69 2	3.82	204	150	11.24	33.56	4.52	25.63	237	0.45
232	8.80	33.86 7	3.48	175	200	9.62	33.73	3.73	26.04	197	0.56
273	7.86	33.98 5	2.92	152	250	8.32	33.92	3.29	26.40	164	0.65
320	7.51	34.07 1	1.87	141	300	7.68	34.04	2.30	26.59	146	0.73
404	6.68	34.14 7	1.01	125	400	6.72	34.14	1.05	26.80	126	0.87
515	5.70	34.23 2	0.45	106	500	5.82	34.22	0.51	26.98	108	1.00
618	5.10	34.30 9	0.28	94	600	5.18	34.30	0.31	27.12	95	1.10
757	4.60	34.39 9	0.28	81	700	4.78	34.37	0.28	27.22	86	1.20
889	4.19	34.45 9	0.43	73	800	4.47	34.42	0.32	27.30	79	1.29
1037	3.80	34.49 7	0.60	66	1000	3.88	34.48	0.57	27.41	68	1.45
1186	3.41	34.52 8	0.75	60	1200	3.38	34.53	0.76	27.50	60	1.60
1355	3.06	34.57	0.94	54	1500	2.80	34.57	1.10	27.58	52	1.79
1551	2.70	34.57 9	1.20	50	2000	2.08	34.63	1.82	27.69	41	2.07
1791	2.32	34.60 6	1.55	45							
2034	2.03	34.63 2	1.91	41							

HORIZON; April 14, 1962; 0751 GCT; 29°38'N, 120°47'W; sounding, 2110 fm; wind, 340°, force 4; weather, cloudy; sea, moderate; wire angle, 15°.

100.90

0	15.36	33.55	5.61	316	0	15.36	33.55	5.61	24.80	316	0.00
10	15.34	33.52 4	5.64	318	10	15.34	33.52	5.64	24.78	318	0.03
29	15.02	33.53	5.69	310	20	15.17	33.53	5.68	24.82	314	0.06
39	14.95	33.51 2	5.61	310	30	15.02	33.53	5.68	24.86	310	0.09
53	14.68	33.49 2	5.71	306	50	14.74	33.50	5.69	24.89	307	0.16
67	14.35	33.46	5.66	302	75	14.18	33.44	5.65	24.97	300	0.23
90	13.86	33.41 4	5.63	296	100	13.53	33.42	5.57	25.08	289	0.31
109	13.18	33.43 6	5.47	281	125	12.18	33.50	4.92	25.41	258	0.38
127	12.04	33.50 3	4.87	255	150	10.80	33.59	4.33	25.73	227	0.44
145	11.06	33.56 8	4.50	233	200	9.22	33.84	3.48	26.20	183	0.54
173	9.78	33.71 5	3.73	201	250	8.22	33.98	2.96	26.46	158	0.63
206	9.10	33.86 0	3.41	180	300	7.53	34.04	2.42	26.61	144	0.71
234	8.52	33.95 7	3.11	164	400	6.67	34.16	0.98	26.82	123	0.85
282	7.72	34.01 3	2.63	148	500	6.14	34.27	0.48	26.98	109	0.97
333	7.20	34.08 7	1.94	136	600	(5.33)	(34.29)		(27.10)	(98)	(1.08)
415	6.56	34.17 3	0.86	121							
498	6.14	34.26 6	0.49	109							
584	5.48	34.29 2	0.36	99							

S10

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6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ_T	Z	T	S	O ₂	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

100.100

HORIZON; April 14, 1962; 1443 GCT; 29°19'N, 121°25'W; sounding, 2100 fm; wind, 340°, force 1; weather, cloudy; sea, moderate; wire angle, 10°.

0	15.34	33.54 2	5.72	316	0	15.34	33.54	5.72	24.79	316	0.00
10	15.31	33.53 3	5.50	316	10	15.31	33.53	5.50	24.79	316	0.03
50	15.02	33.50 7	5.72	312	20	15.20	33.52	5.57	24.81	315	0.06
90	14.71	33.50 1	5.72	306	30	15.04	33.51	5.72	24.84	312	0.09
110	13.49	33.55 5	5.28	278	50	15.02	33.51	5.72	24.84	312	0.16
130	12.22	33.59 6	5.08	251	75	14.78	33.50	5.72	24.88	308	0.24
150	11.00	33.60 8	4.74	229	100	14.11	33.53	5.52	25.05	292	0.31
179	9.76	33.73 6	3.78	199	125	12.57	33.59	5.14	25.41	258	0.38
208	9.06	33.86 1	3.44	179	150	11.00	33.61	4.74	25.71	229	0.44
248	8.28	34.01 6	2.76	156	200	9.22	33.82	3.53	26.18	184	0.55
293	7.90	34.09 8	2.77	144	250	8.23	34.02	2.76	26.49	155	0.63
341	7.72	34.20 6	1.93	134	300	7.87	34.11	2.70	26.62	143	0.71
426	7.02	34.26 0	0.68	120	400	7.28	34.26	0.96	26.82	124	0.85
542	5.84	34.28 3	0.39	104	500	6.22	34.27	0.46	26.97	110	0.97
670	5.17	34.36 8	0.29	90	600	5.49	34.32	0.33	27.10	97	1.08
798	4.68	34.43 0	0.35	80	700	5.06	34.39	0.30	27.21	87	1.18
932	4.18	34.46 5	0.49	72	800	4.67	34.43	0.36	27.28	80	1.27
1088	3.74	34.49 3	0.72	66	1000	3.98	34.48	0.59	27.40	69	1.44
1245	3.38	34.52 6	0.83	60	1200	3.48	34.52	0.80	27.48	61	1.59
1420	3.02	34.56 2	1.05	54	1500	2.86	34.57	1.19	27.58	52	1.79
1626	2.60	34.59 4	1.39	48	2000	2.09	34.63	1.90	27.69	41	2.07
1878	2.22	34.61 8	1.73	43							
2131	1.99	34.63 9	2.04	40							

100.120

HORIZON; April 15, 1962; 0522 GCT; 28°40.5'N, 122°47'W; sounding, 2245 fm; wind, 010°, force 3; weather, cloudy; sea, calm; wire angle, 22°.

0	16.46	33.76 4	5.40	324	0	16.46	33.76	5.40	24.71	324	0.00
9	16.42	33.76 1	5.41	323	10	16.40	33.76	5.41	24.72	323	0.03
29	16.16	33.78 1	5.40	316	20	16.28	33.77	5.41	24.76	320	0.06
57	16.23	33.84 3	5.40	313	30	16.15	33.78	5.40	24.80	316	0.10
66	16.55	33.98 4	5.30	310	50	16.14	33.79	5.40	24.81	315	0.16
79	16.71	34.05 3	5.29	309	75	16.68	34.04	5.29	24.87	309	0.24
92	16.70	34.08	5.32	306	100	16.69	34.10	5.31	24.92	305	0.32
106	16.68	34.12 0	5.30	303	125	14.85	33.85	5.18	25.14	284	0.39
129	14.40	33.80 1	5.15	278	150	12.69	33.69	4.95	25.46	253	0.46
145	13.06	33.70 3	5.00	259	200	10.17	33.71	4.27	25.94	208	0.57
172	11.27	33.65 0	4.65	230	250	8.52	33.94	3.31	26.38	165	0.67
197	10.28	33.70 1	4.32	210	300	7.60	34.02	2.54	26.58	146	0.75
223	9.24	33.83 0	3.78	184	400	6.51	34.13	1.20	26.82	124	0.89
268	8.15	33.97 8	3.09	157	500	5.89	34.20	0.58	26.96	111	1.01
316	7.35	34.02 8	2.29	142							
393	6.58	34.12 1	1.25	125							
470	6.04	34.17 6	0.72	114							
548	5.67	34.25 8	0.44	104							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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6203-4

HORIZON; April 15, 1962; 1636 GCT; 27°59.5'N, 124°06'W; sounding, 2300 fm; wind, 330°, force 3; weather, cloudy; sea, moderate; wire angle, 07°.

100.140

0	17.94	34.35 8	5.20	314	0	17.94	34.36	5.20	24.82	314	0.00
10	17.89	34.34 8	5.14	314	10	17.89	34.35	5.14	24.82	314	0.03
81	17.54	34.37 1	5.32	304	20	17.85	34.35	5.15	24.83	313	0.06
145	15.66	34.18 7	4.70	276	30	17.81	34.35	5.16	24.84	312	0.09
160	14.22	33.98 0	4.70	261	50	17.71	34.36	5.22	24.87	309	0.16
179	12.81	33.81 2	4.71	246	75	17.58	34.37	5.31	24.91	305	0.23
209	10.86	33.79 3	4.12	213	100	17.30	34.36	5.30	24.97	299	0.31
223	10.14	33.83 3	3.68	198	125	16.69	34.30	5.07	25.07	290	0.38
247	9.37	33.91 3	3.33	180	150	15.22	34.13	4.70	25.27	271	0.46
288	8.58	33.98 8	3.01	162	200	11.40	33.79	4.37	25.78	222	0.58
327	7.70	34.00 5	2.59	149	250	9.30	33.92	3.32	26.25	178	0.68
371	7.04	34.05 7	1.97	136	300	8.30	34.00	2.92	26.46	157	0.77
450	6.28	34.12 7	1.09	121	400	6.71	34.08	1.60	26.76	130	0.92
564	5.70	34.27 1	0.44	103	500	5.99	34.20	0.70	26.94	112	1.05
682	4.94	34.33 3	0.38	90	600	5.48	34.30	0.41	27.09	99	1.16
800	4.50	34.37 9	0.37	82	700	4.86	34.34	0.38	27.19	89	1.26
938	4.06	34.45 1	0.56	72	800	4.50	34.38	0.37	27.26	82	1.35
1096	3.67	34.49 8	0.73	65	1000	3.89	34.48	0.65	27.41	68	1.52
1254	3.32	34.53 9	0.83	58	1200	3.43	34.53	0.81	27.49	60	1.67
1434	2.96	34.56 1	1.00	54	1500	2.82	34.57	1.10	27.58	52	1.86
1642	2.59	34.58 7	1.30	48	2000	2.12	34.62	1.82	27.68	42	2.14
1898	2.23	34.61 1	1.69	44							
2155	1.98	34.63 8	2.01	40							

HORIZON; April 16, 1962; 0507 GCT; 27°22.5'N, 125°20'W; sounding, 2265 fm; wind, 020°, force 4; weather, cloudy; sea, moderate; wire angle, 11°.

100.160

0	17.50	34.19 2	5.15	316	0	17.50	34.19	5.15	24.79	316	0.00
10	17.50	34.18 3	5.32	317	10	17.50	34.18	5.32	24.79	317	0.03
45	17.08	34.20 6	5.34	306	20	17.10	34.19	5.32	24.89	307	0.06
74	16.62	34.10 7	5.37	303	30	17.10	34.20	5.33	24.90	307	0.09
94	16.35	34.08 2	5.38	298	50	17.07	34.20	5.35	24.90	306	0.16
108	16.30	34.08 4	5.34	297	75	16.60	34.10	5.37	24.94	303	0.23
123	16.05	34.10 3	5.22	290	100	16.32	34.08	5.36	24.99	298	0.31
142	14.54	33.95 5	5.05	269	125	15.97	34.10	5.20	25.08	289	0.38
162	13.40	33.83 5	4.95	256	150	14.05	33.90	5.00	25.35	264	0.45
193	11.45	33.74 0	4.75	227	200	11.00	33.74	4.62	25.82	219	0.57
217	10.02	33.75 2	4.26	202	250	8.85	33.92	3.80	26.32	171	0.67
242	9.06	33.88 9	3.84	177	300	7.95	34.01	2.93	26.53	152	0.76
276	8.32	33.96 7	3.61	160	400	6.71	34.09	1.60	26.76	129	0.90
315	7.70	34.02 4	2.59	147	500	6.10	34.21	0.64	26.94	113	1.03
364	6.82	34.01 5	2.15	136	600	5.19	34.26	0.38	27.09	98	1.14
434	6.66	34.16 1	1.04	123							
518	5.92	34.21 7	0.58	110							
601	5.18	34.26 4	0.37	98							

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6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

100.160

HORIZON; April 16-17, 1962; 2249, 0213 GCT; 27°22'N, 125°25.5'W;^{a)} sounding, 2230 fm; wind, 010°, force 3; weather, cloudy; sea, high; wire angle, 12°, 05°.

0	18.23	34.47 6	5.31	313	0	18.23	34.48	5.31	24.84	312	0.00
10	18.12	34.46 4	5.34	311	10	18.12	34.46	5.34	24.85	311	0.03
45	17.97	34.48 8	5.34	306	20	18.04	34.47	5.34	24.88	308	0.06
75	17.93	34.50 0	5.31	304	30	18.00	34.48	5.34	24.89	307	0.09
95	17.34	34.42 0	5.31	296	50	17.96	34.49	5.33	24.91	305	0.15
110	16.40	34.21 1	5.30	290	75	17.93	34.50	5.31	24.93	304	0.23
124	15.60	34.20 6	5.23	273	100	17.04	34.36	5.30	25.03	294	0.31
145	13.82	33.90 2	5.01	259	125	15.55	34.20	5.21	25.25	273	0.38
164	12.58	33.79 8	4.97	243	150	13.48	33.86	5.00	25.43	255	0.45
195	10.92	33.76 9	4.36	216	200	10.73	33.77	4.33	25.89	212	0.56
219	10.04	33.77 6	4.28	201	250	9.29	33.88	3.80	26.22	181	0.66
244	9.42	33.85 5	3.90	185	300	8.19	33.99	3.02	26.47	157	0.75
278	8.52	33.96 8	3.33	163	400	6.58	34.04	1.90	26.74	131	0.90
318	7.91	34.00 4	2.81	152	500	5.82	34.16	0.75	26.93	113	1.03
368	6.92	34.01 2	2.32	138	600	5.21	34.26	0.39	27.09	98	1.14
438	6.25	34.07 7	1.38	124	700	4.72	34.34	0.31	27.21	87	1.24
523	5.74	34.18 2	0.62	110	800	4.51	34.42	0.40	27.29	79	1.33
610	5.22	34.25 4	0.40	99	1000	3.89	34.48	0.67	27.41	68	1.50
					1200	3.40	34.52	0.81	27.49	61	1.64
492b)	5.78	34.15 8	0.75	113	1500	2.80	34.57	1.18	27.58	52	1.84
589	5.20	34.25 6	0.38	99	2000	2.13	34.62	1.85	27.68	42	2.12
685	4.78	34.33 5	0.31	88	2500	1.79	34.65	2.25	27.73	38	2.37
782	4.56	34.41 6	0.39	80	3000	1.59	34.66	2.70	27.75	35	2.60
880	4.28	34.45 4	0.50	74							
978	3.96	34.47 7	0.63	69							
1076	3.72	34.50	0.72	65							
1174	3.48	34.52 2	0.79	61							
1370	3.04	34.55 1	1.03	55							
1568	2.69	34.57 8	1.26	50							
1766	2.42	34.60 4	1.52	46							
1964	2.18	34.61 6	1.78	43							
2164	2.00	34.63 1	2.03	41							
2362	1.88	34.64 2	2.19	39							
2558	1.76	34.65 0	2.38	37							
2755	1.66	34.65 7	2.54	36							
2952	1.61	34.66 4	2.67	35							
3158	1.56	34.66 5	2.79	35							
3345	1.53	34.66 6	2.92	35							
3442	1.52	34.67 2	2.94	34							
3540	1.52	34.67 1	3.00	34							
3589	1.51	34.66 9	3.03	34							
3638	1.51	34.67 4	3.03	34							

a) When the deep cast was made, the position of the ship had changed to 27°19'N, 125°30'W.

b) Overlapping casts; reconciliation of property curves when necessary.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
CCOFI
6203-4

HORIZON; April 21, 1962; 0911 GCT; 29°46.5'N, 115°58.5'W; sounding, 630 fm; wind, 310°, force 4; weather, partly cloudy; sea, very rough; wire angle, 34°.

110.35

0	14.20	33.58 0	5.95	290	0	14.20	33.58	5.95	25.07	290	0.00
8	14.20	33.56 3	5.89	291	10	14.20	33.56	5.90	25.05	292	0.03
24	14.21	33.56 5	5.96	291	20	14.21	33.56	5.93	25.05	292	0.06
33	13.61	33.50 5	5.88	284	30	14.15	33.56	5.95	25.06	291	0.09
44	12.41	33.47 1	5.17	264	50	12.15	33.50	4.89	25.42	257	0.14
57	11.18	33.55 6	4.07	236	75	10.27	33.66	3.61	25.88	213	0.20
74	10.29	33.64 4	3.67	214	100	9.54	33.81	3.24	26.12	190	0.25
89	9.84	33.79 3	3.09	196	125	9.09	33.93	2.68	26.29	174	0.30
104	9.43	33.81 6	3.24	188	150	8.81	34.00	2.50	26.39	165	0.34
118	9.17	33.89 2	2.75	178	200	8.77	34.22	1.25	26.56	148	0.42
141	8.92	33.98 3	2.57	168	250	8.49	34.32	0.87	26.69	136	0.49
167	8.64	34.07 1	2.23	157	300	8.49	34.42	0.39	26.76	129	0.56
190	8.91	34.22 7	1.25	150	400	7.26	34.38	0.30	26.92	115	0.69
227	8.22	34.21 0	1.24	141	500	(6.42)	(34.40)		(27.05)	(102)	(0.81)
270	8.68	34.41 5	0.47	132							
336	8.10	34.41 2	0.34	124							
404	7.22	34.37 6	0.30	114							
477	6.58	34.38 3	0.24	106							

HORIZON; April 21, 1962; 0411 GCT; 29°34'N, 116°15'W; sounding, 1320 fm; wind, 310°, force 5; weather, partly cloudy; sea, very rough; wire angle, 15°.

110.40

1	15.06	33.50 7	5.59	313	0	(15.06)	(33.51)	(5.59)	(24.83)	(313)	(0.00)
10	15.06	33.50 6	5.65	313	10	15.06	33.51	5.65	24.83	313	0.03
35	13.80	33.46 0	5.85	291	20	15.06	33.51	5.65	24.83	313	0.06
45	13.02	33.43 9	5.46	278	30	15.06	33.51	5.65	24.83	313	0.09
59	12.42	33.45 5	5.14	265	50	12.79	33.44	5.31	25.25	273	0.15
74	11.64	33.47 6	4.83	250	75	11.58	33.48	4.80	25.51	248	0.22
100	10.40	33.55 7	4.31	223	100	10.40	33.56	4.31	25.78	222	0.28
119	9.66	33.70 2	3.66	200	125	9.43	33.75	3.52	26.09	193	0.33
139	9.14	33.86 1	3.15	180	150	9.11	33.95	2.82	26.30	173	0.38
168	9.08	34.06 9	2.23	164	200	8.94	34.21	1.46	26.53	151	0.46
197	8.94	34.20 0	1.50	152	250	8.64	34.24	1.19	26.60	145	0.54
237	8.96	34.24 1	1.34	149	300	7.83	34.24	0.98	26.72	133	0.61
267	8.23	34.24 0	1.06	139	400	6.75	34.25	0.69	26.88	118	0.74
315	7.66	34.23 5	0.94	131	500	6.41	34.35	0.30	27.01	106	0.86
379	6.85	34.22 4	0.81	121	600	5.65	34.38	0.24	27.13	95	0.96
477	6.58	34.33 6	0.34	109							
565	5.80	34.36 3	0.27	98							
639	5.52	34.39 3	0.23	92							

HORIZON; April 20, 1962; 2222 GCT; 29°16.5'N, 116°59.5'W; sounding, 1470 fm; wind, 310°, force 6; weather, partly cloudy; sea, high; wire angle, 33°.

110.50

0	15.16	33.47 5	5.74	317	0	15.16	33.48	5.74	24.79	317	0.00
8	15.16	33.47 0	5.76	318	10	15.16	33.47	5.76	24.78	318	0.03
30	15.16	33.47 3	5.71	318	20	15.16	33.47	5.74	24.78	318	0.06
56	14.26	33.44 5	5.75	301	30	15.16	33.47	5.71	24.78	318	0.10
64	14.07	33.43 5	5.84	298	50	14.63	33.46	5.72	24.89	308	0.16
81	13.48	33.42 8	5.74	287	75	13.90	33.43	5.82	25.02	295	0.23
93	12.94	33.45 4	5.47	275	100	12.70	33.46	5.32	25.28	270	0.31
106	12.00	33.46 7	4.99	257	125	10.72	33.53	4.49	25.70	230	0.37
131	10.36	33.56 2	4.33	222	150	9.70	33.75	3.50	26.05	197	0.42
148	9.74	33.73 6	3.58	199	200	9.22	34.05	2.30	26.36	167	0.52
174	9.36	33.92 1	2.86	179	250	8.64	34.21	1.38	26.58	147	0.60
205	9.20	34.07 4	2.19	165	300	8.30	34.29	0.89	26.69	136	0.67
230	8.82	34.17 3	1.64	152	400	7.39	34.34	0.42	26.87	119	0.80
274	8.46	34.25 1	1.12	141	500	6.44	34.34	0.36	27.00	107	0.92
331	8.10	34.32 2	0.65	131							
421	7.17	34.34 2	0.39	116							
503	6.42	34.34 3	0.35	107							
573	5.92	34.37 1	0.23	98							

S10
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6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

110.60

HORIZON; April 20, 1962; 1556 GCT; 28°56'N, 117°37'W; sounding, 1900 fm; wind, 330°, force 7; weather, partly cloudy; sea, high; wire angle, 12°.

1	16.08	33.66 6	5.29	323	0	(16.08)	(33.67)	(5.29)	(24.73)	(323)	(0.00)
11	16.06	33.66 5	5.33	323	10	16.06	33.67	5.32	24.73	322	0.03
35	16.06	33.66 5	5.36	323	20	16.06	33.67	5.36	24.73	322	0.06
46	15.84	33.64 6	5.38	319	30	16.06	33.67	5.36	24.73	322	0.10
61	15.56	33.63 0	5.35	314	50	15.69	33.64	5.37	24.79	316	0.16
74	15.50	33.63 7	5.39	313	75	15.49	33.64	5.39	24.84	312	0.24
100	15.09	33.58 7	5.24	308	100	15.09	33.59	5.24	24.89	307	0.32
120	13.34	33.54 6	4.78	276	125	12.87	33.56	4.59	25.32	266	0.39
140	11.72	33.60 3	4.04	242	150	11.20	33.67	3.69	25.72	228	0.45
169	10.56	33.80 2	3.20	207	200	9.88	33.93	2.83	26.16	187	0.56
198	9.92	33.91 6	2.87	188	250	8.90	34.08	2.16	26.43	160	0.65
238	9.09	34.06 0	2.34	165	300	8.12	34.14	1.59	26.60	144	0.73
268	8.66	34.11 9	1.87	154	400	7.12	34.23	0.85	26.82	124	0.87
319	7.84	34.15 0	1.48	140	500	6.25	34.28	0.50	26.97	109	0.99
382	7.29	34.22 2	0.95	127	600	5.78	34.35	0.28	27.09	98	1.10
480	6.37	34.26 6	0.54	112							
568	5.96	34.32 8	0.33	102							
643	5.52	34.37 4	0.25	93							

110.70

HORIZON; April 20, 1962; 0855 GCT; 28°35.5'N, 118°20'W; sounding, 1980 fm; wind, 330°, force 7; weather, clear; sea, high; wire angle, 38°.

1	16.57	33.72 7	5.42	329	0	(16.57)	(33.73)	(5.42)	(24.66)	(329)	(0.00)
8	16.59	33.72 8	5.52	330	10	16.59	33.73	5.50	24.66	329	0.03
27	16.58	33.72 4	5.46	330	20	16.59	33.73	5.48	24.66	329	0.07
34	16.16	33.68 2	-	323	30	16.52	33.72	-	24.66	329	0.10
45	15.63	33.60 3	5.54	318	50	15.61	33.60	5.53	24.78	318	0.16
57	15.44	33.57 8	5.51	316	75	14.77	33.48	5.56	24.87	309	0.24
75	14.77	33.48 4	5.56	309	100	12.89	33.46	5.20	25.24	274	0.32
89	13.62	33.45 6	5.41	288	125	12.11	33.60	4.72	25.50	249	0.38
103	12.68	33.46 1	5.13	270	150	10.55	33.71	3.68	25.87	214	0.44
125	12.11	33.60 0	4.72	249	200	9.48	34.01	2.63	26.29	174	0.54
145	10.83	33.71 1	3.76	218	250	8.60	34.12	1.98	26.51	153	0.62
171	9.84	33.78 7	3.46	197	300	7.84	34.12	1.63	26.63	142	0.70
193	9.67	33.97 9	2.78	180	400	6.57	34.18	0.86	26.85	121	0.84
225	8.77	34.06 3	2.32	160	500	(5.81)	(34.25)	-	(27.01)	(106)	(0.96)
269	8.45	34.14 9	1.78	149							
337	7.14	34.09 9	1.54	134							
400	6.57	34.17 8	0.86	121							
458	6.09	34.22 9	0.57	111							

110.80

HORIZON; April 20, 1962; 0305 GCT; 28°17'N, 118°57'W; sounding, 2090 fm; wind, 330°, force 7; weather, overcast; sea, high; wire angle, 12°.

1	16.32	33.60 8	5.60	332	0	(16.32)	(33.61)	(5.60)	(24.63)	(332)	(0.00)
10	16.31	33.59 5	5.60	333	10	16.31	33.60	5.60	24.62	333	0.03
35	15.35	33.53 1	5.72	317	20	16.31	33.59	5.60	24.61	333	0.07
64	14.95	33.52 0	5.74	310	30	16.30	33.59	5.60	24.62	333	0.10
75	14.30	33.46 8	5.76	300	50	15.12	33.52	5.73	24.83	313	0.16
94	12.48	33.44 8	5.04	267	75	14.30	33.47	5.76	24.96	300	0.24
109	11.80	33.49 3	4.64	251	100	12.19	33.46	4.88	25.38	261	0.31
123	10.88	33.55 8	4.34	231	125	10.75	33.57	4.30	25.73	227	0.37
152	9.72	33.72 1	3.75	200	150	9.80	33.71	3.81	26.00	202	0.43
171	9.32	33.84 6	3.14	184	200	8.64	33.97	2.82	26.39	165	0.52
199	8.66	33.96 9	2.83	165	250	8.32	34.12	1.84	26.56	149	0.60
233	8.42	34.07 4	2.13	154	300	7.60	34.17	1.27	26.70	135	0.68
262	8.24	34.14 8	1.66	146	400	6.79	34.24	0.76	26.87	119	0.81
310	7.42	34.17 3	1.19	132	500	6.07	34.31	0.61	27.02	105	0.93
372	7.04	34.22 9	0.78	123	600	5.61	34.39	0.26	27.14	93	1.03
470	6.20	34.27 5	0.73	109							
559	5.84	34.37 1	0.25	97							
639	5.34	34.39 5	0.27	90							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

HORIZON; April 19, 1962; 2117 GCT; 27°52.5'N, 119°32'W; sounding, 2150 fm; wind, 330°, force 5; weather, cloudy; sea, very rough; wire angle, 40°.

110.90

0	16.28	33.60	5	5.74	332	0	16.28	33.60	5.74	24.63	332	0.00
9	16.26	33.59	4	5.47	332	10	16.26	33.60	5.47	24.63	332	0.03
27	16.08	33.75	1	5.48	317	20	16.20	33.60	5.47	24.65	330	0.07
42	15.84	33.73	0	5.43	313	30	16.07	33.75	5.47	24.79	317	0.10
58	15.83	33.74	6	5.41	312	50	15.83	33.74	5.42	24.84	312	0.16
77	14.96	33.54	0a)	5.49b)	308	75	15.04	33.57	5.48	24.88	308	0.24
101	13.96	33.41	8	5.58c)	297	100	14.00	33.42	5.58	24.99	298	0.32
128	12.64	33.65	1	4.98	255	125	12.80	33.64	5.04	25.40	259	0.39
152	10.88	33.65	7	4.47	223	150	10.99	33.65	4.50	25.75	226	0.45
185	9.74	33.84	5	3.55	191	200	9.39	33.91	3.30	26.22	180	0.55
222	8.86	33.98	1	2.92	167	250	8.35	34.05	2.45	26.50	154	0.64
271	8.08	34.09	4	2.06	147	300	7.79	34.15	1.60	26.66	139	0.71
346	7.32	34.21		0.99	128	400	6.76	34.25	0.62	26.88	118	0.85
459	6.29	34.28	9	0.45	109	500	6.02	34.31	0.37	27.03	104	0.96
563	5.65	34.34	7	0.31	97	600	5.43	34.37	0.31	27.15	93	1.07
675	5.04	34.40	5	0.32	86	700	4.90	34.42	0.35	27.25	83	1.16
775	4.58	34.43	9	0.42	78	800	4.49	34.45	0.47	27.32	76	1.25
890	4.23	34.47	3	0.51	72	1000	3.90	34.50	0.60	27.42	67	1.41
1007	3.88	34.50	0	0.60	67	1200	3.46	34.53	0.77	27.49	60	1.56
1138	3.60	34.52	2	0.71	62	1500	2.82	34.58	1.12	27.59	51	1.75
1297	3.24	34.54	3	0.86	57							
1497	2.84	34.58	3	1.11	51							
1708	2.48	34.60	6	1.39	46							

HORIZON; April 19, 1962; 1225 GCT; 27°32'N, 120°14'W; sounding, 2160 fm; wind, 310°, force 5; weather, partly cloudy; sea, rough; wire angle, 28°.

110.100

0	16.49	33.70	1	5.34	329	0	16.49	33.70	5.34	24.66	329	0.00
9	16.47	33.69	2	5.45	330	10	16.46	33.69	5.46	24.66	329	0.03
28	15.84	33.58	2	5.54	324	20	16.15	33.62	5.50	24.67	328	0.07
37	15.38	33.54	3	5.57	317	30	15.73	33.57	5.55	24.73	322	0.10
52	15.07	33.53	7	5.55	311	50	15.08	33.54	5.55	24.85	311	0.16
65	15.04	33.53	9	5.58	310	75	15.17	33.61	5.55	24.88	308	0.24
89	15.34	33.71	7	5.52	303	100	15.00	33.71	5.43	25.00	297	0.32
106	14.65	33.71	0	5.35	290	125	13.48	33.72	5.09	25.33	266	0.39
125	13.48	33.72		5.09	266	150	12.52	33.72	4.83	25.52	248	0.45
144	12.81	33.72	7	4.88	252	200	9.82	33.81	3.76	26.07	195	0.56
172	10.88	33.68	0	4.54	222	250	8.64	33.99	2.97	26.40	163	0.66
203	9.74	33.83	5	3.67	191	300	7.88	34.08	2.17	26.59	146	0.74
231	9.00	33.95	0	3.20	171	400	6.68	34.21	0.91	26.86	120	0.87
277	8.20	34.03	3	2.61	154	500	5.97	34.28	0.43	27.01	106	0.99
329	7.51	34.13	1	1.60	137							
410	6.58	34.21	6	0.83	118							
491	6.02	34.27	0	0.46	107							
575	5.54	34.34	2	0.32	96							

- a) Loose bottle cap; value falls on property curve.
- b) Alternate value, 5.64 ml/L, not used in interpolation.
- c) Alternate value, 5.69 ml/L, not used in interpolation.

S10
CCOF1
6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

110.120

HORIZON; April 18, 1962; 2333 GCT; 26°57'N, 121°32.5'W; sounding, 2323 fm; wind, 350°, force 4; weather, cloudy; sea, rough; wire angle, 14°.

0	17.46	33.88 2	5.41	338	0	17.46	33.88	5.41	24.57	338	0.00
10	17.32	33.85 5	5.42	337	10	17.32	33.86	5.42	24.58	336	0.03
54	16.57	33.84 1	5.48	321	20	17.17	33.85	5.43	24.61	334	0.07
98	16.29	33.84 0	5.34	315	30	16.74	33.84	5.47	24.71	325	0.10
113	15.18	33.74 0	5.48	298	50	16.59	33.84	5.48	24.74	321	0.17
137	13.36	33.70 2	4.78	265	75	16.44	33.84	5.41	24.78	318	0.25
156	11.76	33.72 3	3.96	234	100	16.26	33.84	5.34	24.82	314	0.33
185	10.38	33.78 5	3.51	205	125	14.25	33.71	5.19	25.16	282	0.40
208	9.80	33.94 8	3.17	184	150	12.22	33.72	4.16	25.57	242	0.47
250	9.34	34.11 2	2.18	165	200	9.97	33.89	3.32	26.11	191	0.58
287	8.92	34.19 6	1.62	152	250	9.34	34.11	2.18	26.39	165	0.67
334	8.54	34.27 5	1.12	140	300	8.81	34.22	1.49	26.56	149	0.75
415	7.78	34.32 4	0.61	126	400	7.92	34.32	0.70	26.77	128	0.89
529	6.67	34.33 4	0.38	110	500	6.95	34.33	0.42	26.92	114	1.02
650	5.67	34.37 7	0.29	95	600	6.03	34.36	0.31	27.06	101	1.14
777	5.04	34.40 7	0.35	86	700	5.38	34.39	0.31	27.17	91	1.24
910	4.52	34.46 8	0.43	75	800	4.95	34.42	0.36	27.24	84	1.34
1067	4.00	34.50 4	0.63	67	1000	4.22	34.49	0.56	27.38	71	1.51
1217	3.54	34.52 4	0.74	62	1200	3.60	34.52	0.72	27.47	62	1.66
1391	3.13	34.56 1	1.04	55	1500	2.89	34.57	1.20	27.57	52	1.86
1594	2.70	34.58 1	1.32	50	2000	2.14	34.62	1.90	27.68	42	2.15
1841	2.33	34.60 6	1.68	45							
2090	2.04	34.63 3	2.02	41							

110.140

HORIZON; April 18, 1962; 1143 GCT; 26°16'N, 122°49'W; sounding, 2245 fm; wind, 020°, force 1; weather, partly cloudy; sea, rough; wire angle, 02°.

0	17.06	33.83 2	5.36	332	0	17.06	33.83	5.36	24.62	333	0.00
10	17.06	33.83 0	5.34	333	10	17.06	33.83	5.34	24.62	333	0.03
71	17.22	34.19 9	5.34	309	20	17.06	33.86	5.34	24.65	330	0.07
130	16.62	34.12 7	5.55	301	30	17.06	33.93	5.34	24.70	325	0.10
140	15.65	34.03 5	5.04	287	50	17.08	34.09	5.34	24.82	314	0.16
160	13.56	33.85 8	4.65	257	75	17.21	34.20	5.35	24.87	309	0.24
185	12.04	33.79 3	4.36	233	100	17.20	34.22	5.41	24.89	307	0.32
209	10.84	33.82 5	3.10	210	125	17.20	34.24	5.53	24.90	306	0.40
229	9.80	33.94 9	2.82	184	150	14.52	33.94	4.79	25.28	270	0.47
279	9.10	34.15 6	1.88	158	200	11.20	33.80	3.45	25.83	218	0.59
321	8.88	34.28 6	1.07	145	250	9.39	34.05	2.44	26.33	170	0.69
363	8.14	34.27 8	0.91	134	300	8.99	34.23	1.40	26.54	151	0.78
448	7.24	34.32	0.51	119	400	7.72	34.29	0.74	26.78	128	0.92
562	6.12	34.28 5	0.32	107	500	6.72	34.30	0.40	26.93	114	1.05
686	5.20	34.38 3	0.30	89	600	5.79	34.31	0.30	27.06	101	1.16
808	4.74	34.43 5	0.38	80	700	5.13	34.40	0.31	27.21	87	1.27
947	4.27	34.47 4	0.46	72	800	4.76	34.43	0.38	27.27	81	1.36
1105	3.82	34.51 5	0.61	65	1000	4.11	34.49	0.50	27.39	70	1.53
1265	3.42	34.54 4	0.73	59	1200	3.58	34.54	0.69	27.48	61	1.68
1444	3.02	34.56 7	1.00	54	1500	2.91	34.58	1.08	27.58	52	1.87
1653	2.59	34.59 5	1.34	48	2000	2.12	34.62	1.88	27.68	42	2.16
1906	2.22	34.61 6	1.75	43							
2163	1.98	34.63 7	2.07	40							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
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6203-4

HORIZON; April 17, 1962; 2212 GCT; 25°34.5'N, 124°07'W; sounding, 2295 fm; wind, 030°, force 3; weather, cloudy; sea, very rough; wire angle, 08°.

0	18.44	34.33	0	4.76	328	0	18.44	34.33	4.76	24.67	328	0.00
10	18.20	34.31	0	5.02	324	10	18.20	34.31	5.02	24.71	324	0.03
60	18.01	34.38	0	5.15	314	20	18.14	34.32	5.09	24.74	322	0.06
104	17.54	34.32	9	5.12	307	30	18.11	34.34	5.12	24.76	320	0.10
119	17.38	34.29	9	5.12	306	50	18.06	34.37	5.14	24.79	316	0.16
139	17.45	34.36	4	5.07	303	75	17.89	34.37	5.15	24.84	312	0.24
163	15.66	34.12	7	4.72	280	100	17.59	34.34	5.13	24.89	308	0.32
188	12.82	33.85	1	4.38	244	125	17.40	34.32	5.10	24.92	305	0.40
217	10.98	33.79	7	3.62	215	150	17.09	34.32	4.96	24.99	298	0.47
256	9.74	33.89	6	3.22	187	200	11.88	33.80	4.01	25.70	230	0.61
301	8.98	34.10	8	2.06	159	250	9.87	33.87	3.30	26.11	191	0.71
344	8.42	34.16	9	1.58	147	300	8.99	34.11	2.07	26.44	159	0.80
433	7.32	34.25	9	0.77	125	400	7.73	34.23	1.02	26.73	132	0.96
552	6.06	34.28	6	0.42	106	500	6.55	34.27	0.52	26.93	114	1.09
670	5.28	34.37	2	0.31	91	600	5.71	34.32	0.36	27.07	100	1.20
797	4.70	34.44	1	0.43	79	700	5.11	34.39	0.32	27.20	88	1.30
934	4.25	34.47	3	0.58	72	800	4.69	34.44	0.44	27.29	79	1.39
1092	3.76	34.51	2	0.68	65	1000	4.00	34.49	0.62	27.40	69	1.56
1249	3.44	34.53	8	0.80	60	1200	3.54	34.53	0.75	27.48	61	1.71
1425	3.00	34.56	1	1.04	54	1500	2.84	34.58	1.14	27.59	51	1.90
1631	2.62	34.59	7	1.31	48	2000	2.10	34.63		27.69	41	2.18
1884	2.24	34.61	5	1.69	44							
2139	2.00	34.65	6	1.69u	39							

110.60

110,160

HORIZON; May 2, 1962; 0254 GCT; 29°20'N, 115°20'W; sounding, 50 fm; wind, 290°, force 6; weather, clear; sea, rough; wire angle, 20°.

113.30

1	11.90	33.71	5	5.17	237	0	(11.90)	(33.72)	(5.17)	(25.63)	(236)	(0.00)
10	11.90	33.71	3	5.21	237	10	11.90	33.71	5.21	25.63	237	0.02
29	11.88	33.71	7	5.09	236	20	11.90	33.71	5.12	25.63	237	0.05
48	10.92	33.74	3	3.56	218	30	11.87	33.72	5.08	25.64	236	0.07

HORIZON; May 1, 1962; 1538 GCT; 28°54.5'N, 115°23'W; sounding, 348 fm; wind, 300°, force 5; weather, partly cloudy; sea, rough; wire angle, 20°.

115.35

1	14.72	33.56	0	5.99	302	0	(14.72)	(33.56)	(5.99)	(24.94)	(302)	(0.00)
10	14.70	33.55	3	6.10	302	10	14.70	33.55	6.10	24.94	302	0.03
29	14.44	33.56	2	5.94	296	20	14.64	33.55	6.07	24.95	301	0.06
39	14.01	33.60	1	5.72	285	30	14.43	33.56	5.93	25.01	296	0.09
48	13.45	33.64	2	5.40	271	50	13.35	33.64	5.33	25.29	269	0.15
62	12.20	33.64	1	4.45	248	75	10.81	33.71	3.53	25.83	218	0.21
75	10.81	33.71	2	3.53	218	100	9.61	33.95	2.67	26.22	181	0.26
93	9.90	33.89	7	2.82	189	125	9.50	34.07	2.32	26.33	170	0.30
116	9.52	34.03	8	2.48	173	150	9.13	34.10	2.20	26.41	162	0.35
135	9.46	34.09	2	2.22	168	200	9.25	34.28	1.18	26.53	151	0.43
164	8.90	34.10	9	2.16	158	250	9.31	34.43	0.58	26.64	141	0.50
192	9.08	34.21	9	1.50	153	300	8.87	34.45	0.41	26.73	132	0.57
221	9.69	34.43	7	0.70	146	400	7.81	34.40	0.35	26.85	121	0.70
260	9.19	34.42	7	0.54	139	500	7.08	34.42	0.25	26.97	109	0.83
317	8.74	34.45	5	0.39	130							
390	7.86	34.39	7	0.37	122							
464	7.50	34.43	4	0.18a)	114							
543	6.44	34.38	4	0.36b)	104							

HORIZON; May 1, 1962; 1820 GCT; 28°18.5'N, 114°54'W; sounding, 60 fm; wind, 300°, force 4; weather, overcast; sea, rough; wire angle, 13°.

119.33

1	15.76	33.73	2	5.63	311	0	(15.76)	(33.73)	(5.63)	(24.85)	(311)	(0.00)
11	15.67	33.72	8	5.55	310	10	15.67	33.73	5.56	24.87	309	0.03
30	15.64	33.72	5	5.61	309	20	15.67	33.73	5.60	24.87	309	0.06
40	15.52	33.72	2	5.56	307	30	15.64	33.72	5.61	24.86	310	0.09

- a) Mean value of 0.11 and 0.24 ml/L.
b) Mean value of 0.45 and 0.28 ml/L.

S10

CCOF1

6302-4

6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

120.45

HORIZON; April 22, 1962; 2340 GCT; 27°43'N, 115°32.5'W; sounding, 1500 fm; wind, 260°, force 2; weather, clear; sea, rough; wire angle, 07°.

0	15.23	33.84 7	6.48	292	0	15.23	33.85	6.48	25.06	291	0.00
10	13.69	33.82 0	6.63	262	10	13.69	33.82	6.63	25.36	262	0.03
30	13.25	33.81 3	5.01	254	20	13.52	33.82	6.20	25.39	259	0.05
40	11.84	33.77 0	3.42	232	30	13.25	33.81	5.01	25.44	255	0.08
55	11.49	33.81 0	3.00	222	50	11.65	33.79	3.17	25.74	227	0.13
70	10.78	33.86 9	2.66	206	75	10.40	33.88	2.56	26.03	199	0.18
96	10.20	34.01 8	2.33	185	100	10.10	34.04	2.12	26.21	182	0.23
114	10.34	34.21 9	1.51	173	125	10.10	34.19	1.67	26.32	171	0.27
135	9.86	34.16 9	1.79	169	150	10.02	34.30	1.18	26.42	161	0.32
155	10.04	34.32 4	1.09	160	200	9.70	34.40	0.74	26.55	149	0.40
184	9.68	34.33 4	0.94	154	250	9.56	34.45	0.51	26.62	143	0.47
219	9.71	34.46 1	0.49	145	300	9.07	34.46	0.35	26.70	135	0.54
249	9.57	34.45 4	0.51	143	400	7.84	34.45	0.20	26.89	117	0.68
298	9.10	34.46 6	0.35	135	500	7.01	34.43	0.18	26.99	108	0.80
351	8.36	34.44 7	0.28	125	600	6.17	34.42	0.19	27.09	98	0.91
435	7.56	34.45 2	0.18	113							
521	6.83	34.41 9	0.18	106							
605	6.13	34.42 4	0.19	97							

120.50

HORIZON; April 23, 1962; 0438 GCT; 27°29'N, 115°51.5'W; sounding, 2140 fm; wind, 270°, force 3; weather, clear; sea, moderate; wire angle, 20°.

0	15.42	33.85 4	6.64	295	0	15.42	33.85	6.64	25.01	295	0.00
9	15.28	33.84 7	6.83	293	10	15.09	33.84	6.78	25.08	289	0.03
28	13.50	33.85 0	5.53	257	20	13.99	33.84	6.05	25.31	267	0.06
46	12.76	33.86 7	3.93	241	30	13.29	33.85	5.20	25.46	252	0.08
64	11.14	34.04 7	2.06	199	50	11.90	33.88	3.10	25.76	225	0.13
88	10.96	34.21 8	1.36	183	75	11.00	34.17	1.55	26.15	187	0.18
110	10.82	34.26 0	1.15	178	100	10.88	34.24	1.24	26.23	180	0.23
137	10.67	34.33 8	0.94	169	125	10.72	34.29	1.02	26.29	174	0.27
165	10.50	34.42 6	0.72	160	150	10.59	34.38	0.85	26.39	165	0.32
206	10.04	34.48 8	0.41	148	200	10.12	34.48	0.42	26.55	150	0.40
247	9.63	34.48 1	0.40	142	250	9.60	34.48	0.40	26.63	141	0.47
298	9.16	34.48 3	0.28	134	300	9.13	34.48	0.27	26.71	134	0.54
380	8.34	34.46 2	0.22	124	400	8.10	34.45	0.22	26.85	121	0.68
495	6.85	34.39 7	0.20	108	500	6.80	34.40	0.20	26.99	107	0.80
615	5.97	34.42 6	0.20	95	600	6.06	34.42	0.20	27.11	96	0.91
752	5.04	34.44 3	0.28a)	83	700	5.39	34.44	0.23	27.21	87	1.01
883	4.37	34.46 8	0.40	74	800	4.77	34.45	0.31	27.29	79	1.10
1032	3.88	34.50 0	0.54	67	1000	3.97	34.49	0.52	27.41	68	1.27
1181	3.50	34.54 4	0.73	60	1200	3.46	34.55	0.75	27.50	59	1.41
1349	3.21	34.56 9	0.89	55	1500	2.88	34.58	1.00	27.58	51	1.61
1547	2.78	34.58 8	1.06	50	2000	2.14	34.63	1.84	27.69	42	1.89
1789	2.37	34.61 6	1.53	45							
2035	2.12	34.63 6	1.86	41							

a) Alternate value, 0.47 ml/L, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
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6203-4

HORIZON; April 23, 1962; 1606 GCT; 27°00'N, 116°36.5'W; sounding, 2000 fm; wind, 260°, force 1; weather, cloudy; sea, rough; wire angle, 07°.

120.60

0	16.06	33.63 0	5.38	325	0	16.06	33.63	5.38	24.70	325	0.00
10	15.99	33.61 9	5.35	324	10	15.99	33.62	5.35	24.71	324	0.03
30	15.66	33.56 8	5.61	321	20	15.80	33.59	5.47	24.73	322	0.06
60	15.40	33.61 8	5.56	312	30	15.66	33.57	5.61	24.75	321	0.10
70	15.10	33.58 2	5.57	308	50	15.50	33.60	5.58	24.80	315	0.16
84	13.92	33.54 0	5.17	287	75	14.78	33.56	5.51	24.93	303	0.24
99	12.18	33.52 4	4.60	256	100	12.15	33.53	4.60	25.44	255	0.31
114	11.46	33.55 2	4.30	241	125	11.40	33.60	4.17	25.63	236	0.37
139	10.70	33.73 6	3.38	214	150	10.36	33.79	3.16	25.97	205	0.43
158	10.14	33.83 0	3.05	198	200	9.61	34.07	2.26	26.31	172	0.52
187	9.59	33.98 4	2.65	178	250	9.27	34.23	1.40	26.49	155	0.61
217	9.64	34.17 3	1.76	165	300	8.80	34.31	0.96	26.63	142	0.68
246	9.32	34.22 9	1.45	156	400	7.72	34.37	0.53	26.84	122	0.82
295	8.88	34.31 0	0.97	143	500	7.01	34.41	0.28	26.97	109	0.94
349	7.90	34.27 3	0.91	131	600	5.93	34.41	0.18	27.12	96	1.05
434	7.60	34.41 3	0.34	117							
519	6.82	34.41 7	0.27	106							
603	5.91	34.41 0	0.17	95							

HORIZON; April 23, 1962; 2324 GCT; 26°51'N, 117°09'W; sounding, 2000+ fm; wind, 230°, force 3; weather, cloudy; sea, rough; wire angle, 09°.

120.70

0	16.62	33.55 8	5.61	343	0	16.62	33.56	5.61	24.52	342	0.00
10	15.96	33.58 3	5.63	326	10	15.96	33.58	5.63	24.69	327	0.03
29	15.82	33.57 6	5.63	324	20	15.90	33.58	5.63	24.70	325	0.07
49	14.54	33.48 7	5.73	304	30	15.81	33.58	5.63	24.72	323	0.10
68	13.76	33.46 3	5.68	290	50	14.49	33.48	5.73	24.93	303	0.16
94	12.37	33.46 5	4.93	264	75	13.51	33.46	5.60	25.12	285	0.24
118	11.38	33.71 6	3.15	227	100	11.90	33.48	4.48	25.45	254	0.30
147	10.30	33.88 7	2.88	197	125	11.14	33.78	3.05	25.82	219	0.36
176	9.74	34.03 8	2.47	176	150	10.23	33.90	2.83	26.07	194	0.42
221	8.98	34.12 4	2.04	158	200	9.32	34.09	2.26	26.37	166	0.51
265	8.52	34.21 1	1.39	145	250	8.64	34.18	1.62	26.55	149	0.59
319	8.25	34.31 7	0.80	133	300	8.36	34.29	0.94	26.68	137	0.66
407	7.28	34.32 6	0.63	119	400	7.34	34.32	0.65	26.86	120	0.80
530	6.43	34.39 4	0.14	103	500	6.62	34.38	0.21	27.00	106	0.92
657	5.66	34.43 2	0.21	91	600	6.01	34.41	0.18	27.11	97	1.03
795	4.88	34.47 2	0.31	79	700	5.40	34.45	0.23	27.21	86	1.13
932	4.37	34.47 8	0.41	73	800	4.85	34.47	0.31	27.29	79	1.22
1089	3.86	34.51 7	0.54	65	1000	4.14	34.49	0.47	27.39	70	1.38
1245	3.47	34.55 3	0.74	59	1200	3.57	34.54	0.70	27.49	61	1.53
1422	3.12	34.57 2	0.93	54	1500	2.96	34.58	1.05	27.58	52	1.73
1627	2.67	34.59 6	1.28	48	2000	2.16	34.63	1.83	27.68	42	2.01
1879	2.30	34.61 9	1.66	44							
2133	2.01	34.64 8	2.02	39							

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6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

120.80

HORIZON; April 24, 1962; 0749 GCT; 26°31'N, 117°47'W; sounding, 2110 fm; wind, 280°, force 2; weather, overcast; sea, moderate; wire angle, 13°.

1	17.14	33.71 2	5.32	343	0	(17.14)	(33.71)	(5.32)	(24.51)	(343)	(0.00)
10	16.80	33.69 8	5.37	336	10	16.80	33.70	5.37	24.58	336	0.03
30	16.52	33.66 6	5.42	333	20	16.60	33.68	5.39	24.62	333	0.07
60	15.83	33.71 0	5.44	314	30	16.52	33.67	5.42	24.63	332	0.10
70	15.22	33.65 6	5.15	305	50	16.50	33.67	5.42	24.63	332	0.17
84	14.42	33.60 8	4.93	292	75	14.92	33.63	5.06	24.95	301	0.25
98	13.50	33.62 2	4.43	273	100	13.32	33.62	4.40	25.28	270	0.32
112	12.11	33.58 8	4.35	250	125	11.30	33.63	3.93	25.68	232	0.38
136	10.91	33.71 6	3.51	219	150	10.62	33.88	2.83	25.99	202	0.44
154	10.60	33.93 5	2.63	198	200	10.46	34.26	1.40	26.32	172	0.53
183	10.68	34.19 0	1.60	180	250	9.42	34.30	1.13	26.52	152	0.62
211	10.24	34.27 8	1.32	167	300	8.55	34.30	0.96	26.66	139	0.69
239	9.68	34.30 4	1.17	156	400	7.60	34.35	0.41	26.84	122	0.83
287	8.71	34.29 3	1.00	142	500	6.85	34.38	0.26	26.97	109	0.95
341	8.11	34.32 1	0.67	131	600	(6.15)	(34.43)	(0.20)	(27.10)	(97)	(1.06)
424	7.42	34.35 6	0.37	119							
507	6.80	34.38 8	0.24	108							
592	6.20	34.42 5	0.20	98							

120.90

HORIZON; April 24, 1962; 1406 GCT; 26°09'N, 118°26'W; sounding, 2220 fm; wind, 290°, force 1; weather, cloudy; sea, rough; wire angle, 08°.

0	17.45	33.83 2	5.49	341	0	17.45	33.83	5.49	24.53	341	0.00
10	17.44	33.83 5	5.53	341	10	17.44	33.84	5.53	24.54	340	0.03
29	17.32	33.80 8	5.54	340	20	17.37	33.82	5.54	24.54	340	0.07
50	16.27	33.77 4	6.06	319	30	17.31	33.81	5.54	24.55	340	0.10
70	15.56	33.70 1	5.31	309	50	16.27	33.77	6.06	24.76	319	0.17
95	14.23	33.65 7	4.64	285	75	15.24	33.68	5.13	24.92	304	0.25
120	12.39	33.79 1	3.22	240	100	13.99	33.66	4.47	25.17	280	0.32
149	11.44	33.87 9	2.83	216	125	12.17	33.80	3.12	25.65	235	0.39
180	10.75	34.10 8	2.10	188	150	11.42	33.89	2.80	25.86	215	0.44
225	9.84	34.25 1	1.40	162	200	10.29	34.18	1.77	26.28	175	0.54
269	9.84	34.42 5	0.74	149	250	9.84	34.36	0.94	26.50	154	0.63
325	8.96	34.43 0	0.63	135	300	9.38	34.43	0.68	26.63	142	0.70
414	7.92	34.42 0	0.35	121	400	8.08	34.42	0.38	26.83	123	0.84
539	6.49	34.42 1	0.26	102	500	6.87	34.42	0.28	27.00	107	0.96
669	5.73	34.45 2	0.23	90	600	6.10	34.44	0.23	27.12	95	1.07
807	4.84	34.46 5	0.35	79	700	5.55	34.46	0.24	27.20	87	1.17
946	4.32	34.50 9	0.56	70	800	4.88	34.46	0.34	27.28	80	1.27
1104	3.80	34.53 6	0.68	63	1000	4.13	34.52	0.60	27.41	68	1.43
1262	3.42	34.55 9	0.87	58	1200	3.57	34.55	0.80	27.49	60	1.58
1438	3.05	34.58 6	1.06	52	1500	2.92	34.59	1.18	27.59	51	1.77
1645	2.66	34.59 7	1.39	48	2000	2.11	34.64	1.93	27.70	41	2.05
1898	2.22	34.63 0	1.81	42							
2152	2.00	34.64 2	2.04	40							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δT	Z	T	S	O ₂	σ _t	δT	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
CCOF1
6203-4

HORIZON; April 24, 1962; 2305 GCT; 25°51'N, 119°05'W; sounding, 2160 fm; wind, 270°, force 2; weather, partly cloudy; sea, very rough; wire angle, 08°.

120.100

0	17.70	33.85 4	5.29	345	0	17.70	33.85	5.29	24.49	346	0.00
10	17.22	33.83 4	5.24	336	10	17.22	33.83	5.24	24.58	336	0.03
30	17.12	33.83 6	5.34	333	20	17.15	33.84	5.31	24.61	334	0.07
60	16.44	33.78 2	5.37	322	30	17.12	33.84	5.34	24.62	333	0.10
70	15.96	33.69 3	5.29	318	50	16.47	33.78	5.37	24.72	323	0.17
85	14.82	33.59 0	5.34	302	75	15.60	33.65	5.31	24.82	314	0.25
99	13.08	33.59 3	4.25	267	100	13.03	33.59	4.25	25.32	267	0.32
114	12.59	33.66 0	4.50	253	125	12.12	33.69	4.48	25.57	242	0.38
139	11.18	33.71 6	4.19	224	150	10.22	33.71	3.75	25.93	208	0.44
158	9.80	33.71 5	3.52	201	200	9.24	34.03	2.49	26.34	169	0.54
187	9.56	34.00 0	2.58	176	250	8.90	34.20	1.57	26.53	151	0.62
217	8.92	34.06 3	2.38	162	300	8.09	34.22	1.07	26.67	138	0.69
246	8.92	34.19 3	1.62	152	400	7.12	34.30	0.52	26.87	119	0.83
295	8.16	34.21 9	1.10	139	500	6.35	34.36	0.31	27.02	104	0.95
350	7.54	34.27 4	0.73	126	600	5.69	34.40	0.24	27.14	93	1.05
434	6.86	34.32 9	0.43	113							
520	6.20	34.37 3	0.29	102							
606	5.66	34.40 4	0.23	93							

HORIZON; April 25, 1962; 0759 GCT; 25°12'N, 120°18'W; sounding, 2165 fm; wind, 320°, force 3; weather, cloudy; sea, rough; wire angle, 07°.

120.120

0	17.97	34.08 3	5.32	335	0	17.97	34.08	5.32	24.60	335	0.00
11	17.96	34.07 7	5.26	335	10	17.96	34.08	5.27	24.60	335	0.03
30	17.74	34.03 5	5.26	333	20	17.88	34.06	5.26	24.60	335	0.07
50	17.42	33.94 7	5.35	332	30	17.74	34.04	5.26	24.62	333	0.10
70	16.34	33.72 8	5.46	324	50	17.42	33.95	5.35	24.63	332	0.17
95	16.45	33.90 5	5.34	314	75	16.15	33.73	5.42	24.76	320	0.25
120	14.36	33.69 8	4.85	285	100	16.00	33.84	5.25	24.88	308	0.33
150	12.83	33.75 6	4.42	251	125	14.12	33.70	4.78	25.18	280	0.40
180	11.24	33.71 8	4.09	225	150	12.83	33.76	4.42	25.49	250	0.47
224	9.49	33.90 4	3.17	182	200	10.28	33.78	3.73	25.97	204	0.59
268	8.90	34.08 7	2.23	160	250	9.09	34.02	2.61	26.36	168	0.68
323	8.44	34.23 0	1.25	142	300	8.65	34.18	1.57	26.55	149	0.76
412	7.36	34.28	0.70	123	400	7.49	34.27	0.76	26.80	126	0.91
535	6.31	34.34 9	0.33	105	500	6.60	34.33	0.38	26.97	110	1.03
664	5.36	34.38 6	0.35	91	600	5.79	34.37	0.34	27.10	97	1.14
802	4.71	34.44 2	0.44	79	700	5.14	34.40	0.38	27.21	87	1.24
941	4.28	34.50 8	0.53	70	800	4.72	34.44	0.44	27.29	80	1.33
1099	3.81	34.51 0	0.68	65	1000	4.08	34.49	0.59	27.39	69	1.50
1256	3.46	34.54 1	0.74	60	1200	3.58	34.53	0.72	27.48	61	1.65
1434	3.00	34.57 5	0.96	53	1500	2.84	34.58	1.08	27.59	51	1.85
1640	2.59	34.59 7	1.33	48	2000	2.11	34.63	1.84	27.69	41	2.13
1891	2.23	34.62 4	1.73	43							
2142	1.98	34.64 2	2.00	40							

S10

CCOF1
6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

123.42

HORIZON; May 1, 1962; 1117 GCT; 27°12'N, 114°57.5'W; sounding, 1200 fm; wind, 300°, force 4; weather, clear; sea, rough; wire angle, 28°.

0	15.58	33.76 7	5.71	305	0	15.58	33.77	5.71	24.92	305	0.00
7	15.58	33.75 8	5.62	305	10	15.58	33.76	5.65	24.91	305	0.03
31	15.56	33.77 7	5.68	304	20	15.57	33.77	5.66	24.92	304	0.06
57	13.16	33.69 5	4.58	261	30	15.56	33.78	5.68	24.93	303	0.09
65	12.75	33.75 4	4.02	249	50	14.25	33.73	5.18	25.17	280	0.15
82	11.62	33.78 3	3.22	227	75	12.50	33.79	3.72	25.57	242	0.22
95	11.24	33.93 9	2.60	209	100	10.88	33.93	2.60	25.98	203	0.27
107	10.36	33.91 9	2.63	195	125	10.04	34.04	2.36	26.22	181	0.32
133	10.00	34.11 4	1.99	175	150	10.52	34.37	0.97	26.39	165	0.36
150	10.52	34.37 1	0.97a)	164	200	9.99	34.44	0.62	26.54	151	0.45
175	10.32	34.42 8	0.71	157	250	9.71	34.48	0.40	26.61	143	0.52
206	9.92	34.43 8	0.60	150	300	8.95	34.45	0.42	26.72	134	0.59
233	9.93	34.48 7	0.37	146	400	7.78	34.42	0.27	26.87	119	0.73
275	9.31	34.46 4	0.46	138	500	6.84	34.43	0.20	27.01	105	0.84
335	8.46	34.42 8	0.36	128	600	(6.00)	(34.43)		(27.12)	(95)	(0.95)
427	7.52	34.42 2	0.23	115							
510	6.75	34.42 7	0.19	105							
582	6.14	34.43 4	0.19	96							

127.40

HORIZON; May 1, 1962; 0637 GCT; 26°45'N, 114°26'W; sounding, 1870 fm; wind, 300°, force 5; weather, clear; sea, rough; wire angle, 32°.

1	15.42	33.61 0	5.85	313	0	(15.42)	(33.61)	(5.85)	(24.83)	(313)	(0.00)
10	15.42	33.59 0	5.83	314	10	15.42	33.59	5.83	24.81	314	0.03
31	15.44	33.58 3	5.86	315	20	15.43	33.59	5.85	24.81	315	0.06
56	14.13	33.54 4	5.78	291	30	15.44	33.58	5.86	24.80	316	0.09
65	13.54	33.52 5	5.20	281	50	14.90	33.57	5.84	24.91	305	0.16
82	12.06	33.57 3	4.35	250	75	12.55	33.55	4.48	25.38	261	0.23
94	11.50	33.59 8	4.28	238	100	11.20	33.63	4.00	25.69	231	0.29
107	10.89	33.71 3	3.51	219	125	10.54	33.96	2.57	26.07	195	0.34
130	10.53	34.01 4	2.34	191	150	10.83	34.22	1.41	26.22	181	0.39
147	10.86	34.22 5	1.41	181	200	10.10	34.32	1.12	26.42	161	0.48
170	10.06	34.19 6	1.70	170	250	9.59	34.42	0.72	26.59	146	0.56
200	10.10	34.32 3	1.12	161	300	9.16	34.45	0.44	26.68	137	0.63
219	10.10	34.43 8	0.71	153	400	8.29	34.48	0.33	26.84	122	0.77
259	9.43	34.41 6	0.72	144	500	7.35	34.46	0.18	26.97	110	0.89
313	9.08	34.46 3	0.39	135							
400	8.29	34.47 5	0.33	122							
484	7.52	34.46 4	0.18	112							
552	6.70	34.44 9	0.17	102							

130.30

HORIZON; April 27, 1962; 2330 GCT; 26°29'N, 113°25'W; sounding, 35 fm; wind, 280°, force 5; weather, clear; sea, moderate; wire angle, 10°.

0	14.61	33.86 4	6.52	278	0	14.61	33.86	6.52	25.20	278	0.00
10	14.53	33.85 6	6.38	277	10	14.53	33.86	6.38	25.21	276	0.03
31	12.82	33.81 7	4.05	246	20	14.00	33.82	5.73	25.30	269	0.05
51	11.72	33.98 9	2.36	213	30	12.85	33.82	4.08	25.53	246	0.08
					50	11.73	33.99	2.38	25.88	213	0.13

a) Alternate value, 1.08 ml/L, not used in interpolation.

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δT	Z	T	S	O ₂	σ _t	δT	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
CCOF1
6203-4

HORIZON; April 27, 1962; 1651 GCT; 26°04'N, 114°09'W; sounding, 1500 fm; wind, 300°, force 3; weather, cloudy; sea, very rough; wire angle, 30°.

130.40

0	15.04	33.61 4	5.75	305	0	15.04	33.61	5.75	24.91	305	0.00
9	15.00	33.61 2	5.78	304	10	14.99	33.61	5.78	24.92	304	0.03
27	14.72	33.63 6	5.71	297	20	14.85	33.62	5.74	24.96	300	0.06
34	14.50	33.64 1	5.77	292	30	14.65	33.64	5.71	25.02	295	0.09
47	14.13	33.66 3	5.72	283	50	14.09	33.57	5.72	25.08	289	0.15
58	13.72	33.70 5	-	271	75	12.40	33.90	3.14	25.68	232	0.21
79	12.16	33.94 4	2.68	224	100	11.49	34.09	1.75	26.00	202	0.27
95	11.64	34.06 3	1.84	206	125	10.76	34.16	1.62	26.18	184	0.32
111	11.14	34.12 8	1.68	193	150	10.57	34.26	1.32	26.30	173	0.36
127	10.72	34.16 7	1.60	183	200	9.78	34.38	1.02	26.53	152	0.45
149	10.58	34.26 5	1.31	173	250	9.91	34.50	0.32	26.60	145	0.52
176	10.39	34.34 9	0.92	164	300	9.31	34.50	0.23	26.70	135	0.60
199	9.78	34.37 8	1.03	152	400	8.06	34.46	0.20	26.86	120	0.73
235	9.99	34.47 5	0.44	148	500	(6.93)	(34.43)	(0.11)	(27.00)	(107)	(0.85)
278	9.61	34.50 5	0.27	140							
344	8.70	34.48 0	0.21	128							
414	7.91	34.45 6	0.18	118							
490	7.04	34.43 1	0.14	108							

HORIZON; April 27, 1962; 1146 GCT; 25°48'N, 114°46.5'W; sounding, 1980 fm; wind, 300°, force 4; weather, overcast; sea, very rough; wire angle, 25°.

130.50

0	16.37	33.64 2	5.49	331	0	16.37	33.64	5.49	24.64	331	0.00
9	16.35	33.63 2	5.59	331	10	16.35	33.63	5.58	24.63	331	0.03
32	16.40	33.63 4	5.53	332	20	16.37	33.63	5.53	24.63	332	0.07
59	15.21	33.57 2	5.76	311	30	16.39	33.63	5.53	24.63	332	0.10
68	14.89	33.56 0	5.72	306	50	16.10	33.62	5.59	24.68	327	0.17
86	14.25	33.55 5	5.34	293	75	14.67	33.56	5.60	24.95	301	0.24
99	13.17	33.53 5	5.01	273	100	13.05	33.54	4.95	25.27	271	0.32
112	12.42	33.66 9	4.16	249	125	11.95	33.79	3.53	25.68	232	0.38
139	11.12	33.90 1	2.74	209	150	10.74	33.97	2.38	26.04	198	0.43
158	10.59	34.03 3	2.21	191	200	10.20	34.34	1.02	26.42	161	0.53
184	10.29	34.25 9	1.37	169	250	9.88	34.44	0.62	26.56	149	0.61
215	10.12	34.38 8	0.82	157	300	9.30	34.46	0.40	26.67	138	0.68
243	9.94	34.43 1	0.68	151	400	7.96	34.44	0.29	26.86	120	0.82
289	9.47	34.46 5	0.41	141	500	6.98	34.44	0.17	27.00	107	0.94
349	8.48	34.42 1	0.38	129	600	(6.05)	(34.42)	(0.20)	(27.11)	(96)	(1.05)
442	7.58	34.44 6	0.21	114							
528	6.68	34.44 0	0.16	103							
599	6.06	34.42 2	0.20	96							

S10

CCOF1
6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

130.60

HORIZON; April 27, 1962; 0606 GCT; 25°29'N, 115°23.5'W; sounding, 2000 fm; wind, 330°, force 5; weather, cloudy; sea, very rough; wire angle, 16°.

0	16.39	33.64 8	5.53	331	0	16.39	33.65	5.53	24.64	331	0.00
9	16.38	33.63 3	5.33	332	10	16.38	33.63	5.35	24.63	332	0.03
28	15.86	33.57 4	5.68	325	20	16.35	33.63	5.36	24.63	331	0.07
47	15.54	33.64 4	5.58	313	30	15.73	33.58	5.67	24.74	322	0.10
64	14.92	33.62 3	5.48	302	50	15.50	33.64	5.57	24.83	312	0.16
90	12.76	33.51 7	4.79	267	75	13.36	33.53	5.03	25.20	277	0.24
115	11.64	33.68 2	3.80	234	100	12.44	33.54	4.62	25.39	259	0.30
143	11.06	34.02 2	2.05	199	125	10.86	33.76	2.83	25.86	215	0.36
171	10.97	34.27 9	1.39	179	150	10.98	34.07	1.89	26.08	194	0.42
217	10.66	34.46 9	0.65	160	200	10.60	34.38	0.84	26.38	165	0.51
258	10.06	34.50 8	0.45	147	250	10.07	34.50	0.46	26.57	148	0.59
311	9.02	34.43 4	0.51	136	300	9.23	34.45	0.50	26.67	138	0.66
395	7.80	34.41 1	0.38	120	400	7.73	34.41	0.38	26.87	119	0.80
515	6.50	34.41 1	0.31	103	500	6.63	34.41	0.31	27.03	104	0.92
640	5.67	34.44 4	0.27	90	600	5.90	34.44	0.28	27.14	93	1.02
775	4.93	34.46 2	0.35	80	700	5.34	34.45	0.29	27.22	86	1.12
895	4.34	34.50 1	0.52	71	800	4.79	34.47	0.38	27.30	78	1.21
1064	3.94	34.51 9	0.60	66	1000	4.10	34.51	0.57	27.41	68	1.37
1219	3.55	34.54 8	0.75	60	1200	3.60	34.54	0.72	27.48	61	1.52
1392	3.15	34.56 8	0.99	55	1500	2.92	34.58	1.10	27.58	52	1.72
1596	2.74	34.59 7	1.22	49	2000	2.15	34.63	1.92	27.69	42	2.00
1847	2.34	34.61 8	1.65	44							
2099	2.07	34.63 9	2.02	40							

130.70

HORIZON; April 27, 1962; 0100 GCT; 25°10'N, 116°01.5'W; sounding, 2000 fm; wind, 320°, force 5; weather, cloudy; sea, very rough; wire angle, 10°.

1	17.44	33.84 5	5.55	340	0	(17.44)	(33.84)	(5.55)	(24.54)	(340)	(0.00)
10	17.43	33.84 2	5.52	340	10	17.43	33.84	5.52	24.54	340	0.03
36	17.40	33.84 0	5.67	340	20	17.41	33.84	5.58	24.55	340	0.07
66	16.26	33.74 8	5.70	321	30	17.40	33.84	5.64	24.55	340	0.10
75	15.88	33.72 4	5.63	314	50	16.90	33.80	5.70	24.64	331	0.17
95	14.54	33.64 7	5.00	292	75	15.88	33.72	5.63	24.81	315	0.25
110	13.54	33.70 1	4.97	268	100	14.18	33.66	4.98	25.13	284	0.33
125	12.68	33.69 7	4.72	252	125	12.68	33.70	4.72	25.47	252	0.39
155	10.68	33.76 6	3.65	212	150	10.89	33.75	3.73	25.84	217	0.45
175	10.08	33.87 2	3.46	194	200	9.79	34.05	2.60	26.27	176	0.55
204	9.76	34.06 4	2.49	175	250	9.34	34.21	1.66	26.47	157	0.64
239	9.41	34.18 1	1.78	161	300	9.01	34.32	1.07	26.60	144	0.72
268	9.25	34.24 6	1.49	153	400	7.75	34.35	0.48	26.82	124	0.86
319	8.81	34.34 5	0.86	139	500	6.86	34.39	0.31	26.98	109	0.98
383	7.93	34.34 8	0.53	126	600	6.02	34.40	0.26	27.10	97	1.09
482	7.02	34.38 6	0.33	111							
570	6.24	34.39 8	0.26	100							
647	5.78	34.41 8	0.27	93							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
CCOF1
6203-4

HORIZON; April 26, 1962; 1756 GCT; 24°43'N, 116°38'W; sounding, 2160 fm; wind, 330°, force 4; weather, overcast; sea, very rough; wire angle, 23°.

13080

0	17.74	33.89 4	5.53	343	0	17.74	33.89	5.53	24.51	344	0.00
8	17.74	33.92	5.41	342	10	17.74	33.90	5.41	24.51	343	0.03
31	17.76	33.90 4	5.40	343	20	17.75	33.90	5.41	24.51	343	0.07
49	17.16	33.89 0	5.56	330	30	17.76	33.90	5.40	24.51	343	0.10
69	16.42	33.77 6	5.68	322	50	17.12	33.88	5.57	24.65	330	0.17
92	15.66	33.66 5	5.48	314	75	16.24	33.74	5.65	24.74	321	0.25
120	14.40	33.65 8	4.91	288	100	15.37	33.66	5.35	24.88	308	0.33
151	11.91	33.67 6	4.27	240	125	14.11	33.66	4.82	25.15	282	0.41
183	10.31	33.82 4	3.53	201	150	11.98	33.67	4.18	25.58	241	0.47
226	9.40	34.09 1	2.35	167	200	9.85	33.93	3.17	26.16	186	0.58
273	9.08	34.26 6	1.33	149	250	9.22	34.19	1.76	26.47	157	0.67
337	8.60	34.36 1	0.68	135	300	8.91	34.32	0.99	26.62	143	0.75
436	7.52	34.39 3	0.33	117	400	7.90	34.39	0.40	26.83	123	0.89
586	6.26	34.41 8	0.19	99	500	6.95	34.40	0.24	26.97	109	1.01
725	5.30	34.44 4	0.31	86	600	6.14	34.42	0.20	27.10	97	1.12
875	4.58	34.47 3	0.40	76	700	5.45	34.44	0.30	27.20	88	1.22
1007	4.10	34.51	0.53	68	800	4.91	34.46	0.36	27.28	80	1.31
1158	3.66	34.53 4	0.67	62	1000	4.12	34.50	0.52	27.40	69	1.48
1311	3.28	34.56 5	0.78	56	1200	3.53	34.54	0.70	27.49	60	1.63
1481	2.95	34.58 1	1.08	52	1500	2.91	34.58	1.11	27.58	52	1.83
1682	2.57	34.60 5	2.24u	47	2000	2.13	34.63	2.00	27.69	42	2.11
1932	2.20	34.62 9	1.93	42							
2185	2.00	34.64 5	2.14	39							

HORIZON; April 26, 1962; 1236 GCT; 24°27'N, 117°16'W; sounding, 1690 fm; wind, 330°, force 5; weather, overcast; sea, very rough; wire angle, 30°.

13090

0	18.34	34.05 7	5.11	346	0	18.34	34.06	5.11	24.49	345	0.00
9	18.34	34.06 2	5.19	345	10	18.34	34.06	5.20	24.49	345	0.03
31	18.36	34.06 0	5.21	346	20	18.34	34.06	5.20	24.49	345	0.07
57	18.01	34.03 9	5.25	339	30	18.36	34.06	5.21	24.48	346	0.10
66	17.70	33.97 6	5.21	337	50	18.40	34.06	5.21	24.47	347	0.17
83	17.50	33.97 4	5.17	332	75	17.58	33.97	5.18	24.61	334	0.26
96	17.28	33.94 9	5.43	329	100	17.11	33.93	5.40	24.69	326	0.34
109	16.48	33.86 5	5.18	317	125	14.71	33.76	4.98	25.10	287	0.42
136	13.44	33.71 9	4.71	265	150	12.49	33.72	4.05	25.52	247	0.49
153	12.26	33.71 9	3.95	243	200	10.43	33.99	1.93	26.11	191	0.60
180	10.88	33.77 5	3.85a)	215	250	10.16	34.33	1.10	26.42	162	0.69
209	10.94	34.22 5	1.42	182	300	8.98	34.30	1.07	26.59	145	0.77
236	10.60	34.35 0	1.01	167	400	7.47	34.32	0.56	26.84	122	0.91
281	9.28	34.29 7	1.20	150	500	6.56	34.35	0.27	26.99	108	1.03
339	8.46	34.33 4	0.78	135	600	(6.12)	(34.41)	(0.18)	(27.09)	(98)	(1.14)
431	7.09	34.31 8	0.47	117							
517	6.48	34.36 3	0.24	106							
593	6.15	34.40 7	0.18	98							

a) Alternate value, 4.10 ml/L, not used in interpolation.

SIO

CCOF1
6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

130.100

HORIZON; April 26, 1962; 0720 GCT; 24°12'N, 117°55.5'W; sounding, 2100 fm; wind, 350°, force 3; weather, overcast; sea, rough; wire angle, 21°.

0	18.16	34.01 1	5.25	345	0	18.16	34.01	5.25	24.50	345	0.00
9	18.16	33.99 6	5.32	346	10	18.16	34.00	5.32	24.49	345	0.03
61	17.70	34.01 8	5.39	333	20	18.14	34.00	5.33	24.49	345	0.07
105	17.23	33.95 6	5.35	327	30	18.10	33.99	5.34	24.49	345	0.10
117	16.24	33.74 0	5.46	321	50	18.00	34.02	5.36	24.54	340	0.17
141	14.58	33.79 0	4.90	282	75	17.67	34.02	5.38	24.62	333	0.26
164	12.13	33.77 3	3.74	237	100	17.43	33.99	5.36	24.66	329	0.34
196	11.18	34.23 7	1.55	186	125	15.68	33.75	5.31	24.88	308	0.42
224	10.91	34.41 1	0.91	168	150	13.58	33.78	4.47	25.35	263	0.49
261	10.58	34.49 9	0.63	156	200	11.13	34.28	1.38	26.21	182	0.61
308	9.90	34.50 5	0.38	144	250	10.69	34.48	0.71	26.45	159	0.69
367	9.38	34.50 0	0.31	137	300	10.00	34.50	0.41	26.58	146	0.77
460	7.98	34.43 7	0.31	120	400	8.89	34.48	0.31	26.75	130	0.92
607	6.34	34.42 0	0.28	100	500	7.43	34.42	0.30	26.92	114	1.05
739	5.52	34.46 8	0.31	86	600	6.39	34.42	0.28	27.07	100	1.16
882	4.82	34.48 0	0.37	78	700	5.71	34.46	0.30	27.18	89	1.27
1016	4.32	34.50 2	0.50	71	800	5.19	34.48	0.33	27.26	82	1.36
1169	3.78	34.51 8	0.72	64	1000	4.39	34.50	0.48	27.37	72	1.54
1320	3.42	34.55 2	0.84	58	1200	3.69	34.52	0.76	27.46	63	1.69
1492	3.09	34.57 0	1.02	54	1500	3.07	34.57	1.03	27.56	54	1.90
1693	2.67	34.60 1	1.41	48	2000	2.20	34.62	1.80	27.67	43	2.19
1939	2.29	34.61 8	1.73	44							
2188	2.00	34.64 7	2.10	39							

130.120

HORIZON; April 25, 1962; 2205 GCT; 23°31'N, 119°12'W; sounding, 2360 fm; wind, 300°, force 3; weather, cloudy; sea, rough; wire angle, 14°.

0	19.08	34.17 2	5.26	355	0	19.08	34.17	5.26	24.39	355	0.00
10	19.05	34.17 5	5.30	354	10	19.05	34.18	5.30	24.40	354	0.04
30	19.00	34.18 1	5.24	352	20	19.02	34.18	5.26	24.41	353	0.07
40	18.88	34.16	5.28	351	30	19.00	34.18	5.24	24.41	352	0.11
54	18.16	34.00 6	5.50	345	50	18.29	34.03	5.48	24.48	346	0.18
68	17.92	33.97 5	5.32	342	75	17.80	33.95	5.30	24.54	341	0.26
93	15.65	33.74 5	5.22	308	100	14.93	33.72	5.12	25.02	295	0.34
113	13.34	33.67 3	4.71	266	125	11.94	33.65	4.43	25.57	242	0.41
132	11.60	33.65 4	4.32	236	150	10.42	33.78	3.48	25.95	206	0.47
150	10.42	33.78 4	3.48	206	200	9.73	34.13	2.15	26.34	169	0.56
180	10.00	34.00 6	2.72	183	250	9.50	34.32	1.45	26.52	152	0.65
212	9.72	34.15 3	2.07	168	300	9.07	34.38	0.81	26.64	141	0.72
241	9.32	34.24 7	1.55	154	400	7.84	34.37	0.49	26.82	123	0.86
290	9.22	34.38 5	0.87	143	500	6.98	34.39	0.34	26.96	110	0.98
344	8.37	34.37 9	0.63	130	600	(6.13)	(34.39)	(0.26)	(27.08)	(99)	(1.10)
428	7.60	34.37 1	0.43	120							
513	6.85	34.39 5	0.32	108							
597	6.16	34.39 5	0.27	99							

137.23

HORIZON; April 28, 1962; 0732 GCT; 25°36'N, 112°21'W; sounding, 50 fm; wind, 290°, force 3; weather, clear; sea, rough; wire angle, 08°.

0	16.10	33.95 8	6.09	302	0	16.10	33.96	6.09	24.95	302	0.00
10	16.08	33.95 5	6.06	302	10	16.08	33.96	6.06	24.95	301	0.03
30	13.88	33.93 7	4.23	258	20	15.00	33.94	4.94	25.17	280	0.06
49	12.52	33.91 6	3.01	233	30	13.88	33.94	4.23	25.41	257	0.09

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10
CCOF1
6203-4

HORIZON; April 28, 1962; 1043 GCT; 25°21'N, 112°46'W; sounding, 145 fm; wind, 310°, force 3; weather, cloudy; sea, rough; wire angle, 35°.

137.30

0	16.86	33.87	0	6.04	325	0	16.86	33.87	6.04	24.70	325	0.00
9	16.83	33.86	7	6.10a)	325	10	16.83	33.87	6.10	24.71	325	0.03
25	15.30	33.80	0	5.24	297	20	16.66	33.86	6.00	24.74	321	0.06
41	13.46	33.68	3	3.98	268	30	14.47	33.74	4.73	25.14	284	0.10
62	13.02	33.92	5	3.42	242	50	13.25	33.70	3.73	25.36	263	0.15
82	12.06	33.94	2	2.57	223	75	12.41	33.87	2.83	25.65	235	0.21
104	11.22	34.09	8	1.99	196	100	11.30	34.06	2.09	26.01	201	0.27
138	11.34	34.58	0	0.40	163	125	11.28	34.40	0.99	26.28	175	0.32
173	11.12	34.64	8	0.14	154	150	11.28	34.61	0.30	26.44	160	0.36

HORIZON; April 28, 1962; 1541 GCT; 24°55.5'N, 113°29'W; sounding, 1880 fm; wind, 280°, force 3; weather, overcast; sea, rough; wire angle, 15°.

137.40

1	18.52	34.15	5	5.35	343	0	(18.52)	(34.16)	(5.35)	(24.52)	(342)	(0.00)
10	18.53	34.15	4	5.30	343	10	18.53	34.15	5.30	24.51	343	0.03
35	17.12	33.81	2	5.58	335	20	18.53	34.14	5.30	24.50	344	0.07
44	16.62	33.68	7	5.55	333	30	17.90	33.98	5.48	24.54	341	0.10
58	15.86	33.73	5	5.30	313	50	16.85	33.77	5.52	24.63	332	0.17
73	14.74	33.79	6	4.89	285	75	14.57	33.79	4.81	25.15	282	0.25
97	12.88	33.74	7	3.98	252	100	12.84	33.76	3.92	25.48	251	0.32
116	11.98	33.82	7	3.12	230	125	11.55	33.88	2.86	25.82	218	0.37
135	11.08	33.92	4	2.71	207	150	10.30	33.95		26.10	192	0.43
164	9.68	33.97	4	-	180	200	9.30	34.14	2.05	26.42	162	0.52
192	9.30	34.09	1	2.27	166	250	9.04	34.33	0.91	26.61	144	0.60
230	9.28	34.30	2	1.13	150	300	8.70	34.36	0.66	26.68	137	0.67
259	8.92	34.33	5	0.87	142	400	7.78	34.39	0.29	26.85	121	0.80
308	8.65	34.36	6	0.62	135	500	6.78	34.41	0.27	27.01	106	0.92
370	8.12	34.37	9	0.34	127	600	6.11	34.41	0.24	27.09	98	1.03
469	6.97	34.41	4	0.25	108							
558	6.44	34.40	6	0.29	102							
633	5.84	34.41	9	0.19	94							

HORIZON; April 28, 1962; 2103 GCT; 24°30'N, 114°05'W; sounding, 2070 fm; wind, 310°, force 4; weather, cloudy; sea, very rough; wire angle, 20°.

137.50

1	18.64	34.16	7	5.24	345	0	(18.64)	(34.17)	(5.24)	(24.50)	(344)	(0.00)
11	18.62	34.16	3	5.13	345	10	18.62	34.16	5.18	24.50	345	0.03
34	18.59	34.16	3	5.20	344	20	18.60	34.16	5.18	24.50	344	0.07
58	18.52	34.14	9	5.15	343	30	18.59	34.16	5.18	24.50	344	0.10
77	17.34	33.96	6	5.35	329	50	18.56	34.16	5.18	24.51	343	0.17
101	15.26	33.77	7	4.92	297	75	17.54	33.99	5.33	24.63	332	0.26
124	13.04	33.83	1	3.37	249	100	15.38	33.78	5.00	24.97	300	0.34
153	11.58	34.01	4	2.37	209	125	13.01	33.83	3.35	25.50	249	0.41
182	11.30	34.29	3	1.27	183	150	11.65	33.99	2.48	25.89	212	0.46
225	10.50	34.45	8	0.72	158	200	10.94	34.38	1.00	26.32	171	0.56
268	10.22	34.53	3	0.35	148	250	10.34	34.51	0.45	26.53	151	0.65
315	9.54	34.51	6	0.29	138	300	9.79	34.53	0.30	26.64	141	0.72
401	8.24	34.43	6	0.32	124	400	8.26	34.44	0.32	26.82	124	0.86
520	7.03	34.45	2	0.26	106	500	7.20	34.45	0.28	26.98	109	0.98
645	6.21	34.46	6	0.15	95	600	6.51	34.46	0.18	27.08	99	1.10
774	5.24	34.46	0	0.29	84	700	5.80	34.46	0.20	27.17	90	1.20
906	4.58	34.48	5	0.43	75	800	5.07	34.46	0.31	27.26	82	1.30
1059	4.06	34.51	1	0.56	68	1000	4.22	34.50	0.52	27.39	70	1.47
1210	3.68	34.54	7	0.67	61	1200	3.71	34.54	0.65	27.47	62	1.62
1382	3.24	34.56	9	0.89	55	1500	2.99	34.58	1.09	27.57	52	1.82
1585	2.82	34.59	7	1.20	50	2000	2.18	34.63	1.90	27.68	42	2.10
1831	2.43	34.61	8	1.58	45							
2080	2.07	34.64	0	2.02	40							

a) Alternate value, 6.20 ml/L, not used in interpolation.

SIO

CCOF1
6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

137.60

HORIZON; April 29, 1962; 0141 GCT; 24°21'N, 114°36.5'W; sounding, 2000 fm; wind, 310°, force 5; weather, overcast; sea, very rough; wire angle, 17°.

1	19.11	34.17 0	5.22	356	0	(19.11)	(34.17)	(5.22)	(24.38)	(356)	(0.00)
10	19.11	34.17 1	5.23	356	10	19.11	34.17	5.23	24.38	356	0.04
30	19.12	34.17 1	5.19	356	20	19.11	34.17	5.21	24.38	356	0.07
59	17.26	33.90 7	5.63	331	30	19.12	34.17	5.19	24.38	356	0.11
70	17.10	33.91 2	5.64	328	50	17.90	33.97	5.45	24.53	342	0.18
85	15.70	33.75 5	5.11	308	75	16.76	33.88	5.56	24.73	322	0.26
99	14.04	33.72 1	4.31	277	100	13.92	33.72	4.28	25.24	274	0.34
114	12.72	33.78 5	3.81	246	125	12.13	33.88	3.23	25.71	229	0.40
140	11.42	33.99 0	2.61	208	150	10.98	34.03	2.40	26.04	197	0.45
160	10.65	34.07 0	2.23	189	200	10.36	34.32	1.28	26.38	166	0.55
189	10.34	34.26 3	1.49	169	250	10.26	34.48	0.62	26.52	152	0.63
219	10.40	34.40 3	0.95	160	300	9.58	34.46	0.47	26.62	143	0.70
250	10.26	34.48 3	0.62	152	400	8.23	34.45	0.28	26.83	123	0.84
300	-	34.46 4	0.47	-	500	7.28	34.46	0.17	26.98	109	0.97
355	8.82	34.46 6	0.35	130	600	6.33	34.45	0.27	27.10	97	1.08
440	7.78	34.44 0	0.23	117							
525	7.08	34.46 9	0.17	106							
611	6.23	34.44 6	0.28	97							

137.70

HORIZON; April 29, 1962; 0701 GCT; 23°59.5'N, 115°17.5'W; sounding, 1980 fm; wind, 320°, force 4; weather, overcast; sea, rough; wire angle, 26°.

0	18.42	34.07 7	5.59	346	0	18.42	34.08	5.59	24.48	346	0.00
8	18.42	34.07 3	5.35	346	10	18.42	34.07	5.30	24.48	347	0.03
31	18.44	34.07 5	5.29	347	20	18.43	34.07	5.30	24.47	347	0.07
48	18.38	34.06 5	5.32	346	30	18.44	34.08	5.30	24.48	346	0.10
67	16.81	33.85 9	5.56	325	50	17.80	33.98	5.45	24.56	339	0.17
90	15.64	33.78 0	5.16	305	75	16.68	33.85	5.53	24.73	323	0.26
117	13.23	33.74 0	3.69	259	100	14.30	33.74	4.25	25.17	280	0.33
149	11.00	33.76 7	3.62	217	125	12.68	33.74	3.66	25.50	249	0.40
180	10.64	34.15 2	1.92	183	150	10.98	33.77	3.61	25.84	217	0.46
220	10.44	34.41 2	0.86	160	200	10.52	34.30	1.28	26.34	170	0.56
265	10.27	34.56 8	0.33	146	250	10.34	34.54	0.45	26.55	149	0.64
327	9.42	34.54 6	0.17	134	300	9.85	34.57	0.21	26.66	139	0.71
423	7.90	34.44 3	0.21	119	400	8.22	34.46	0.21	26.84	122	0.85
570	6.40	34.44 4	0.16	99	500	7.05	34.44	0.18	26.99	107	0.97
708	5.36	34.45 7	0.29	85	600	6.13	34.45	0.19	27.12	95	1.08
856	4.70	34.47 6	0.33	77	700	5.41	34.45	0.28	27.21	87	1.18
986	4.26	34.51 2	0.36	69	800	4.92	34.47	0.31	27.29	80	1.27
1133	3.82	34.54 1	0.58	63	1000	4.21	34.52	0.38	27.40	68	1.44
1280	3.44	34.55 8	0.77	58	1200	3.64	34.55	0.68	27.49	61	1.59
1448	3.08	34.57 9	0.98	53	1500	2.97	34.58	1.08	27.57	52	1.79
1646	2.67	34.59 9	1.32	48	2000	2.15	34.62	1.83	27.68	43	2.07
1891	2.29	34.60 8	1.63	45							
2140	2.02	34.64 4	2.05	40							

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ _T	Z	T	S	O ₂	σ _t	δ _T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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6203-4

HORIZON: April 28, 1962; 0425 GCT; 23°37.5'N, 115°52.5'W; sounding, 2000 fm; wind, 320°, force 3; weather, overcast; sea, rough; wire angle, 15°.

137.80

1	18.42	33.97 2	5.33	354	0	(18.42)	(33.97)	(5.33)	(24.40)	(354)	(0.00)
11	18.42	33.97 0	5.33	354	10	18.42	33.97	5.33	24.40	354	0.04
30	18.42	33.97 1	5.27	354	20	18.42	33.97	5.30	24.40	354	0.07
50	17.07	33.81 9	5.53	334	30	18.42	33.97	5.27	24.40	354	0.11
70	16.58	33.72 5	5.52	330	50	17.07	33.82	5.53	24.61	334	0.18
95	15.24	33.80 2	5.15	295	75	16.50	33.74	5.51	24.68	327	0.26
119	12.58	33.68 6	4.31	251	100	14.80	33.78	5.03	25.10	288	0.34
147	11.18	33.78 2	3.50	219	125	12.21	33.70	4.13	25.56	243	0.40
175	10.32	33.96 0	2.69	192	150	11.06	33.80	3.43	25.85	216	0.46
217	10.30	34.31 6	1.15	165	200	10.31	34.20	1.62	26.29	174	0.56
261	9.82	34.40 4	0.73	151	250	9.96	34.39	0.79	26.50	154	0.64
312	9.22	34.43 2	0.53	139	300	9.38	34.43	0.58	26.63	142	0.72
399	7.98	34.39 4	0.37	124	400	7.96	34.39	0.37	26.82	124	0.86
519	6.85	34.41 0	0.19	107	500	7.02	34.41	0.20	26.97	109	0.98
642	5.70	34.42 3	0.24	92	600	6.08	34.42	0.21	27.11	97	1.09
780	5.02	34.46 0	0.31	81	700	5.37	34.44	0.28	27.21	87	1.19
912	4.44	34.49 5	0.38	73	800	4.93	34.47	0.32	27.29	80	1.29
1068	3.94	34.52 0	0.53	66	1000	4.15	34.51	0.48	27.40	69	1.45
1220	3.54	34.54 8	0.69	60	1200	3.59	34.54	0.65	27.48	61	1.60
1405	3.12	34.56 9	0.94	54	1500	2.94	34.58	1.06	27.58	52	1.80
1600	2.74	34.59 2	1.22	49	2000	2.15	34.63	1.89	27.69	42	2.08
1851	2.34	34.61 7	1.65	44							
2103	2.05	34.63 4	2.02	41							

HORIZON: April 30, 1962; 1421 GCT; 24°36'N, 112°25'W; sounding, 60 fm; wind, 300°, force 4; weather, cloudy; sea, rough; wire angle, 20°.

140.30

1	16.35	34.00 0	5.64	304	0	(16.35)	(34.00)	(5.64)	(24.92)	(304)	(0.00)
11	16.32	33.97 9	5.64	305	10	16.32	33.98	5.64	24.91	305	0.03
30	14.32	33.94 0	4.03	266	20	16.31	33.98	5.64	24.91	305	0.06
49	12.08	33.94 3	2.71	223	30	14.32	33.94	4.03	25.32	266	0.09
73	11.70	34.25 4	1.44	193	50	12.03	33.95	2.66	25.79	222	0.14
					75	(11.68)	(34.28)	(1.36)	(26.11)	(191)	(0.19)

HORIZON: April 30, 1962; 0856 GCT; 24°25'N, 113°01.5'W; sounding, 1780 fm; wind, 310°, force 5; weather, overcast; sea, rough; wire angle, 33°.

140.40

0	16.76	33.81 1	5.97	327	0	16.76	33.81	5.97	24.68	327	0.00
9	16.77	33.79 4	5.99	329	10	16.77	33.79	5.98	24.66	329	0.03
30	16.76	33.79 5	5.96	328	20	16.76	33.79	5.97	24.66	329	0.07
38	16.74	33.79 4	5.97	328	30	16.76	33.80	5.96	24.67	328	0.10
49	16.30	33.79 5	5.48	318	50	16.30	33.80	5.47	24.78	318	0.16
61	14.83	33.74 6	4.63	291	75	13.86	33.82	4.97	25.32	266	0.24
78	13.32	33.83	3.67	255	100	11.93	33.94	2.50	25.80	221	0.30
93	12.05	33.85 1	2.95	229	125	11.05	33.99	2.25	26.00	202	0.35
107	11.81	34.01 9	2.19	213	150	10.68	34.14	1.91	26.18	184	0.40
132	10.82	33.98 3	2.25	198	200	9.96	34.29	1.43	26.42	161	0.49
150	10.68	34.14 5	1.91	184	250	9.81	34.42	0.79	26.55	149	0.57
180	10.32	34.25 4	1.65	170	300	8.99	34.40	0.75	26.67	138	0.64
202	9.95	34.29 9	1.41	160	400	8.23	34.47	0.43	26.84	121	0.78
240	9.95	34.42 3	0.82	151	500	7.04	34.43	0.26	26.99	108	0.90
289	9.08	34.38 8	0.76	140							
368	8.64	34.49 0	0.58	126							
446	7.63	34.43 3	0.27	116							
515	6.90	34.42 4	0.26	107							

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6203-4

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δ_T	Z	T	S	O ₂	σ_t	δ_T	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

140.50

HORIZON; April 30, 1962; 0332 GCT; 24°03.5'N, 113°39'W; sounding, 1940 fm; wind, 300°, force 4; weather, overcast; sea, rough; wire angle, 23°.

0	17.94	34.00 0	5.41	340	0	17.94	34.00	5.41	24.54	340	0.00
9	17.94	34.04 5u	5.45	-	10	17.94	34.00	5.41	24.54	340	0.03
28	17.88	33.98 6	5.39	340	20	17.91	33.99	5.40	24.54	340	0.07
37	17.86	33.98 2	5.45	340	30	17.88	33.98	5.39	24.54	340	0.10
51	17.50	33.94 1	5.51	334	50	17.52	33.95	5.49	24.60	334	0.17
64	16.78	33.88 7	5.53	322	75	15.98	33.82	5.35	24.86	310	0.25
86	15.18	33.75 1	5.01	298	100	14.32	33.74	4.47	25.17	281	0.33
105	13.96	33.74 4	4.26	273	125	12.50	33.80	3.62	25.58	241	0.39
122	12.66	33.78 3	3.72	246	150	11.97	34.05	2.35	25.88	213	0.45
139	12.04	33.87 6	3.10	227	200	11.18	34.48	0.64	26.36	168	0.55
165	11.86	34.31 1	1.30	192	250	10.57	34.56	0.38	26.53	151	0.63
197	11.22	34.46 9	0.69	169	300	9.63	34.47	0.48	26.62	143	0.70
224	10.86	34.55 2	0.46	157	400	8.09	34.41	0.36	26.82	124	0.84
270	10.34	34.55 7	0.36	148	500	7.12	34.41	0.30	26.96	111	0.97
320	9.16	34.42 0	0.58	139							
397	8.12	34.41 4	0.37	124							
478	7.24	34.40 0	0.32	113							
559	6.84	34.46 9	0.19	103							

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
60.55-H	III-26	2120	37°49.0'	123°14.0'	43	310°	3	cloudy	rough	11.31	-
80.65-H	17	1210	34°00.0'	121°28.0'	2197	140°	5	overcast	missing	12.16	-
82.47-B	IV-11	1835	34°15.0'	119°58.0'	300	090°	1	fog	moderate	11.38	33.78 4
83.40-B	11	1405	34°14.0'	119°22.0'	11	270°	1	fog	moderate	11.60	33.63 8
83.43-B	11	1550	34°08.0'	119°34.0'	134	090°	3	fog	moderate	12.48	33.59 4
83.51-B	11	2205	33°52.0'	120°07.5'	60	290°	2	fog	moderate	11.53	33.71 2
83.55-B	12	0010	33°44.0'	120°24.5'	520	270°	2	fog	moderate	11.46	33.58 7
83.65-B	12	0555	33°24.0'	121°06.0'	1900	270°	3	fog	moderate	12.37	33.30 2
83.70-B	12	0825	33°14.5'	121°26.0'	2000	280°	3	overcast	moderate	12.52	33.29 7
83.80-B	12	1305	33°53.0'	122°09.0'	2100	290°	3	overcast	moderate	13.28	33.30 6
83.90-B	12	1715	32°34.5'	122°47.5'	2000	320°	3	overcast	moderate	13.38	33.32 8
87.35-B	14	0120	33°50.0'	118°37.5'	300	270°	4	overcast	moderate	13.47	33.54 4
87.40-B	13	2250	33°40.0'	118°58.0'	450	290°	3	overcast	moderate	13.63	33.54 8
87.45-B	13	2015	33°30.0'	119°19.0'	900	290°	3	overcast	moderate	12.09	33.67 4
87.50-B	13	1750	33°20.0'	119°39.5'	40	320°	3	overcast	moderate	12.31	33.59 2
87.55-B	13	1520	33°10.0'	120°00.0'	660	320°	3	overcast	moderate	12.28	33.44 4
87.60-B	13	1245	33°00.0'	120°21.5'	400	320°	3	overcast	moderate	13.12	33.37 2
87.65-B	13	1015	32°49.5'	120°41.5'	2000	290°	3	overcast	moderate	12.94	33.37 9
87.70-B	13	0735	32°39.5'	121°02.0'	2100	270°	3	overcast	moderate	13.36	33.41 7

TEMPERATURE AND SALINITY AT 10 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
87.80-B	IV-13	0253	32°19.5'	121°43.0'	2100	330°	3	overcast	moderate	12.99	33.23 2
87.90-B	12	2150	32°00.0'	122°23.0'	2400	290°	3	partly cloudy	rough	14.52	33.41 2
90.65-H	6	0910	32°16.0'	120°17.0'	2055	310°	4	clear	high	12.68	33.35 3
93.35-B	14	1500	32°40.0'	117°51.5'	350	270°	4	fog	moderate	14.94	33.54 0
93.45-B	14	2040	32°20.0'	118°32.0'	650	320°	3	cloudy	moderate	14.30	33.52 6
93.55-B	15	0225	32°00.0'	119°12.5'	850	270°	4	cloudy	moderate	13.48	33.43 7
93.65-B	15	0805	31°40.0'	119°53.5'	2000	320°	4	cloudy	moderate	14.33	33.43 4
97.30-B	17	1650	32°16.0'	117°08.5'	30	320°	2	overcast	slight	14.60	33.64
97.32-B	17	1545	32°12.0'	117°16.0'	100	320°	2	overcast	slight	15.00	33.58
97.35-B	17	1345	32°04.5'	117°30.5'	700	280°	3	overcast	moderate	15.06	33.55
97.40-B	17	1115	31°56.0'	117°48.0'	350	310°	3	overcast	moderate	15.16	33.58
97.45-B	17	0850	31°46.0'	118°08.5'	800	300°	3	overcast	rough	15.24	33.58
97.50-B	17	0615	31°36.0'	118°29.0'	1300	300°	3	overcast	rough	15.24	33.55 3
97.55-B	17	0320	31°25.5'	118°49.5'	500	320°	4	cloudy	rough	14.88	33.54 9
97.60-B	17	0045	31°15.5'	119°10.0'	2000	320°	4	cloudy	rough	14.38	33.44 2
97.65-B	16	2225	31°05.0'	119°30.5'	2000	320°	4	cloudy	rough	15.61	33.51 0
97.70-B	16	2000	30°54.0'	119°52.0'	1950	300°	4	cloudy	rough	15.22	33.56 4
97.80-B	16	1525	30°35.0'	120°24.0'	2100	330°	4	cloudy	rough	15.36	33.58 0
97.90-B	16	0940	30°15.5'	121°10.5'	2000	350°	2	cloudy	moderate	15.61	33.55 1

TEMPERATURE AND SALINITY AT 10 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
100.45-H	IV-12	1415	31°10.0'	117°48.0'	665	320°	4	overcast	moderate	14.13	33.47 6
100.55-H	12	2242	30°49.0'	118°26.0'	1375	330°	4	cloudy	moderate	14.96	33.47 9
100.65-H	13	1140	30°25.5'	119°11.0'	1990	300°	4	cloudy	moderate	15.14	33.54 9
103.30-B	19	0710	31°06.0'	116°24.5'	32	320°	2	fog	moderate	13.41	33.73
103.35-B	19	0935	30°56.0'	116°45.0'	900	320°	4	fog	moderate	15.02	33.48
103.40-B	19	1155	30°43.5'	117°06.0'	900	320°	4	fog	moderate	14.98	-
103.45-B	19	1425	30°36.0'	117°24.0'	1100	320°	4	cloudy	moderate	15.14	33.49
103.50-B	19	1640	30°26.0'	117°44.5'	1400	300°	5	partly cloudy	rough	15.40	33.49
103.55-B	19	1925	30°16.0'	118°05.0'	1300	320°	5	partly cloudy	rough	15.52	33.58
103.60-B	19	2210	30°08.0'	118°23.0'	1800	320°	6	partly cloudy	very rough	15.42	33.57
103.65-B	20	0110	29°56.5'	118°44.0'	2000	320°	6	overcast	very rough	15.37	33.49
103.70-B	20	0350	29°46.0'	119°06.0'	1800	320°	6	cloudy	high	15.60	33.58
103.80-B	20	0845	29°24.5'	119°47.0'	2000	320°	7	cloudy	high	15.86	33.61
107.32-B	21	1712	30°26.0'	116°11.0'	250	300°	2	overcast	moderate	12.01	33.70
107.35-B	21	1515	30°20.0'	116°22.5'	900	320°	3	overcast	rough	13.91	33.75
107.40-B	21	1220	30°07.0'	116°45.0'	1500	320°	4	cloudy	very rough	14.06	33.51
107.45-B	21	1010	30°00.0'	117°03.5'	1100	320°	5	cloudy	very rough	14.80	33.51
107.50-B	21	0740	29°50.5'	117°23.5'	1450	320°	5	cloudy	very rough	14.94	33.45
107.55-B	21	0445	29°41.0'	117°42.0'	1700	320°	6	partly cloudy	very rough	15.16	33.49

TEMPERATURE AND SALINITY AT 10 METERS (NET-TOW STATIONS)

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6203-4

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
107.60-B	IV-21	0150	29°32.0'	118°01.5'	1800	340°	6	partly cloudy	high	15.14	33.49
107.65-B	20	2300	29°21.0'	118°21.0'	2000	330°	7	partly cloudy	high	15.77	33.64
107.70-B	20	2015	29°11.0'	118°41.0'	2000	330°	7	partly cloudy	high	16.04	33.69
107.80-B	20	1445	28°51.5'	119°20.5'	2000	340°	7	partly cloudy	very rough	15.98	33.63
110.32-H	21	1235	29°50.0'	115°51.0'	35	320°	3	cloudy	high	13.20	33.55 2
110.45-H	21	0115	29°25.5'	116°35.0'	305	310°	6	partly cloudy	very high	15.02	33.49 3
110.55-H	20	1950	29°09.5'	117°18.5'	1900	310°	6	partly cloudy	high	15.45a)	33.53 6
110.65-H	20	1236	28°46.0'	117°57.5'	1905	330°	7	partly cloudy	missing	16.10	33.64 9
113.30-B	22	0140	29°22.0'	115°18.0'	30	320°	3	clear	moderate	12.24	33.86
113.35-B	22	0405	29°11.5'	115°38.0'	550	270°	3	clear	moderate	12.72	33.68
113.40-B	22	0630	29°02.0'	115°57.0'	1000	270°	3	clear	rough	14.16	33.64
113.45-B	22	0850	28°51.0'	116°17.5'	1100	270°	3	partly cloudy	rough	14.78	33.53
113.50-B	22	1120	28°41.0'	116°35.0'	2000	270°	3	cloudy	rough	15.20	33.48
113.55-B	22	1345	28°30.0'	116°55.0'	2000	280°	3	overcast	moderate	15.44	33.57
113.60-B	22	1615	28°20.0'	117°14.0'	1900	270°	3	overcast	moderate	15.54	33.53
113.65-B	22	1850	28°12.0'	117°33.0'	2000	320°	2	cloudy	moderate	16.16	33.66
113.70-B	22	2120	28°02.0'	117°55.0'	1700	320°	2	partly cloudy	rough	16.85	33.82

a) Alternate value, 15.24°C.

TEMPERATURE AND SALINITY AT 10 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
113.80-B	IV-23	0150	27°42.0'	118°33.5'	2000	320°	3	partly cloudy	rough	16.96	33.83
113.90-B	23	0610	27°22.0'	119°12.0'	2000	320°	3	missing	moderate	16.28	33.66
117.26-B	24	2305	28°56.0'	114°41.5'	40	320°	3	partly cloudy	moderate	13.96	33.78
117.30-B	24	2120	28°48.0'	114°56.5'	55	320°	2	partly cloudy	moderate	14.69	33.65
117.35-B	24	1855	28°38.0'	115°16.0'	120	320°	2	cloudy	moderate	14.98	33.69
117.40-B	24	0915	28°28.0'	115°35.5'	500	290°	2	cloudy	moderate	15.16	33.62
117.45-B	24	0650	28°18.0'	115°56.0'	1750	270°	2	partly cloudy	moderate	15.46	33.66
117.50-B	24	0415	28°05.5'	116°14.0'	2500	270°	1	cloudy	moderate	15.45	33.56
117.55-B	24	0150	27°58.0'	116°34.5'	2000	270°	3	cloudy	moderate	15.92	33.64
117.60-B	23	2340	27°48.0'	116°50.0'	2000	260°	2	cloudy	moderate	16.26	33.65
117.65-B	23	2135	27°37.5'	117°11.0'	2000	270°	1	cloudy	moderate	16.30	33.69
117.70-B	23	1900	27°28.0'	117°32.5'	2100	320°	2	cloudy	moderate	17.04	33.80
117.80-B	23	1435	27°10.0'	118°10.5'	2000	-	1	overcast	rough	17.06	33.84
117.90-B	23	1020	26°50.0'	118°50.0'	2000	320°	1	overcast	moderate	17.14	33.80
118.39-B	24	1100	28°18.5'	115°23.5'	75	290°	1	cloudy	moderate	15.38	33.68
120.25-B	25	0305	28°22.5'	114°15.0'	30	280°	3	partly cloudy	moderate	15.68	33.62
120.30-B	25	0505	28°13.0'	114°34.0'	50	320°	3	partly cloudy	moderate	14.97	33.66
120.35-B	25	0725	28°03.0'	114°54.0'	50	320°	2	partly cloudy	moderate	15.98	33.71
120.40-B	25	0923	27°56.5'	115°14.0'	22	270°	4	partly cloudy	moderate	15.12	33.72

TEMPERATURE AND SALINITY AT 10 METERS (NET-TOW STATIONS)

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6203-4

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
120.55-H	IV-23	1228	27°09.0'	116°18.5'	2020	200°	1	cloudy	slight	15.24	33.55 3'
120.65-H	23	1940	26°53.0'	116°54.0'	2455	250°	1	overcast	rough	16.56	33.68 7
123.37-B	25	1420	27°24.0'	114°40.0'	40	280°	2	cloudy	moderate	13.78	33.78
123.42-B	25	1645	27°14.0'	114°59.0'	850	320°	3	cloudy	moderate	15.89	33.77
123.45-B	25	1820	27°08.0'	115°11.5'	2200	320°	3	cloudy	moderate	15.54	33.67
123.50-B	25	2050	26°58.0'	115°31.0'	2000	290°	4	overcast	moderate	16.16	33.79
123.55-B	25	2325	26°47.0'	115°50.5'	2000	320°	4	overcast	moderate	15.08	33.66
123.60-B	26	0130	26°38.5'	116°09.0'	2200	300°	4	cloudy	moderate	15.90	33.58
123.65-B	26	0350	26°28.5'	116°28.0'	2200	300°	4	drizzle	moderate	16.89	33.73
123.70-B	26	0605	26°19.0'	116°47.0'	2000	300°	5	drizzle	rough	16.76	33.74
123.80-B	26	1010	25°59.0'	117°25.5'	2000	320°	5	cloudy	rough	16.94	33.73
127.34-B	27	1250	26°55.0'	114°06.5'	41	290°	2	partly cloudy	rough	12.82	33.66
127.40-B	27	1020	26°42.5'	114°23.5'	1400	320°	4	partly cloudy	rough	15.46	33.64
127.45-B	27	0755	26°33.5'	114°44.5'	1800	320°	6	partly cloudy	rough	15.42	33.57
127.50-B	27	0525	26°25.0'	115°04.0'	1800	320°	6	partly cloudy	rough	15.64	33.57
127.55-B	27	0255	26°16.0'	115°24.0'	2000	340°	5	partly cloudy	rough	16.23	33.62
127.60-B	27	0020	26°05.5'	115°43.5'	2000	340°	6	partly cloudy	rough	16.12	33.58
127.65-B	26	2140	25°53.0'	116°06.0'	2000	320°	5	cloudy	rough	16.72	33.67
127.70-B	26	1920	25°49.0'	116°27.0'	2000	320°	5	cloudy	rough	16.85	33.74

TEMPERATURE AND SALINITY AT 10 METERS (NET-TOW STATIONS)

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
127.80-B	IV-26	1420	25°29.5'	117°02.5'	2000	340°	5	cloudy	rough	17.49	33.83
130.35-H	27	2005	26°13.0'	113°49.0'	460	300°	4	clear	very rough	16.32a)	33.69 1
130.45-H	27	1420	25°56.0'	114°27.0'	1880	300°	3	overcast	very rough	15.72	33.66 0
130.55-H	27	0910	25°39.5'	115°04.0'	1980	330°	5	cloudy	very rough	16.08	33.61 1
133.25-B	28	0050	26°04.5'	112°48.0'	44	320°	5	clear	rough	15.06	33.98
133.30-B	28	0325	25°54.5'	113°07.5'	110	290°	5	clear	rough	16.22	33.88
133.35-B	28	0605	25°44.5'	113°26.5'	450	320°	5	missing	rough	15.84	33.82
133.40-B	28	0835	25°34.5'	113°45.5'	1500	320°	5	missing	rough	16.67	33.73
133.45-B	28	1100	25°25.0'	114°05.5'	2000	320°	5	cloudy	rough	16.10	33.69
133.50-B	28	1330	25°15.5'	114°26.5'	2000	320°	4	overcast	rough	16.25	33.65
133.55-B	28	1605	25°07.0'	114°46.0'	2000	320°	4	overcast	rough	16.64	33.69
133.60-B	28	1830	24°57.0'	115°06.5'	2000	320°	4	overcast	rough	16.92	33.76
133.65-B	28	2055	24°49.0'	115°25.0'	2000	320°	4	overcast	rough	16.90	33.75
133.70-B	28	2305	24°39.0'	115°40.5'	2000	330°	4	overcast	rough	16.87	33.70
133.80-B	29	0330	24°14.5'	116°17.0'	2000	320°	4	overcast	very rough	17.66	33.84
137.35-H	28	1310	25°09.0'	113°06.5'	1075	270°	3	overcast	very rough	17.11	33.79 0
137.45-H	28	1742	24°46.0'	113°45.0'	1770	300°	3	cloudy	rough	16.26	33.62 7

a) Alternate value, 16.21°C.

TEMPERATURE AND SALINITY AT 10 METERS (NET-TOW STATIONS)

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6203-4

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
137.55-H	IV-28	2325	24°28.5'	114°21.5'	2040	310°	3	overcast	very rough	18.81	-
140.35-H	30	1135	24°35.5'	112°42.5'	520	320°	5	overcast	rough	16.91	33.88 1
140.45-H	30	0610	24°14.0'	113°20.0'	1860	310°	5	overcast	rough	18.24	34.11 4

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