

UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

# data report

PHYSICAL AND CHEMICAL DATA

CCOFI Cruise 6101-2  
5 January - 20 February 1961

SIO Reference 61-24  
29 June 1961

UNIVERSITY OF CALIFORNIA  
SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

CCOFI CRUISE 6101-2

5 January - 20 February 1961

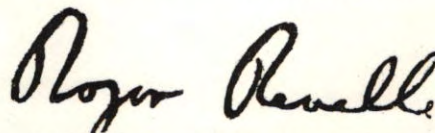
Sponsored by

Marine Research Committee

SIO Reference 61-24

29 June 1961

Approved for distribution:



Roger Revelle, Director



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## INTRODUCTION

The data presented in this report were collected by the RV Black Douglas of the Bureau of Commercial Fisheries, the RV Horizon and the RV Hugh M. Smith of the Scripps Institution of Oceanography on Cruise 6101-2 of the California Cooperative Oceanic Fisheries Investigations program, and the USCGC Minnetonka of the United States Coast Guard at Station November. The first two figures in CCOFI 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 6007-8 (Scripps Institution report, SIO Ref. 62-9) and 6008, 6009 and 6009-10 (SIO Ref. 62-10).

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.<sup>1/</sup> 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  $\Delta D$ .

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."<sup>2/</sup> The values are recorded to two decimal places when obtained by chlorinity titration, or by salinometer where only one determination

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<sup>1/</sup>Klein, Hans T. A new technique for processing physical oceanographic data. MS.  
<sup>2/</sup>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.

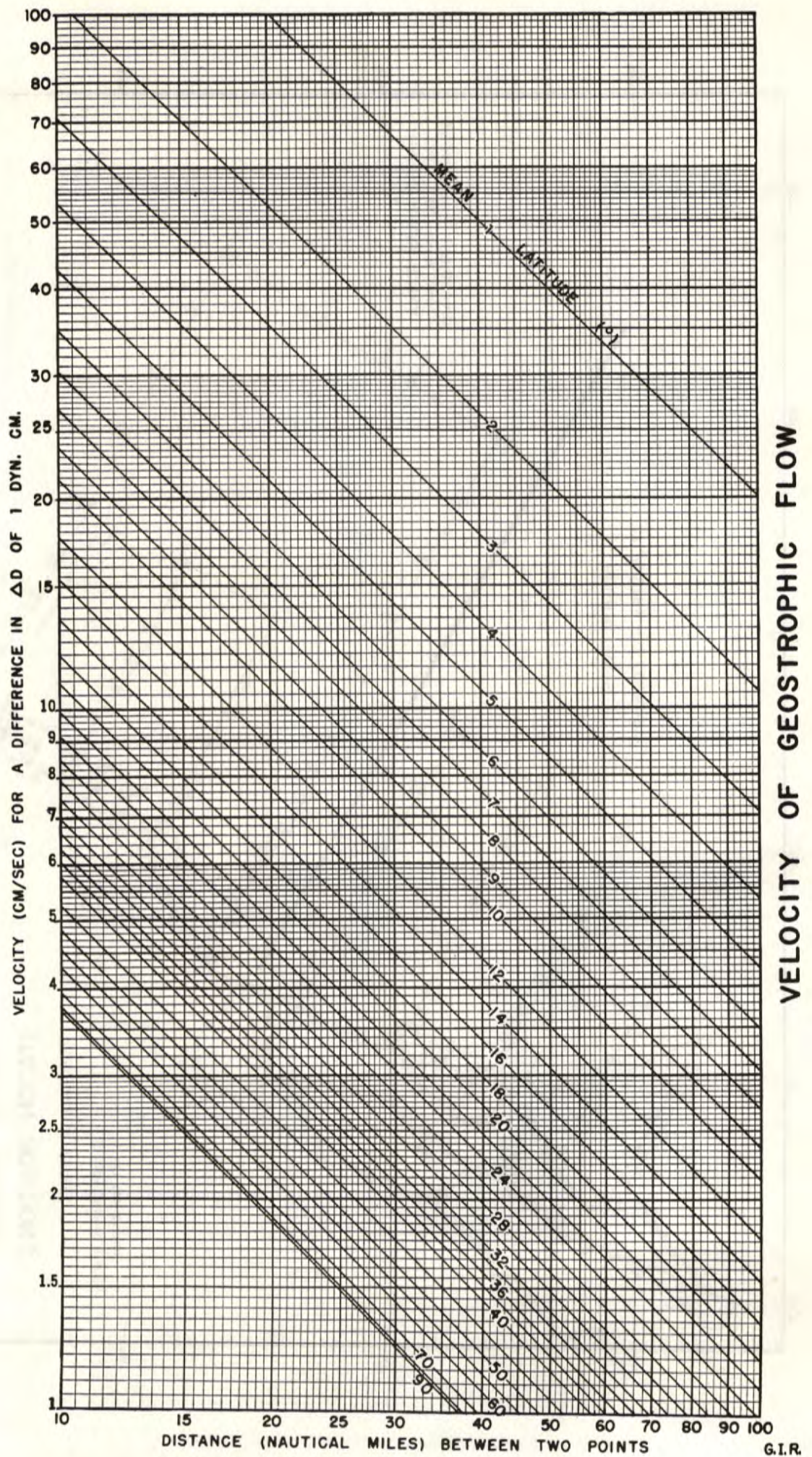
r: rejected value (value seems to be definitely wrong),

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.











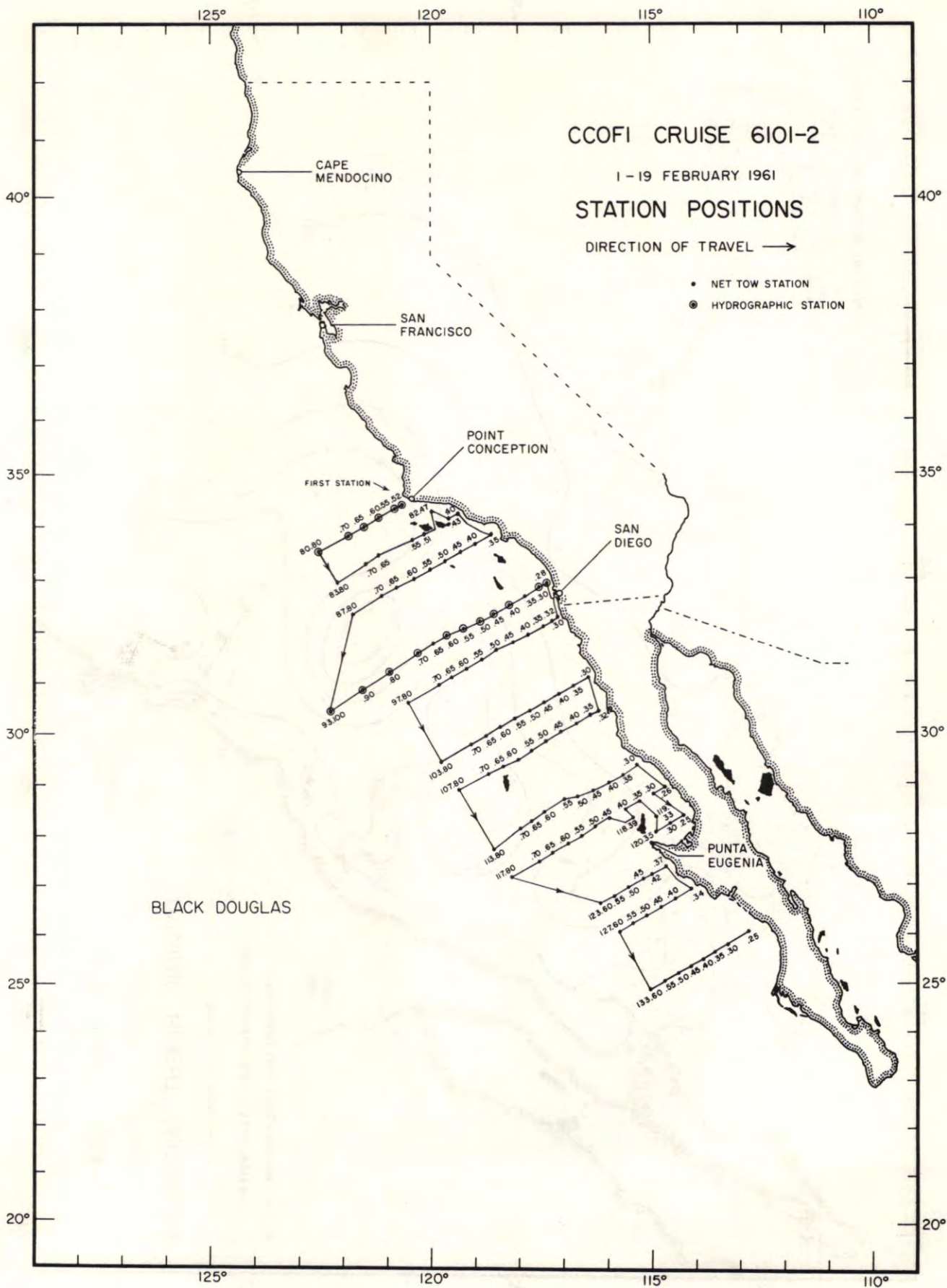


FIGURE 1B



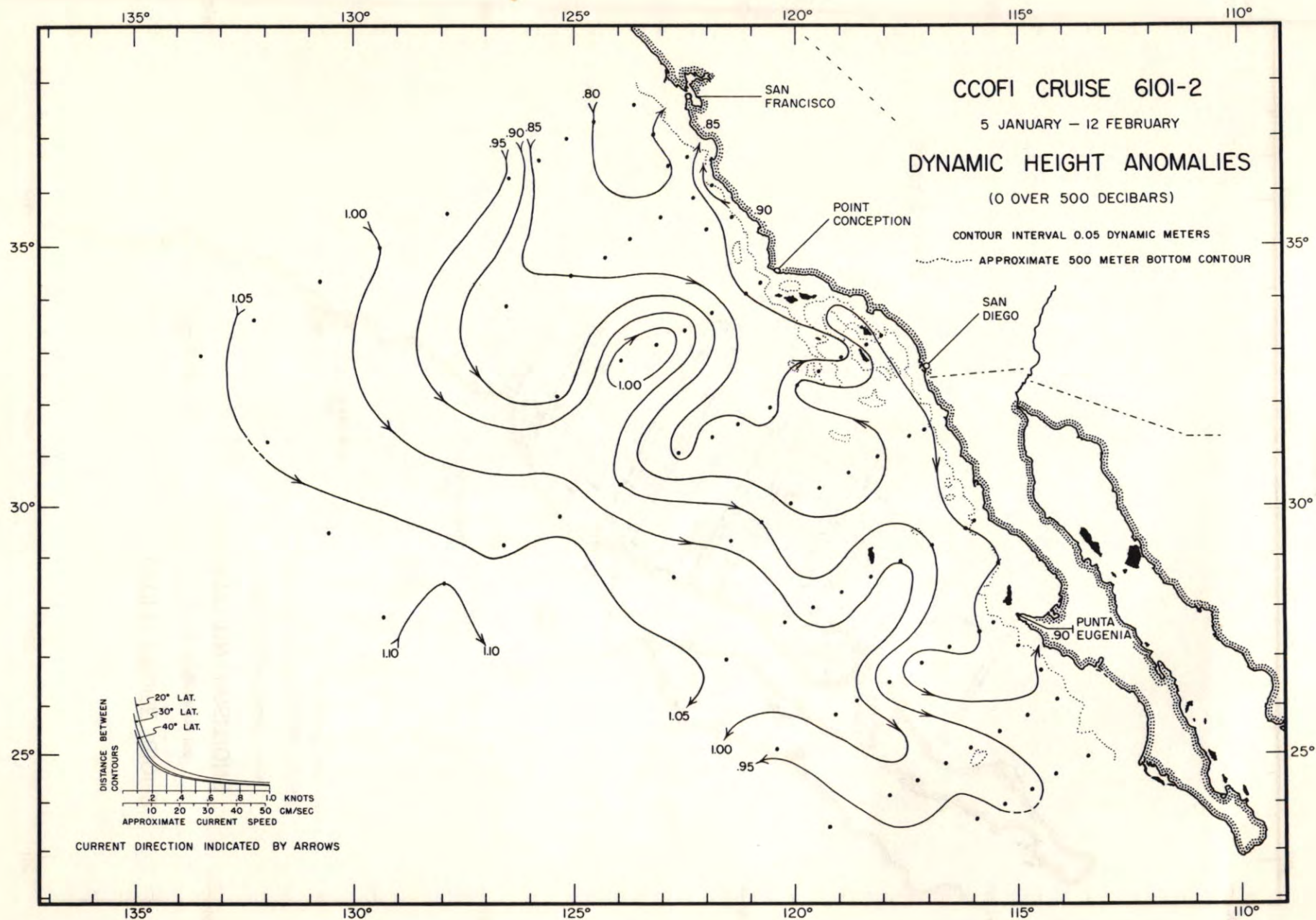


FIGURE 2A



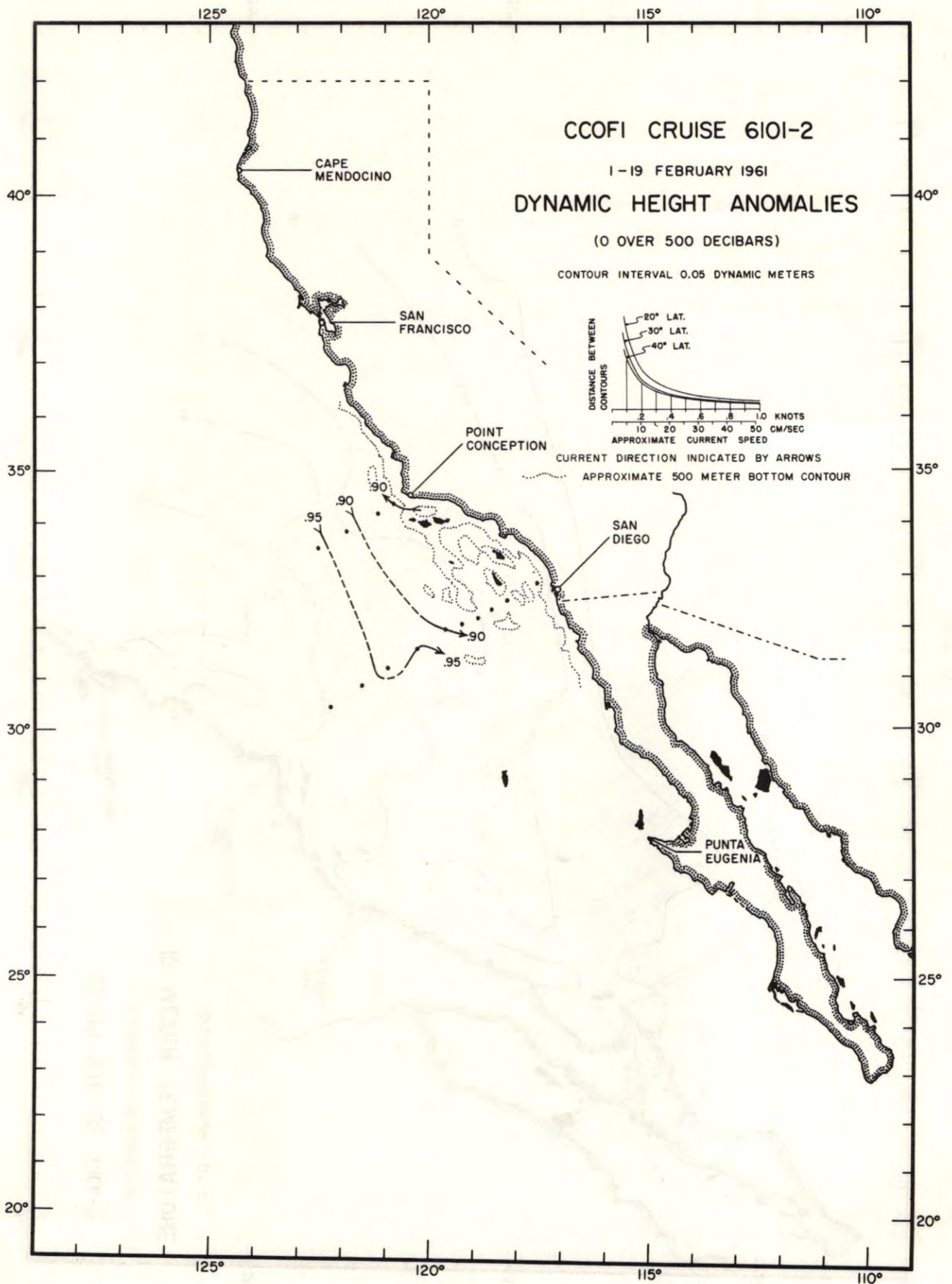


FIGURE 2B



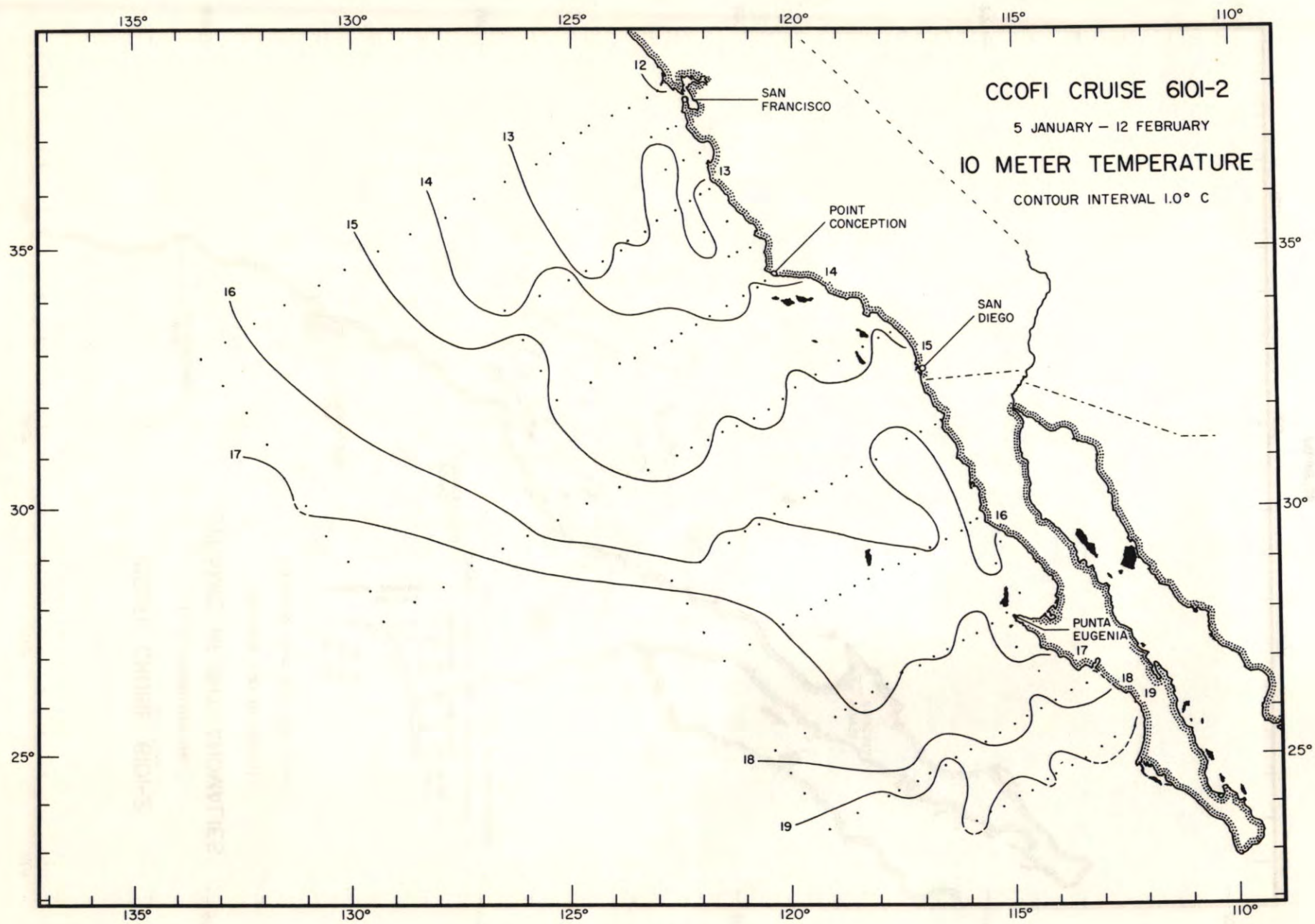


FIGURE 3A



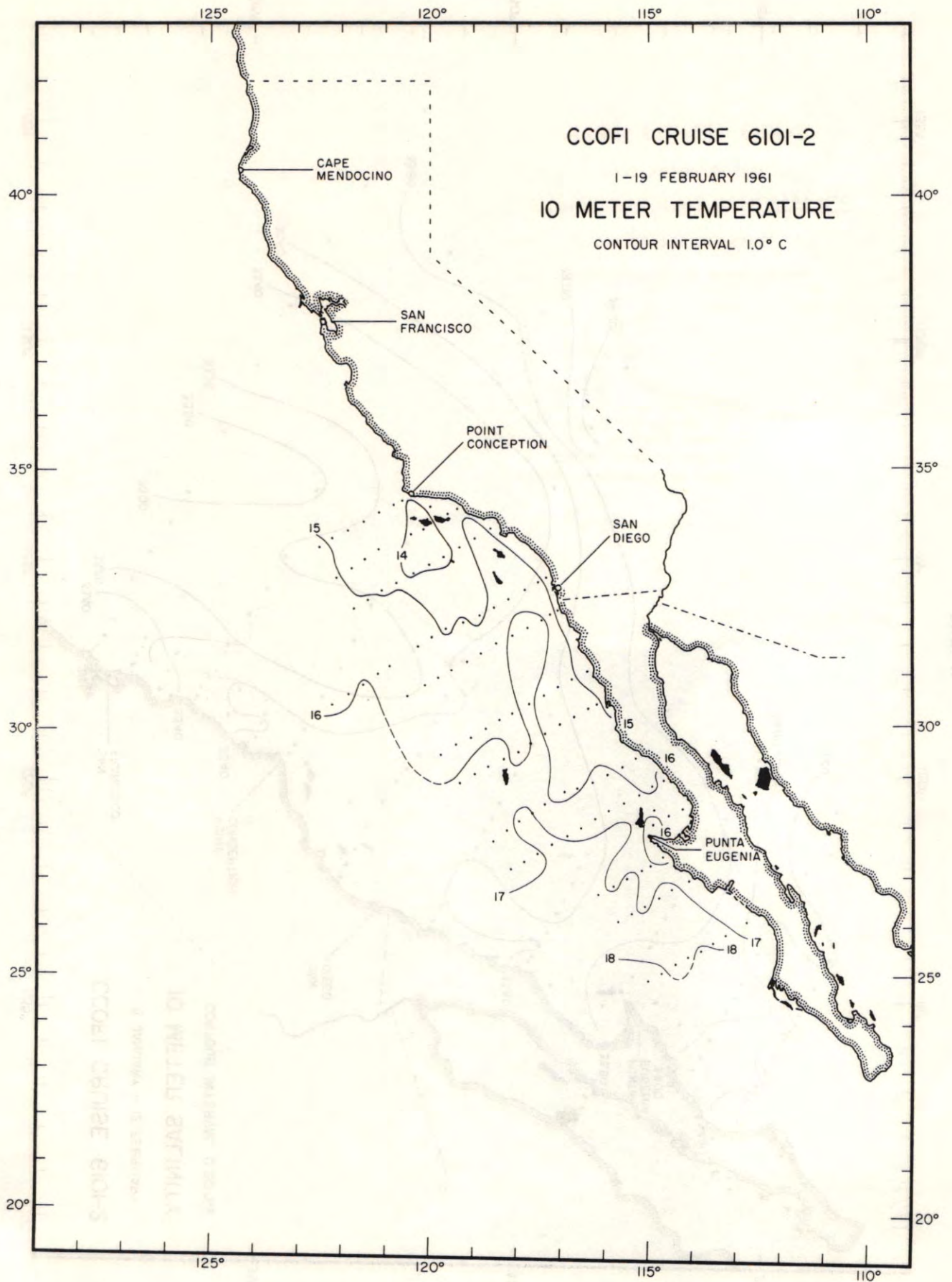


FIGURE 3B



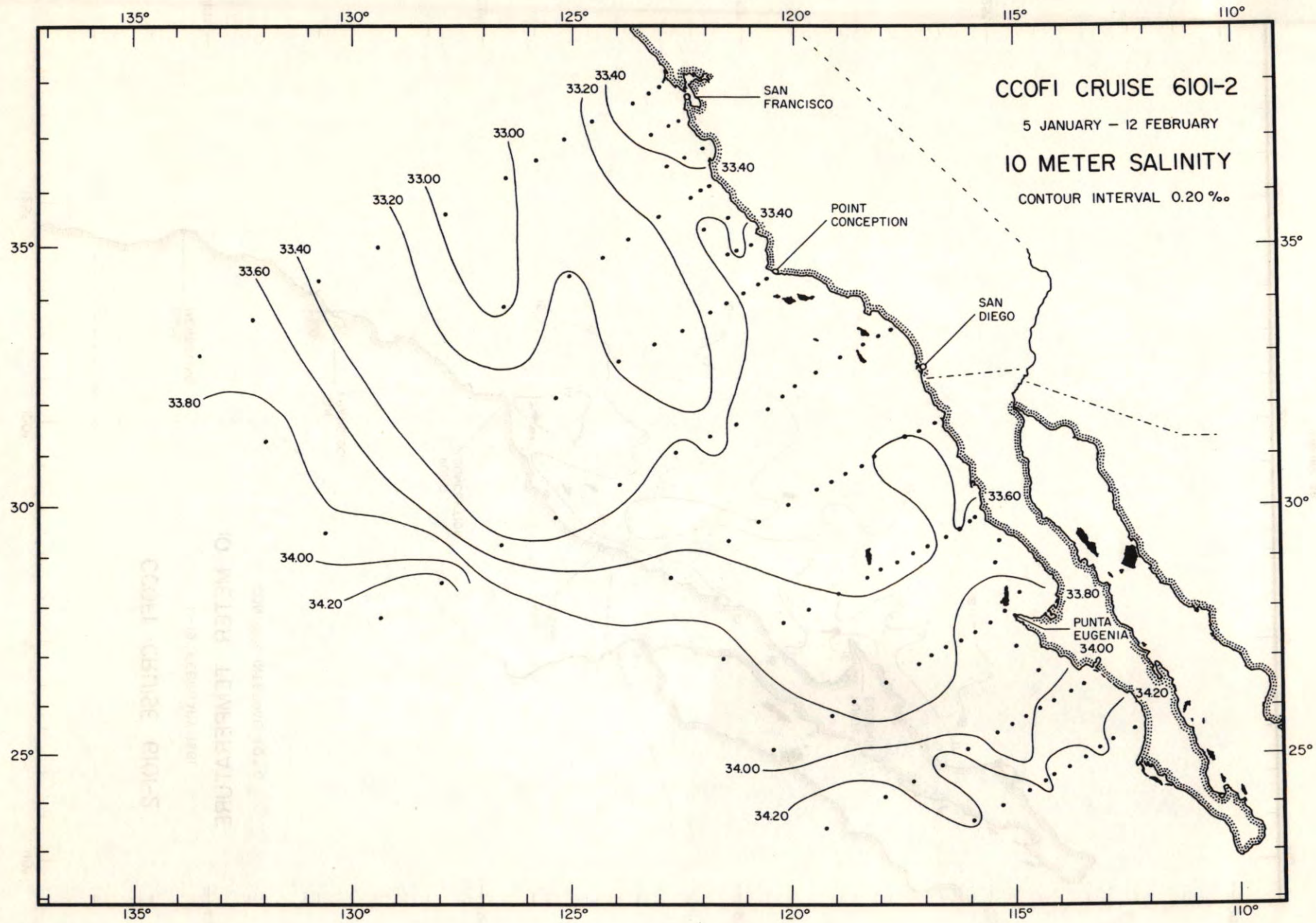


FIGURE 4A



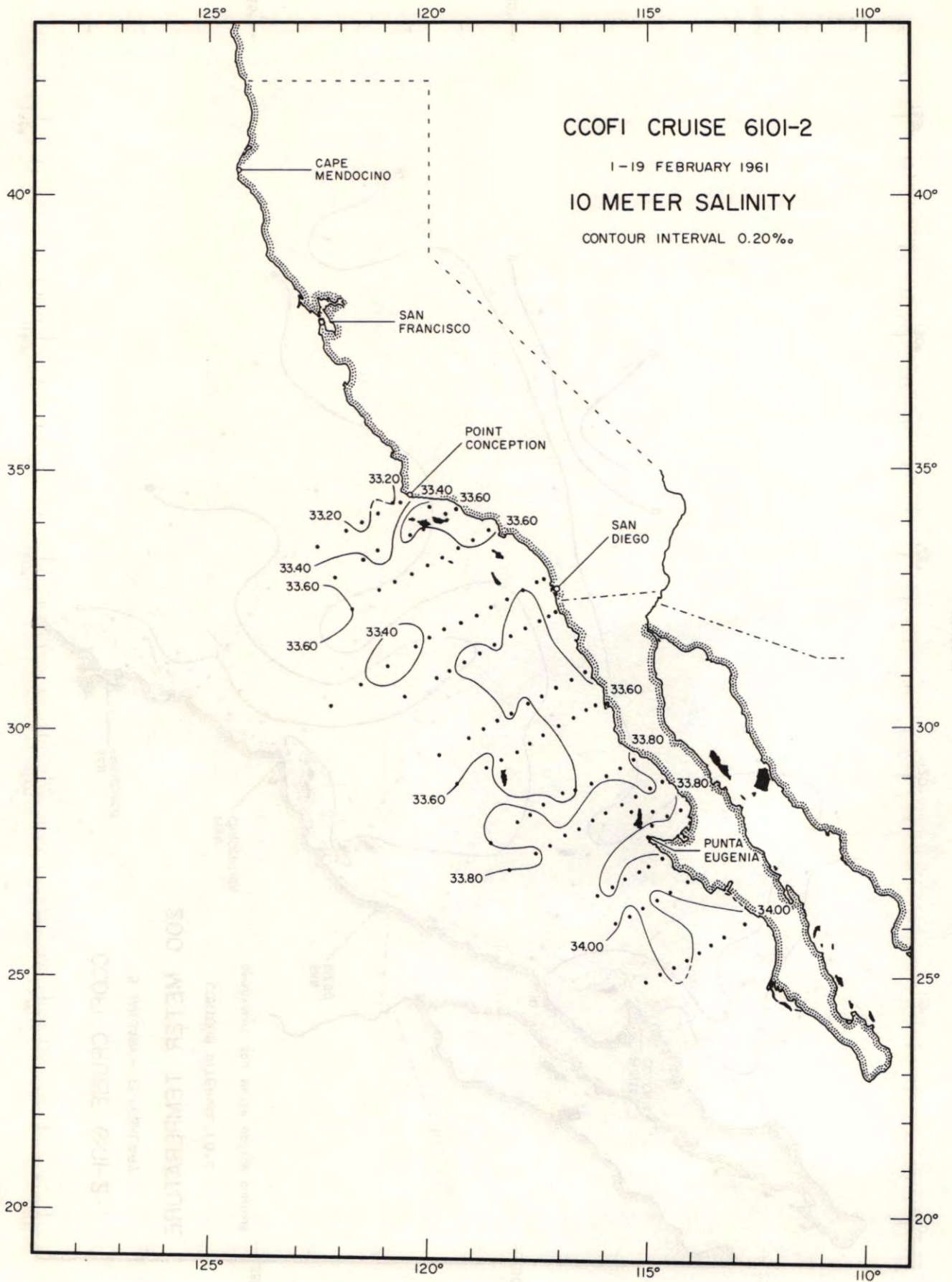


FIGURE 4B



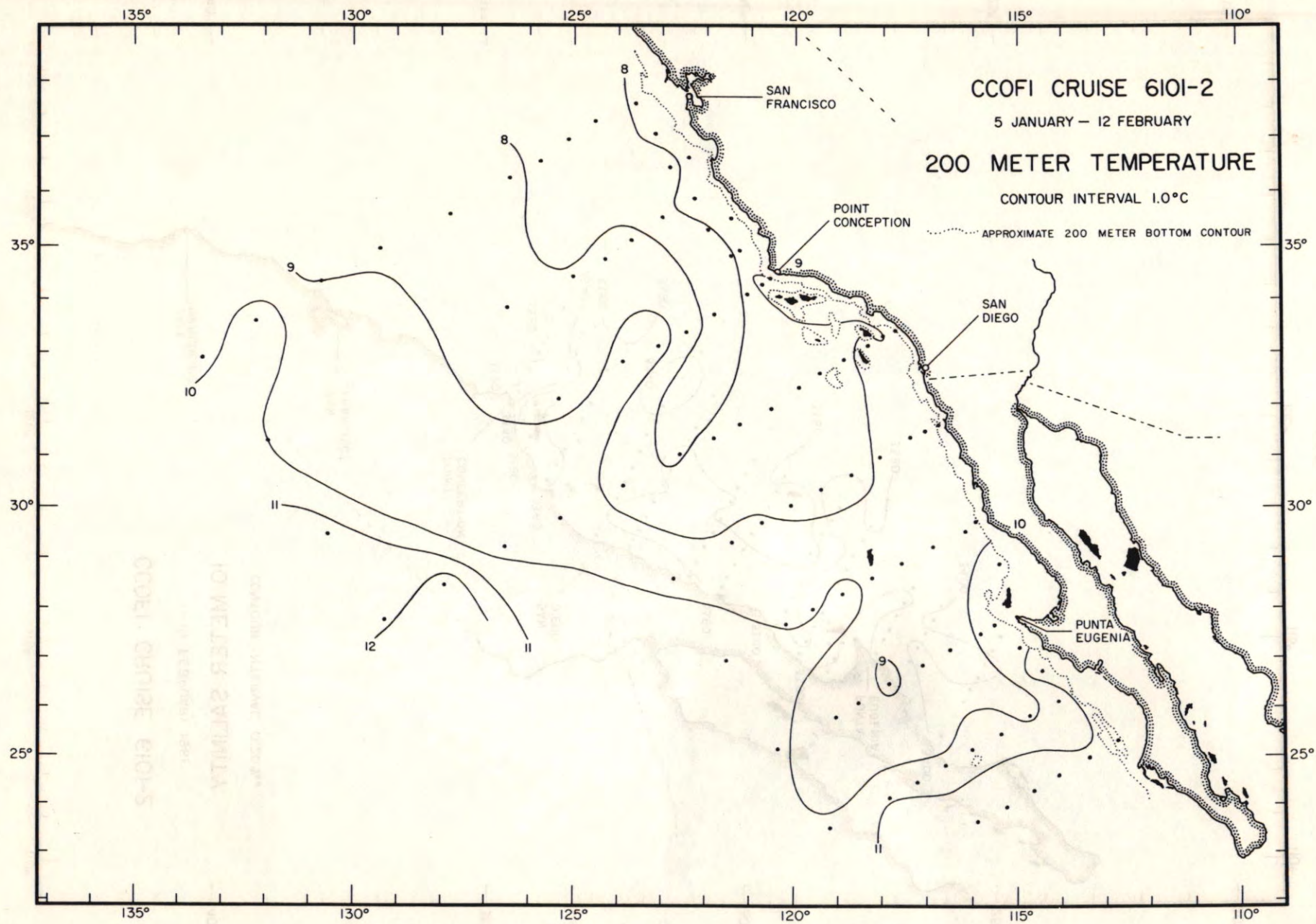


FIGURE 5A



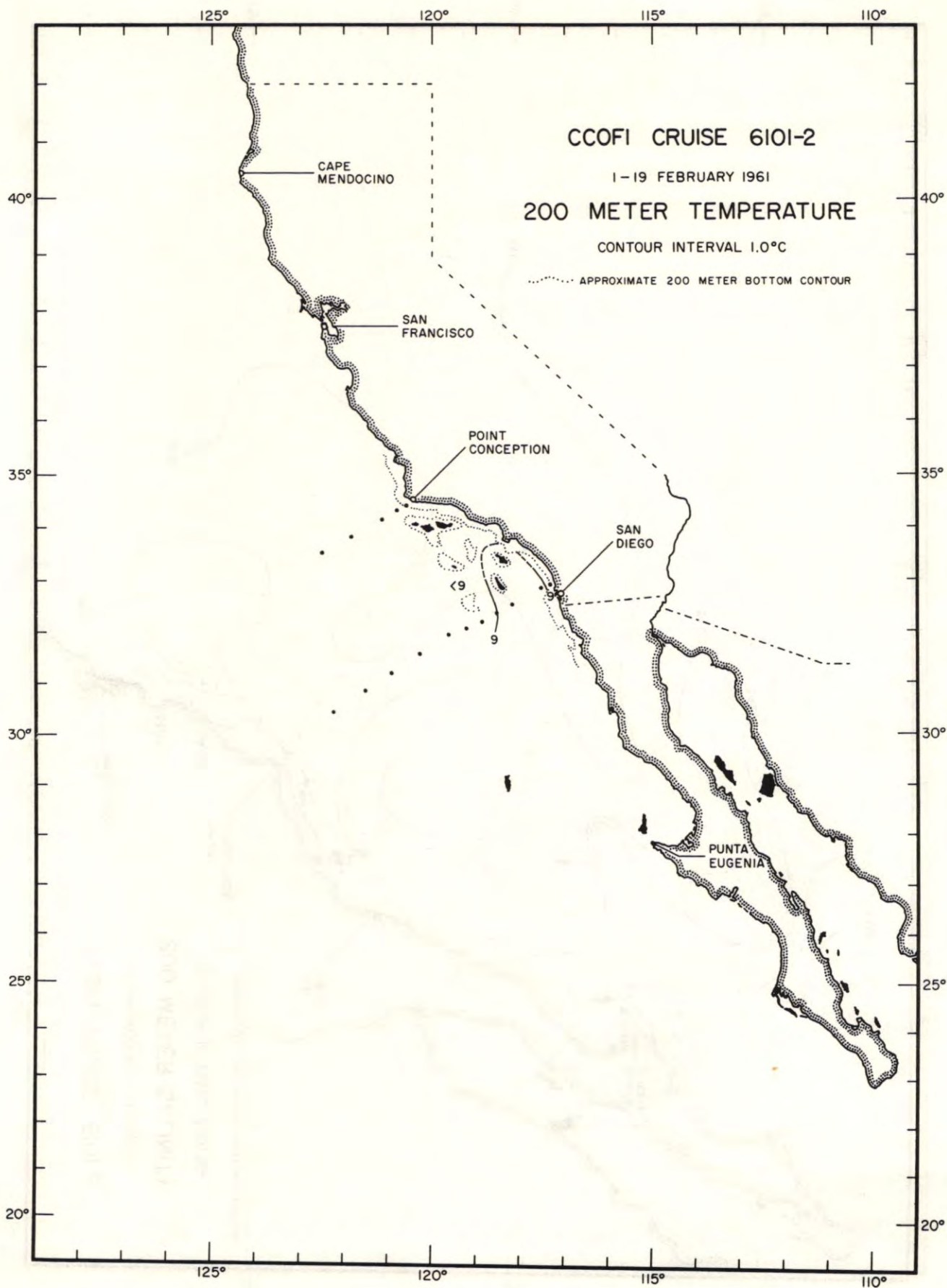


FIGURE 5B



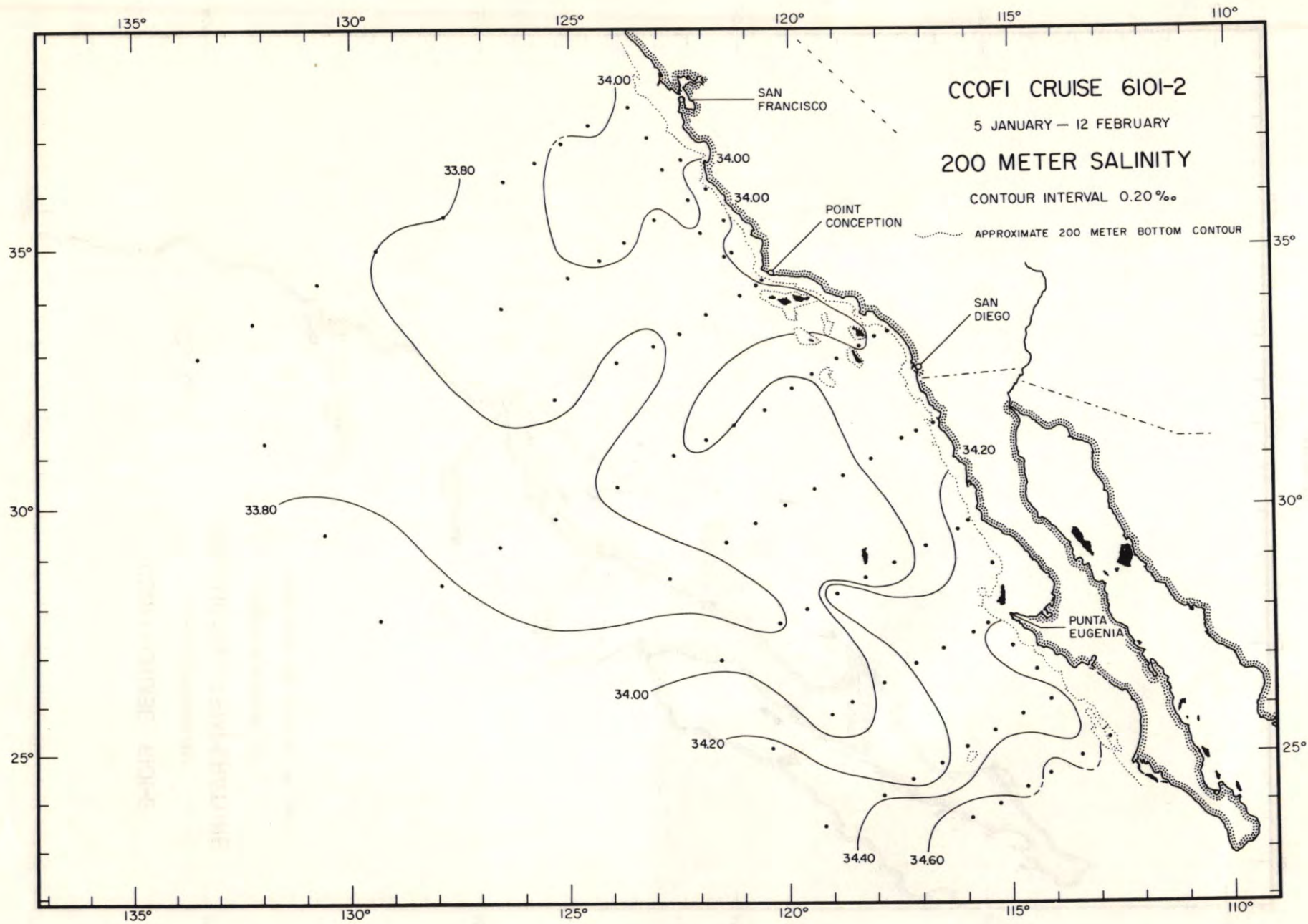


FIGURE 6A



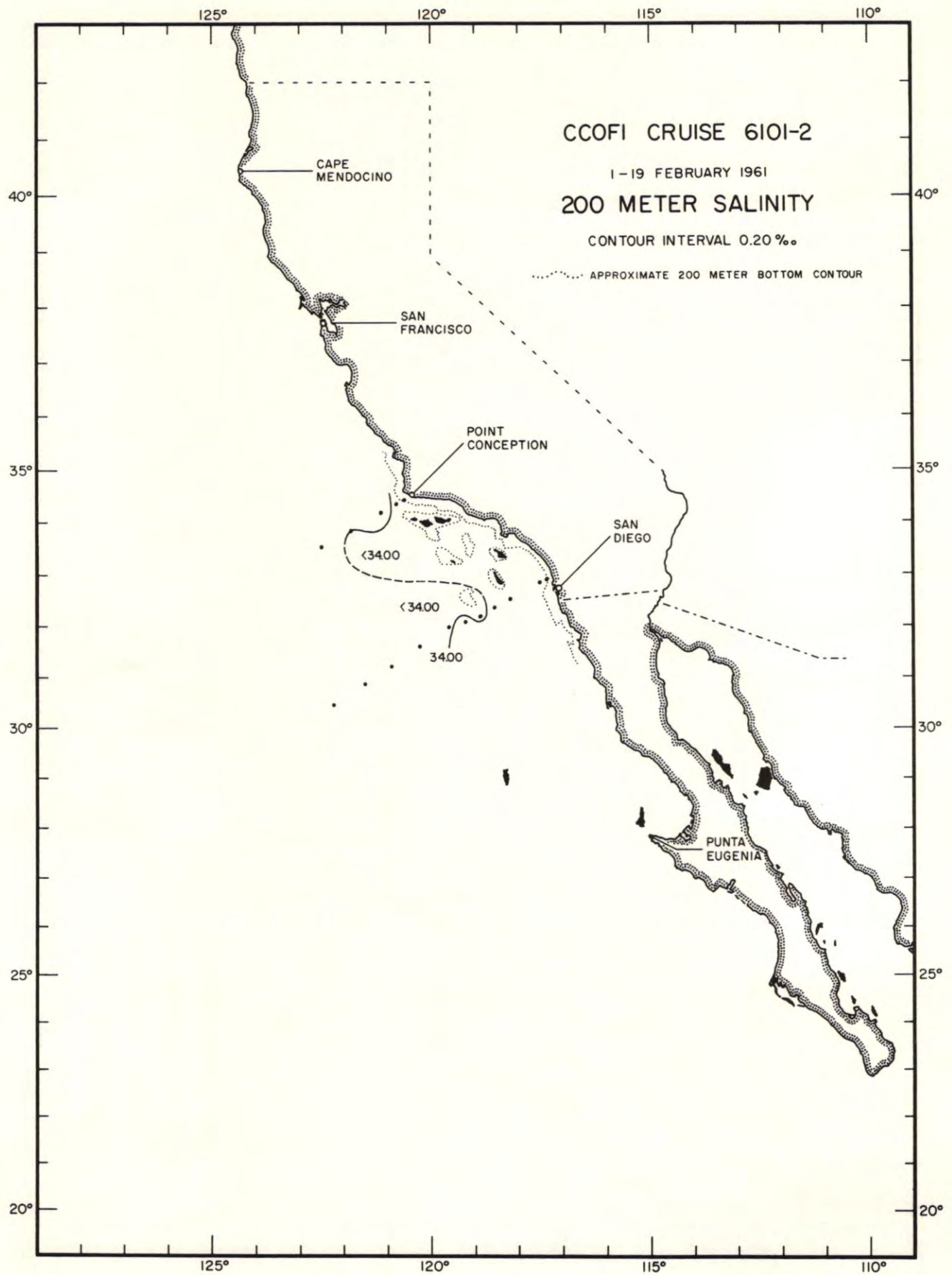


FIGURE 6B



## PERSONNEL

### SHIPS' CAPTAINS

Collinson, Barnes, RV Horizon, San Diego to San Francisco  
Forster, Charles W., RV Black Douglas  
Hopkins, Marvin F., RV Hugh M. Smith  
Newbegin, Robert C., RV Horizon, San Francisco to San Diego  
Schiederer, Lt. Cmdr. E. D., USCGC Minnetonka

### PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

#### RV Black Douglas

Farrar, Lloyd, Fishery Aid, Bureau of Commercial Fisheries  
Farrell, David E., Marine Technician  
Hubbard, Lyle T., Fishery Aid, Bureau of Commercial Fisheries  
Olsen, Karl, Laboratory Assistant II  
Sanger, Gerald A., Fishery Aid, Bureau of Commercial Fisheries  
Simonsen, Reimer, Visiting Research Assistant, Institut für Meereskunde,  
Kiel, Germany

#### RV Horizon

Brennan, Robert E., Senior Marine Technician  
Born, Robert M., Marine Technician, San Diego to San Francisco  
Engebretson, David W., Marine Technician  
Fisher, Oliver L., Marine Technician  
Frey, James M., Marine Technician  
Olsen, Karl, Laboratory Assistant II  
Pine, James S., Marine Technician  
Wagner, Vaughn M., Fishery Aid, Bureau of Commercial Fisheries  
Wyllie, John G., Senior Laboratory Technician



RV Hugh M. Smith

Brennan, Robert E. , Senior Marine Technician  
Bottom, Kenneth S. , Marine Technician  
Bryan, Walter R. , Marine Technician  
Engebretson, David M. , Marine Technician  
Frey, James M. , Marine Technician  
Hodnett, Haley L. , Marine Technician  
Pine, James S. , Marine Technician  
Wagner, Vaughn M. , Fishery Aid, Bureau of Commercial Fisheries  
Wyllie, John G. , Senior Laboratory Technician

USCGC Minnetonka

Lawson, Jan B. , Senior Marine Technician



\* Enlarge decimal point  
pp. 1-43

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

SIO  
CCOFI  
6101-2

HORIZON; January 11, 1961; 2316 GCT; 37°53.5'N, 123°02'W; sounding, 40 fm; wind, 270°, force 3; weather, partly cloudy; sea, rough; wire angle, 08°.

60.52

1	11.79	33.28 3	6.15	266	0	(11.79)	(33.28)	(6.15)	(25.32)	(266)	(0.00)
11	12.00	33.49 3	5.96	255	10	12.00	33.48	5.97	25.43	256	0.03
30	11.84	-	5.89	-	20	11.94	33.54	5.93	25.49	250	0.05
50	11.76	33.59 7	4.87	243	30	11.84	33.56	5.89	25.52	247	0.08
					50	11.76	33.60	4.87	25.57	243	0.13

HORIZON; January 12, 1961; 0413 GCT; 37°37'N, 123°39'W; sounding, 1700 fm; wind, 280°, force 3; weather, clear; sea, rough; wire angle, 09°.

60.60

1	12.48	33.52 3	6.07	261	0	(12.48)	(33.52)	(6.07)	(25.38)	(261)	(0.00)
11	12.46	33.52 3	6.03	261	10	12.46	33.52	6.03	25.38	261	0.03
30	-	33.54 1	6.00	-	20	12.45	33.52	6.01	25.38	261	0.05
40	11.90	33.54 9	5.19	249	30	12.45	33.54	6.00	25.39	259	0.08
55	10.51	33.53 5	4.09	226	50	10.90	33.54	4.30	25.68	232	0.13
69	9.97	33.60 5	3.68	212	75	9.96	33.64	3.60	25.92	209	0.18
93	9.46	33.74 9	3.04	194	100	9.37	33.78	2.92	26.13	189	0.23
113	9.20	33.84 2	2.76	182	125	8.98	33.90	2.57	26.28	175	0.28
131	8.87	33.92 4	2.50	171	150	8.62	33.98	2.33	26.41	163	0.32
151	8.60	33.98 5	2.32	163	200	8.13	34.10	1.62	26.57	148	0.40
180	8.12	34.00 6	2.25	154	250	7.49	34.08	1.67	26.65	140	0.47
213	8.13	34.12 5	1.41	146	300	7.39	34.18	0.98	26.74	132	0.54
242	7.51	34.06 9	1.71	142	400	6.71	34.24	0.60	26.89	118	0.67
290	7.44	34.16 5	1.08	133	500	5.83	34.25	0.46	27.01	106	0.79
343	7.05	34.21 3	0.75	125	600	(5.22)	(34.31)	(0.37)	(27.12)	(95)	(0.90)
425	6.52	34.24 7	0.56	115							
508	5.76	34.25 5	0.45	105							
590	5.28	34.30 1	0.37	96							

HORIZON; January 12, 1961; 0928 GCT; 37°17.5'N, 124°33.5'W; sounding, 2100 fm; wind, 300°, force 4; weather, clear; sea, very rough; wire angle, 16°.

60.70

1	12.54	33.24 1	6.12	283	0	(12.54)	(33.24)	(6.12)	(25.14)	(283)	(0.00)
11	12.51	33.24 1	6.09	283	10	12.51	33.24	6.10	25.15	283	0.03
28	12.32	33.33 1	5.93	273	20	12.45	33.25	6.05	25.17	281	0.06
38	11.88	33.29 6	5.46	267	30	12.29	33.33	5.92	25.26	272	0.08
52	11.51	33.38 0	5.13	254	50	11.56	33.37	5.18	25.43	256	0.14
66	10.63	33.38 2	4.72	240	75	9.50	33.49	4.04	25.88	213	0.20
89	9.30	33.57 5	3.84	204	100	9.02	33.64	3.67	26.07	195	0.25
109	8.86	33.68 4	3.59	189	125	8.65	33.76	3.50	26.22	181	0.30
127	8.62	33.77 2	3.50	179	150	8.33	33.89	3.54	26.38	166	0.34
146	8.39	33.86 7	3.57	168	200	7.68	33.93	3.68	26.51	154	0.42
174	8.02	33.92 4	3.47	159	250	7.15	34.00	2.65	26.64	141	0.50
207	7.59	33.93 8	3.70	152	300	6.87	34.11	1.52	26.76	129	0.56
234	7.24	33.96 8	3.10	145	400	6.03	34.16	0.80	26.91	116	0.69
282	7.02	34.06 5	1.86	135	500	5.34	34.21	0.49	27.04	103	0.80
334	6.54	34.14 9	1.12	122	600	(4.96)	(34.28)		(27.14)	(94)	(0.91)
416	5.92	34.16 5	0.71	114							
497	5.36	34.20 8	0.50	104							
580	5.01	34.27 7	0.38	96							



SIO  
CCOFI  
6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

6080

HORIZON; January 12, 1961; 1448, 1716 GCT; 36°59'N, 125°10.5'W; sounding, 2250 fm; wind 310°, force 1; weather, clear; sea, rough; wire angle, 15°, 15°.

0	12.50	33.02 7	6.15	298	0	12.50	33.03	6.15	24.98	298	0.00
10	12.46	33.02 9	6.10	297	10	12.46	33.03	6.10	24.99	297	0.03
28	12.50	33.03 6	6.08	298	20	12.48	33.03	6.09	24.98	298	0.06
56	12.46	33.05 0	5.98	296	30	12.50	33.04	6.07	24.98	298	0.09
65	11.10	33.36 0	4.92	249	50	12.47	33.05	5.99	25.01	296	0.15
79	10.30	33.47 5	4.38	227	75	10.52	33.46	4.47	25.69	231	0.22
93	9.73	33.50 0	4.18	216	100	9.50	33.58	3.85	25.95	207	0.27
107	9.34	33.64 5	3.57	199	125	8.86	33.77	3.15	26.20	183	0.32
130	8.72	33.80 8	3.00	178	150	8.34	33.91	2.68	26.40	164	0.36
149	8.36	33.91 1	2.69	165	200	7.65	34.01	2.28	26.57	148	0.44
176	7.98	33.96 8	2.58	155	250	7.11	34.05	1.80	26.68	137	0.52
204	7.60	34.01 4	2.20	147	300	6.62	34.08	1.38	26.77	129	0.58
231	7.30	34.04 0	1.94	141	400	5.56	34.09	1.00	26.91	115	0.71
278	6.80	34.04 8	1.69	133	500	5.16	34.19	0.52	27.04	103	0.82
328	6.34	34.10 2	1.16	123	600	(4.65)	(34.26)	(0.36)	(27.14)	(93)	(0.93)
408	5.50	34.09 4	0.98	114	700	(4.29)	(34.32)	(0.36)	(27.24)	(84)	(1.02)
489	5.21	34.17 2a)	0.59	105	800	(4.02)	(34.38)	(0.36)	(27.31)	(77)	(1.11)
571	4.78	34.23 9a)	0.41	95	1000	3.60	34.46	0.52	27.42	67	(1.27)
					1200	3.16	34.51	0.74	27.50	59	(1.41)
1	12.44	33.00 7	6.15	299	1500	2.62	34.55	1.01	27.58	52	(1.61)
284b)	6.82	34.07 1	1.46	132	2000	2.01	34.61	1.72	27.68	42	(1.89)
569	4.80	34.23 3	0.36	96	2500	1.79	34.65	2.25	27.72	38	(2.13)
854	3.90	34.41 2	0.36	73	3000	1.63	34.66	2.59	27.74	36	(2.37)
1141	3.30	34.49 9	0.69	61							
1330	2.88	34.53 1	0.87	55							
1522	2.60	34.55 1	1.02	52							
1713	2.42	34.58 5	1.34	AT 46							
1906	2.08	34.60 1	1.60	44							
2096	1.96	34.61 9	1.82	41							
2286	1.86	34.63 6	2.02	39							
2476	1.80	34.64 7	2.24	38							
2666	1.75	34.65 4	2.43	37							
2857	1.64	34.65 9	2.55	36							
3046	1.62	34.66 2	2.60	36							
3190	1.59	34.66 5	2.68	36							
3334	1.58	34.67 0	2.67	35							
3429	1.56	34.67 1	2.77	35							

6090

HORIZON; January 13, 1961; 0013 GCT; 36°35'N, 125°47'W; sounding, 2300 fm; wind, 060°, force 3; weather, clear; sea, very rough; wire angle, 12°.

1	12.64	33.10 4	6.29	295	0	(12.64)	(33.10)	(6.29)	(25.02)	(295)	(0.00)
11	12.58	33.10 8	6.24	294	10	12.58	33.11	6.24	25.03	294	0.03
29	12.48	33.13 1	6.07	290	20	12.52	33.12	6.16	25.05	292	0.06
57	11.54	33.28 1	5.47	262	30	12.47	33.13	6.06	25.07	290	0.09
67	10.86	33.30 2	5.12	249	50	11.97	33.24	5.68	25.25	273	0.14
81	10.06	33.40 7	4.58	228	75	10.30	33.36	4.78	25.65	235	0.21
95	9.92	33.58 7	3.71	213	100	9.80	33.63	3.53	25.94	207	0.26
109	9.48	33.68 5	3.32	199	125	9.06	33.74	3.21	26.14	188	0.31
133	8.84	33.75 9	3.20	183	150	8.38	33.80	3.20	26.30	173	0.36
152	8.32	33.80 1	3.20	172	200	7.39	33.91	3.06	26.53	152	0.44
180	7.70	33.86 2	3.37	159	250	7.35	34.08	1.55	26.67	138	0.52
208	7.32	33.92 9	2.83	149	300	6.90	34.10	1.36	26.74	131	0.58
236	7.38	34.05 7	1.77	140	400	5.35	34.05	1.15	26.91	115	0.71
283	7.18	34.11 3	1.35	133	500	4.75	34.13	0.66	27.04	103	0.83
335	6.14	34.04 9	1.41	125	600	(4.40)	(34.20)		(27.13)	(94)	(0.93)
416	5.21	34.06 0	1.08	113							
497	4.77	34.13 1	0.68	103							
580	4.46	34.19 4	0.46	96							

- a) Salinity samples appear to have been reversed; they are assumed to be listed in correct order.  
b) Overlapping casts; reconciliation of property curves when necessary.



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

SIO  
CCOFI  
6101-2

HORIZON; January 13, 1961; 0500 GCT; 36°15.5'N, 126°30'W; sounding, 2390 fm; wind, 250°, force 3; weather, clear; sea, very rough; wire angle, 04°.

60.100

1	13.48	32.95 2	6.09	322	0	(13.48)	(32.95)	(6.09)	(24.73)	(322)	(0.00)
11	13.45	32.95 2	6.07	322	10	13.46	32.95	6.07	24.74	322	0.03
30	13.38	32.94 9	6.05	320	20	13.42	32.95	6.06	24.75	321	0.06
59	13.26	32.95 0	6.02	318	30	13.38	32.95	6.05	24.76	320	0.10
69	13.27	32.98 3	5.98	315	50	13.28	32.95	6.03	24.78	318	0.16
85	11.76	33.06 0	5.73	282	75	13.03	33.01	5.89	24.86	310	0.24
99	10.92	33.09 2	5.68	265	100	10.90	33.10	5.67	25.34	265	0.31
114	10.38	33.16 9	5.43	250	125	10.08	33.24	5.24	25.59	241	0.38
139	9.62	33.37 2	4.84	224	150	9.23	33.48	4.45	25.91	210	0.43
158	8.99	33.57 2	4.12	199	200	8.23	33.86	3.17	26.37	167	0.53
187	8.47	33.80 0	3.37	175	250	7.49	33.97	2.85	26.56	149	0.61
215	7.98	33.91 1	3.07	159	300	7.08	34.02	2.07	26.66	139	0.68
244	7.55	33.95 8	2.91	150	400	6.19	34.08	1.20	26.83	123	0.82
293	7.13	34.01 3	2.14	140	500	5.64	34.18	0.59	26.98	109	0.94
346	6.68	34.05 0	1.57	132	600	(5.25)	(34.25)	(0.38)	(27.08)	(99)	(1.05)
429	5.98	34.10 5	1.01	119							
512	5.60	34.19 6	0.53	108							
594	5.28	34.24 9	0.38	100							

HORIZON; January 13, 1961; 1350, 1644 GCT; 35°35.5'N, 127°51'W; sounding, 2450 fm; wind, 280°, force 3; weather, clear; sea, very rough; wire angle, 18°, 30°.

60.120

0	13.82	32.94 5	6.04	329	0	13.82	32.94	6.04	24.66	329	0.00
10	13.82	32.94 0	5.94	330	10	13.82	32.94	5.94	24.65	330	0.03
27	13.84	32.94 6	5.86	330	20	13.83	32.94	5.89	24.65	330	0.07
55	13.84	32.95 4	5.87	329	30	13.84	32.95	5.86	24.65	330	0.10
64	13.82	32.94 5	5.88	329	50	13.84	32.95	5.87	24.66	329	0.16
78	13.32	33.02 1	5.67	314	75	13.78	32.96	5.85	24.68	327	0.25
91	12.64	33.20 4	5.96	288	100	12.82	33.40	5.90	25.21	277	0.32
105	12.65	33.44 7	5.83	270	125	11.79	33.41	5.66	25.42	257	0.39
128	11.63	33.40 7	5.63	255	150	10.57	33.40	5.40	25.62	237	0.45
147	10.70	33.39 5	5.43	240	200	8.87	33.80	4.63	26.22	181	0.56
175	9.54	33.60 8	4.99	205	250	8.10	33.93	4.47	26.44	160	0.65
202	8.83	33.81 1	4.62	179	300	7.15	33.94	3.78	26.59	146	0.72
230	8.46	33.93 1	4.53	165	400	6.03	34.00	2.00	26.78	128	0.87
276	7.56	33.92 6	4.28	152	500	5.25	34.06	1.13	26.93	113	0.99
327	6.76	33.95 1	3.28	140	600	4.77	34.16	0.62	27.06	101	1.11
407	5.97	34.00 2	1.90	126	700	4.47	34.28	0.36	27.19	89	1.21
487	5.34	34.05 4	1.21	115	800	4.30	34.35	0.31	27.26	82	1.30
570	4.90	34.13 1	0.76	105	1000	3.72	34.45	0.45	27.40	69	1.47
					1200	3.23	34.50	0.69	27.48	61	1.61
340a)	6.58	33.96 6	2.83	136	1500	2.63	34.55	1.07	27.58	52	1.81
689	4.50	34.26 4	0.37	90	2000	2.00	34.61	1.72	27.68	42	2.09
866	4.18	34.39 3	0.31	77	2500	1.74	34.64	2.16	27.73	38	2.33
1042	3.58	34.46 8	0.50	66	3000	1.61	34.66	2.52	27.76	36	2.57
1317	3.00	34.51 8	0.83	57							
1583	2.48	34.56 5	1.15	49							
1768	2.21	34.58 9	1.33	46							
1953	2.04	34.60 6	1.63	43							
2139	1.92	34.62 8	1.80	40							
2420	1.79	34.63 7	2.05	39							
2704	1.66	34.65 1	2.28	37							
2894	1.62	34.65 9	2.42	36							
3086	1.60	34.66 1	2.61	35							
3277	1.55	34.67 1	2.73	35							
3468	1.55	34.67 7	2.86	34							
3612	1.51	34.67 8	2.98	33							
3758	1.50	34.68 5	3.08	33							
3856	1.50	34.67 8	3.05	33							

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



S10

CCOF1  
6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

60.140

HORIZON; January 17, 1961; 0920 GCT; 34°59'N, 129°24'W; sounding, 2500 fm; wind 330°, force 2; weather, clear; sea, rough; wire angle, 03°.

1	14.78	33.29 1	5.42	323	0	(14.78)	(33.29)	(5.42)	(24.72)	(323)	(0.00)
11	14.80	33.29 1	5.60	324	10	14.80	33.29	5.60	24.72	323	0.03
30	14.78	33.29 3	5.63	322	20	14.79	33.29	5.61	24.72	323	0.06
59	14.81	33.29 6	5.72	324	30	14.79	33.29	5.63	24.73	322	0.10
69	14.76	33.28 2	5.63	323	50	14.80	33.29	5.72	24.72	323	0.16
84	12.90	33.32 6	5.68	284	75	14.72	33.28	5.63	24.74	322	0.24
98	12.12	33.37 6	5.77	266	100	12.03	33.38	5.77	25.34	264	0.32
113	11.64	33.38 7	5.72	256	125	11.39	33.42	5.68	25.50	249	0.38
137	11.12	33.45 7	5.60	242	150	10.81	33.49	5.48	25.66	234	0.44
157	10.60	33.51 6	5.34	229	200	8.99	33.80	4.24	26.21	182	0.55
186	9.38	33.69 4	4.50	196	250	8.44	33.95	4.33	26.40	164	0.64
214	8.76	33.88 0	4.17	173	300	7.53	33.96	3.90	26.55	150	0.72
244	8.53	33.94 2	4.35	165	400	6.18	33.95	2.20	26.72	133	0.86
293	7.66	33.95 7	3.99	152	500	5.52	34.06	1.10	26.90	116	1.00
345	6.83	33.95 4	3.41	141	600	(4.76)	(34.13)	(0.69)	(27.04)	(103)	(1.11)
427	5.95	33.95 2	1.77	130							
510	5.46	34.07 5	1.03	115							
593	4.81	34.12 6	0.69	104							

60.160

HORIZON; January 17, 1961; 1720 GCT; 34°19.5'N, 130°43.5'W; sounding, 2600 fm; wind, 060°, force 4; weather, cloudy; sea, rough; wire angle, 14°.

1	15.54	33.35 4	5.70	334	0	(15.54)	(33.35)	(5.70)	(24.61)	(334)	(0.00)
11	15.54	33.36 6	5.73	333	10	15.54	33.36	5.72	24.62	333	0.03
29	15.52	33.36 8	5.66	332	20	15.53	33.37	5.70	24.62	333	0.07
57	15.32	33.41 8	5.69	325	30	15.51	33.37	5.66	24.63	332	0.10
67	15.24	33.40 1	5.65	325	50	15.37	33.42	5.68	24.69	326	0.17
82	15.21	33.41 5	5.60	323	75	15.21	33.41	5.62	24.71	324	0.25
95	15.14	33.42 4	5.66	320	100	15.01	33.42	5.66	24.77	319	0.33
110	12.88	33.26 8	5.63	288	125	11.79	33.26	5.44	25.30	268	0.40
133	11.43	33.27 3	5.35	261	150	10.98	33.41	5.01	25.57	243	0.47
151	10.94	33.41 5	4.99	242	200	9.00	33.74	3.66	26.15	187	0.58
180	9.50	33.57 4	4.34	207	250	8.29	33.91	3.31	26.41	163	0.67
207	8.87	33.77 4	3.56	183	300	7.58	34.00	2.83	26.58	147	0.75
234	8.51	33.87 6	3.44	169	400	6.33	34.04	1.68	26.78	128	0.89
281	7.85	33.97 2	3.03	153	500	5.63	34.11	0.87	26.92	114	1.02
333	7.13	34.02 3	2.56	139							
413	6.19	34.04 2	1.51	126							
493	5.68	34.10 4	0.91	116							
575	5.12	34.16 3	0.62	105							

60.180

HORIZON; January 18, 1961; 0320 GCT; 33°36'N, 132°13'W; sounding, 2600 fm; wind, 120°, force 4; weather, overcast; sea, rough; wire angle, 11°.

0	15.86	33.68 1	5.61	317	0	15.85	33.68	5.60	24.79	317	0.00
10	15.87	33.68 7	5.64	317	10	15.87	33.69	5.65	24.79	317	0.03
28	16.34	33.85 7	5.54	315	20	15.95	33.72	5.63	24.80	316	0.06
56	16.40	33.89 9	5.56	313	30	16.36	33.86	5.54	24.82	314	0.09
66	16.36	33.88 8	5.57	313	50	16.31	33.87	5.55	24.83	313	0.16
81	16.12	33.94 0	5.58	305	75	16.20	33.93	5.58	24.90	306	0.23
94	14.44	33.71 5	5.70	285	100	14.31	33.76	5.64	25.18	279	0.31
110	14.20	33.86 0	5.59	270	125	13.86	33.86	5.59	25.36	263	0.38
133	13.52	33.84 1	5.59	258	150	12.90	33.78	5.44	25.49	250	0.44
152	12.80	33.76 8	5.39	249	200	10.43	33.76	5.10	25.94	207	0.56
181	11.14	33.72 4	5.14	222	250	9.35	33.91	4.88	26.23	180	0.66
209	10.16	33.79 0	5.07	201	300	8.57	33.97	4.57	26.41	163	0.75
238	9.51	33.86 9	4.92	185	400	6.74	33.98	2.70	26.67	138	0.91
285	8.86	33.97 6	4.70	168	500	5.60	33.99	1.74	26.83	123	1.04
337	7.78	33.95 9	3.93	153	600	(4.94)	(34.11)		(27.00)	(107)	(1.16)
419	6.48	33.98 1	2.43	134							
501	5.58	33.99 4	1.73	123							
584	5.04	34.08 9	0.93	110							



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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6101-2

HORIZON; January 18, 1961; 1020 GCT; 32°56'N, 133°27'W; sounding, 2200 fm; wind, 150°, force 5; weather, clear; sea, rough; wire angle, 25°.

60200

2	16.18	33.65 7	5.57	326	0	(16.18)	(33.66)	(5.57)	(24.70)	(326)	(0.00)
11	16.16	33.66 4	5.61	324	10	16.16	33.66	5.61	24.70	325	0.03
28	16.34	33.73 3	5.58	324	20	16.24	33.70	5.60	24.72	324	0.06
53	16.49	33.84 2	5.50	319	30	16.37	33.74	5.57	24.72	323	0.10
62	16.51	33.83 2	5.45	320	50	16.48	33.84	5.52	24.76	320	0.16
75	16.51	33.83 7	5.44	320	75	16.51	33.83	5.44	24.76	320	0.24
87	16.43	33.84 2	5.53	318	100	15.16	33.83	5.65	25.06	290	0.32
100	15.16	33.83 3	5.65	290	125	14.20	33.87	5.49	25.29	269	0.39
120	14.40	33.86 9	5.50	273	150	12.73	33.78	5.36	25.52	247	0.46
136	13.48	33.81 9	5.45	258	200	9.83	33.77	2.96	26.04	198	0.57
162	12.04	33.74 1	5.19	237	250	9.28	33.92	2.10	26.24	178	0.66
186	10.26	33.69 0	3.71	210	300	9.02	34.01	1.79	26.36	168	0.76
211	9.65	33.80 9	2.65	192	400	8.27	34.15	1.24	26.59	146	0.92
253	9.26	33.92 1	2.08	178	500	6.98	34.16	0.90	26.78	127	1.06
300	9.02	34.01 2	1.79	168							
375	8.50	34.12 5	1.32	151							
452	7.66	34.15 7	1.09	137							
534	6.47	34.16 6	0.76	120							

HORIZON; January 11, 1961; 1216 GCT; 37°18.5'N, 122°37'W; sounding, 49 fm; wind, direction missing, force 1; weather, clear; sea, moderate; wire angle, 00°.

6352

0	12.66	33.58 2	5.95	260	0	12.66	33.58	5.95	25.38	260	0.00
10	12.66	33.58 1	5.84	260	10	12.66	33.58	5.84	25.38	260	0.03
29	12.65	33.58 3	5.80	260	20	12.66	33.58	5.82	25.38	260	0.05
49	12.22	33.59 2	5.17	252	30	12.64	33.58	5.79	25.38	260	0.08
73	11.76	33.61 0	4.64	242	50	12.21	33.59	5.16	25.48	251	0.13
					75	(11.73)	(33.61)	(4.64)	(25.58)	(241)	(0.19)

HORIZON; January 11, 1961; 1008 GCT; 37°14'N, 122°50.5'W; sounding, 100 fm; wind, 310°, force 2; weather, clear; sea, moderate; wire angle, 03°.

6355

1	12.62	33.48 9	6.06	267	0	(12.62)	(33.49)	(6.06)	(25.31)	(267)	(0.00)
11	12.60	33.47 9	6.10	267	10	12.60	33.48	6.09	25.31	267	0.03
30	11.00	33.44 0	4.75	241	20	12.60	33.48	6.09	25.31	267	0.05
50	10.22	33.63 9	3.77	214	30	11.00	33.44	4.75	25.59	241	0.08
74	9.76	33.76 6	3.29	196	50	10.22	33.64	3.77	25.87	214	0.12
98	9.66	33.83 4	2.94	190	75	9.75	33.77	3.28	26.06	196	0.18
123	9.46	33.89 4	2.71	183	100	9.64	33.84	2.92	26.13	189	0.22
					125	(9.44)	(33.90)	(2.71)	(26.21)	(182)	(0.27)

HORIZON; January 11, 1961; 0652 GCT; 37°04'N, 123°12'W; sounding, 1290 fm; wind, 320°, force 3; weather, clear; sea, rough; wire angle, 12°.

6360

1	12.84	33.55 2	5.97	266	0	(12.84)	(33.55)	(5.97)	(25.32)	(266)	(0.00)
11	12.82	33.54 5	5.99	266	10	12.82	33.54	5.99	25.32	266	0.03
29	12.73	33.54 1	5.95	265	20	12.77	33.54	5.98	25.33	265	0.05
53	11.24	33.52 4	4.46	239	30	12.73	33.54	5.95	25.34	265	0.08
62	10.88	33.59 1	4.05	229	50	11.80	33.53	5.00	25.50	249	0.13
71	10.45	33.60 3	3.82	220	75	10.38	33.62	3.76	25.82	218	0.19
86	9.98	33.66 7	3.41	207	100	9.12	33.73	3.24	26.13	189	0.24
99	9.15	33.72 8	3.26	190	125	8.81	33.91	2.77	26.31	172	0.29
123	8.82	33.88 3	2.88	174	150	8.68	34.03	2.03	26.44	160	0.33
142	8.76	34.01 5	2.13	163	200	8.21	34.12	1.51	26.58	147	0.41
166	8.50	34.05 7	1.93	156	250	8.02	34.20	1.03	26.66	139	0.48
194	8.26	34.11 0	1.59	149	300	7.20	34.15	1.02	26.74	131	0.55
223	8.10	34.15 1	1.38	143	400	6.46	34.18	0.78	26.87	119	0.68
261	7.98	34.21 7	0.93	137	500	5.82	34.26	0.38	27.01	106	0.80
318	6.90	34.13 4	1.06	128							
390	6.52	34.17 2	0.82	120							
462	5.99	34.23 0	0.50	110							
539	5.71	34.28 5	0.31	102							



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6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

67.50

HORIZON; January 10, 1961; 1928 GCT; 36°49'N, 122°04.5'W; sounding, 50 fm; wind, 020°, force 3; weather, clear; sea, very rough; wire angle, 01°.

1	12.36	33.59 4	5.80	254	0	(12.36)	(33.59)	(5.80)	(25.45)	(254)	(0.00)
11	12.28	33.58 9	5.69	253	10	12.29	33.59	5.72	25.46	253	0.03
30	12.04	33.59 5	5.16	248	20	12.17	33.59	5.40	25.48	251	0.05
50	11.84	33.61 0	5.21	244	30	12.04	33.60	5.16	25.51	248	0.08
74	11.74	33.61 5	4.80	241	50	11.84	33.61	5.21	25.56	244	0.12
					75	(11.74)	(33.62)	(4.80)	(25.59)	(241)	(0.18)

67.55

HORIZON; January 10, 1961; 2240 GCT; 36°39'N, 122°28'W; sounding, 700 fm; wind, 340°, force 3; weather, clear; sea, high; wire angle, 05°.

1	12.96	33.53 2	5.95	269	0	(12.96)	(33.53)	(5.95)	(25.29)	(269)	(0.00)
11	12.90	33.55 5	5.90	267	10	12.91	33.55	5.91	25.31	267	0.03
30	12.81	33.58 8	5.74	263	20	12.86	33.57	5.82	25.34	265	0.05
58	12.03	33.61 6	4.73	247	30	12.81	33.59	5.74	25.36	263	0.08
68	11.44	33.63 2	4.15	235	50	12.65	33.61	5.53	25.40	258	0.13
83	10.73	33.67 1	3.69	220	75	11.30	33.66	3.98	25.70	230	0.19
96	10.45	33.71 5	3.48	212	100	10.37	33.73	3.42	25.92	209	0.25
111	10.14	33.75 6	3.26	204	125	9.81	33.81	2.95	26.08	194	0.30
134	9.63	33.84 6	2.82	189	150	9.44	33.88	2.76	26.19	184	0.35
154	9.41	33.88 7	2.72	182	200	8.95	34.03	2.06	26.39	165	0.44
183	9.12	33.97 6	2.32	172	250	8.19	34.08	1.68	26.56	149	0.52
212	8.82	34.05 1	1.94	162	300	7.69	34.14	1.35	26.67	138	0.59
240	8.31	34.06 8	1.76	152	400	6.82	34.21	0.81	26.85	121	0.72
288	7.79	34.13 0	1.42	140	500	6.14	34.25	0.51	26.97	110	0.84
340	7.34	34.16 2	1.12	132	600	(5.47)	(34.31)		(27.09)	(98)	(0.96)
422	6.68	34.22 4	0.74	118							
505	6.10	34.24 8	0.50	110							
588	5.54	34.29 7	0.37	99							

67.60

HORIZON; January 11, 1961; 0214 GCT; 36°29.5'N, 122°52'W; sounding, 160 fm; wind, 320°, force 3; weather, clear; sea, rough; wire angle, 00°.

0	13.50	33.27 0	6.01	299	0	13.50	33.27	6.01	24.98	299	0.00
10	13.48	33.26 6	6.07	299	10	13.48	33.27	6.07	24.98	299	0.03
29	12.85	33.33 5	5.82	282	20	13.00	33.30	5.92	25.10	287	0.06
58	10.49	33.49 4	4.26	229	30	12.84	33.34	5.81	25.16	281	0.09
68	9.61	33.52 1	4.14	213	50	10.84	33.47	4.42	25.63	237	0.14
83	9.14	33.66 7	3.50	195	75	9.32	33.59	3.84	25.99	203	0.19
97	8.96	33.74 0	3.10	186	100	8.91	33.76	3.04	26.19	184	0.24
112	8.76a)	33.83 9	2.88	176	125	8.51	33.88	2.75	26.34	169	0.29
136	8.33	33.91 0	2.70	164	150	8.20	33.94	2.70	26.44	160	0.33
155	8.14	33.94 6	2.69	159	200	7.69	34.01	2.24	26.56	148	0.41
184	7.85	33.97 5	2.50	153	250	7.20	34.08	1.60	26.69	136	0.48
214	7.56	34.03 5	2.03	144	300	7.01	34.15	1.07	26.76	129	0.55
243	7.24	34.06 9	1.69	138	400	6.43	34.24	0.54	26.92	114	0.67
292	7.06	34.13 9	1.12	130	500	5.98	34.30	0.39	27.03	104	0.79
345	6.64	34.17 4	0.75	122	600	(5.20)	(34.31)	(0.25)	(27.12)	(95)	(0.89)
427	6.32	34.26 6	0.49	111							
510	5.91	34.30 3	0.37	103							
593	5.24	34.30 9	0.25	95							

a) Alternate value, 8.65°C, not used in interpolation.



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10  
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6101-2

HORIZON; January 10, 1961; 1417 GCT; 36°07'N, 121°54'W; sounding, 560 fm; wind, 080°, force 3; weather, clear; sea, rough; wire angle, 07°.

70.53

0	13.07	33.34 2	5.89	286	0	13.07	33.34	5.89	25.11	286	0.00
10	13.04	33.34 0	5.94	285	10	13.04	33.34	5.94	25.12	285	0.03
29	12.46	33.40 9	5.22	270	20	12.94	33.39	5.72	25.18	279	0.06
38	12.45a)	33.41 9	4.68	269	30	12.46	33.41	5.20	25.29	269	0.08
53	11.90	33.43 8	4.57	257	50	12.00	33.43	4.62	25.40	259	0.14
67	11.72	33.44 3	4.31	253	75	11.65	33.47	4.22	25.48	251	0.20
90	10.80	33.51 2	3.73	233	100	10.64	33.53	3.62	25.72	228	0.26
109	10.34	33.56 6	3.47	221	125	9.85	33.63	3.18	25.92	209	0.32
128	9.80	33.64 0	3.13	207	150	9.44	33.74	2.62	26.08	194	0.37
148	9.48	33.72 7	2.67	196	200	8.92	33.87	2.00	26.27	176	0.46
177	9.10	33.80 8	2.39	184	250	8.64	33.98	1.51	26.40	164	0.55
211	8.85	33.88 9	1.89	174	300	8.23	34.03	1.20	26.50	154	0.63
239	8.71	33.95 2	1.64	167	400	6.83	34.02	0.85	26.69	136	0.78
288	8.34	34.02 9	1.24	156	500	6.21	34.13	0.43	26.86	120	0.92
340	7.78	34.02 4	1.05	148	600	(5.68)	(34.15)		(26.95)	(112)	(1.04)
422	6.52	34.02 2	0.80	132							
505	6.19	34.12 6	0.42	120							
588	5.72	34.14 2	0.34	113							

HORIZON; January 10, 1961; 0924 GCT; 35°54.5'N, 122°19'W; sounding, 1500 fm; wind, 320°, force 4; weather, clear; sea, very rough; wire angle, 20°.

70.60

1	12.86	33.30 3	6.01	284	0	(12.86)	(33.30)	(6.01)	(25.13)	(284)	(0.00)
11	12.84	33.30 6	6.05	284	10	12.84	33.31	6.05	25.13	284	0.03
33	12.88	33.45 2	6.00	274	20	12.88	33.37	6.05	25.18	280	0.06
42	12.70	33.45 8	5.65	270	30	12.88	33.44	6.02	25.23	275	0.08
55	11.16	33.42 9	4.67	245	50	12.30	33.46	5.29	25.36	263	0.14
69	10.09	33.48 6	4.00	223	75	10.05	33.51	3.93	25.80	221	0.20
91	9.58	33.66 1	3.38	202	100	9.51	33.73	3.13	26.07	195	0.25
109	9.43	33.79 1	2.88	190	125	9.10	33.85	2.68	26.22	181	0.30
127	9.06	33.85 2	2.67	180	150	8.74	33.96	2.00	26.38	166	0.34
153	8.70	33.97 8	1.95	165	200	8.35	34.08	1.45	26.52	153	0.42
181	8.46	34.04 4	1.67	156	250	7.86	34.14	1.03	26.65	140	0.50
216	8.23	34.09 3	1.29	150	300	7.19	34.13	0.87	26.73	132	0.57
243	7.94	34.13 6	1.08	142	400	6.37	34.14	0.72	26.85	121	0.70
287	7.40	34.14 4	0.83	134	500	5.79	34.23	0.35	27.00	107	0.82
347	6.49	34.06 8	1.00	128	600	(5.30)	(34.27)	(0.26)	(27.09)	(98)	(0.93)
439	6.24	34.19 4	0.47	116							
522	5.66	34.23 8	0.32	105							
595	5.32	34.26 7	0.26	99							

HORIZON; January 10, 1961; 0405 GCT; 35°32.5'N, 123°01.5'W; sounding, 2050 fm; wind, 340°, force 3; weather, clear; sea, rough; wire angle, 10°.

70.70

1	13.47	33.23 2	6.01	301	0	(13.47)	(33.23)	(6.01)	(24.96)	(301)	(0.00)
11	13.46	33.23 7	5.99	301	10	13.46	33.23	5.99	24.96	301	0.03
34	13.40	33.22 5	5.86	300	20	13.43	33.23	5.93	24.96	301	0.06
44	12.42	33.27 1	5.48	279	30	13.41	33.23	5.88	24.96	301	0.09
58	10.69	33.29 8	4.83	247	50	11.90	33.29	5.25	25.30	268	0.15
73	10.06	33.42 5	4.29	227	75	10.00	33.45	4.19	25.76	224	0.21
96	9.28	33.60 6	3.75	201	100	9.15	33.63	3.85	26.05	197	0.26
116	8.80	33.69 8	3.94	187	125	8.67	33.75	3.86	26.22	181	0.31
134	8.56	33.80 5	3.73	175	150	8.32	33.86	3.54	26.36	168	0.35
162	8.12	33.88 5	3.40	163	200	7.59	33.94	2.65	26.52	152	0.44
191	7.68	33.92 0	2.92	155	250	7.20	33.99	2.04	26.62	143	0.51
228	7.38	33.98 3	2.14	145	300	6.89	34.05	1.40	26.71	134	0.58
258	7.15	33.99 5	1.97	142	400	6.24	34.13	0.79	26.86	120	0.71
304	6.85	34.06 2	1.35	133	500	5.63	34.19	0.54	26.99	108	0.83
368	6.48	34.12 3	0.87	123	600	5.13	34.26	0.33	27.10	97	0.94
463	5.82	34.16 5	0.64	113							
549	5.38	34.22 9	0.44	102							
622	5.03	34.26 9	0.32	96							

a) Alternate value, 12.14°C, not used in interpolation.



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6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

70.80

HORIZON; January 9, 1961; 2225 GCT; 35°07.5'N, 123°44'W; sounding, 2050 fm; wind, 350°, force 4; weather, fog; sea, very rough; wire angle, 18°.

1	12.96	32.98 0	5.92	310	0	(12.96)	(32.98)	(5.92)	(24.86)	(310)	(0.00)
11	12.92	33.05 2	5.99	304	10	12.91	33.05	5.99	24.92	304	0.03
29	12.80	33.14 1	5.80	295	20	12.88	33.10	5.88	24.97	299	0.06
57	12.42	33.45 9	5.67	266	30	12.79	33.15	5.78	25.03	294	0.09
66	12.18	33.44 0	5.59	262	50	12.49	33.33	5.71	25.22	276	0.15
80	10.68	33.35 8	4.90	242	75	11.25	33.39	5.14	25.50	249	0.21
93	9.68	33.52 6	4.39	213	100	9.40	33.58	2.93	25.97	205	0.27
107	9.95	33.75 4	2.64	201	125	9.19	33.79	2.73	26.17	186	0.32
129	9.10	33.81 2	2.73	183	150	8.93	33.97	1.97	26.34	169	0.36
147	8.95	33.94 3	2.06	171	200	8.29	34.01	1.93	26.47	157	0.45
174	8.72	34.01 4	1.76	163	250	7.50	34.03	1.84	26.61	144	0.52
201	8.28	34.00 8	1.94	156	300	6.99	34.05	1.50	26.70	135	0.60
228	7.87	34.02 7	1.92	149	400	6.24	34.14	0.75	26.87	119	0.73
274	7.16	34.03 0	1.77	140	500	5.35	34.20	0.42	27.02	105	0.84
323	6.84	34.08 3	1.24	131							
402	6.22	34.14 4	0.74	119							
482	5.48	34.18 3	0.48	107							
563	5.06	34.23 0	0.31	99							

70.90

HORIZON; January 9, 1961; 1710 GCT; 34°46.5'N, 124°19'W; sounding, 2200 fm; wind, 280°, force 2; weather, partly cloudy; sea, high; wire angle, 29°.

0	12.80	33.04 2	6.09	302	0	12.80	33.04	6.09	24.94	302	0.00
8	12.78	33.03 7	5.95	302	10	12.79	33.05	5.95	24.95	302	0.03
25	12.82	33.30 4	6.06	284	20	12.81	33.16	5.99	25.03	294	0.06
50	12.50	33.45 4	5.85	267	30	12.82	33.36	6.04	25.17	280	0.09
58	11.68	33.44 8	5.13	253	50	12.50	33.45	5.85	25.31	267	0.14
71	10.82	33.54 4	4.15	231	75	10.60	33.59	4.07	25.77	223	0.20
82	10.22	33.63 4	3.99	214	100	9.08	33.57	3.99	26.01	200	0.26
95	9.36	33.57 2	3.97	205	125	8.56	33.80	4.27	26.27	176	0.31
115	8.64	33.72 6	4.18	183	150	8.27	33.89	4.03	26.39	165	0.35
131	8.51	33.82 5	4.29	173	200	8.20	34.11	1.50	26.57	148	0.43
155	8.20	33.91 4	3.88	162	250	7.78	34.14	1.30	26.66	139	0.50
178	8.01	33.98 3	2.80	154	300	7.24	34.15	1.19	26.74	131	0.57
202	8.21	34.11 4	1.49	148	400	6.50	34.21	0.68	26.89	117	0.70
242	7.86	34.14 0	1.31	141	500	5.82	34.24	0.40	27.00	107	0.82
287	7.36	34.14 4	1.24	133							
359	6.78	34.18 9	0.87	122							
432	6.29	34.22 8	0.55	113							
511	5.74	34.24 2	0.39	106							

70.100

HORIZON; January 9, 1961; 1123 GCT; 34°27'N, 125°04.5'W; sounding, 2300 fm; wind, 240°, force 2; weather, cloudy; sea, moderate; wire angle, 09°.

1	14.14	33.21 9	5.84	316	0	(14.14)	(33.22)	(5.84)	(24.81)	(316)	(0.00)
11	14.12	33.21 6	5.90	315	10	14.13	33.22	5.89	24.81	315	0.03
29	14.03	-	-	-	20	14.09	33.21	5.90	24.81	315	0.06
58	11.82	33.28 7	5.24	267	30	14.02	33.20	5.90	24.81	315	0.09
67	11.13	33.31 2	4.84	253	50	12.90	33.23	5.66	25.07	290	0.16
83	9.94	33.45 0	4.25	223	75	10.40	33.37	4.48	25.64	236	0.22
97	9.60	33.54 5	3.99	211	100	9.53	33.57	3.89	25.93	207	0.28
112	9.28	33.64 0	3.55	199	125	9.05	33.74	3.11	26.15	188	0.33
135	8.92	33.81 5	2.84	180	150	8.80	33.89	2.63	26.30	173	0.37
155	8.74	33.90 5	2.58	171	200	8.02	33.97	2.47	26.49	155	0.46
183	8.17	33.95 0	2.49	159	250	7.50	34.02	2.07	26.60	145	0.53
212	7.92	33.98 9	2.42	153	300	6.84	34.04	1.69	26.71	135	0.60
240	7.62	34.01 3	2.15	147	400	5.88	34.09	1.00	26.88	118	0.74
288	6.98	34.03 5	1.80	137	500	5.36	34.17	0.55	27.00	107	0.85
341	6.40	34.06 1	1.34	127	600	(4.78)	(34.23)		(27.11)	(96)	(0.96)
423	5.70	34.11 6	0.86	115							
505	5.30	34.17 7	0.51	106							
588	4.86	34.22 2	0.36	97							



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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6101-2

HORIZON; January 9, 1961; 0205 GCT; 33°51'N, 126°31'W; sounding, 2450 fm; wind, 260°, force 3; weather, cloudy; sea, rough; wire angle, 12°.

70120

0	13.78	32.98 4	6.13	325	0	13.78	32.98	6.13	24.70	325	0.00
10	13.72	32.99 0	6.06	324	10	13.72	32.99	6.06	24.71	324	0.03
28	13.41	-	-	-	20	13.53	33.05	5.96	24.81	315	0.06
56	12.74	33.34 3	5.74	279	30	13.37	33.15	5.91	24.91	305	0.10
66	12.58	33.39 2	5.36	273	50	12.75	33.31	5.78	25.16	281	0.15
80	10.63	33.31 2	4.64	245	75	10.95	33.32	4.75	25.50	249	0.22
94	9.94	33.46 0	4.14	222	100	9.64	33.50	4.04	25.86	215	0.28
108	9.43	33.55 1	3.87	208	125	9.39	33.73	3.00	26.09	193	0.33
132	9.34	33.79 3	2.70	188	150	8.92	33.85	2.67	26.25	178	0.38
151	8.90	33.85 1	2.66	177	200	8.20	33.99	2.26	26.47	157	0.46
180	8.42	33.94 7	2.43	163	250	7.86	34.09	1.53	26.61	144	0.54
208	8.12	34.00 2	2.18	154	300	7.10	34.10	1.38	26.72	134	0.61
236	8.02	34.07 2	1.71	148	400	5.99	34.11	1.04	26.87	119	0.74
283	7.33	34.10 2	1.39	136	500	5.40	34.21	0.43	27.03	104	0.86
335	6.66	34.08 4	1.36	129	600	(4.90)	(34.28)		(27.14)	(93)	(0.96)
416	5.86	34.12 0	0.91	116							
498	5.41	34.20 8	0.44	105							
580	5.00	34.26 9	0.38	96							

HORIZON; January 19, 1961; 0021 GCT; 31°16.5'N, 131°55'W; sounding, 2300 fm; wind, 150°, force 5; weather, cloudy; sea, moderate; wire angle, 22°.

70200

1	16.82	33.92 0	5.54	321	0	(16.82)	(33.92)	(5.54)	(24.75)	(321)	(0.00)
10	16.82	33.92 1	5.52	321	10	16.82	33.92	5.52	24.75	321	0.03
33	16.83	33.92 4	5.23	321	20	16.82	33.92	5.39	24.75	321	0.06
59	17.12	34.05 4	5.14	318	30	16.83	33.92	5.26	24.75	321	0.10
68	17.41	34.19 4	5.06	314	50	16.87	33.95	5.19	24.76	320	0.16
85	17.51	34.26 6	5.04	311	75	17.49	34.23	5.05	24.83	313	0.24
99	16.11	34.03 8	5.49	296	100	15.95	34.01	5.50	25.02	295	0.32
112	15.49	34.01 7	5.54	285	125	15.11	34.12	5.30	25.29	269	0.39
139	14.96	34.12 9	5.25	265	150	14.66	34.10	5.23	25.38	261	0.46
156	14.00	34.00 6	5.21	255	200	10.00	33.67	4.75	25.94	208	0.57
182	11.05	33.60 1	5.02	230	250	8.78	33.90	4.11	26.32	172	0.67
213	9.54	33.74 1	4.48	195	300	8.00	33.96	3.87	26.48	156	0.76
239	8.94	33.86 9	4.17	176	400	6.57	34.00	2.09	26.71	134	0.91
284	8.24	33.95 7	4.09	160	500	5.79	34.07	1.02	26.87	119	1.04
342	7.36	33.96 3	3.28	147	600	(5.06)	(34.15)		(27.01)	(106)	(1.16)
433	6.24	34.01 9	1.68	129							
518	5.67	34.09 2	0.91	116							
588	5.14	34.13 4	0.66	107							

HORIZON; January 6, 1961; 0537 GCT; 35°31.5'N, 121°28.5'W; sounding, 360 fm; wind, 280°, force 4; weather, partly cloudy; sea, moderate; wire angle, 18°.

7353

1	13.72	33.28 7	5.92	302	0	(13.72)	(33.29)	(5.92)	(24.95)	(302)	(0.00)
10	13.72	33.28 2	5.94	303	10	13.72	33.28	5.94	24.94	303	0.03
28	13.75	33.27 7	5.98	304	20	13.74	33.28	5.97	24.94	303	0.06
55	13.04	33.47 2	5.64	276	30	13.75	33.28	5.98	24.93	303	0.09
64	12.60	33.46 5	5.30	268	50	13.12	33.46	5.68	25.20	278	0.15
78	11.18	33.41 9	4.72	246	75	11.47	33.42	4.81	25.49	250	0.22
91	10.29	33.45 1	4.55	229	100	10.10	33.47	4.52	25.76	224	0.28
105	10.02	33.46 8	4.50	223	125	9.32	33.56	4.20	25.97	205	0.33
127	9.28	33.56 4	4.19	205	150	8.95	33.70	3.75	26.13	189	0.38
146	9.00	33.67 4	3.82	192	200	8.36	33.92	3.05	26.40	164	0.47
173	8.68	33.80 6	3.35	177	250	7.69	34.02	2.35	26.57	147	0.55
201	8.34	33.92 0	3.04	164	300	7.29	34.07	1.78	26.67	138	0.62
227	7.94	33.99 9	2.65	153	400	6.96	34.23	0.76	26.84	122	0.76
274	7.48	34.04 1	2.08	143	500	6.05	34.26	0.52	26.99	108	0.88
324	7.17	34.09 0	1.56	135							
403	6.94	34.23 7	0.73	121							
483	6.20	34.25 4	0.55	110							
566	5.56	34.30 4	0.31	99							



S10

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6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

7360

HORIZON; January 6, 1961; 0938 GCT; 35°19'N, 121°59.5'W; sounding, 1300 fm; wind, 280°, force 5; weather, clear; sea, rough; wire angle, 31°.

0	12.88	33.46 9	5.93	273	0	12.88	33.47	5.93	25.25	273	0.00
8	12.88	33.45 9	5.91	274	10	12.88	33.45	5.92	25.24	274	0.03
25	12.88	33.45 2	5.97	274	20	12.88	33.45	5.95	25.24	274	0.05
50	12.72	33.46 1	5.82	270	30	12.87	33.45	5.97	25.24	274	0.08
58	11.54	33.38 1	5.19	255	50	12.72	33.46	5.82	25.28	270	0.14
70	10.51	33.48 5	4.27	230	75	10.10	33.58	3.87	25.85	216	0.20
81	9.88	33.63 8	3.62	208	100	9.36	33.76	3.12	26.11	191	0.25
93	9.53	33.74 9	3.10	194	125	8.82	33.80	3.17	26.23	180	0.30
113	9.03	33.76 3	3.19	186	150	8.49	33.90	2.85	26.36	168	0.34
129	8.76	33.81 5	3.13	178	200	7.91	33.99	2.63	26.52	153	0.42
151	8.47	33.90 2	2.84	168	250	7.59	34.09	1.57	26.64	141	0.50
176	8.20	33.95 9	2.71	159	300	7.23	34.14	1.18	26.74	132	0.57
198	7.92	33.98 4	2.67	153	400	6.24	34.17	0.70	26.89	117	0.70
239	7.63	34.07 6	1.72	143	500	5.72	34.22	0.47	27.00	107	0.81
283	7.38	34.12 1	1.31	136							
354	6.72	34.17 0	0.89	123							
428	6.01	34.17 4	0.62	114							
509	5.70	34.22 9	0.47	106							

7751

HORIZON; January 6, 1961; 2140 GCT; 35°01.5'N, 120°56.5'W; sounding, 120 fm; wind, 290°, force 1; weather, partly cloudy; sea, moderate; wire angle, 05°.

0	13.44	33.52 6	5.93	279	0	13.44	33.53	5.93	25.19	279	0.00
10	13.21	33.52 0	5.95	275	10	13.21	33.52	5.95	25.23	275	0.03
29	13.21	33.52 2	5.82	275	20	13.21	33.52	5.88	25.23	275	0.06
49	13.21	33.53 0	5.70	274	30	13.21	33.52	5.81	25.23	275	0.08
73	12.48	33.49 1	5.11	264	50	13.21	33.53	5.69	25.24	274	0.14
97	11.54	33.56 8	4.34	241	75	12.30	33.49	4.97	25.38	261	0.20
122	10.46	33.61 0	3.82	220	100	11.48	33.58	4.31	25.60	239	0.27
151	9.76	33.78 5	3.12	195	125	10.39	33.62	3.78	25.83	217	0.33
					150	9.77	33.79	3.13	26.07	195	0.38

7755

HORIZON; January 6, 1961; 1656 GCT; 34°56'N, 121°17.5'W; sounding, 250 fm; wind, 280°, force 2; weather, partly cloudy; sea, very rough; wire angle, 07°.

1	13.62	33.28 2	6.06	300	0	(13.62)	(33.28)	(6.06)	(24.97)	(300)	(0.00)
11	13.60	33.28 2	6.05	300	10	13.60	33.28	6.05	24.97	300	0.03
30	13.12	33.43 1	6.12	280	20	13.15	33.37	6.11	25.13	285	0.06
50	12.66	33.49 9	5.59	266	30	13.12	33.43	6.12	25.17	280	0.09
73	10.65	33.52 5	4.24	229	50	12.66	33.50	5.59	25.32	266	0.14
97	10.16	33.56 3	4.04	218	75	10.63	33.53	4.23	25.71	229	0.20
122	9.35	33.60 7	3.96	202	100	10.12	33.57	4.03	25.84	217	0.26
160	8.72	33.92 2	2.85	169	125	9.25	33.62	3.93	26.02	200	0.31
198	8.52	34.02 6	2.41	158	150	8.83	33.86	3.11	26.28	175	0.36
248	7.94	34.07 2	2.03	147	200	8.51	34.03	2.39	26.46	158	0.44
296	7.76	34.16 3	1.32	137	250	7.93	34.08	2.00	26.59	146	0.52
					300	(7.75)	(34.17)	(1.32)	(26.69)	(136)	(0.60)

7757

HORIZON; January 6, 1961; 1450 GCT; 34°51'N, 121°27.5'W; sounding, 320 fm; wind, 280°, force 4; weather, partly cloudy; sea, very rough; wire angle, 02°.

1	13.08	33.43 5	6.12	279	0	(13.08)	(33.44)	(6.12)	(25.19)	(279)	(0.00)
11	13.07	33.43 1	6.06	279	10	13.07	33.43	6.07	25.19	279	0.03
30	13.06	33.44 5	6.04	278	20	13.07	33.44	6.05	25.19	279	0.06
50	13.04	33.47 5	5.87	275	30	13.06	33.44	6.04	25.20	278	0.08
74	11.20	33.46 2	4.78	243	50	13.04	33.48	5.87	25.23	275	0.14
98	9.82	33.56 9	3.94	213	75	11.13	33.46	4.72	25.59	241	0.20
123	9.16	33.81 2	2.92	184	100	9.80	33.59	3.89	25.90	211	0.26
162	8.44	33.87 4	3.22	169	125	9.11	33.82	2.94	26.20	183	0.31
200	7.92	33.97 2	2.76	154	150	8.62	33.86	3.17	26.30	173	0.36
248	7.22	34.04 3	2.07	139	200	7.92	33.97	2.76	26.50	154	0.44
297	6.77	34.06 0	1.62	132	250	7.20	34.05	2.03	26.66	139	0.51
					300	(6.74)	(34.06)	(1.62)	(26.74)	(131)	(0.58)



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10  
CCOF1  
6101-2

HORIZON; January 19, 1961; 0908 GCT; <sup>a)</sup> 30°04'N, 131°01.5'W; sounding, 2300 fm; wind, 150°, force 4; weather, overcast; sea, moderate; wire angle, 13°.

77.200

419	6.48	34.00 1	2.18	133
422	6.39	33.99 8	2.10	132
425	6.30	33.99 4	2.18	131
448	6.08	33.99 1	2.11	129
451	6.09	33.99 7	2.06	129
454	6.02	34.00 6	2.07	127
478	5.86	34.02 7	1.59	123
481	5.87	34.03 5	1.53	123
484	5.84	34.03 6	1.49	123
508	5.59	34.07 7	1.31	116
511	5.49	34.05 0	1.33	117
514	5.43	34.04 7	1.35	117
538	5.42	34.09 9	0.99	113
541	5.40	34.10 1	1.01	112
544	5.40	34.10 6	0.98	112
568	5.24	34.14 8	0.86	107
571	5.21	34.14 9	0.68	107
574	5.17	34.15 8	0.67	106

HORIZON; January 7, 1961; 0215 GCT; 34°24'N, 120°36'W; sounding, 145 fm; wind, 300°, force 3; weather, clear; sea, moderate; wire angle, 12°.

80.52

0	13.64	33.50 4	5.95	284	0	13.64	33.50	5.95	25.13	284	0.00
10	13.64	33.50 7	5.91	284	10	13.64	33.51	5.91	25.13	284	0.03
28	13.54	33.51 4	5.84	282	20	13.58	33.51	5.85	25.15	282	0.06
48	13.40	33.49 0	5.95b)	281	30	13.52	33.51	5.86	25.16	281	0.08
71	12.52	33.47 3	5.27	266	50	13.37	33.49	5.94	25.17	281	0.14
95	11.62	33.54 8	4.15	244	75	12.49	33.49	5.18	25.35	264	0.21
119	10.80	33.63 6	3.78	224	100	11.40	33.55	4.06	25.60	240	0.27
157	9.43	33.86 6	2.83	184	125	10.50	33.66	3.64	25.85	216	0.33
195	9.00	34.03 9	1.91	165	150	9.61	33.82	3.04	26.12	190	0.38
					200	(8.97)	(34.06)	(1.91)	(26.41)	(163)	(0.47)

HORIZON; January 7, 1961; 0428 GCT; 34°18.5'N, 120°48'W; sounding, 390 fm; wind, 300°, force 3; weather, clear; sea, moderate; wire angle, 13°.

80.55

1	14.03	33.55 7	5.84	288	0	(14.03)	(33.56)	(5.84)	(25.09)	(288)	(0.00)
11	14.02	33.55 7	5.86	288	10	14.02	33.56	5.86	25.09	288	0.03
29	13.64	33.53 7	5.35	282	20	14.01	33.56	5.86	25.09	288	0.06
39	13.43	33.50 9	5.29	280	30	13.62	33.53	5.33	25.15	282	0.09
53	12.54	33.51 2	4.97	263	50	12.65	33.51	4.99	25.34	265	0.14
67	11.72	33.50 4	4.70	249	75	11.55	33.53	4.53	25.55	244	0.20
90	11.10	33.56 4	4.08	234	100	10.88	33.59	3.92	25.72	228	0.26
110	10.77	33.61 5	3.82	224	125	10.60	33.65	3.72	25.81	219	0.32
128	10.55	33.65 9	3.68	218	150	9.85	33.80	3.08	26.07	196	0.37
147	9.93	33.78 5	3.15	198	200	9.17	33.97	2.40	26.31	172	0.47
175	9.34	33.91 3	2.63	179	250	8.85	34.09	1.79	26.45	159	0.55
208	9.11	33.99 0	2.34	170	300	8.16	34.13	1.63	26.60	145	0.63
236	8.98	34.06 2	1.86	163	400	6.96	34.24	0.78	26.85	121	0.77
283	8.42	34.12 1	1.70	150	500	6.12	34.27	0.53	26.99	108	0.89
335	7.61	34.16 0	1.41	136	600	(5.80)	(34.32)		(27.07)	(101)	(1.00)
415	6.82	34.25 5	0.71	118							
497	6.15	34.27 6	0.54	108							
580	5.83	34.30 7	0.47	102							

a) Test cast.

b) Alternate value, 6.14 ml/L, not used in interpolation.



S10

CCOFI  
6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

80.60

HORIZON; January 7, 1961; 0746 GCT; 34°08'N, 121°08.5'W; sounding, 1350 fm; wind, 250°, force 1; weather, partly cloudy; sea, moderate; wire angle, 20°.

1	13.69	33.41 7	5.94a)	292	0	(13.69)	(33.42)	(5.94)	(25.05)	(292)	(0.00)
10	13.74	33.45 9	5.88	290	10	13.74	33.46	5.88	25.07	290	0.03
27	13.84	33.50 3	5.88	288	20	13.82	33.49	5.88	25.08	289	0.06
55	13.57b)	33.48 1	5.77	284	30	13.84	33.50	5.87	25.09	288	0.09
64	12.76	33.43 7	5.56c)	273	50	13.70	33.49	5.79	25.11	286	0.14
78	11.75	33.46 3	4.82	252	75	11.82	33.46	4.90	25.45	254	0.21
90	10.96	33.59 4	4.15	229	100	10.60	33.64	3.87	25.81	220	0.27
104	10.10	33.66 9	3.56	209	125	9.61	33.78	3.09	26.08	194	0.32
126	9.60	33.78 6	3.09	193	150	8.98	33.86	3.02	26.25	178	0.37
143	9.14	33.84 8	3.01	181	200	8.04	33.97	3.00	26.48	156	0.46
171	8.52	33.87 8	3.03	170	250	7.40	34.03	2.08	26.62	143	0.53
197	8.08	33.96 9	3.01	157	300	6.95	34.06	1.66	26.70	135	0.60
224	7.75	34.00 2	2.40	149	400	6.20	34.13	0.91	26.86	120	0.74
268	7.20	34.04 0	1.92	139	500	5.70	34.22	0.52	27.00	107	0.85
317	6.84	34.06 6	1.56	133							
395	6.22	34.13 3	0.97	120							
475	5.80	34.19 4	0.60	110							
557	5.45	34.28 4	0.35	99							

80.70

HORIZON; January 7, 1961; 1330 GCT; 33°44'N, 121°52'W; sounding, 1950 fm; wind, 210°, force 1; weather, cloudy; sea, slight; wire angle, 01°.

0	13.62	33.25 1	5.83	303	0	13.62	33.25	5.83	24.94	303	0.00
10	13.60	33.24 6	5.89	303	10	13.60	33.25	5.89	24.94	303	0.03
29	13.61	33.25 0	5.91	303	20	13.60	33.25	5.89	24.94	303	0.06
58	13.57	33.25 2	5.82	301	30	13.61	33.25	5.90	24.94	303	0.09
68	13.04	33.29 7	5.73	288	50	13.59	33.25	5.85	24.95	302	0.15
83	12.04	33.28 6	5.27	271	75	13.02	33.31	5.72	25.10	287	0.22
97	10.26	33.40 4	4.51	232	100	9.86	33.45	4.39	25.79	222	0.29
111	9.42	33.54 7	4.13	208	125	9.13	33.69	3.55	26.09	193	0.34
135	8.92	33.77 8	3.15	183	150	8.74	33.83	3.24	26.27	176	0.39
156	8.64	33.85 0	3.27	173	200	7.83	33.94	2.96	26.48	156	0.47
185	8.03	33.91 5	2.95	160	250	7.23	33.98	2.50	26.61	144	0.55
214	7.67	33.94 9	2.97	152	300	6.85	34.05	1.74	26.71	134	0.62
243	7.31	33.97 4	2.58	145	400	6.35	34.20	0.62	26.90	116	0.75
292	6.85	34.03 0	1.88	135	500	5.61	34.24	0.41	27.02	105	0.87
344	6.90	34.16 7	0.90	125	600	(5.19)	(34.33)	(0.26)	(27.14)	(93)	(0.97)
427	6.10	34.20 5	0.54	113							
510	5.56	34.24 4	0.38	103							
593	5.20	34.31 6	0.26	94							

80.80

HORIZON; January 7, 1961; 1814 GCT; 33°25'N, 122°30.5'W; sounding, 2100 fm; wind, 210°, force 2; weather, cloudy; sea, slight; wire angle, 04°.

1	14.71	33.18 6	5.79	329	0	(14.71)	(33.19)	(5.79)	(24.66)	(329)	(0.00)
11	14.71	33.17 9	5.81	330	10	14.71	33.18	5.81	24.65	330	0.03
30	14.70	33.18 5	5.74	329	20	14.71	33.18	5.79	24.65	330	0.07
55	14.56	33.18 2	5.74	327	30	14.70	33.18	5.74	24.66	329	0.10
63	14.57	33.18 1	5.73	327	50	14.56	33.18	5.74	24.69	327	0.16
74	14.56	33.18 1	5.75	327	75	14.55	33.18	5.75	24.69	327	0.25
89	13.42	33.20 0	5.71	302	100	12.90	33.24	5.67	25.07	290	0.32
103	12.54	33.24 3	5.62	283	125	11.38	33.36	5.37	25.45	254	0.39
126	11.32	33.36 5	5.33	252	150	9.84	33.52	4.38	25.84	217	0.45
146	10.03	33.47 8	4.53	223	200	8.69	33.83		26.27	176	0.55
170	9.23	33.68 0	3.75	195	250	7.99	33.96	2.59	26.49	155	0.64
199	8.70	33.82 4	4.19u	176	300	7.19	34.00	2.20	26.63	142	0.72
228	8.23	33.93 2	2.83	162	400	6.02	34.06	1.22	26.83	123	0.85
267	7.74	33.97 9	2.42	151	500	5.51	34.17	0.61	26.98	109	0.97
324	6.78	34.01 0	2.02	136							
397	6.04	34.06 0	1.28	123							
469	5.62	34.14 8	0.70	111							
547	5.34	34.19 7	0.48	104							

12

- a) Alternate value, 5.69 ml/L, not used in interpolation.  
 b) Alternate value, 13.68°C, not used in interpolation.  
 c) Alternate value, 5.36 ml/L, not used in interpolation.



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

SIO  
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6101-2

HORIZON; January 7, 1961; 2324 GCT; 33°09'N, 123°08'W; sounding, 2200 fm; wind, 250°, force 1; weather, partly cloudy; sea, rough; wire angle, 07°.

80.90

1	15.14	33.17 4	5.82	339	0	(15.14)	(33.17)	(5.82)	(24.55)	(339)	(0.00)
11	14.90	33.16 3	5.75	335	10	14.91	33.16	5.75	24.60	335	0.03
30	14.90	33.17 1	5.76	334	20	14.90	33.16	5.75	24.61	335	0.07
58	14.83	33.21 6	5.73	330	30	14.90	33.17	5.76	24.61	334	0.10
68	14.84	33.19 3	5.68	332	50	14.85	33.21	5.75	24.64	331	0.17
83	14.84	33.20 3	5.76a)	331	75	14.84	33.20	5.71	24.64	331	0.25
96	14.82	33.20 8	5.76	330	100	14.81	33.21	5.73	24.65	330	0.33
111	13.48	33.17 7	5.66	306	125	12.40	33.21	5.51	25.15	283	0.41
135	12.03	33.23 8	5.44	274	150	11.49	33.34	5.18	25.42	257	0.48
155	11.23	33.38 6	5.06	249	200	9.19	33.66	3.83	26.06	196	0.60
183	9.40	33.58 9	4.16	204	250	8.28	33.94	3.32	26.42	161	0.69
213	9.02	33.73 3	3.59	188	300	7.63	34.00	2.80	26.57	148	0.77
240	8.44	33.90 8	3.43	166	400	6.35	34.05	1.63	26.78	128	0.91
290	7.76	33.99 0	2.88	150	500	5.62	34.13	0.94	26.94	112	1.04
342	7.08	34.02 7	2.27	138	600	(5.20)	(34.26)		(27.08)	(99)	(1.15)
424	6.12	34.06 2	1.43	124							
507	5.58	34.14 0	0.85	111							
587	5.24	34.23 6	0.53	101							

HORIZON; January 8, 1961; 0445 GCT; 32°49.5'N, 123°55'W; sounding, 2200 fm; wind, 260°, force 1; weather, clear; sea, moderate; wire angle, 04°.

80.100

1	14.91	33.17 8	5.79	334	0	(14.91)	(33.18)	(5.79)	(24.61)	(334)	(0.00)
11	14.90	33.18 0	5.86	333	10	14.90	33.18	5.85	24.61	334	0.03
30	14.89	33.19 6	-	332	20	14.89	33.19	5.84	24.62	333	0.07
55	14.86	33.18 3	5.81	332	30	14.89	33.20	5.83	24.63	332	0.10
63	14.88	33.17 4	5.73	334	50	14.87	33.19	5.81	24.63	332	0.17
73	14.87	33.18 3	5.82	333	75	14.86	33.18	5.81	24.62	333	0.25
89	14.70	33.18 5	5.79	329	100	14.00	33.18	5.79	24.81	315	0.33
103	13.78	33.18 4	5.79	311	125	12.27	33.22	5.56	25.17	280	0.41
126	12.20	33.21 9	5.54	279	150	10.94	33.33	5.16	25.51	248	0.47
146	11.16	33.31 1	5.25	253	200	9.09	33.77	3.82	26.16	187	0.58
170	9.90	33.47 1	4.42	221	250	8.27	33.94	3.35	26.43	161	0.68
198	9.13	33.74 7	3.83	189	300	7.47	34.01	2.53	26.60	145	0.75
228	8.64	33.89 6	3.73	171	400	6.39	34.07	1.38	26.80	126	0.90
266	7.97	33.96 4	3.01	155	500	5.64	34.14	0.72	26.94	112	1.02
324	7.16	34.02 5	2.26	140							
396	6.42	34.07 0	1.44	127							
469	5.83	34.13 5	0.87	117							
547	5.30	34.20 2	0.55	104							

HORIZON; January 8, 1961; 1306 GCT; 32°08'N, 125°21'W; sounding, 2200 fm; wind, direction missing, force 1; weather, clear; sea, rough; wire angle, 04°.

80.120

0	14.86	33.33 2		322	0	14.86	33.33		24.74	322	0.00
10	14.84	33.29 7		324	10	14.84	33.30		24.72	324	0.03
29	14.86	33.30 0		324	20	14.85	33.30		24.72	324	0.06
54	14.61	33.29 2		320	30	14.86	33.30		24.72	324	0.10
62	12.78	33.18 7		291	50	14.84	33.29		24.72	324	0.16
72	11.90	33.19 7		275	75	11.60	33.21		25.29	269	0.24
87	11.56	33.25 9		264	100	10.63	33.37		25.59	241	0.30
101	10.53	33.38 2		238	125	9.59	33.59		25.95	207	0.36
124	9.60	33.58 0		208	150	9.11	33.80		26.19	184	0.41
144	9.20	33.74 2		190	200	8.39	33.95		26.41	163	0.50
168	8.86	33.89 2		174	250	7.64	34.02		26.58	147	0.58
197	8.42	33.93 9		164	300	6.99	34.04		26.69	136	0.65
228	7.92	33.99 4		153	400	6.13	34.16		26.90	117	0.78
266	7.44	34.03 0		144	500	5.37	34.22		27.04	103	0.89
324	6.71	34.06 0		131							
395	6.19	34.15 2		118							
468	5.58	34.19 3		107							
545	5.14	34.24 9		98							

a) Alternate value, 5.65 ml/L, not used in interpolation.



S10

CCOF1  
6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

80.200

HORIZON; January 19, 1961; 1355 GCT; 29°30'N, 130°33'W; sounding, 2400 fm; wind, 110°, force 4; weather, overcast; sea, moderate; wire angle, 09°.

0	17.06	33.86 9	5.35	330	0	17.06	33.87	5.35	24.65	330	0.00
10	17.06	33.85 3	5.34	331	10	17.06	33.85	5.34	24.64	331	0.03
29	17.07	33.85 5	5.35	331	20	17.06	33.85	5.34	24.64	331	0.07
57	17.08	33.87 9	5.30	330	30	17.07	33.86	5.35	24.64	331	0.10
67	17.09	33.90 3	5.32	328	50	17.07	33.87	5.31	24.65	330	0.17
81	17.15	33.91 7	5.15	329	75	17.12	33.91	5.25	24.67	328	0.25
96	16.12	33.79 6	5.42	314	100	15.74	33.75	5.41	24.86	310	0.33
111	16.68	34.21 2	5.32	296	125	16.50	34.32	5.20	25.13	284	0.40
134	16.14	34.33 9	5.13	275	150	15.30	34.23	5.11	25.34	265	0.47
153	15.10	34.21 2	5.11	262	200	11.65	33.89	4.92	25.81	220	0.60
183	13.18	34.00 1	5.10	239	250	9.85	33.98	4.71	26.20	182	0.70
211	11.02	33.86 4	4.82	210	300	8.67	34.01	4.39	26.42	162	0.79
239	10.10	33.95 4	4.72	188	400	6.59	34.00	2.38	26.71	134	0.94
287	8.98	34.02 0	4.62	166	500	5.58	34.09	1.12	26.91	115	1.07
340	7.74	33.98 6	3.66	150	600	(4.99)	(34.18)		(27.05)	(102)	(1.19)
422	6.28	34.01 5	2.04	129							
503	5.54	34.09 4	1.10	114							
586	5.06	34.17 7	0.62	103							

90.28

HORIZON; January 23, 1961; 1945 GCT; 33°27'N, 117°45.5'W; sounding, 160 fm; wind, 210°, force 2; weather, fog; sea, moderate; wire angle, 01°.

1	14.92	33.54 6	5.84	307	0	(14.92)	(33.55)	(5.84)	(24.89)	(307)	(0.00)
11	14.72	33.54 6	5.92	303	10	14.73	33.55	5.91	24.94	303	0.03
30	14.32	33.54 7	5.82a)	294	20	14.62	33.56	5.90	24.97	300	0.06
50	14.06	33.53 6	5.73	291	30	14.32	33.55	5.82	25.03	294	0.09
74	12.95	33.51 7	4.95	271	50	14.06	33.54	5.73	25.06	291	0.15
98	11.55	33.55 5	4.26	242	75	12.91	33.52	4.92	25.28	270	0.22
122	10.44	33.69 7	3.63	213	100	11.54	33.56	4.24	25.58	241	0.28
161	9.76	33.93 0	2.72	184	125	10.38	33.72	3.56	25.91	210	0.34
200	9.33	34.08 0	2.02	167	150	9.91	33.87	2.97	26.11	191	0.39
					200	9.33	34.08	2.02	26.36	167	0.48

90.32

HORIZON; January 23, 1961; 1719 GCT; 33°20.5'N, 118°03'W; sounding, 410 fm; wind, 310°, force 1; weather, fog; sea, moderate; wire angle, 02°.

0	15.08	33.54 4	5.88	310	0	15.08	33.54	5.88	24.86	310	0.00
10	15.07	33.54 3	6.00	310	10	15.07	33.54	6.00	24.86	310	0.03
29	14.62	33.51 9	6.04	303	20	14.94	33.54	6.03	24.88	308	0.06
39	14.06	33.49 0	5.76	294	30	14.58	33.51	6.03	24.94	302	0.09
49	13.65	33.48 4	5.46	286	50	13.60	33.48	5.45	25.12	285	0.15
64	12.66	33.47 6	5.01	268	75	12.20	33.50	4.80	25.41	258	0.22
79	11.73	33.51 0	4.59	248	100	10.62	33.65	3.88	25.81	220	0.28
98	10.71	33.63 9	3.92	222	125	9.93	33.81	3.20	26.06	196	0.33
122	9.98	33.80 2	3.23	198	150	9.59	33.90	2.92	26.18	184	0.38
142	9.66	33.86 6	3.01	188	200	9.00	34.14	1.70	26.46	158	0.47
171	9.41	33.99 2	2.54	175	250	8.54	34.20	1.36	26.59	146	0.54
200	9.00	34.13 9	1.70	158	300	8.04	34.23	1.07	26.68	137	0.62
229	8.84	34.17 9	1.52	152	400	7.30	34.28	0.74	26.83	123	0.75
268	8.30	34.21 3	1.21	141	500	6.40	34.30	0.42	26.97	109	0.87
327	7.87	34.24 1	0.96	133							
399	7.31	34.27 8	0.75	123							
472	6.63	34.29 2	0.50	113							
551	6.05	34.32 5	0.33	104							

a) Alternate value, 5.68 ml/L, not used in interpolation.



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

SIO  
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6101-2

HORIZON; January 23, 1961; 1412 GCT; 33°10.5'N, 118°23.5'W; sounding, 640 fm; wind, 310°, force 2; weather, partly cloudy; sea, rough; wire angle, 02°.

9037

0	15.01	33.52 7	5.90	311	0	15.01	33.53	5.90	24.85	311	0.00
10	14.98	33.52 6	5.96	310	10	14.98	33.53	5.96	24.86	310	0.03
29	13.98	33.51 6	5.67	290	20	14.79	33.53	5.94	24.90	306	0.06
39	13.12	33.49 4	5.09	275	30	13.86	33.51	5.60	25.09	288	0.09
49	12.89	33.49 6	4.97	271	50	12.86	33.50	4.96	25.28	270	0.15
63	12.56	33.50 5	4.70	264	75	12.25	33.52	4.66	25.41	258	0.21
78	12.18	33.51 7	4.64	256	100	11.65	33.56	4.30	25.56	244	0.28
97	11.72	33.55 4	4.33	245	125	11.07	33.61	4.07	25.70	230	0.34
121	11.15	33.60 0	4.11	232	150	10.61	33.68	3.74	25.84	217	0.39
141	10.78	33.65 5	3.87	222	200	9.66	33.94	3.14	26.20	182	0.50
171	10.26	33.76 3	3.39	205	250	8.87	34.15	1.66	26.49	155	0.58
200	9.66	33.94 0	3.14	182	300	8.44	34.22	1.22	26.62	143	0.66
229	9.05	34.09 9	1.92	161	400	7.37	34.25	0.76	26.80	126	0.80
268	8.76	34.17 6	1.52	151	500	6.61	34.29	0.49	26.94	113	0.92
327	8.16	34.23 9	1.01	138							
398	7.39	34.24 7	0.77	126							
471	6.82	34.27 7	0.56	117							
549	6.24	34.30 9	0.35	107							

HORIZON; January 23, 1961; 0744 GCT; 32°54.5'N, 118°55.5'W; sounding, 900 fm; wind, calm; weather, clear; sea, rough; wire angle, 02°.

9045

0	14.79	33.48 8	6.00	309	0	14.79	33.49	6.00	24.87	309	0.00
10	14.66	33.48 0	6.03	306	10	14.66	33.48	6.03	24.90	306	0.03
29	13.40	33.42 1	5.64	286	20	14.51	33.48	6.02	24.93	304	0.06
39	12.53	33.40 6	5.17	271	30	13.32	33.42	5.60	25.13	284	0.09
49	11.96	33.42 0	4.94	259	50	11.89	33.42	4.90	25.41	258	0.14
63	11.22	33.48 4	4.42	242	75	10.66	33.55	4.12	25.73	227	0.21
78	10.50	33.57 2	4.03	223	100	9.65	33.74	3.45	26.05	197	0.26
98	9.72	33.73 0	3.48	199	125	9.35	33.83	3.05	26.18	185	0.31
122	9.34	33.81 4	3.11	187	150	9.39	33.98	2.39	26.28	175	0.35
142	9.44	33.96 1	2.48	178	200	8.84	34.05	2.02	26.43	161	0.44
172	9.11	34.01 3	2.22	168	250	8.22	34.13	1.46	26.58	147	0.52
201	8.82	34.05 4	2.01	161	300	7.81	34.21	0.99	26.70	135	0.59
230	8.46	34.09 6	1.71	153	400	7.07	34.28	0.57	26.86	120	0.72
269	8.06	34.16 9	1.24	142	500	6.31	34.31	0.36	26.99	108	0.84
328	7.60	34.23 8	0.83	130							
399	7.08	34.27 6	0.58	120							
472	6.51	34.29 7	0.38	111							
550	5.94	34.33 0	0.35	101							

HORIZON; January 23, 1961; 0135 GCT; 32°38.5'N, 119°29'W; sounding, 350 fm; wind, 320°, force 1; weather, clear; sea, very rough; wire angle, 05°.

9053

0	15.58	33.52 4	6.18	322	0	15.58	33.52	6.18	24.73	322	0.00
10	14.82	33.49 4	6.37	309	10	14.82	33.49	6.37	24.87	309	0.03
29	14.60	33.48 7	6.34	305	20	14.70	33.49	6.36	24.89	307	0.06
39	14.08	33.45 0	6.26	297	30	14.59	33.49	6.33	24.92	305	0.09
49	13.57	33.42 5	6.06	289	50	13.52	33.42	6.05	25.09	288	0.15
58	13.21	33.41 0	5.89	283	75	12.10	33.44	5.32	25.38	261	0.22
68	12.46	33.41 8	5.55	269	100	10.41	33.58	4.34	25.80	221	0.28
83	11.67	33.44 9	5.08	252	125	9.90	33.73	3.58	26.01	201	0.34
96	10.56	33.55 6	4.41	225	150	9.39	33.83	3.25	26.16	186	0.38
111	10.15	33.64 6	4.13	212	200	8.60	34.02	2.28	26.44	160	0.47
135	9.72	33.78 2	3.34	195	250	7.95	34.08	1.96	26.59	146	0.55
164	9.12	33.87 9	3.13	179	300	7.76	34.16	1.45	26.67	138	0.62
198	8.62	34.01 9	2.31	161	400	6.61	34.16	0.97	26.83	123	0.76
246	7.99	34.07 3	2.02	147	500	(5.93)	(34.27)	(0.48)	(27.01)	(106)	(0.88)
294	7.80	34.15 8	1.49	139							
395	6.67	34.15 9	0.99	123							
493	5.98	34.26 2	0.48	107							



S10

CCOF1  
6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

9060

HORIZON; January 22, 1961; 2153 GCT; 32°21.5'N, 119°56'W; sounding, 1100 fm; wind, 100°, force 1; weather, partly cloudy; sea, very rough; wire angle, 04°.

1	15.70	33.53 4	6.19	324	0	(15.70)	(33.53)	(6.19)	(24.71)	(324)	(0.00)
11	15.36	33.53 3	6.12	317	10	15.38	33.53	6.13	24.79	317	0.03
30	15.02	33.51 2	6.12	312	20	15.25	33.53	6.12	24.81	315	0.06
54	14.76	33.49 9	6.18	307	30	15.02	33.51	6.12	24.84	312	0.10
64	13.82	33.42 7	5.89	294	50	14.82	33.50	6.18	24.87	309	0.16
74	12.52	33.37 0	5.46	273	75	12.51	33.37	5.45	25.25	273	0.23
88	11.54	33.41 6	4.98	252	100	11.17	33.45	4.87	25.56	243	0.30
102	11.04	33.46 7	4.84	240	125	10.09	33.62	4.15	25.88	213	0.35
127	10.00	33.63 7	4.11	210	150	9.32	33.76	3.89	26.11	191	0.40
146	9.42	33.73 6	3.94	184	200	8.43	33.94	3.63	26.40	164	0.49
170	8.90	33.84 8	3.68	177	250	7.77	34.00	3.06	26.55	150	0.58
199	8.44	33.93 7	3.62	164	300	7.21	34.03	2.26	26.64	141	0.65
228	8.04	33.98 1	3.76	155	400	6.38	34.13	1.10	26.85	121	0.78
266	7.58	34.00 2	2.64	147	500	6.30	34.30	0.40	26.99	108	0.90
325	6.96	34.05 0	1.95	135							
397	6.38	34.12 3	1.13	122							
469	6.43	34.27 6	0.46	112							
548	5.92	34.33 3	0.39	101							

9070

HORIZON; January 22, 1961; 1620 GCT; 31°56.5'N, 120°31.5'W; sounding, 2060 fm; wind, calm; weather, partly cloudy; sea, moderate; wire angle, 00°.

1	14.96	33.57 0	5.99	306	0	(14.96)	(33.57)	(5.99)	(24.90)	(306)	(0.00)
11	14.91	33.58 5	6.01	304	10	14.92	33.58	6.01	24.92	304	0.03
30	14.72	33.57 4	6.01	301	20	14.87	33.59	6.01	24.93	303	0.06
54	14.48	33.55 0	5.90	298	30	14.72	33.57	6.01	24.96	301	0.09
64	12.25	33.42 6	5.99	264	50	14.60	33.56	5.92	24.98	299	0.15
75	11.22	33.37 7	4.85	250	75	11.22	33.38	4.85	25.49	250	0.22
89	10.54	33.53 5	4.20	226	100	10.19	33.62	3.84	25.87	214	0.28
104	10.02	33.64 7	3.74	210	125	9.23	33.80	3.17	26.17	186	0.33
128	9.18	33.82 8	3.08	183	150	8.90	33.93	2.78	26.32	171	0.37
148	8.93	33.92 2	2.78	172	200	8.15	33.99	2.90	26.48	156	0.46
172	8.52	33.96 5	2.83	163	250	7.25	34.03	2.16	26.64	141	0.53
201	8.14	33.99 2	2.90	156	300	6.80	34.07	1.65	26.74	131	0.60
230	7.75	34.03 8	2.31	147	400	6.52	34.26	0.54	26.92	114	0.73
269	6.92	34.02 4	2.06	137	500	5.92	34.31	0.33	26.04	103	0.84
328	6.76	34.12 3	1.17	127							
400	6.52	34.25 5	0.54	114							
472	6.08	34.28 9	0.38	106							
550	5.71	34.33 6	0.28	98							

9080

HORIZON; January 22, 1961; 1129 GCT; 31°38'N, 121°15'W; sounding, 2080 fm; wind, 140°, force 1; weather, missing; sea, missing; wire angle, 04°.

1	15.05	33.50 7	5.70	313	0	(15.05)	(33.51)	(5.70)	(24.83)	(313)	(0.00)
11	15.05	33.51 2	5.69	313	10	15.05	33.51	5.69	24.83	313	0.03
30	14.75	33.50 3	5.73	307	20	14.93	33.51	5.71	24.86	310	0.06
54	14.13	33.50 9	5.56	294	30	14.75	33.50	5.73	24.89	307	0.09
64	12.18	33.47 8	4.77	259	50	14.70	33.51	5.72	24.92	305	0.15
74	11.22	33.53 8	4.27	238	75	11.18	33.54	4.22	25.63	237	0.22
88	10.76	33.59 7	3.90	226	100	10.23	33.66	3.62	25.89	212	0.28
103	10.08	33.68 1	3.55	208	125	9.52	33.77	3.12	26.09	193	0.33
127	9.49	33.77 9	3.10	192	150	9.17	33.85	2.98	26.22	181	0.38
147	9.22	33.84 6	2.98	183	200	8.32	34.00	2.36	26.47	157	0.46
171	8.76	33.88 8	2.99	172	250	7.79	34.07	1.81	26.60	145	0.54
200	8.32	34.00 2	2.36	157	300	7.42	34.14	1.30	26.70	135	0.61
228	8.03	34.04 7	2.03	150	400	6.30	34.19	0.74	26.89	117	0.74
267	7.62	34.09 0	1.66	142	500	5.75	34.27	0.40	27.03	104	0.86
326	7.24	34.16 6	1.10	131							
398	6.32	34.18 1	0.76	117							
471	5.92	34.25 3	0.44	107							
548	5.42	34.28 0	0.35	99							



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10  
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6101-2

HORIZON; January 22, 1961; 0650 GCT; 31°22'N, 121°53'W; sounding, 2200 fm; wind, 140°, force 2; weather, partly cloudy; sea, missing; wire angle, 03°.

90.90

1	15.30	-	5.91	-	0	(15.30)	(33.29)	(5.91)	(24.61)	(334)	(0.00)
11	14.80	33.29 3	5.97	323	10	14.86	33.29	5.96	24.71	324	0.03
30	14.10	33.27 7	6.01	310	20	14.43	33.28	6.00	24.79	317	0.06
40	13.70	33.30 9	5.96	300	30	14.10	33.28	6.01	24.86	310	0.10
50	13.15	33.29 8	5.52	290	50	13.15	33.30	5.52	25.07	290	0.16
64	11.92	33.29 1	5.52	268	75	11.31	33.36	5.11	25.46	253	0.22
79	11.26	33.39 5	5.01	249	100	10.32	33.42	4.78	25.69	231	0.28
98	10.36	33.41 7	4.81	232	125	9.73	33.70	3.76	26.01	201	0.34
121	9.86	33.67 0	3.73	206	150	8.99	33.80	3.70	26.20	183	0.39
142	9.15	33.76 5	3.77	188	200	8.72	34.03	2.13	26.43	161	0.48
171	8.78	33.87 6	3.24	174	250	8.06	34.08	1.93	26.57	148	0.56
199	8.73	34.02 0	2.17	162	300	7.42	34.10	1.55	26.67	138	0.63
228	8.30	34.07 0	2.00	152	400	6.05	34.13	0.92	26.88	118	0.76
267	7.90	34.09 2	1.86	145	500	5.62	34.24	0.45	27.03	104	0.88
326	7.02	34.11 1	1.32	132							
397	6.08	34.12 3	0.97	119							
470	5.74	34.20 4	0.57	109							
548	5.38	34.28 9	0.35	98							

HORIZON; January 22, 1961; 0218 GCT; 31°03'N, 122°38'W; sounding, 2120 fm; wind, 140°, force 2; weather, overcast; sea, rough; wire angle, 00°.

90.100

0	15.03	33.44 9	5.90	317	0	15.03	33.45	5.90	24.79	317	0.00
10	14.93	33.44 8	5.89	314	10	14.93	33.45	5.89	24.82	314	0.03
29	14.66	33.44 3	5.63	309	20	14.79	33.45	5.77	24.84	312	0.06
53	14.22	33.47 3	5.57	298	30	14.65	33.44	5.62	24.87	309	0.09
63	13.52	33.47 3	5.23	284	50	14.34	33.47	5.58	24.96	301	0.15
73	12.00	33.44 0	4.54	259	75	11.72	33.45	4.46	25.46	253	0.22
87	10.24	33.52 9	4.02	222	100	9.93	33.61	3.75	25.90	211	0.28
102	9.88	33.62 0	3.72	210	125	9.23	33.76	3.28	26.13	189	0.33
126	9.21	33.76 5	3.26	189	150	10.88	33.90	2.85	26.30	173	0.38
146	8.94	33.88 4	2.84	175	200	7.84	33.97	2.85	26.51	153	0.46
170	8.49	33.94 7	2.92	164	250	7.40	34.10	1.56	26.68	137	0.54
200	7.84	33.97 3	2.85	153	300	6.92	34.13	1.17	26.76	129	0.60
229	7.58	34.05 4	2.05	143	400	6.51	34.26	0.51	26.93	114	0.73
268	7.22	34.11 8	1.34	134	500	5.89	34.32	0.30	27.05	102	0.84
327	6.74	34.14 5	1.04	125							
399	6.52	34.25 6	0.52	114							
472	6.08	34.30 2	0.34	105							
550	5.56	34.33 8	0.27	96							



SIO  
CCOF1  
6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

90.120

HORIZON; January 21, 1961; 1328, 1605 GCT; 30°25.5'N, 123°56.5'W; sounding, 2280 fm; wind, 140°, force 1; weather, overcast; sea, rough; wire angle, 02°, 02°.

0	15.44	33.33 9	5.70	333	0	15.44	33.34	5.70	24.62	333	0.00
10	15.31	33.33 0	5.68	331	10	15.31	33.33	5.68	24.64	331	0.03
29	15.26	33.33 0	5.70	330	20	15.29	33.33	5.69	24.65	330	0.07
39	14.99	33.29 7	5.71	327	30	15.24	33.33	5.70	24.66	329	0.10
49	14.60	33.24 6	5.75	323	50	14.55	33.24	5.75	24.74	322	0.16
63	13.95	33.26 8	5.68	308	75	13.79	33.32	5.65	24.96	300	0.24
79	13.74	33.32 7	5.64	299	100	12.32	33.31	5.33	25.24	274	0.31
97	12.40	33.31 1	5.36	276	125	10.59	33.43	4.72	25.65	235	0.38
121	10.81	33.40 9	4.83	240	150	9.71	33.59	4.14	25.92	209	0.44
141	9.98	33.52 0	4.34	218	200	8.59	33.88	3.24	26.33	170	0.53
169	9.18	33.75 7	3.68	188	250	7.93	33.99	2.70	26.52	153	0.61
198	8.61	33.87 8	3.27	171	300	7.19	34.02	2.20	26.65	140	0.69
227	8.23	33.95 2	3.07	160	400	6.39	34.12	1.09	26.83	123	0.82
266	7.71	34.00 5	2.49	148	500	5.71	34.22	0.49	27.00	107	0.95
325	6.86	34.03 2	1.98	135	600	5.20	34.28	0.35	27.10	97	1.06
396	6.41	34.13 0	1.00	122	700	4.80	34.35	0.34	27.21	87	1.16
469	5.92	34.19 8	0.62	111	800	4.44	34.42	0.36	27.30	78	1.24
547	5.43	34.25 9	0.39	101	1000	3.84	34.48	0.61	27.41	68	1.41
					1200	3.35	34.53	0.85	27.50	60	1.55
391a)	6.46	34.08 3	1.37	126	1500	2.77	34.57	1.22	27.59	51	1.75
587	5.26	34.25 9	0.36	99	2000	2.13	34.62	1.86	27.68	42	2.03
782	4.50	34.40 5	0.34	80	2500	1.86	34.65	2.27	27.72	38	2.28
978	3.90	34.47 4	0.58	69	3000	1.67	34.66	2.60	27.75	36	2.52
1173	3.42	34.52 0	0.82	61							
1367	2.97	34.55 2	1.05	54							
1562	2.68	34.57 5	1.29	50							
1756	2.38	34.60 5	1.54	45							
1951	2.18	34.61 8	1.81	43							
2146	2.03	34.63 8	2.04	40							
2340	1.93	34.64 5	2.20	39							
2533	1.83	34.65 0	2.28	38							
2630	1.81	34.65 4	2.45	38							
2727	1.75	34.58 0u	2.27	-							
2824	1.69	34.65 9	2.57	36							
2921	1.67	34.66 3	2.54	36							
3017	1.66	34.66 4	2.66	36							
3113	1.62	34.66 7	2.66	35							
3211	1.60	34.66 6	2.71	35							
3306	1.58	34.67 2	2.83	34							

90.140

HORIZON; January 21, 1961; 0400 GCT; 29°47'N, 125°19.5'W; sounding, 2320 fm; wind, 180°, force 3; weather, partly cloudy; sea, missing; wire angle, 02°.

1	16.00	33.39 0	5.64	341	0	(16.00)	(33.39)	(5.64)	(24.54)	(341)	(0.00)
11	15.71	33.38 3	5.66	336	10	15.72	33.38	5.66	24.59	336	0.03
30	15.57	33.35 6	5.69	334	20	15.62	33.37	5.68	24.60	335	0.07
54	15.81	33.44 7	5.71	333	30	15.57	33.36	5.69	24.61	334	0.10
64	16.45	33.65 6	5.62	332	50	15.79	33.44	5.71	24.62	333	0.17
74	16.44	33.65 6	5.60	332	75	16.43	33.65	5.59	24.63	332	0.25
88	16.40	33.65 2	5.50	331	100	16.31	33.64	5.58	24.65	330	0.34
103	16.28	33.63 2	5.60	330	125	13.60	33.51	5.49	25.14	283	0.41
127	13.51	33.50 9	5.48	282	150	13.29	33.72	5.33	25.37	262	0.48
147	13.37	33.72 1	5.36	263	200	9.88	33.71	4.58	25.98	203	0.60
172	10.92	33.52 1	4.84b)	234	250	8.68	33.93	3.56	26.36	168	0.70
201	9.83	33.72 0	4.57	201	300	7.70	33.98	2.93	26.54	151	0.78
230	9.00	33.87 9	3.98	177	400	6.40	34.10	1.20	26.81	125	0.92
269	8.38	33.95 6	3.28	162	500	5.78	34.19	0.58	26.96	110	1.04
327	7.19	33.99 7	2.60	142							
399	6.41	34.09 4	1.24	125							
472	5.94	34.16 1	0.69	114							
550	5.46	34.23 1	0.43	103							

18

- a) Overlapping casts; reconciliation of property curves when necessary.  
b) Alternate value, 4.46 ml/L, not used in interpolation.



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10  
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6101-2

HORIZON; January 20, 1961; 1959 GCT; 29°13'N, 126°34.5'W; sounding, 2250 fm; wind, 120°, force 2; weather, cloudy; sea, moderate; wire angle, 01°.

90.160

1	16.26	33.41 7	5.62	345	0	(16.26)	(33.42)	(5.62)	(24.49)	(345)	(0.00)
11	16.04	33.42 3	5.61	340	10	16.06	33.42	5.61	24.54	340	0.03
30	15.94	33.40 3	5.51	339	20	15.97	33.41	5.55	24.55	339	0.07
54	16.08	33.45 6	5.49	338	30	15.94	33.40	5.51	24.55	339	0.10
64	16.11	33.46 7	5.51	338	50	16.04	33.44	5.50	24.56	338	0.17
74	16.46	33.61 9	5.43	335	75	16.48	33.63	5.42	24.60	335	0.25
88	16.72	33.72 4	5.41	332	100	15.70	33.61	5.53	24.77	319	0.34
103	14.72	33.49 9	5.59	307	125	13.30	33.51	5.36	25.21	277	0.41
127	13.20	33.51 5	5.35	276	150	12.84	33.62	5.11	25.38	261	0.48
148	12.88	33.62 5	5.12	261	200	9.51	33.66	3.85	26.01	201	0.60
172	10.85	33.54 6	4.67	231	250	8.43	33.93	3.60	26.39	165	0.69
201	9.48	33.66 6	3.84	200	300	7.56	33.99	2.58	26.57	147	0.77
230	8.84	33.88 0	3.80	175	400	6.32	34.08	1.16	26.82	124	0.91
269	8.08	33.95 7	3.28	158	500	5.70	34.19	0.62	26.97	109	1.04
328	7.14	34.02 1	2.05	140							
400	6.32	34.08 4	1.16	124							
473	5.85	34.16 2	0.72	113							
551	5.38	34.21 1	0.47	104							

HORIZON; January 20, 1961; 1130 GCT; 28°29.5'N, 127°56.5'W; sounding, 2320 fm; wind, 180°, force 4; weather, overcast; sea, slight; wire angle, 07°.

90.180

1	17.82	34.23 2	5.39	321	0	(17.82)	(34.23)	(5.39)	(24.75)	(321)	(0.00)
11	17.85	34.23 0	5.44	322	10	17.84	34.23	5.43	24.74	322	0.03
30	17.79	34.22 6	5.35	320	20	17.82	34.23	5.41	24.75	321	0.06
58	17.78	34.22 4	5.30	320	30	17.79	34.23	5.35	24.75	320	0.10
68	17.78	34.22 0	5.37	321	50	17.78	34.22	5.30	24.76	320	0.16
82	17.77	34.22 0	5.32	320	75	17.77	34.22	5.35	24.76	320	0.24
97	17.78	34.23 6	5.34	320	100	17.79	34.24	5.34	24.76	320	0.32
112	17.89	34.27 4	5.32	320	125	17.52	34.27	5.32	24.85	311	0.40
136	16.85	34.24 2	5.27	298	150	15.90	34.18	5.01	25.16	281	0.48
154	15.62	34.15 7	4.97	277	200	12.47	33.83	4.80	25.61	238	0.61
184	13.46	33.91 1	4.88	251	250	9.71	33.82	4.40	26.10	192	0.72
213	11.64	33.79 9	4.76	226	300	8.35	33.94	3.42	26.41	163	0.81
241	10.06	33.80 3	4.52	199	400	6.78	34.03	1.96	26.71	134	0.97
290	8.58	33.92 3	3.58	167	500	5.79	34.13	0.86	26.91	115	1.10
341	7.55	33.98 1	2.86	148	600	(5.21)	(34.23)		(27.07)	(100)	(1.21)
425	6.50	34.04 8	1.64	129							
506	5.74	34.13 4	0.83	114							
589	5.25	34.22 2	0.43	102							

HORIZON; January 20, 1961; 0248 GCT; 27°47'N, 129°18'W; sounding, 2320 fm; wind, calm; weather, cloudy; sea, moderate; wire angle, 03°.

90.200

0	18.08	34.31 8	5.27	321	0	18.08	34.32	5.27	24.75	321	0.00
10	17.98	34.30 6	5.23	319	10	17.98	34.31	5.23	24.77	319	0.03
29	17.94	34.30 3	5.22	318	20	17.95	34.30	5.22	24.77	318	0.06
53	17.94	34.30 4	5.17	318	30	17.94	34.30	5.22	24.77	318	0.10
63	17.98	34.31 6	5.27	318	50	17.94	34.30	5.18	24.77	318	0.16
73	17.98	34.33 2	5.20	317	75	17.98	34.33	5.20	24.79	317	0.24
87	17.97	34.32 8	5.18	317	100	18.00	34.34	5.16	24.79	317	0.32
103	18.01	34.34 2	5.15	317	125	17.47	34.37	5.01	24.94	303	0.40
127	17.43	34.36 9	5.00	302	150	16.30	34.28	4.95	25.14	283	0.47
147	16.52	34.30 5	4.98	286	200	11.97	33.85	4.64	25.72	228	0.60
171	14.73	34.11 4	4.74	262	250	9.44	33.86	4.17	26.18	185	0.71
200	11.97	33.84 7	4.64	228	300	8.42	33.94	3.43	26.40	164	0.80
229	10.22	33.81 4	4.44	201	400	6.73	34.05	1.84	26.74	132	0.95
268	8.97	33.89 5	3.86	175	500	5.85	34.15	0.84	26.92	114	1.08
326	8.02	33.97 9	3.07	156							
398	6.76	34.04 6	1.88	132							
471	6.04	34.12 0	1.07	119							
549	5.58	34.20 8	0.48	106							



S10  
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6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

946305

HORIZON; January 5, 1961; 0235 GCT; 32°36'N, 117°23'W; sounding, 100 fm; wind, 300°, force 2; weather, cloudy; sea, slight; wire angle, 00°. a)

0	14.86	33.54 4	5.80	306
5	14.84	33.53 2	5.83	307
10	14.86	33.52 7	5.84	307
15	14.82	33.53 1	5.83	306
19	14.80	33.54 2	5.83	305
24	14.79	33.54 0	5.78	304
29	14.72	33.54 6	5.80	303
34	14.62	33.54 1	5.79	302
39	14.30	33.52 6	5.66b)	296
44	14.14	33.54 3	5.44	291
49	14.00	33.52 6	5.39	290
54	13.76	33.52 0	5.33	286
58	13.55	33.51 5	5.23	282
63	13.51u	33.52 9	5.23	280
68	13.50	33.51 7	5.24	281
73	13.18	33.50 6	5.09	276
78	13.12	33.51 5	5.07	274
83	12.52	33.52 5	4.79	262

975299

HUGH M. SMITH; January 27, 1961; 2202 GCT; 32°13'N, 117°03.5'W; sounding, 80 fm; wind, 320°, force 3; weather, partly cloudy; sea, moderate; wire angle, 00°. a)

1	15.46	33.56 1	5.80	317
6	15.42	33.55 5	5.58	317
11	15.23	33.54 9	5.48	314
16	15.22	33.55 7	5.42	313
21	15.16	33.55 1	5.41	312
25	15.14	33.55 6	5.32	311
31	15.00	33.56 1	5.42	308
36	14.66	33.55 7	5.41	301
41	14.40	33.55 3	5.38	296
47	14.20	33.55 3	5.09	292
51	14.06	33.54 5	5.22	290
56	13.86	33.54 7	5.08	286
61	13.68	33.54 6	5.18	282
66	13.64	33.53 6	5.18	282
71	13.48	33.53 6	5.14	279
76	13.24	33.53 7	5.03	275
82	12.60	33.55 3	4.73	261
86	12.32	33.55 9	4.61	256

10030

HUGH M. SMITH; January 28, 1961; 0223 GCT; 31°40.5'N, 116°46.5'W; sounding, 240 fm; wind, 320°, force 3; weather, partly cloudy; sea, moderate; wire angle, 09°.

1	15.72	33.59 6	5.61	320	0	(15.72)	(33.60)	(5.61)	(24.76)	(320)	(0.00)
11	15.70	33.55 8	5.72	323	10	15.70	33.56	5.72	24.73	323	0.03
31	15.36	33.57 8	5.72	314	20	15.51	33.55	5.72	24.77	319	0.06
50	14.16	33.54 8	5.40	291	30	15.37	33.58	5.72	24.82	314	0.10
75	12.38	33.60 5	4.28	253	50	14.16	33.55	5.40	25.06	291	0.16
100	11.28	33.65 4	3.96	230	75	12.38	33.61	4.28	25.46	253	0.22
123	10.67	33.73 2	3.66	214	100	11.28	33.65	3.96	25.70	230	0.29
162	9.97	33.92 8	2.67	188	125	10.63	33.74	3.61	25.88	213	0.34
201	9.36	34.09 2	2.00	166	150	10.19	33.85	3.00	26.05	197	0.40
250	9.04	34.20 0	1.46	154	200	9.37	34.09	2.01	26.37	167	0.49
300	8.65	34.25 0	1.10	144	250	9.04	34.20	1.46	26.50	154	0.57
					300	8.65	34.25	1.10	26.61	144	0.64

a) Shakedown station.

b) Mean value of 5.63 and 5.68 ml/L.



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10  
CCOF1  
6101-2

HUGH M. SMITH; January 28, 1961; 0555 GCT; 31°31'N, 117°07'W; sounding, 600 fm; wind, 360°, force 2; weather, partly cloudy; sea, moderate; wire angle, 02°.

100.35

1	15.80	-	5.70	-	0	(15.80)	(33.57)	(5.70)	(24.71)	(324)	(0.00)
11	15.79	33.57	5.67	324	10	15.79	(33.57)	5.67	(24.71)	(324)	(0.03)
31	15.56	33.59 5	5.75	317	20	15.78	33.57	5.68	24.72	323	0.06
41	15.17	33.55 6	5.68	311	30	15.59	33.59	5.74	24.78	318	0.10
56	14.50	33.52 4	5.56	300	50	14.76	33.53	5.60	24.92	305	0.16
71	13.63	33.50 5	5.10	284	75	13.20	33.53	4.79	25.24	274	0.23
96	12.14	33.66 3	4.05	245	100	12.04	33.68	4.01	25.57	242	0.30
115	11.58	33.72 5	3.84	230	125	11.09	33.77	3.55	25.82	218	0.36
134	10.78	33.81 5	3.31	210	150	10.48	33.89	2.98	26.03	199	0.41
155	10.36	33.91 5	2.85	195	200	9.56	34.15	2.12	26.39	165	0.50
184	9.75	34.05 2	2.19	175	250	8.89	34.19	1.62	26.53	152	0.58
219	9.34	34.18 9	2.02	159	300	8.26	34.25	1.26	26.66	139	0.66
248	8.90	34.19 2	1.64	152	400	7.31	34.30	0.60	26.85	121	0.79
299	8.28	34.24 3	1.27	139	500	6.50	34.33	0.37	26.98	108	0.91
354	7.75	34.29 2	0.75	128	600	5.81	34.36	0.30	27.10	97	1.02
439	6.98	34.30 3	0.49	116							
523	6.34	34.34 0	0.33	106							
608	5.76	34.36 7	0.30	96							

HUGH M. SMITH; January 28, 1961; 1222 GCT; 31°21.5'N, 117°27'W; sounding, 1060 fm; wind, 310°, force 2; weather, partly cloudy; sea, moderate; wire angle, 00°.

100.40

1	16.32	33.59 7	5.67	333	0	(16.32)	(33.60)	(5.67)	(24.62)	(333)	(0.00)
11	16.32	33.59 6	5.63	333	10	16.32	33.60	5.63	24.62	333	0.03
31	16.32	33.60 5	5.63	332	20	16.32	33.60	5.63	24.62	333	0.07
41	15.96	33.59 0	5.60	326	30	16.32	33.60	5.63	24.63	332	0.10
51	15.56	33.58 0	5.52	318	50	15.65	33.58	5.53	24.76	320	0.17
66	14.78	33.55 1	4.94	304	75	13.89	33.55	4.93	25.11	286	0.24
81	13.15	33.56 5	4.91	271	100	12.17	33.65	4.19	25.53	246	0.31
101	12.08	33.66 0	4.15	244	125	11.05	33.74	3.55	25.81	220	0.37
126	11.00	33.74 4	3.52	219	150	10.34	33.90	3.14	26.05	197	0.42
146	10.44	33.86 7	3.23	200	200	9.48	34.10	2.26	26.35	168	0.51
176	9.85	34.02 9	2.67	179	250	8.94	34.21	1.58	26.53	151	0.60
206	9.42	34.11 7	2.17	166	300	8.17	34.21	1.41	26.65	140	0.67
236	9.28	34.22 3	1.65	156	400	7.12	34.29	0.68	26.87	119	0.80
276	8.38	34.20 0	1.50	144	500	6.58	34.34	0.40	26.97	109	0.92
336	7.83	34.22 6	1.27	134							
410	7.06	34.30 7	0.61	118							
485	6.68	34.33 4	0.45	111							
566	6.01	34.36 5	0.33	100							

HUGH M. SMITH; January 28, 1961; 1720 GCT; 31°16'N, 117°38'W; sounding, 1050 fm; wind, 290°, force 2; weather, cloudy; sea, very rough; wire angle, 03°.

100.43

250	8.72	34.12 6	2.05	154	250	8.72	34.13	2.05	26.50	154	
350	7.52	34.22 6	0.96	130	300	8.04	34.19	1.46	26.65	140	
549	6.20	34.35 0	0.30	103	400	7.19	34.27	0.68	26.84	122	
747	5.08	34.41 3	0.30	86	500	6.52	34.32	0.38	26.97	109	
947	4.26	-	0.57	-	600	5.90	34.37	0.30	27.09	98	
1145	3.71	34.52 0	0.67	64	700	5.32	34.40	0.30	27.19	89	
1345	3.26a)	34.55 5	0.88	56	800	4.83	34.43	0.33	27.27	81	
1469	2.98	34.57 6	1.07	52	1000	4.08	34.49	0.60	27.39	69	
1581	2.77	34.59 1	1.26	50	1200	3.59	34.53	0.71	27.48	61	
1620	2.71	34.59 6	1.28	49	1500	2.91	34.58	1.10	27.58	52	
1639	2.72	34.59 2	1.28	49							
1660	2.68	34.60 0	1.30	48							
1680	2.66	34.60 2	1.37	48							
1700	2.63	34.60 1	1.38	48							
1721	2.65	34.60 1	1.35	48							
1740	2.60	34.60 1	1.37	47							
1760	2.60	34.59 8	1.35	48							
1801	2.58	34.60 8	1.39	47							

a) Alternate value, 3.34°C, not used in interpolation.



S10

CCOF1  
6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

100.50

HUGH M. SMITH; January 28, 1961; 2325 GCT; 31°00'N, 118°08.5'W; sounding, 930 fm; wind, 340°, force 2; weather, partly cloudy; sea, rough; wire angle, 06°.

1	16.18	33.61 6	5.84	329	0	(16.18)	(33.62)	(5.84)	(24.66)	(329)	(0.00)
11	16.05	33.60 0	5.96	327	10	16.06	33.60	5.95	24.68	327	0.03
31	15.74	33.59 9	5.94	320	20	16.00	33.60	5.96	24.70	326	0.07
41	15.32	33.58 9	5.97	312	30	15.79	33.60	5.95	24.75	321	0.10
50	14.26	33.52 3	5.74	295	50	14.26	33.52	5.74	25.02	295	0.16
65	12.57	33.50 1	5.14	264	75	12.03	33.53	4.68	25.46	253	0.23
80	11.86	33.54 2	4.50	249	100	11.11	33.62	4.09	25.70	230	0.29
100	11.11	33.61 8	4.09	230	125	10.22	33.72	3.66	25.93	207	0.34
124	10.23	33.72 3	3.65	208	150	9.63	33.85	3.16	26.14	189	0.40
143	9.76	33.83 2	3.23	192	200	9.09	34.07	2.15	26.40	164	0.48
173	9.30	33.93 8	2.88	177	250	8.28	34.14	1.81	26.58	147	0.56
203	9.04	34.08 5	2.09	162	300	7.76	34.18	1.34	26.69	136	0.64
233	8.42	34.10 7	2.00	152	400	6.90	34.25	0.69	26.87	119	0.77
273	8.03	34.17 0	1.54	141	500	6.31	34.33	0.36	27.00	106	0.89
332	7.46	34.20 0	1.12	131							
406	6.86	34.26 0	0.67	118							
481	6.42	34.32 2	0.37	108							
561	5.94	34.34 5	0.34	100							

100.60

HUGH M. SMITH; January 29, 1961; 0544 GCT; 30°40.5'N, 118°47'W; sounding, 1540 fm; wind, 320°, force 2; weather, partly cloudy; sea, rough; wire angle, 02°.

1	15.86	33.51 7	5.75	329	0	(15.86)	(33.52)	(5.75)	(24.66)	(329)	(0.00)
11	15.85	33.50 4	5.66	329	10	15.85	33.51	5.67	24.66	329	0.03
31	15.16	33.49 0	5.80	316	20	15.83	33.50	5.67	24.66	329	0.07
41	14.31	33.47 8	5.81	300	30	15.50	33.49	5.75	24.72	323	0.10
56	13.34	33.41 0	5.39	286	50	13.77	33.44	5.62	25.05	292	0.16
71	12.50	33.44 1	5.13	268	75	12.09	33.45	5.00	25.39	259	0.23
96	10.95	33.50 2	4.54	236	100	10.75	33.52	4.47	25.69	231	0.29
115	10.03	33.61 4	4.14	213	125	9.73	33.68	3.87	25.99	203	0.35
134	9.45	33.73 8	3.66	194	150	9.13	33.82	3.56	26.19	183	0.40
155	9.06	33.85 1	3.52	180	200	8.40	33.96	3.16	26.42	162	0.48
185	8.68	33.93 0	3.37	168	250	7.68	34.06	2.04	26.61	144	0.56
220	8.08	33.99 8	2.85	154	300	7.15	34.11	1.47	26.72	134	0.64
249	7.70	34.06 4	2.05a)	144	400	6.28	34.17	0.88	26.89	118	0.77
299	7.18	34.10 6	1.48	134	500	5.83	34.27	0.48	27.02	105	0.88
354	6.70	34.14 3	1.15	125	600	5.33	34.35	0.36	27.14	93	0.99
439	6.06	34.21 1	0.65	112							
524	5.75	34.29 0	0.43	102							
609	5.28	34.35 0	0.35	92							

100.70

HUGH M. SMITH; January 29, 1961; 1140 GCT; 30°21.5'N, 119°26'W; sounding, 2025 fm; wind, 040°, force 2; weather, overcast; sea, rough; wire angle, 00°.

1	15.74	33.48 3	5.71	329	0	(15.74)	(33.48)	(5.71)	(24.66)	(329)	(0.00)
11	15.68	33.48 0	5.77	328	10	15.68	33.48	5.76	24.67	328	0.03
31	14.82	33.47 2	5.88	311	20	15.44	33.48	5.80	24.73	323	0.07
41	14.44	33.42 0	5.96	307	30	14.95	33.47	5.85	24.83	313	0.10
51	14.22	33.41 6	5.74	303	50	14.27	33.41	5.80	24.92	304	0.16
66	13.50	33.41 8	5.47	288	75	12.75	33.42	5.26	25.24	274	0.23
81	11.99	33.42 4	5.02	260	100	10.62	33.49	4.28	25.69	231	0.30
101	10.54	33.50 0	4.23	229	125	9.56	33.70	3.96	26.04	198	0.35
125	9.56	33.70 5	3.96	198	150	9.13	33.83	3.40	26.22	182	0.40
145	9.22	33.81 0	3.46	185	200	8.43	33.97	2.90	26.42	162	0.48
175	8.66	33.90 4	3.21	170	250	7.89	34.07	2.07	26.58	146	0.56
205	8.38	33.97 8	2.80	160	300	7.60	34.19	1.35	26.71	134	0.64
236	8.04	34.03 9	2.29	151	400	6.33	34.20	0.75	26.91	116	0.77
276	7.61	34.12 1	1.70	139	500	5.90	34.28	0.46	27.02	104	0.88
335	7.60	34.27 5	0.88	127							
410	6.18	34.19 8	0.71	114							
485	5.94	34.27 1	0.49	106							
565	5.43	34.31 7	0.38	97							

22

a) Alternate value, 1.92 ml/L, not used in interpolation.



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10  
CCOF1  
6101-2

HUGH M. SMITH; January 29, 1961; 1655 GCT; 30°03'N, 120°06'W; sounding, 1920 fm; wind, 160°, force 2;  
weather, overcast; sea, moderate; wire angle, 02°.

100.80

1	15.84	33.50 9	5.66	329	0	(15.84)	(33.51)	(5.66)	(24.65)	(329)	(0.00)
11	15.82	33.49 8	5.73	330	10	15.82	33.50	5.72	24.65	330	0.03
31	15.27	33.55 2	5.78	314	20	15.79	33.50	5.74	24.66	329	0.07
41	15.14	33.54 8	5.82	312	30	15.28	33.55	5.77	24.81	314	0.10
51	14.70	33.49 4	5.80	307	50	14.74	33.50	5.81	24.89	307	0.16
66	13.58	33.45 8	5.56	286	75	12.89	33.46	5.25	25.24	274	0.23
81	12.56	33.45 8	5.13	268	100	10.85	33.52	4.84	25.67	233	0.30
100	10.85	33.51 8	4.84	233	125	9.83	33.69	4.05	25.97	204	0.35
124	9.86	33.68 5	4.06a)	204	150	9.29	33.80	3.36	26.15	187	0.40
144	9.42	33.77 3	3.42	191	200	8.29	33.97	3.00	26.45	160	0.49
173	8.76	33.89 9	3.24	172	250	7.86	34.05	2.17	26.57	148	0.57
203	8.26	33.97 3	2.95	159	300	7.19	34.07	1.77	26.69	137	0.64
234	8.06	34.03 9	2.25	151	400	6.38	34.20	0.86	26.90	116	0.77
274	7.55	34.05 5	2.05	143	500	6.08	34.31	0.38	27.02	105	0.89
335	6.80	34.10 7	1.37	129							
409	6.33	34.21 3	0.79	115							
484	6.18	34.29 3	0.42	107							
564	5.46	34.32 3	0.33	96							

HUGH M. SMITH; January 30, 1961; 0005 GCT; 29°42.5'N, 120°46'W; sounding, 1850 fm; wind, 160°, force 2;  
weather, overcast; sea, slight; wire angle, 00°.

100.90

1	16.28	33.54 3	5.78	336	0	(16.28)	(33.54)	(5.78)	(24.59)	(336)	(0.00)
11	16.14	33.54 2	5.79	333	10	16.14	33.54	5.79	24.62	333	0.03
31	16.03	33.54 5	5.81	331	20	16.11	33.54	5.80	24.63	332	0.07
41	15.78	33.50 1	5.82	328	30	16.04	33.54	5.81	24.64	331	0.10
51	15.57	33.48 3	5.82b)	325	50	15.59	33.49	5.82	24.70	325	0.17
66	15.07	33.46 6	5.80	316	75	14.59	33.47	5.71	24.90	306	0.24
81	14.31	33.48 4	5.62	299	100	13.00	33.51	5.33	25.27	272	0.32
101	12.90	33.51 3	5.29	270	125	11.28	33.53	4.74	25.60	240	0.38
125	11.28	33.53 0	4.74	240	150	10.19	33.60	4.58	25.85	215	0.44
146	10.37	33.58 2	4.61	220	200	9.04	33.92	3.30	26.29	174	0.54
175	9.30	33.78 7	4.04	188	250	8.18	34.08	2.37	26.55	150	0.62
205	9.00	33.95 1	3.18	172	300	7.71	34.15	1.68	26.67	138	0.70
235	8.37	34.05 8	2.53	154	400	6.65	34.20	0.79	26.86	120	0.83
274	7.95	34.10 5	2.05	144	500	5.82	34.28	0.38	27.03	104	0.95
334	7.35	34.19 0	1.23	130							
408	6.56	34.20 4	0.72	118							
483	5.93	34.27 4	0.40	106							
564	5.55	34.31 9	0.31	98							

HUGH M. SMITH; January 30, 1961; 0552 GCT; 29°20'N, 121°26'W; sounding, 2100 fm; wind, 140°, force 1;  
weather, overcast; sea, slight; wire angle, 00°.

100.100

0	16.36	33.47 7	5.73	343	0	16.36	33.48	5.73	24.52	343	0.00
10	16.36	33.46 9	5.64	343	10	16.36	33.47	5.64	24.51	343	0.03
30	16.11	33.47 7	5.61	337	20	16.28	33.47	5.63	24.53	341	0.07
55	15.96	33.48 1	5.64	334	30	16.11	33.48	5.61	24.57	337	0.10
65	16.20	33.58 5	5.51	332	50	15.96	33.48	5.63	24.61	334	0.17
75	16.13	33.62 9	5.54	327	75	16.13	33.63	5.54	24.69	327	0.25
90	14.76	33.56 9	5.62	302	100	14.17	33.58	5.50	25.08	289	0.33
105	13.66	33.59 8	5.35	278	125	12.12	33.51	5.08	25.43	256	0.40
129	11.86	33.49 8	5.03	252	150	10.95	33.53	4.79	25.67	233	0.46
149	11.00	33.52 9	4.80	235	200	9.03	33.83	3.81	26.22	181	0.57
173	9.80	33.66 7	4.20	205	250	8.04	33.97	3.14	26.48	156	0.65
203	8.97	33.84 3	3.77	179	300	7.23	34.03	2.37	26.65	141	0.73
234	8.37	33.94 3	3.33	162	400	6.31	34.12	1.17	26.85	121	0.87
274	7.62	34.00 3	2.84	148	500	5.75	34.24	0.55	27.01	106	0.99
332	6.84	34.05 6	1.89	134							
407	6.26	34.12 9	1.11	120							
482	5.83	34.21 4	0.64	109							
562	5.50	34.32 5	0.37	97							

a) Mean value of 3.98 and 4.15 ml/L.

b) Alternate value, 5.70 ml/L, not used in interpolation.



S10

CCOF1  
6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

100.120

HUGH M. SMITH; January 30, 1961; 1535, 1759 GCT; 28°36.5'N, 122°44.5'W; sounding, 2250 fm; wind, 140°, force 1; weather, overcast; sea, slight; wire angle, 00°, 02°.

1	16.90	33.70	9	5.64	338	0	(16.90)	(33.71)	(5.64)	(24.57)	(338)	(0.00)
11	16.90	33.70	7	5.65	338	10	16.90	33.71	5.65	24.57	338	0.03
31	16.86	33.75	3	5.59	334	20	16.88	33.73	5.62	24.59	336	0.07
56	16.92	33.82	6	5.56	330	30	16.86	33.75	5.59	24.61	334	0.10
66	17.00	33.86	5	5.51	329	50	16.92	33.82	5.57	24.65	330	0.17
76	17.10	33.91	7	5.52	328	75	17.09	33.91	5.52	24.68	327	0.25
91	17.17	33.95	6	5.48	326	100	17.15	33.97	5.45	24.70	325	0.33
105	16.75	33.90	5	5.29	320	125	13.92	33.70	5.17	25.22	276	0.41
129	13.64	33.68	4	5.14	272	150	12.85	33.67	4.94	25.42	257	0.48
149	12.91	33.67	7	4.95	258	200	9.84	33.79	4.31	26.05	196	0.59
173	10.74	33.62	8	4.61	223	250	8.57	33.94	3.73	26.38	166	0.68
204	9.72	33.80	8	4.28	193	300	7.91	34.06	2.52	26.57	147	0.77
234	8.93	33.91	0	3.97	173	400	6.77	34.17	1.12	26.82	123	0.91
274	8.16	33.97	6	3.28	157	500	6.44	34.36	0.37	27.01	106	1.03
334	7.64	34.13	3	1.86	138							
408	6.70	34.18	2	1.01	122							
482	6.55	34.33	0	0.43	109							
563	5.90	34.36	8	0.28	98							
300a)	7.61	34.00	7	2.65	147	300a)	7.61	34.01	2.65	26.57	147	0.77
500	5.98	34.28	1	0.58	106	400	6.66	34.16	1.21	26.82	123	0.91
801	4.60	34.44	3	0.34	78	500	5.98	34.28	0.58	27.01	106	1.03
1000	4.00	34.48	9	0.61	69	600	5.45	34.37	0.42	27.15	93	1.13
1198	3.42	34.53	0	0.78	60	700	4.99	34.41	0.35	27.23	84	1.23
1399	3.02	34.56	7	1.01	54	800	4.60	34.44	0.34	27.30	78	1.32
1598	2.66	34.59	2	1.32	49	1000	4.00	34.49	0.61	27.40	69	1.48
1798	2.33	34.61	4	1.63	44	1200	3.41	34.53	0.79	27.50	60	1.63
1997	2.12	34.63	7	1.89	41	1500	2.83	34.58	1.18	27.59	51	1.82
2195	1.98	34.64	6	2.11	39	2000	2.11	34.64	1.90	27.70	41	2.10
2394	1.86	34.65	6	2.29	38	2500	1.80	34.66	2.37	27.74	37	2.34
2593	1.76	34.66	5	2.43	36	3000	1.60	34.67	2.80	27.77	34	2.57
2793	1.68	34.66	5	2.63	36							
2892	1.64	34.67	1	2.70	35							
3092	1.58	34.67	7	2.83	34							
3191	1.60	34.67	3	2.86	34							
3391	1.54	34.68	0	2.95	33							
3591	1.52	34.68	3	3.07	33							
3691	1.54	34.68	3	3.14	33							
3791	1.53	34.68	5	3.12	33							

110.35

HORIZON; February 2, 1961; 1836 GCT; 29°43.5'N, 115°59'W; sounding, 580 fm; wind, 020°, force 4; weather, overcast; sea, rough; wire angle, 16°.

1	15.61	33.64	2	5.60	315	0	(15.61)	(33.64)	(5.60)	(24.81)	(315)	(0.00)
10	15.60	33.63	5	5.65	315	10	15.60	33.64	5.65	24.81	315	0.03
29	15.58	33.64	3	5.64	314	20	15.59	33.64	5.65	24.81	315	0.06
38	15.24	33.61	7	5.58	309	30	15.58	33.64	5.64	24.83	314	0.09
52	13.90	33.59	9	4.88	283	50	14.07	33.60	4.97	25.11	286	0.15
66	12.12	33.55	7	4.63	252	75	12.00	33.67	4.23	25.58	242	0.22
89	11.66	33.90	4	2.95	218	100	11.10	33.99	2.58	25.99	202	0.28
106	10.89	34.01	9	2.45	197	125	10.59	34.11	2.10	26.18	185	0.33
124	10.61	34.11	4	2.11	185	150	10.00	34.20	1.85	26.35	169	0.37
142	10.17	34.17	0	1.97	173	200	9.88	34.37	1.15	26.50	154	0.45
168	9.75	34.25	3	1.54	160	250	9.48	34.39	0.82	26.59	146	0.53
200	9.88	34.37	4	1.15	154	300	8.98	34.41	0.70	26.68	137	0.60
227	9.70	34.39	2	0.83	150	400	7.91	34.39	0.43	26.84	122	0.74
272	9.29	34.39	9	0.80	143	500	6.67	34.37	0.36	26.99	107	0.86
322	8.74	34.41	4	0.60	133							
401	7.90	34.39	8	0.42	122							
482	6.84	34.37	1	0.35	110							
566	6.13	34.37	5	0.39	100							

24

a) The data collected on each cast were interpolated separately because this station is considered to be an example of isopycnal mixing in the region of the cast overlap.



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10  
CCOFI  
6101-2

HUGH M. SMITH: February 2, 1961; 1538 GCT; 29°34.5'N, 116°11.5'W; sounding, 1300 fm; wind, 360°, force 4; weather, overcast; sea, rough; wire angle, 08°.

110.40

0	16.16	33.60 7	5.74	329	0	16.16	33.61	5.74	24.67	329	0.00
10	16.15	33.60 1	5.71	329	10	16.15	33.60	5.71	24.66	329	0.03
29	16.15	33.60 4	5.67	329	20	16.14	33.60	5.68	24.66	329	0.07
39	16.15	33.60 9	5.64	328	30	16.14	33.60	5.67	24.66	329	0.10
54	14.73	33.54 0	5.65	304	50	16.15	33.61	5.64	24.67	328	0.16
69	14.26	33.72 7	4.30	280	75	13.88	33.72	4.13	25.25	273	0.24
93	11.74	33.71 1	3.92	234	100	11.27	33.70	3.97	25.73	227	0.30
113	10.62	33.68 2	4.01	217	125	10.48	33.80	3.50	25.96	206	0.36
132	10.36	33.86 3	3.18	199	150	9.69	33.95	2.90	26.21	182	0.41
152	9.66	33.96 6	2.85	181	200	9.61	34.23	1.64	26.44	160	0.49
181	9.60	34.15 0	2.01	166	250	9.28	34.35	0.99	26.59	145	0.57
216	9.58	34.29 1	1.36	155	300	8.79	34.35	0.84	26.67	138	0.64
246	9.31	34.35 4	1.03	146	400	7.46	34.34	0.59	26.85	121	0.78
296	8.83	34.35 5	0.85	139	500	6.60	34.36	0.37	26.99	107	0.90
351	8.06	34.33 5	0.84	129	600	5.83	34.38	0.39	27.11	96	1.01
435	7.11	34.35 0	0.46	115							
520	6.44	34.36 6	0.37	105							
605	5.80	34.38 4	0.39	96							

HUGH M. SMITH: February 2, 1961; 0823 GCT; 29°15'N, 116°55'W; sounding, 1200 fm; wind, 360°, force 5; weather, overcast; sea, very rough; wire angle, 30°.

110.50

1	15.94	33.52 6	5.76	330	0	(15.94)	(33.53)	(5.76)	(24.65)	(330)	(0.00)
9	15.94	33.52 2	5.77	330	10	15.94	33.52	5.76	24.65	330	0.03
31	15.94	33.52 0	5.68	330	20	15.94	33.52	5.72	24.65	330	0.07
58	15.87	33.57 6	5.61	325	30	15.94	33.52	5.69	24.65	330	0.10
66	15.42	33.55 9	5.55a)	317	50	15.93	33.52	5.67	24.65	330	0.16
83	14.03	33.53 5	5.23	290	75	14.88	33.54	5.44	24.90	307	0.24
95	13.40	33.60 0	5.26	273	100	13.14	33.59	5.17	25.30	268	0.32
106	12.72	33.58 9	4.97	261	125	11.32	33.65	4.34	25.69	231	0.38
131	10.97	33.67 8	4.17	223	150	10.23	33.79	3.45	25.99	203	0.44
150	10.23	33.79 3	3.45	203	200	9.43	34.05	2.33	26.33	171	0.53
173	9.80	33.88 5	2.93	189	250	8.70	34.16	1.75	26.54	151	0.61
200	9.43	34.05 4	2.33	171	300	8.34	34.24	1.26	26.65	141	0.69
224	8.96	34.13 5	1.96	157	400	7.58	34.32	0.67	26.83	123	0.83
266	8.56	34.18 2	1.61	147	500	6.35	34.31	0.46	26.99	108	0.95
319	8.22	34.27 2	1.03	137							
405	7.52	34.32 1	0.65	123							
489	6.44	34.31 3	0.48	109							
560	5.98	34.35 2	0.32	101							

HUGH M. SMITH: February 2, 1961; 0114 GCT; 28°55'N, 117°38'W; sounding, 1900 fm; wind, 360°, force 6; weather, cloudy; sea, very rough; wire angle, 30°.

110.60

2	16.53	33.58 5	5.93	339	0	(16.53)	(33.58)	(5.93)	(24.56)	(339)	(0.00)
11	16.55	33.57 8	5.93	340	10	16.55	33.58	5.93	24.56	340	0.03
28	16.57	33.57 9	5.87	340	20	16.57	33.58	5.89	24.55	340	0.07
54	16.43	33.59 0	5.89	336	30	16.58	33.58	5.87	24.55	340	0.10
62	16.33	33.59 1	5.83	334	50	16.48	33.59	5.88	24.57	337	0.17
76	16.20	33.61 1	5.77	330	75	16.21	33.61	5.77	24.65	330	0.25
87	15.58	33.58 4	5.76	318	100	14.77	33.54	5.65	24.93	304	0.33
100	14.77	33.54 4	5.65	304	125	12.83	33.60	4.76	25.37	262	0.40
119	13.27	33.58 4	4.97	272	150	11.10	33.68	4.00	25.75	226	0.47
135	12.12	33.62 5	4.43	247	200	9.30	33.93	3.04	26.26	177	0.57
160	10.45	33.73 1	3.74	211	250	8.78	34.10	2.19	26.48	156	0.66
184	9.92	33.88 8	2.96	190	300	8.77	34.25	1.26	26.59	145	0.73
208	9.10	33.95 6	3.04	173	400	7.07	34.22	1.01	26.82	124	0.87
248	8.78	34.10 1	2.22	157	500	6.40	34.32	0.34	26.99	108	1.00
294	8.82	34.25 6	1.27	146							
366	7.34	34.18 6	1.21	130							
442	6.78	34.27 2	0.61	116							
524	6.24	34.32 9	0.38	105							

a) Alternate value, 6.08 ml/L, not used in interpolation.



S10

CCOF1  
6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

110.70

HUGH M. SMITH; February 1, 1961; 1215 GCT; 28°37.5'N, 118°18'W; sounding, 1500 fm; wind, 360°, force 5; weather, cloudy; sea, missing; wire angle, 10°.

1	16.50	33.57 2	5.64	339	0	(16.50)	(33.57)	(5.64)	(24.55)	(339)	(0.00)
11	16.50	33.57 5	5.68	339	10	16.50	33.56	5.67	24.55	339	0.03
31	16.48	33.56 6	5.63	339	20	16.49	33.56	5.66	24.55	339	0.07
40	16.24	33.55 9	5.68	334	30	16.49	33.56	5.63	24.55	339	0.10
55	16.10	33.54 8	5.68	332	50	16.18	33.55	5.68	24.62	333	0.17
70	15.86	33.54 4	5.69	327	75	15.71	33.54	5.70	24.71	324	0.25
94	14.44	33.51 5	5.57	300	100	14.06	33.52	5.46	25.05	292	0.33
115	12.90	33.54 6	5.01	267	125	11.83	33.59	4.56	25.55	245	0.40
133	11.48	33.60 7	4.40	237	150	10.79	33.69	3.83	25.81	219	0.46
152	10.70	33.69 9	3.77	217	200	9.52	33.91	3.03	26.21	182	0.56
182	9.78	33.82 3	3.35	193	250	9.30	34.13	1.81	26.41	163	0.65
217	9.40	33.99 2	2.65	174	300	9.12	34.31	1.30	26.58	146	0.73
247	9.30	34.11 4	1.89	164	400	7.98	34.36	0.51	26.80	126	0.87
297	9.16	34.30 2	1.35	148	500	6.80	34.37	0.29	26.98	109	0.99
351	8.53	34.37 4	0.61	133	600	5.97	34.39	0.28	27.09	98	1.10
434	7.58	34.35 7	0.47	121							
519	6.60	34.37 8	0.28	106							
605	5.94	34.38 8	0.28	97							

110.80

HUGH M. SMITH; February 1, 1961; 0610 GCT; 28°18.5'N, 118°57'W; sounding, 2000 fm; wind, 010°, force 5; weather, cloudy; sea, moderate; wire angle, 17°.

1	16.69	33.60 3	5.50	341	0	(16.69)	(33.60)	(5.50)	(24.54)	(341)	(0.00)
11	16.69	33.60 5	5.52	340	10	16.69	33.60	5.52	24.54	341	0.03
29	16.66	33.60 5	5.50	340	20	16.68	33.60	5.51	24.55	340	0.07
39	16.36	33.57 6	5.45	336	30	16.63	33.60	5.49	24.55	339	0.10
53	16.26	33.57 7	5.43	333	50	16.26	33.58	5.44	24.62	333	0.17
67	15.88	33.55 5	5.61	327	75	15.43	33.54	5.58	24.77	318	0.25
90	14.26	33.52 3	5.45	295	100	13.86	33.53	5.33	25.10	287	0.33
110	12.60	33.59 2	4.56	259	125	11.68	33.84	3.24	25.77	224	0.39
127	11.60	33.87 6	3.06	220	150	11.28	34.05	2.17	26.01	201	0.45
146	11.30	34.02 5	2.28	203	200	10.85	34.29	1.33	26.27	176	0.54
172	11.12	34.17 7	1.73	189	250	10.29	34.38	0.97	26.44	160	0.63
205	10.79	34.30 5	1.26	174	300	9.50	34.40	0.78	26.59	146	0.71
233	10.51	34.36 4	1.05	165	400	8.05	34.37	0.47	26.80	126	0.85
279	9.87	34.40 0	0.85	152	500	6.82	34.35	0.44	26.95	111	0.97
331	9.02	34.39 9	0.69	139							
411	7.90	34.37 3	0.45	124							
493	6.90	34.34 3	0.44	113							
577	6.20	34.38 4	0.24	101							

110.90

HUGH M. SMITH; February 1, 1961; 0040 GCT; 28°00'N, 119°36'W; sounding, 2100 fm; wind, 010°, force 4; weather, overcast; sea, moderate; wire angle, 10°.

1	16.84	33.61 4		344	0	(16.84)	(33.61)		(24.50)	(344)	(0.00)
11	16.82	33.61 4		343	10	16.83	33.61		24.51	343	0.03
31	16.72	33.61 9		340	20	16.79	33.62		24.52	342	0.07
60	16.52	33.63 6		335	30	16.72	33.62		24.54	341	0.10
70	16.00	33.60 3		325	50	16.57	33.63		24.58	336	0.17
84	14.82	33.49 9		309	75	15.47	33.56		24.77	319	0.25
99	13.98	33.53 2		289	100	13.90	33.53		25.10	288	0.33
113	12.56	33.58 0		259	125	11.33	33.60		25.64	236	0.40
136	10.84	33.61 5		226	150	10.42	33.69		25.88	213	0.45
155	10.26	33.72 4		208	200	9.12	33.91		26.27	176	0.55
185	9.38	33.86 1		184	250	8.49	34.07		26.49	155	0.64
213	8.92	33.96 0		169	300	7.76	34.13		26.65	140	0.71
242	8.61	34.05 0		158	400	7.03	34.26		26.85	121	0.85
290	7.82	34.11 2		142	500	6.37	34.32		26.99	107	0.97
343	7.52	34.20 3		131	600	(5.68)	(34.37)		(27.12)	(95)	(1.08)
424	6.83	34.27 7		117							
507	6.33	34.32 8		106							
593	5.74	34.36 8		96							



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

SIO  
CCOFI  
6101-2

HUGH M. SMITH; January 31, 1961; 1856 GCT; 27°42.5'N, 120°12'W; sounding, 2130 fm; wind, 040°, force 4; weather, cloudy; sea, slight; wire angle, missing.

110.100

1	17.02	33.66 8	5.59	344	0	(17.02)	(33.67)	(5.59)	(24.50)	(344)	(0.00)
11	16.99	33.66 4	5.59	343	10	16.99	33.67	5.59	24.51	343	0.03
31	16.98	33.67 4	5.55	342	20	16.98	33.67	5.57	24.52	342	0.07
56	16.76	33.65 9	5.57	338	30	16.98	33.67	5.56	24.52	342	0.10
65	16.66	33.63 5	5.54	338	50	16.83	33.66	5.56	24.55	339	0.17
75	16.83	33.71 0	5.54	336	75	16.83	33.71	5.54	24.58	336	0.26
90	16.82	33.73 3	5.61	334	100	16.00	33.85	5.52	24.88	308	0.34
105	16.19	33.93 5	5.50	306	125	14.91	33.86	5.31	25.13	284	0.41
129	14.62	33.84 1	5.26	280	150	13.31	33.84	5.10	25.45	254	0.48
148	13.46	33.84 3	5.12	256	200	9.88	33.78	4.24	26.04	198	0.60
173	11.58	33.73 6	4.80	229	250	8.52	33.95	3.15	26.40	164	0.69
203	9.74	33.79 1	4.16	194	300	7.89	34.08	2.18	26.59	145	0.77
234	8.86	33.91 1	3.50	172	400	7.23	34.24	0.97	26.81	125	0.91
273	8.16	34.01 9	2.67	154	500	6.32	34.30	0.51	26.98	109	1.03
333	7.68	34.15 6	1.67	137							
406	7.18	34.24 1	0.93	124							
481	6.49	34.29 2	0.56	111							
561	5.94	34.33 5	0.36	101							

HUGH M. SMITH; January 31, 1961; 0841 GCT; 26°58'N, 121°34.5'W; sounding, 2190 fm; wind, 040°, force 2; weather, cloudy; sea, moderate; wire angle, 00°.

110.120

0	17.86	33.84 9	5.64	350	0	17.86	33.85	5.64	24.44	350	0.00
10	17.88	33.85 1	5.53	350	10	17.88	33.85	5.53	24.44	350	0.04
30	17.84	33.83 1	5.50	350	20	17.87	33.84	5.51	24.44	350	0.07
55	17.60	33.81 3	5.54	346	30	17.84	33.83	5.50	24.44	350	0.10
65	17.64	33.82 2	5.48	346	50	17.62	33.81	5.53	24.47	347	0.17
75	17.70	33.85 0	5.41	346	75	17.70	33.85	5.41	24.48	346	0.26
90	17.59	33.86 8	5.38	342	100	17.02	33.87	5.40	24.66	329	0.35
104	16.50	33.86 0	5.41	318	125	14.53	33.76	5.15	25.13	284	0.42
128	14.35	33.74 6	5.10	281	150	13.17	33.91	4.44	25.53	246	0.49
148	13.28	33.90 4	4.48	248	200	10.43	33.93	3.30	26.07	195	0.60
173	11.30	33.86 5	3.81	216	250	9.15	34.08	2.48	26.40	164	0.70
203	10.32	33.93 7	3.23	193	300	8.46	34.17	1.81	26.58	147	0.78
233	9.45	34.02 1	2.71	173	400	7.26	34.27	0.94	26.83	123	0.92
272	8.82	34.12 8	2.20	156	500	6.42	34.31	0.47	26.97	109	1.04
331	8.05	34.20 7	1.45	139							
405	7.20	34.27 6	0.91	122							
481	6.56	34.29 7	0.52	112							
561	6.06	34.34 0	0.34	102							

HUGH M. SMITH; February 12, 1961; 2113 GCT; 29°21'N, 115°19.5'W; sounding, 48 fm; wind, 310°, force 6; weather, overcast; sea, rough; wire angle, 10°.

113.30

1	16.10	33.83 5u	5.69	-	0	(16.10)	(33.74)	(5.69)	(24.77)	(318)	(0.00)
11	16.10	33.73 5	5.69	318	10	16.10	33.73	5.69	24.77	318	0.03
31	14.96	33.73 2	4.61	294	20	16.10	33.73	5.67	24.77	318	0.06
51	13.26a)	33.78 0	2.86	257	30	16.03	33.73	5.61	24.78	317	0.10
					50	13.32	33.78	2.92	25.40	259	0.15

a) Alternate value, 13.46°C, not used in interpolation.



S10

CCOFI  
6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

11535

HUGH M. SMITH; February 12, 1961; 1710 GCT; 28°54'N, 115°26'W; sounding, 475 fm; wind, 300°, force 5; weather, cloudy; sea, rough; wire angle, 25°.

2	15.52	33.70 6	5.80	308	0	(15.52)	(33.71)	(5.80)	(24.88)	(308)	(0.00)
11	15.52	33.70 0	5.78	308	10	15.52	33.70	5.78	24.88	308	0.03
29	15.53	33.70 8	5.74	308	20	15.53	33.70	5.76	24.88	308	0.06
55	13.84	33.56 2	5.14	284	30	15.53	33.71	5.73	24.88	308	0.09
64	13.44	33.66 0	4.32	270	50	14.97	33.67	5.50	24.98	299	0.15
76	12.43	33.63 6	4.34	253	75	12.44	33.63	4.34	25.46	253	0.22
90	12.50	33.84 3	3.21	238	100	12.00	33.89	2.95	25.75	225	0.28
102	11.99	33.89 4	2.93	225	125	11.47	34.02	2.44	25.95	207	0.34
123	11.54	34.00 8	2.48	209	150	11.00	34.19	1.99	26.16	186	0.39
140	10.95	34.07 4	2.36	194	200	10.42	34.35	1.17	26.40	164	0.48
167	11.01	34.32 2	1.28	176	250	9.87	34.40	0.86	26.52	152	0.56
193	10.40	34.30 0	1.36	168	300	9.19	34.38	0.82	26.63	142	0.63
218	10.44	34.42 6	0.93	159	400	8.10	34.39	0.53	26.80	125	0.77
262	9.67	34.39 3	0.84	149	500	7.11	34.38	0.37	26.94	113	0.90
312	9.05	34.38 2	0.81	140							
389	8.22	34.39 8	0.54	127							
470	7.32	34.38 0	0.42	116							
552	6.87	34.38 9	0.31	109							

11933

HUGH M. SMITH; February 12, 1961; 1043 GCT; 28°19'N, 114°53'W; sounding, 55 fm; wind, 300°, force 4; weather, clear; sea, moderate; wire angle, 07°.

1	16.67	33.83 8	5.48	323	0	(16.67)	(33.84)	(5.48)	(24.72)	(323)	(0.00)
11	16.68	33.83 1	5.56	324	10	16.68	33.83	5.55	24.71	324	0.03
31	16.68	33.82 9	5.55	324	20	16.68	33.83	5.56	24.71	324	0.06
51	16.06	33.78 6	4.94	314	30	16.68	33.83	5.55	24.71	324	0.10
76	14.04	33.75 6	3.54	274	50	16.10	33.79	4.96	24.81	314	0.16
					75	14.18	33.76	3.61	25.21	277	0.23

12045

HUGH M. SMITH; February 3, 1961; 1435 GCT; 27°42.5'N, 115°33.5'W; sounding, 1700 fm; wind, 330°, force 6; weather, overcast; sea, rough; wire angle, 25°.

1	16.95	33.87 4	5.59	327	0	(16.95)	(33.87)	(5.59)	(24.68)	(327)	(0.00)
10	16.94	33.75 4u	5.52	-	10	16.94	33.87	5.52	24.68	327	0.03
33	16.94	33.87 1	5.19	327	20	16.94	33.87	5.35	24.68	327	0.07
59	15.92	33.82 4	4.79	308	30	16.94	33.87	5.20	24.68	327	0.10
68	13.94	33.68 4	4.26	277	50	16.93	33.87	5.16	24.69	326	0.16
85	12.80	33.84 1	3.51	244	75	13.56	33.80	3.87	25.37	261	0.24
98	12.01	33.85 3	3.46	229	100	11.89	33.86	3.43	25.74	226	0.30
110	11.29	33.88 8	3.15	213	125	11.00	33.97	2.68	26.00	202	0.35
135	10.86	34.04 4	2.30	194	150	10.69	34.15	1.94	26.18	184	0.40
153	10.68	34.16 7	1.87	182	200	10.26	34.39	1.03	26.45	159	0.49
178	10.50	34.27 5	1.44	171	250	9.78	34.44	0.68	26.58	147	0.57
208	10.19	34.40 2	0.95	156	300	9.05	34.45	0.49	26.70	135	0.64
234	9.99	34.43 0	0.80	151	400	8.02	34.43	0.35	26.85	121	0.77
278	9.34	34.44 8	0.54	140	500	7.12	34.42	0.27	26.97	110	0.89
335	8.66	34.44 9	0.43	129	600	(5.97)	(34.41)		(27.11)	(96)	(1.00)
427	7.78	34.42 4	0.32	118							
513	6.99	34.41 9	0.26	108							
585	6.16	34.41 1	0.27	98							



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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6101-2

HUGH M. SMITH; February 3, 1961; 1840 GCT; 27°32.5'N, 115°53'W; sounding, 2100 fm; wind, 330°, force 5; weather, cloudy; sea, rough; wire angle, 25°.

120.50

1	17.14	33.90 8	5.61	329	0	(17.14)	(33.91)	(5.61)	(24.66)	(329)	(0.00)
10	17.15	33.90 5	5.55	329	10	17.15	33.90	5.55	24.66	329	0.03
33	17.1	33.90 8	5.52	-	20	17.15	33.90	5.54	24.67	329	0.07
60	16.27	33.88 3	4.87	311	30	17.14	33.90	5.53	24.67	328	0.10
69	15.48	33.83 2	4.33	298	50	17.06	33.90	5.47	24.68	327	0.16
86	13.62	33.80 6	3.60	262	75	14.82	33.81	4.04	25.11	286	0.24
100	13.06	33.88 6	3.13	245	100	13.06	33.89	3.13	25.54	245	0.31
112	12.28	33.85 8	3.20	233	125	11.98	34.05	2.21	25.88	213	0.37
139	11.95	34.15 0	1.89	205	150	11.58	34.20	1.76	26.07	195	0.42
157	11.26	34.23 3	1.70	187	200	10.08	34.39	0.97	26.48	156	0.51
184	10.42	34.37 0	1.12	163	250	9.39	34.44	0.63	26.64	141	0.58
215	9.84	34.40 9	0.87	151	300	8.88	34.43	0.60	26.71	134	0.66
244	9.46	34.43 8	0.65	142	400	7.84	34.42	0.42	26.86	120	0.79
289	9.00	34.42 8	0.61	136	500	6.87	34.41	0.25	27.00	107	0.90
348	8.31	34.40 8	0.56	127	600	5.91	34.43	0.29	27.14	94	1.01
442	7.46	34.42 1	0.32	114							
529	6.58	34.41 6	0.24	103							
602	5.90	34.42 8	0.29	94							

HUGH M. SMITH; February 4, 1961; 0059 GCT; 27°12.5'N, 116°31.5'W; sounding, 2000 fm; wind, 330°, force 6; weather, overcast; sea, rough; wire angle, 14°.

120.60

2	16.97	33.70 8	5.41	339	0	(16.96)	(33.71)	(5.41)	(24.55)	(339)	(0.00)
12	16.96	33.71 1	5.47	339	10	16.96	33.71	5.46	24.56	339	0.03
36	16.97	33.71 0	5.55	339	20	16.96	33.71	5.50	24.56	339	0.07
64	14.89	33.55 4	5.48	306	30	16.96	33.71	5.54	24.56	339	0.10
74	13.76	33.57 4	4.90	282	50	16.95	33.71	5.55	24.56	339	0.17
93	12.76	33.62 5	4.43	259	75	13.65	33.58	4.86	25.18	279	0.25
107	11.99	33.74 2	3.78	236	100	12.39	33.67	4.14	25.50	249	0.31
120	11.18	33.82 3	3.38	216	125	10.93	33.88	3.13	25.94	208	0.37
147	10.58	33.99 7	2.64	193	150	10.46	34.00	2.65	26.11	191	0.42
167	10.00	34.00 9	2.69	183	200	9.83	34.22	1.56	26.39	164	0.51
195	9.93	34.21 1	1.66	167	250	9.44	34.36	1.03	26.57	148	0.59
227	9.50	34.31 2	1.25	152	300	9.08	34.41	0.65	26.67	138	0.67
257	9.42	34.37 1	0.98	147	400	7.87	34.42	0.49	26.86	120	0.80
304	9.02	34.41 5	0.64	138	500	6.95	34.43	0.33	27.00	107	0.92
365	8.14	34.39 5	0.59	126	600	6.09	34.42	0.40	27.11	97	1.03
463	7.36	34.44 4	0.33	111							
553	6.46	34.41 5	0.34	102							
627	5.91	34.42 9	0.43	94							

HUGH M. SMITH; February 4, 1961; 0728 GCT; 26°52'N, 117°10.5'W; sounding, 2100 fm; wind, 340°, force 6; weather, overcast; sea, rough; wire angle, 20°.

120.70

1	17.03	33.74 5	5.39	338	0	(17.03)	(33.74)	(5.39)	(24.57)	(338)	(0.00)
10	17.02	33.74 3	5.49	338	10	17.02	33.74	5.49	24.57	338	0.03
34	17.02	33.74 0	5.47	338	20	17.02	33.74	5.48	24.57	338	0.07
43	15.06	33.59 7	5.42	307	30	17.02	33.74	5.48	24.57	338	0.10
57	13.80	33.58 0	4.95	282	50	14.40	33.58	5.20	25.03	294	0.16
71	12.58	33.61 6	4.35	256	75	12.41	33.62	4.30	25.46	253	0.23
94	11.65	33.66 9	4.11	236	100	11.36	33.70	3.96	25.72	228	0.29
112	10.83	33.76 6	3.63	214	125	10.52	33.83	3.36	25.97	204	0.35
130	10.40	33.85 3	3.26	202	150	9.90	33.98	2.81	26.20	183	0.40
156	9.78	34.01 6	2.71	179	200	9.53	34.21	1.89	26.44	160	0.48
183	9.49	34.09 2	2.39	168	250	9.17	34.37	1.03	26.61	143	0.56
220	9.56	34.34 8	1.21	150	300	8.66	34.38	0.68	26.71	134	0.63
248	9.20	34.36 8	1.04	144	400	7.44	34.39	0.38	26.90	117	0.76
293	8.72	34.38 1	0.70	135	500	6.46	34.41	0.28	27.05	102	0.88
353	8.09	34.38 5	0.50	126	600	5.73	34.42	0.36	27.15	92	0.98
447	6.92	34.39 4	0.30	109							
533	6.20	34.41 5	0.28	98							
607	5.70	34.42 2	0.36	92							



S10

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6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

120.80

HUGH M. SMITH; February 4, 1961; 1327, 1345 GCT; 26°30'N, 117°52'W; sounding, 2100 fm; wind, 330°, force 5; weather, overcast; sea, rough; wire angle, 15°, 15°.

1	16.76	33.63 6	5.52	340	0	(16.76)	(33.64)	(5.52)	(24.55)	(340)	(0.00)
11	16.76	33.63 1	5.53	340	10	16.76	33.63	5.53	24.55	340	0.03
30	16.78	-	5.55	-	20	16.77	33.63	5.53	24.55	340	0.07
59	16.38	33.55 4	5.52	338	30	16.78	33.63	5.53	24.55	340	0.10
68	15.07	33.55 5	5.52	310	50	16.80	33.63	5.53	24.55	340	0.17
83	14.10	33.52 6	5.30	292	75	14.60	33.54	5.43	24.95	301	0.25
97	12.78	33.65 7	4.98	257	100	12.40	33.65	4.86	25.48	251	0.32
					125	10.83	33.68	4.20	25.80	220	0.38
111	11.62	33.63 3	4.58	238	150	9.69	33.83	3.64	26.10	192	0.43
134	10.34	33.72 9	3.96	209	200	8.80	34.02	2.56	26.41	163	0.52
153	9.62	33.84 4	3.59	189	250	8.27	34.16	1.98	26.59	145	0.60
182	9.16	33.99 0	2.69	171	300	7.72	34.22	1.27	26.73	133	0.67
211	8.62	34.04 8	2.49	159	400	6.80	34.28	0.66	26.90	116	0.80
240	8.36	34.13 5	2.11	148	500	6.10	34.35	0.34	27.05	102	0.92
288	7.88	34.21 3	1.41	136	600	(5.49)	(34.41)	(0.31)	(27.17)	(90)	(1.02)
341	7.26	34.24 4	0.94	125							
423	6.66	34.30 0	0.57	113							
507	6.05	34.36 1	0.32	101							
593	5.53	34.40 5	0.31	91							

120.90

HUGH M. SMITH; February 4, 1961; 2005 GCT; 26°07'N, 118°36.5'W; sounding, 2200 fm; wind, 330°, force 4; weather, overcast; sea, rough; wire angle, 12°.

2	16.86	33.61 0	5.61	344	0	(16.86)	(33.61)	(5.61)	(24.50)	(344)	(0.00)
14	16.86	33.60 7	5.69	345	10	16.86	33.61	5.67	24.50	345	0.03
34	16.85	33.60 7	5.62	344	20	16.86	33.61	5.67	24.50	345	0.07
63	16.84	33.60 8	5.66	344	30	16.85	33.61	5.63	24.50	345	0.10
74	16.98	33.67 1	5.61	342	50	16.85	33.61	5.64	24.50	344	0.17
88	16.42	33.73 7	5.59	326	75	16.98	33.67	5.61	24.52	342	0.26
103	15.32	33.75 9	5.52	300	100	15.36	33.74	5.53	24.95	302	0.34
117	14.12	33.70 3	5.27	280	125	13.42	33.70	4.93	25.33	266	0.41
141	12.45	33.75 7	4.28	244	150	11.93	33.81	4.04	25.70	230	0.47
161	11.30	33.84 1	3.89	217	200	9.89	33.91	3.40	26.15	188	0.58
190	10.04	33.86 6	3.60	194	250	9.01	34.12	2.27	26.45	159	0.67
219	9.58	34.00 9	2.90	176	300	8.50	34.22	1.55	26.61	144	0.75
248	9.04	34.11 7	2.29	160	400	7.23	34.27	0.84	26.84	123	0.89
298	8.52	34.22 0	1.56	144	500	6.32	34.35	0.37	27.02	105	1.01
352	7.90	34.26 2	1.14	132	600	5.78	34.41	0.30	27.14	94	1.11
435	6.82	34.29 5	0.62	116							
519	6.20	34.36 9	0.32	102							
605	5.77	34.41 7	0.30	93							

120.100

HUGH M. SMITH; February 5, 1961; 0137 GCT; 25°50'N, 119°03.5'W; sounding, 2200 fm; wind, 020°, force 4; weather, cloudy; sea, rough; wire angle, 13°.

1	17.56	33.81 6	5.50	345	0	(17.56)	(33.82)	(5.50)	(24.50)	(345)	(0.00)
11	17.55	33.81 3	5.49	345	10	17.55	33.81	5.49	24.50	345	0.03
30	17.56	33.81 5	5.55	345	20	17.55	33.81	5.52	24.50	345	0.07
59	17.54	33.81 9	5.54	344	30	17.56	33.82	5.55	24.50	345	0.10
69	17.55	33.81 8	5.51	344	50	17.54	33.82	5.54	24.50	344	0.17
84	17.58	33.82 5	5.47	344	75	17.56	33.82	5.49	24.50	344	0.26
98	16.84	33.78 7	5.58	331	100	16.48	33.77	5.57	24.71	325	0.34
112	15.5a)	33.72 0	5.51	307	125	14.79	33.74	5.24	25.07	290	0.42
135	14.06	33.77 3	4.90	274	150	12.58	33.79	4.18	25.56	243	0.49
154	12.28	33.79 3	4.05	238	200	9.73	33.91	3.38	26.17	186	0.60
182	10.48	33.86 2	3.63	202	250	8.90	34.08	2.26	26.44	160	0.69
210	9.49	33.95 4	3.22	179	300	8.18	34.16	1.67	26.61	143	0.77
238	9.08	34.06 1	2.43	165	400	7.22	34.27	0.74	26.83	123	0.90
286	8.35	34.13 6	1.87	148	500	6.38	34.35	0.30	27.01	105	1.02
338	7.82	34.22 8	1.16	134	600	(5.79)	(34.39)		(27.12)	(95)	(1.13)
419	7.02	34.28 2	0.62	119							
502	6.38	34.34 7	0.30	105							
587	5.85	34.39 1	0.24	96							

30

a) Temperature reading was slightly off the thermometer scale. The value listed is estimated to be accurate to ± 0.1°C.



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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6101-2

HUGH M. SMITH; February 5, 1961; 1138, 1422 GCT; 25°07.5'N, 120°24'W; sounding, 2200 fm; wind, 360°, force 4; weather, cloudy; sea, rough; wire angle, 05°, 11°.

120.120

1	17.80	33.87 0	5.44	347	0	(17.80)	(33.87)	(5.44)	(24.48)	(347)	(0.00)
11	17.82	33.87 9	5.40	347	10	17.82	33.88	5.41	24.48	347	0.03
31	17.87	33.88 1	5.47	347	20	17.84	33.88	5.44	24.47	347	0.07
61	17.86	33.88 8	5.50	347	30	17.87	33.88	5.47	24.47	347	0.10
71	17.98	33.94 9	5.47	345	50	17.87	33.89	5.49	24.47	347	0.17
86	15.78	33.85 0	5.29	303	75	17.25	33.92	5.40	24.65	330	0.26
101	14.12	33.77 4	4.65	275	100	14.16	33.77	4.66	25.23	275	0.34
115	12.99	33.77 3	4.20	253	125	12.22	33.83	3.79	25.66	234	0.40
139	11.25	33.88 4	3.37	213	150	10.80	33.90	3.30	25.97	204	0.46
159	10.58	33.91 4	3.26	199	200	10.28	34.23	1.68	26.32	171	0.55
188	10.42	34.15 3	2.01	179	250	9.63	34.33	1.21	26.51	153	0.63
219	9.93	34.29 0	1.40	161	300	8.74	34.35	0.97	26.67	138	0.71
249	9.64	34.33 5	1.22	153	400	7.62	34.36	0.57	26.85	121	0.84
299	8.76	34.34 5	0.98	138	500	6.63	34.38	0.36	27.00	107	0.96
353	8.21	34.35 2	0.78	130	600	5.86	34.41	0.33	27.13	95	1.07
437	7.24	34.36 1	0.47	116	700	5.30	34.45	0.32	27.22	86	1.17
522	6.43	34.38 5	0.36	104	800	4.82	34.47	0.35	27.30	78	1.26
608	5.82	34.41 7	0.33	94	1000	4.11	34.51	0.53	27.41	68	1.42
					1200	3.57	34.55	0.75	27.49	60	1.56
146a)	11.14	33.89 4	3.19	210	1500	2.84	34.59	1.24	27.60	50	1.76
342	8.28	34.35 3	0.78	131	2000	2.17	34.64	1.85	27.70	41	2.03
538	6.30	34.39 4	0.36	101	2500	1.80	34.67	2.49	27.74	37	2.28
732	5.13	34.45 3	0.31	83	3000	1.66	34.68	2.82	27.77	34	2.51
928	4.32	34.50 1	0.46	71							
1123	3.74	34.53 2	0.66	63							
1318	3.28	34.56 9	0.90	56							
1513	2.81	34.59 7	1.28	50							
1709	2.50	34.61 3	1.50	46							
1903	2.22	34.64 0	1.76	42							
2097	2.10	34.64 3	1.95	41							
2292	1.92	34.65 6	2.12	38							
2488	1.80	34.66 3	2.48	37							
2684	1.72	34.67 5	2.61	35							
2879	1.65	34.67 8	2.77	34							
3075	1.64	34.68 1	2.88	34							
3273	1.57	34.68 4	2.95	33							
3472	1.56	34.68 7	3.03	33							
3570	1.56	34.66 8u	2.96	-							
3672	1.56	34.68 5	2.93	33							

HUGH M. SMITH; February 11, 1961; 1112 GCT; 27°14'N, 114°59.5'W; sounding, 600 fm; wind, 330°, force 3; weather, clear; sea, moderate; wire angle, 27°.

123.42

1	16.64	33.84 9	5.50	322	0	(16.64)	(33.85)	(5.50)	(24.74)	(322)	(0.00)
9	16.62	33.84 5	5.47	322	10	16.62	33.84	5.47	24.74	322	0.03
27	16.26	33.83 6	5.48	314	20	16.43	33.83	5.48	24.78	318	0.06
35	15.94	33.86 4	5.61	305	30	16.17	33.84	5.50	24.84	312	0.10
43	15.18	33.79 9	4.69	294	50	14.66	33.82	3.98	25.16	281	0.16
55	14.34	33.84 3	3.60	274	75	12.84	33.85	3.28	25.55	244	0.22
68	13.26	33.86 8	3.19	251	100	11.78	33.94	2.71	25.83	217	0.28
83	12.44	33.83 9	3.38	238	125	11.12	34.19	1.79	26.14	188	0.33
103	11.58	34.00 1	2.43	210	150	11.02	34.30	1.29	26.25	178	0.38
118	11.16	34.14 7	1.93	192	200	10.48	34.43	0.86	26.45	159	0.46
141	11.08	34.26 4	1.43	182	250	9.96	34.49	0.52	26.58	147	0.54
163	10.94	34.34 3	1.14	173	300	9.50	34.50	0.38	26.67	138	0.62
187	10.65	34.41 0	0.90	164	400	8.23	34.44	0.30	26.83	123	0.75
217	10.14	34.42 5	0.78	154	500	(7.11)	(34.42)		(26.97)	(110)	(0.87)
266	9.86	34.50 6	0.43	144							
331	9.14	34.49 2	0.34	134							
399	8.24	34.44 2	0.31	123							
478	7.33	34.41 6	0.25	113							

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



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6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

127.40

HUGH M. SMITH; February 11, 1961; 0553 GCT; 26°43.5'N, 114°29'W; sounding, 340°, force 3; weather clear; sea, moderate; wire angle, 12°.

1	17.38	33.89 7	5.51	335	0	(17.38)	(33.90)	(5.51)	(24.60)	(335)	(0.00)
11	17.39	33.90 2	5.61	334	10	17.39	33.90	5.59	24.60	335	0.03
30	17.23	33.89 7	5.49	332	20	17.32	33.90	5.57	24.61	334	0.07
60	16.99	33.86 9	5.56	328	30	17.23	33.90	5.49	24.63	332	0.10
69	15.23	33.73 4	5.35	300	50	17.12	33.88	5.53	24.65	330	0.17
83	12.86	33.59 6	4.53	263	75	14.30	33.67	5.07	25.12	285	0.24
97	12.04	33.78 4	3.57	234	100	12.00	33.82	3.43	25.70	230	0.31
112	11.54	33.91 4	2.87	216	125	11.65	34.13	1.96	26.00	202	0.36
136	11.76	34.27 2	1.40	193	150	11.47	34.30	1.33	26.17	186	0.41
155	11.39	34.31 1	1.33	184	200	11.34	34.51	0.64	26.36	168	0.50
185	11.44	34.48 1	0.77	172	250	10.46	34.53	0.49	26.53	152	0.58
214	11.12	34.53 0	0.55	163	300	9.73	34.50	0.41	26.63	142	0.66
243	10.54	34.52 9	0.50	153	400	8.48	34.46	0.32	26.80	126	0.80
292	9.84	34.50 5	0.43	144	500	7.53	34.44	0.26	26.92	114	0.92
346	9.10	34.48 1	0.32	134	600	(6.52)	(34.41)	(0.26)	(27.05)	(102)	(1.04)
428	8.20	34.45 5	0.32	122							
512	7.42	34.43 5	0.25	113							
597	6.56	34.41 3	0.26	103							

130.30

HUGH M. SMITH; February 8, 1961; 1119 GCT; 26°29'N, 113°26'W; sounding, 36 fm; wind, calm; weather, partly cloudy; sea, moderate; wire angle, 00°.

0	17.48	34.11 1	5.56	322	0	17.48	34.11	5.56	24.74	322	0.00
10	17.49	34.10 8	5.51	322	10	17.49	34.11	5.51	24.73	322	0.03
30	16.48	33.98 2	4.78	308	20	17.49	34.11	5.48	24.74	322	0.06
50	14.02	34.00 9	2.94	255	30	16.48	33.98	4.78	24.88	308	0.10
					50	14.02	34.01	2.94	25.43	255	0.15

130.40

HUGH M. SMITH; February 8, 1961; 0546 GCT; 26°09'N, 114°07.5'W; sounding, 1100 fm; wind, 330°, force 4; weather, partly cloudy; sea, moderate; wire angle, 15°.

1	17.94	34.04 3	5.47	337	0	(17.94)	(34.04)	(5.47)	24.58	(337)	(0.00)
11	17.96	34.03 4	5.50	338	10	17.96	34.03	5.49	24.57	338	0.03
30	17.92	34.03 6	5.47	337	20	17.93	34.03	5.47	24.58	337	0.07
58	15.54	33.86 8	4.31	296	30	17.92	34.04	5.47	24.58	337	0.10
68	14.40	33.83 5	3.85	276	50	17.88	34.03	5.47	24.58	337	0.17
81	13.39	33.84 7	3.58	254	75	13.92	33.84	3.70	25.33	266	0.24
95	12.69	33.88 9	3.25	238	100	12.43	33.91	3.06	25.68	232	0.31
109	11.96	33.97 0	2.70	219	125	11.50	34.01	2.51	25.93	208	0.36
133	11.26	34.04 0	2.39	202	150	10.92	34.22	1.72	26.21	182	0.41
152	10.89	34.22 8	1.69	181	200	10.26	34.36	1.14	26.43	161	0.50
180	10.52	34.33 0	1.27	167	250	9.99	34.47	0.72	26.57	148	0.58
209	10.17	34.37 8	1.07	158	300	9.58	34.49	0.44	26.65	140	0.65
236	10.06	34.46 1	0.82	150	400	8.31	34.46	0.33	26.82	124	0.79
284	9.74	34.49 7	0.47	142	500	7.11	34.42	0.28	26.97	110	0.91
337	9.14	34.48 1	0.42	134	600	(6.46)	(34.45)		27.08	99	1.02
419	8.06	34.45 5	0.30	120							
502	7.10	34.42 0	0.28	110							
587	6.49	34.43 7	0.31	101							



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

SIO  
CCOFI  
6101-2

HUGH M. SMITH; February 8, 1961; 0002 GCT; 25°49.5'N, 114°45.5'W; sounding, 1900 fm; wind, 320°, force 1; weather, partly cloudy; sea, moderate; wire angle, 02°.

130.50

1	18.26	33.96 2	5.34	350	0	(18.26)	(33.96)	(5.34)	(24.44)	(350)	(0.00)
11	17.94	33.95 6	5.32	344	10	17.97	33.95	5.32	24.50	344	0.03
31	17.85	33.94 9	5.39	342	20	17.90	33.95	5.36	24.52	343	0.07
61	14.98	33.57 6	5.40	306	30	17.86	33.95	5.39	24.53	342	0.10
71	14.56	33.68 6	4.68	290	50	17.82	33.95	5.39	24.53	342	0.17
85	13.26	33.76 2	3.93	258	75	14.68	33.76	4.57	25.11	287	0.25
100	12.53	33.81 8	3.44	241	100	12.53	33.82	3.44	25.59	241	0.32
115	11.68	33.85 5	3.20	222	125	11.27	33.89	3.10	25.88	213	0.38
140	10.80	33.95 9	2.86	200	150	10.57	34.01	2.58	26.10	192	0.43
160	10.38	34.07 1	2.27	184	200	9.98	34.32	1.37	26.45	159	0.52
190	9.98	34.25 1	1.60	164	250	9.72	34.43	0.66	26.57	147	0.59
220	10.00	34.41 4	0.91	153	300	9.17	34.45	0.56	26.68	137	0.67
249	9.72	34.42 7	0.67	147	400	8.21	34.45	0.29	26.83	123	0.80
299	9.18	34.44 8	0.57	137	500	7.34	34.47	0.20	26.97	109	0.92
354	8.70	34.45 4	0.34	130	600	6.33	34.44	0.18	27.09	98	1.03
439	7.81	34.44 7	0.24	117							
524	7.12	34.47 0	0.18	106							
608	6.26	34.44 0	0.18	97							

HUGH M. SMITH; February 7, 1961; 1658 GCT; 25°29.5'N, 115°23.5'W; sounding, 2050 fm; wind, 010°, force 2; weather, cloudy; sea, moderate; wire angle, 10°.

130.60

1	17.82	33.94 3	5.42	342	0	(17.82)	(33.94)	(5.42)	(24.53)	(342)	(0.00)
11	17.80	33.95 4	5.39	340	10	17.81	33.95	5.40	24.54	341	0.03
30	17.80	33.95 1	5.44	341	20	17.80	33.95	5.41	24.54	341	0.07
55	17.33	33.86 2	5.53	336	30	17.80	33.95	5.44	24.54	341	0.10
64	15.23	33.57 8	5.46	312	50	17.80	33.95	5.45	24.54	341	0.17
74	14.24	33.57 4	5.03	292	75	14.20	33.58	5.00	25.07	290	0.25
88	12.44	33.60 3	4.35	255	100	11.62	33.68	3.96	25.65	234	0.32
102	11.53	33.69 9	3.87	232	125	11.19	33.89	2.97	25.91	211	0.37
127	11.16	33.91 2	2.91	209	150	10.82	34.08	2.13	26.11	191	0.42
147	10.84	34.04 8	2.27	194	200	10.54	34.37	1.06	26.39	165	0.51
171	10.65	34.26 9	1.35	174	250	9.95	34.47	0.54	26.56	148	0.59
200	10.54	34.37 2	1.06	165	300	9.50	34.49	0.37	26.66	139	0.67
231	10.20	34.46 1	0.65	152	400	7.83	34.39	0.37	26.85	121	0.80
269	9.74	34.47 3	0.46	144	500	7.00	34.40	0.24	26.96	110	0.92
328	9.18	34.48 9	0.31	134							
402	7.80	34.39 5	0.37	121							
476	7.20	34.38 9	0.27	113							
557	6.56	34.42 9	0.19	102							

HUGH M. SMITH; February 7, 1961; 1117 GCT; 25°09'N, 116°02'W; sounding, 2000 fm; wind, 060°, force 1; weather, partly cloudy; sea, moderate; wire angle, 03°.

130.70

0	18.62	34.14 7	5.27	346	0	18.62	34.15	5.27	24.48	346	0.00
10	18.64	34.15 8	5.29	346	10	18.64	34.16	5.29	24.48	346	0.03
30	18.66	34.15 9	5.27	346	20	18.65	34.16	5.28	24.48	346	0.07
55	18.56	34.11 7	5.34	346	30	18.66	34.16	5.27	24.48	346	0.10
65	18.44	34.09 9	5.41	345	50	18.58	34.12	5.31	24.48	346	0.17
75	18.08	34.00 6	5.38	343	75	18.08	34.01	5.38	24.51	343	0.26
89	16.00	33.74 2	5.31	316	100	15.27	33.80	4.77	25.01	296	0.34
104	15.21	33.80 9	4.58	294	125	13.07	33.96	3.12	25.60	240	0.41
129	12.74	33.96 4	3.01	234	150	11.42	33.92	2.85	25.88	213	0.47
149	11.44	33.92 0	2.86	214	200	10.90	34.26	1.56	26.23	179	0.57
174	10.97	34.05 8	2.38	195	250	10.31	34.48	0.66	26.51	153	0.65
204	10.89	34.29 1	1.44	177	300	9.68	34.49	0.49	26.63	142	0.73
234	10.49	34.43 0	0.84	160	400	8.06	34.38	0.46	26.80	126	0.87
273	10.05	34.50 9	0.53	147	500	6.98	34.41	0.32	26.98	109	0.99
334	9.14	34.44 9	0.46	136							
408	7.94	34.37 2	0.46	124							
482	7.14	34.40 3	0.36	111							
562	6.52	34.40 9	0.24	103							



S10

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6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

130.80

HUGH M. SMITH; February 7, 1961; 0533 GCT; 24°49'N, 116°38'W; sounding, 2150 fm; wind, 070°, force 1; weather, clear; sea, moderate; wire angle, 00°.

1	19.30	34.24	1	5.20	355	0	(19.30)	(34.24)	(5.20)	(24.38)	(355)	(0.00)
11	19.32	34.25	3	5.17	355	10	19.31	34.25	5.17	24.38	355	0.04
31	19.30	34.25	0	5.12	355	20	19.32	34.25	5.15	24.38	355	0.07
61	18.67	34.10	1	5.29	350	30	19.30	34.25	5.13	24.38	355	0.11
71	16.92	33.80	5	5.43	331	50	19.18	34.23	5.17	24.40	353	0.18
85	15.92	33.70	5	5.35	316	75	16.57	33.76	5.42	24.69	327	0.26
100	15.10	33.83	7	4.42	290	100	15.10	33.84	4.42	25.08	290	0.34
115	13.88	33.95	9	3.32	256	125	12.86	33.93	3.03	25.61	238	0.41
140	11.82	33.97	3	2.77	216	150	11.50	34.03	2.56	25.95	206	0.46
160	11.12	34.05	5	2.30	198	200	10.11	34.18	1.84	26.31	172	0.56
190	10.24	34.13	0	2.01	178	250	9.55	34.32	1.15	26.52	153	0.64
220	9.92	34.26	7	1.43	162	300	9.07	34.40	0.66	26.66	139	0.72
249	9.56	34.31	5	1.16	153	400	7.74	34.36	0.43	26.83	123	0.86
299	9.08	34.39	9	0.67	140	500	6.85	34.40	0.30	26.98	108	0.98
355	8.32	34.38	4	0.54	129	600	6.11	34.42	0.27	27.10	97	1.09
439	7.33	34.36	7	0.35	117							
524	6.67	34.40	4	0.29	105							
609	6.06	34.42	3	0.26	96							

130.90

HUGH M. SMITH; February 7, 1961; 0023 GCT; 24°29'N, 117°15'W; sounding, 2100 fm; wind, 030°, force 3; weather, cloudy; sea, moderate; wire angle, 17°.

1	18.68	34.10	7	5.29	350	0	(18.68)	(34.11)	(5.29)	(24.44)	(350)	(0.00)
10	18.63	34.09	9	5.33	350	10	18.63	34.10	5.33	24.44	350	0.04
29	18.10	33.93	9	5.31	349	20	18.30	33.99	5.32	24.46	349	0.07
58	18.17	33.96	0	5.36	349	30	18.10	33.94	5.31	24.45	349	0.10
67	18.14	33.96	1	5.34	348	50	18.15	33.95	5.35	24.45	349	0.17
80	16.34	33.67	4	5.65a)	328	75	18.25	34.01	5.36	24.48	347	0.26
94	14.92	33.62	8	5.42	301	100	14.79	33.64	5.31	24.99	297	0.34
109	13.86	33.67	4	3.87	276	125	13.21	33.85	3.49	25.48	251	0.41
132	12.82	33.92	4	3.47	238	150	11.26	33.79	3.97	25.81	220	0.47
150	11.26	33.79	3	3.97	220	200	10.29	34.17	1.73	26.27	176	0.57
179	10.62	34.05	4	2.28	190	250	9.38	34.26	1.48	26.50	154	0.66
206	10.18	34.19	0	1.65	172	300	8.79	34.34	0.91	26.66	139	0.73
235	9.60	34.22	8	1.59	160	400	7.93	34.41	0.38	26.85	121	0.87
282	8.98	34.32	8	1.04	143	500	6.93	34.44	0.28	27.01	105	0.99
335	8.48	34.36	4	0.71	133	600	(5.83)	(34.40)		(27.12)	(95)	(1.10)
416	7.80	34.42	8	0.32	118							
498	6.96	34.44	3	0.28	106							
582	6.05	34.40	9	0.29	97							

130.100

HUGH M. SMITH; February 6, 1961; 1715 GCT; 24°09.5'N, 117°52.5'W; sounding, 2100 fm; wind, 040°, force 4; weather, partly cloudy; sea, moderate; wire angle, 07°.

1	19.29	34.29	2	5.11	351	0	(19.29)	(34.29)	(5.11)	(24.44)	(351)	(0.00)
11	19.29	34.30	8	5.11	350	10	19.29	34.31	5.11	24.44	351	0.04
31	19.30	34.29	1	5.11	352	20	19.29	34.29	5.11	24.43	351	0.07
56	19.30	34.29	6	5.11	351	30	19.30	34.29	5.11	24.42	352	0.11
66	19.32	34.29	4	5.11	352	50	19.30	34.29	5.11	24.42	352	0.18
76	17.90	34.06	3	5.16	335	75	19.30	34.28	5.11	24.43	351	0.26
90	15.77	33.88	2	4.82	300	100	14.82	33.91	4.15	25.18	279	0.34
104	14.40	33.91	5	3.78	270	125	12.72	33.90	3.38	25.61	238	0.41
129	12.48	33.89	7	3.37	234	150	11.35	33.93	2.92	25.89	212	0.47
149	11.40	33.92	4	2.96	212	200	10.85	34.39	1.59	26.35	169	0.56
174	10.67	34.10	3	2.03	187	250	10.97	34.63	0.76	26.52	152	0.64
203	10.89	34.42	3	1.55	167	300	10.06	34.56	0.33	26.62	143	0.72
234	11.19	34.65	9	1.20	154	400	8.54	34.52	0.26	26.84	122	0.86
273	10.48	34.56	1	0.34b)	150	500	7.43	34.50	0.14	26.98	108	0.98
332	9.56	34.56	4	0.33	134							
407	8.44	34.52	0	0.24	121							
481	7.65	34.50	8	0.13	111							
561	6.70	34.47	6	0.16	100							

34

a) Alternate value, 5.84 ml/L, not used in interpolation.  
b) Alternate value, 0.18 ml/L, not used in interpolation.



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10  
CCOF1  
6101-2

HUGH M. SMITH; February 6, 1961; 0628 GCT; 23°31'N, 119°11.5'W; sounding, 2150 fm; wind, 340°, force 4; weather, clear; sea, moderate; wire angle, 12°.

130.120

1	19.28	34.29 4	5.28	352	0	(19.28)	(34.29)	(5.28)	(24.43)	(351)	(0.00)
10	19.29	34.28 5	5.28	352	10	19.29	34.28	5.28	24.42	352	0.04
30	19.32	34.29 1	5.23	352	20	19.30	34.28	5.26	24.42	352	0.07
59	19.26	34.27 2	5.25	352	30	19.32	34.29	5.23	24.42	352	0.11
68	16.70	33.90 9	5.25	319	50	19.30	34.28	5.24	24.42	352	0.18
82	14.94	33.86 6	4.44	284	75	15.70	33.87	4.92	24.97	300	0.26
96	13.68	33.97 6	3.32	251	100	13.34	33.96	3.32	25.54	245	0.33
110	12.55	33.93 6	3.33	232	125	11.42	33.96	2.89	25.91	211	0.38
134	10.94	33.99 4	2.68	199	150	10.56	34.11	2.19	26.18	185	0.44
154	10.52	34.13 2	2.04	182	200	10.03	34.30	1.40	26.42	162	0.52
183	10.40	34.27 9	1.42	169	250	9.22	34.39	0.91	26.62	143	0.60
212	9.78	34.30 8	1.39	157	300	8.96	34.47	0.37	26.73	132	0.67
239	9.27	34.35 8	1.02	146	400	7.89	34.45	0.29	26.88	118	0.80
288	9.12	34.47 5	0.39	134	500	7.05	34.47	0.20	27.02	105	0.92
341	8.46	34.45 0	0.36	126	600	(6.21)	(34.46)	(0.25)	(27.12)	(95)	(1.02)
424	7.68	34.45 8	0.27	115							
506	7.00	34.47 5	0.19	104							
590	6.29	34.46 1	0.25	96							

HUGH M. SMITH; February 8, 1961; 2042 GCT; 25°33.5'N, 112°19'W; sounding, 35 fm; wind, 320°, force 4; weather, clear; sea, moderate; wire angle, 05°.

137.23

1	19.00	34.29 3	5.01	344	0	(19.00)	(34.29)	(5.01)	(24.50)	(344)	(0.00)
11	19.00	34.27 9	-	345	10	19.00	34.28		24.49	345	0.03
31	17.90	34.10 6	4.44	332	20	19.00	34.28		24.49	345	0.07
51	14.54	33.99 1	3.04	267	30	18.20	34.14	(4.64)	24.59	336	0.10
					50	14.67	34.00	3.07	25.29	269	0.16

HUGH M. SMITH; February 9, 1961; 0156 GCT; 25°21'N, 112°48'W; sounding, 180 fm; wind, 320°, force 3; weather, partly cloudy; sea, moderate; wire angle, 09°.

137.30

1	18.80	34.25 9	5.24	342	0	(18.80)	(34.26)	(5.24)	(24.53)	(342)	(0.00)
11	18.82	34.25 0	5.42	344	10	18.82	34.25	5.41	24.51	343	0.03
31	18.78	34.24 9	5.24	342	20	18.80	34.25	5.34	24.52	343	0.07
50	16.42	33.98 1	3.96	307	30	18.78	34.25	5.25	24.53	342	0.10
74	14.02	33.98 8	2.99	257	50	16.42	33.98	3.96	24.89	307	0.17
98	13.21	34.34 7	0.88	214	75	13.99	33.99	2.96	25.43	256	0.24
122	12.56	34.53 6	0.44	188	100	13.20	34.36	0.87	25.88	213	0.30
162	11.98	34.60 1	0.31	172	125	12.51	34.54	0.43	26.15	187	0.35
202	11.56	34.63 6	0.14	162	150	12.13	34.58	0.35	26.26	177	0.40
251	10.98	34.63 2	0.13	152	200	11.58	34.63	0.15	26.41	163	0.48
					250	10.99	34.63	0.13	26.51	153	0.56

HUGH M. SMITH; February 9, 1961; 0745 GCT; 24°59'N, 113°27'W; sounding, 1700 fm; wind, 320°, force 3; weather, clear; sea, moderate; wire angle, 07°.

137.40

1	18.93	34.22 6	5.22	347	0	(18.93)	(34.23)	(5.22)	(24.47)	(347)	(0.00)
11	18.96	34.22 9	5.29	348	10	18.95	34.23	5.28	24.46	348	0.03
31	18.98	34.23 2	5.18	348	20	18.97	34.23	5.24	24.46	348	0.07
41	18.90	34.22 5	5.16	346	30	18.98	34.23	5.19	24.46	348	0.10
56	17.00	34.05 7	4.13	315	50	17.90	34.13	4.63	24.65	330	0.17
70	15.72	34.05 7	3.27	287	75	15.00	34.01	3.12	25.23	275	0.25
94	13.94	34.00 2	3.00	254	100	13.00	34.01	2.73	25.65	235	0.31
114	12.53	34.08 3	2.39	221	125	12.24	34.17	1.98	25.91	210	0.37
133	12.12	34.23 2	1.67	203	150	11.94	34.34	1.23	26.11	191	0.42
153	11.89a)	34.35 1	1.18	190	200	11.10	34.42	1.03	26.33	171	0.51
184	11.09	34.33 1	1.25	177	250	10.60	34.56	0.47	26.52	152	0.59
217	11.11	34.51 9	0.61	164	300	9.91	34.54	0.39	26.63	142	0.67
247	10.64	34.55 6	0.48	153	400	8.53	34.47	0.33	26.80	125	0.81
296	9.97	34.54 0	0.40	143	500	7.48	34.46	0.20	26.95	112	0.93
351	9.29	34.51 5	0.37	134	600	6.54	34.45	0.20	27.07	100	1.05
435	8.03	34.45 7	0.28	120							
520	7.30	34.46 4	0.19	109							
605	6.49	34.45 3	0.21	99							

a) Alternate value, 12.00°C, not used in interpolation.



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6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

13750

HUGH M. SMITH; February 9, 1961; 1438 GCT; 24°36'N, 114°09'W; sounding, 1900 fm; wind, 360°, force 4; weather, partly cloudy; sea, rough; wire angle, 18°.

1	19.25	34.33 8	5.14	348	0	(19.25)	(34.34)	(5.14)	(24.47)	(347)	(0.00)
11	19.26	34.34 1	5.16	348	10	19.26	34.34	5.16	24.47	347	0.03
29	19.25	34.33 8	5.11	347	20	19.26	34.34	5.14	24.47	347	0.07
58	15.58	33.80 5	4.89	302	30	19.25	34.34	5.11	24.47	347	0.10
68	14.56	33.90 0	3.96	274	50	19.25	34.34	5.11	24.47	347	0.17
81	13.49	33.96 9	3.25	248	75	13.89	33.95	3.51	25.42	257	0.25
95	12.61	33.98 3	2.88	230	100	12.47	34.01	2.77	25.74	226	0.31
109	12.20	34.12 6	2.23	212	125	12.23	34.38	1.10	26.09	194	0.36
132	12.37	34.44 4	0.96	191	150	12.24	34.53	0.69	26.20	183	0.41
150	12.24	34.53 0	0.69	183	200	11.61	34.65	0.33	26.41	162	0.50
178	12.02	34.64 8	0.36	170	250	10.80	34.64	0.20	26.55	149	0.58
206	11.50	34.65 5	0.32	160	300	10.11	34.61	0.18	26.65	140	0.66
233	11.05	34.64 5	0.25	153	400	9.09	34.57	0.15	26.79	127	0.79
280	10.38	34.62 6	0.18	143	500	7.66	34.50	0.14	26.95	111	0.92
332	9.74	34.58 4	0.18	136							
411	8.97	34.56 4	0.14	125							
494	7.72	34.50 0	0.14	112							
577	6.74	34.46 8	0.15	101							

13760

HUGH M. SMITH; February 9, 1961; 2049 GCT; 24°18'N, 114°41'W; sounding, 1950 fm; wind, 360°, force 4; weather, partly cloudy; sea, rough; wire angle, 22°.

2	19.34	34.23 9	5.17	357	0	(19.34)	(34.24)	(5.17)	(24.37)	(357)	(0.00)
11	19.32	34.23 9	5.22	356	10	19.32	34.24	5.21	24.38	356	0.04
30	19.27	34.23 0	5.14a)	356	20	19.30	34.23	5.18	24.38	356	0.07
57	18.48	34.05 0	5.15	350	30	19.27	34.23	5.14	24.38	356	0.11
66	17.64	33.92 6	5.24	339	50	19.10	34.19	5.15	24.40	354	0.18
79	15.12	33.65 7	5.16	303	75	16.60	33.80	5.24	24.71	324	0.26
93	14.98	33.85 8	4.12	286	100	14.78	33.87	4.00	25.17	281	0.34
106	13.94	33.86 9	3.86	264	125	12.15	33.98	2.72	25.79	222	0.40
128	12.11	33.99 1	2.66	220	150	11.80	34.20	1.76	26.02	200	0.46
147	11.89	34.18 1	1.86	202	200	11.30	34.50	0.67	26.35	168	0.55
175	11.06	34.33 2	1.26	177	250	10.69	34.60	0.32	26.55	150	0.63
202	11.30	34.51 9	0.60	167	300	9.87	34.56	0.29	26.65	140	0.71
228	10.85	34.58 6	0.40	154	400	8.35	34.49	0.20	26.85	122	0.84
274	10.40	34.60 1	0.26	145	500	7.16	34.46	0.23	27.00	107	0.96
330	9.28	34.51 1	0.33	134							
409	8.22	34.48 8	0.19	120							
492	7.25	34.46 3	0.23	108							
575	6.34	34.44 4	0.21	98							

13770

HUGH M. SMITH; February 10, 1961; 0156 GCT; 23°59'N, 115°17.5'W; sounding, 2050 fm; wind, 360°, force 4; weather, partly cloudy; sea, rough; wire angle, 13°.

1	19.38	34.23 3	5.22	357	0	(19.38)	(34.23)	(5.22)	(24.36)	(357)	(0.00)
11	19.40	34.23 4	5.23	358	10	19.40	34.23	5.23	24.35	358	0.04
35	19.39	34.22 6	5.26	358	20	19.40	34.23	5.24	24.35	358	0.07
64	19.12	34.18 7	5.24	355	30	19.39	34.23	5.26	24.35	358	0.11
74	16.64	33.82 1	5.30	324	50	19.31	34.21	5.26	24.36	357	0.18
92	14.49	33.79 5	4.54	280	75	16.48	33.81	5.30	24.74	321	0.26
107	13.45	33.88 9	3.75	253	100	13.98	33.82	4.18	25.30	268	0.34
123	12.64	34.03 2	2.72	227	125	12.66	34.08	2.57	25.76	224	0.40
152	12.74	34.44 2	1.02	198	150	12.74	34.42	1.09	26.01	200	0.46
171	12.10	34.45 6	0.97	186	200	11.84	34.65	0.36	26.37	166	0.55
201	11.82	34.65 5	0.35	166	250	10.33	34.50	0.52	26.52	152	0.63
236	10.97	34.59 5	0.39	156	300	9.64	34.51	0.48	26.65	140	0.71
264	9.98	34.45 8	0.69	149	400	8.62	34.54	0.16	26.83	123	0.84
314	9.53	34.52 8	0.38	137	500	7.34	34.47	0.18	26.98	109	0.96
378	8.97	34.55 6	0.16	126	600	6.36	34.47	0.18	27.11	96	1.07
477	7.58	34.48 0	0.18	112							
568	6.66	34.47 6	0.20	100							
641	6.02	34.46 7	0.18	92							

36

a) Alternate value, 4.96 ml/L, not used in interpolation.



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10

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6101-2

HUGH M. SMITH; February 10, 1961; 0710 GCT; 23°40.5'N, 115°55.5'W; sounding, 2100 fm; wind, 360°, force 3; weather, clear; sea, rough; wire angle, 08°.

137.80

1	18.95	34.17 4	5.31	352	0	(18.95)	(34.17)	(5.31)	(24.42)	(352)	(0.00)
11	18.96	34.17 4	5.33	352	10	18.96	34.17	5.33	24.42	352	0.04
30	18.98	34.17 3	5.28	352	20	18.97	34.17	5.31	24.42	352	0.07
55	17.28	33.86 3	5.42	335	30	18.98	34.17	5.28	24.42	352	0.11
64	16.40	33.90 5	4.87	312	50	18.95	34.16	5.28	24.42	352	0.18
74	15.42	33.82 5	4.76	297	75	15.39	33.83	4.75	25.00	297	0.26
88	14.07	33.99 6	3.19	257	100	12.92	33.98	3.00	25.64	236	0.33
102	12.85	33.98 0	3.00	234	125	11.08	34.01	2.60	26.00	202	0.38
127	11.08	34.00 2	2.57	201	150	12.38	34.55	0.69	26.18	184	0.43
146	12.40	34.51 7	0.80	187	200	11.60	34.66	0.29	26.43	162	0.52
171	12.14	34.63 5	0.43	173	250	10.40	34.56	0.29	26.56	149	0.60
200	11.60	34.66 0	0.29	162	300	9.73	34.55	0.23	26.67	138	0.67
230	10.90	34.59 0	0.38	155	400	8.44	34.51	0.22	26.85	121	0.81
269	10.00	34.54 8	0.20	143	500	7.12	34.47	0.21	27.01	106	0.92
328	9.51	34.56 8a)	0.27	134							
402	8.40	34.51 2a)	0.22	121							
475	7.40	34.48 0	0.21	109							
555	6.68	34.47 0	0.21	101							

BLACK DOUGLAS; February 3, 1961; 0035 GCT; 34°24.5'N, 120°36'W; sounding, 150 fm; wind, 320°, force 5; weather, cloudy; sea, moderate; wire angle, 17°. b)

80.52

0	14.04	33.27 2	6.16	310	0	14.04	33.27	6.16	24.86	310	0.00
39	13.46	33.28 5	6.01	297	10	(14.04)	(33.28)	(6.15)	(24.87)	(309)	(0.03)
78	11.02	33.42 6	4.79	243	20	(14.04)	(33.28)	(6.15)	(24.87)	(309)	(0.06)
102	10.42	33.62 4	3.97	218	30	(14.04)	(33.28)	(6.15)	(24.87)	(309)	(0.09)
126	9.63	33.82 7	3.03	190	50	12.80	33.34	5.75	25.17	280	0.15
151	9.27	33.93 5	2.58	177	75	11.03	33.41	4.83	25.56	243	0.22
170	9.06	34.03 7u	2.55u	-	100	10.47	33.62	4.00	25.81	219	0.28
190	8.84	33.97 8	2.34	167	125	9.64	33.83	3.04	26.11	191	0.33
200	8.72	34.02 4	2.06	162	150	9.28	33.93	2.59	26.26	177	0.37
					200	8.72	34.02	2.06	26.43	162	0.46

BLACK DOUGLAS; February 3, 1961; 0245 GCT; 34°18.5'N, 120°48.5'W; sounding, 400 fm; wind, 320°, force 5; weather, cloudy; sea, rough; wire angle, 12°.

80.55

0	14.24	33.20 7	6.20c)	318	0	14.24	33.21	6.20	24.78	318	0.00
10	14.24	33.20 0	6.07	319	10	14.24	33.20	6.07	24.77	319	0.03
29	14.24	33.20 7	5.03	318	20	14.24	33.20	5.50	24.77	319	0.06
39	13.68	33.27 9	4.25	302	30	14.24	33.21	4.97	24.78	318	0.10
54	13.38	33.32 3	3.02	293	50	13.42	33.32	3.25	25.03	294	0.16
70	13.11	33.33 2	2.49	287	75	12.60	33.33	2.46	25.20	277	0.23
95	11.37	33.33 6	2.45	255	100	11.22	33.35	2.44	25.48	251	0.30
114	10.72	33.56 9	2.34	227	125	10.14	33.70	2.11	25.93	208	0.35
133	9.80	33.77 3	1.90	197	150	9.48	33.84	1.67	26.16	187	0.40
153	9.42	33.85 4	1.65	185	200	8.52	34.03	1.44	26.45	159	0.49
182	8.75	33.99 3	1.62	165	250	8.00	34.10	1.04	26.60	145	0.57
216	8.35	34.04 9	1.26	154	300	7.68	34.17	0.83	26.69	136	0.64
246	8.03	34.10 1	1.06	146	400	6.95	34.24	0.65	26.85	121	0.78
294	7.71	34.16 3	0.85	137	500	6.20	34.28	0.48	26.98	109	0.90
349	7.34	34.22 9	0.72	127	600	5.74	34.31	0.15	27.07	100	1.01
432	6.70	34.24 6	0.60	117							
515	6.10	34.28 6	0.42	107							
601	5.73	34.31 4	0.14	100							

- a) Salinity samples at 328 and 402 meters appear to have been reversed; they are assumed to be listed in correct order.
- b) The January and February data were collected during one cruise which encompassed the two months. Therefore, a cruise designation of 6101-2 has been used. However, the stations have been listed in numerical order in two groups to keep series of observations unbroken.
- c) The computations of the unusual oxygen values on this station were carefully verified.



S10  
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6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

80.60 BLACK DOUGLAS; February 3, 1961; 0610 GCT; 34°09'N, 121°09'W; sounding, 1200 fm; wind, 320°, force 6; weather, cloudy; sea, rough; wire angle, 25°.

3	13.95u	33.24 5	6.01	-	0	14.3	(33.24)	(6.01)	(24.79)	(317)	(0.00)
12	14.27	33.23 6	6.18	317	10	14.27	33.24	6.16	24.79	317	0.03
31	13.89	33.25 6	6.15	308	20	14.27	33.24	6.17	24.79	317	0.06
40	13.53	33.26 9	6.05	299	30	13.93	33.25	6.16	24.88	309	0.09
54	13.22	33.35 8	5.88	287	50	13.32	33.35	5.92	25.07	290	0.15
68	12.44	33.34 8	5.72	274	75	11.70	33.35	5.40	25.38	260	0.22
91	10.24	33.43 2	4.64	230	100	10.00	33.48	4.48	25.78	223	0.28
110	9.64	33.55 9	4.18	211	125	9.36	33.64	3.90	26.02	199	0.34
128	9.30	33.66 3	3.87	197	150	8.96	33.78	3.68	26.20	183	0.39
147	9.00	33.75 9	3.78	186	200	8.29	33.95	3.01	26.43	161	0.47
176	8.69	33.91 7	2.68	169	250	7.93	34.07	2.05	26.58	147	0.55
208	8.18	33.96 9	3.07	158	300	7.45	34.12	1.63	26.68	137	0.62
235	8.02	34.05 9	2.14	149	400	6.60	34.20	0.97	26.86	120	0.76
283	7.64	34.09 8	1.90	141	500	6.08	34.26	0.80	26.98	109	0.88
335	7.06	34.16 3	1.07	129							
413	6.52	34.20 2	0.95	118							
495	6.10	34.25 6	0.82	109							
577	5.72	34.30 9	0.47	100							

80.65 BLACK DOUGLAS; February 3, 1961; 1000 GCT; 33°59'N, 121°30'W; sounding, 1750 fm; wind, 320°, force 6; weather, cloudy; sea, rough; wire angle, 20°.

1	14.66	33.18 7	5.95	328	0	(14.66)	(33.19)	(5.95)	(24.67)	(328)	(0.00)
10	14.70	33.18 4	5.95	329	10	14.70	33.18	5.95	24.66	329	0.03
29	14.42	33.20 2	5.98	322	20	14.66	33.18	5.96	24.67	328	0.07
39	13.88	33.25 5	6.11	308	30	14.38	33.21	5.99	24.75	321	0.10
53	13.32	33.29 1	5.99	294	50	13.32	33.28	6.00	25.02	295	0.16
66	13.00	33.36 2	5.76	283	75	12.78	33.37	5.68	25.20	278	0.23
89	11.86	33.36 9	5.42	261	100	11.25	33.38	5.13	25.49	250	0.30
108	10.40	33.42 5	4.61	232	125	9.39	33.58	3.85	25.97	204	0.36
144	8.78	33.76 4	3.40	182	150	8.64	33.81	3.31	26.27	176	0.40
172	8.28	33.92 2	3.17	163							

80.70 BLACK DOUGLAS; February 3, 1961; 1352 GCT; 33°49'N, 121°51'W; sounding, 2000 fm; wind, 320°, force 4; weather, overcast; sea, rough; wire angle, 25°.

0	14.96	33.19 6	6.00	334	0	14.96	33.20	6.00	24.61	334	0.00
9a)	14.96	33.20 5	5.98	333	10	14.96	33.21	5.98	24.62	333	0.03
32a)	14.65	33.23 3	6.02	324	20	14.96	33.22	5.98	24.63	332	0.07
42	14.40	33.22 6	5.99	320	30	14.75	33.23	6.00	24.68	327	0.10
55	13.58	33.19 0	5.79	306	50	13.67	33.18	5.82	24.87	309	0.16
69	13.12	33.27 5	5.77	291	75	12.92	33.29	5.74	25.11	286	0.24
92	12.10	33.33 2	5.53	268	100	11.88	33.34	5.45	25.35	264	0.31
109	11.48	33.35 6	5.25	256	125	10.57	33.46	4.68	25.68	232	0.37
153	8.94	33.73 5	3.64	187	150	9.08	33.71	3.72	26.12	190	0.42
179	8.46	33.88 5	3.20	168	200	8.46	34.00	2.22	26.44	160	0.51
214	8.46	34.05 7	1.83	155	250	7.72	34.04	2.08	26.58	147	0.59
241	7.88	34.03 6	2.09	149	300	7.14	34.08	1.70	26.69	136	0.66
286	7.28	34.06 2	1.86	139	400	6.10	34.13	0.87	26.88	118	0.80
344	6.70	34.11 2	1.22	127	500	5.49	34.20	0.55	27.01	106	0.91
436	5.80	34.14 7	0.74	113	600	(5.04)	(34.29)	(0.29)	(27.12)	(95)	(1.02)
522	5.41	34.22 0	0.48	104							
595	5.07	34.28 4	0.29	95							

a) Nansen bottles at 9 and 36 meters are believed to have been reversed in the rack; the present order is assumed to be correct.



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10  
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6101-2

BLACK DOUGLAS; February 3, 1961; 1907 GCT; 33°31'N, 122°30'W; sounding, 2100 fm; wind, 320°, force 6; weather, overcast; sea, rough; wire angle, 30°. a)

8080

1	15.29	33.25 4	5.77	336	0	(15.29)	(33.25)	(5.77)	(24.59)	(336)	(0.00)
10	15.32	33.25 2	5.93	337	10	15.32	33.25	5.93	24.58	337	0.03
33	15.31	33.27 7	5.91	335	20	15.32	33.26	5.92	24.59	336	0.07
42	15.29	33.25 3	5.92	336	30	15.31	33.27	5.91	24.60	335	0.10
55	15.25	33.26 3	5.82	335	50	15.27	33.26	5.86	24.60	335	0.17
70	14.96	33.24 4	5.86	330	75	14.30	33.20	5.93	24.76	320	0.25
91	13.54	33.20 2	5.98	305	100	12.73	33.24	5.80	25.11	287	0.33
109	12.12	33.27 2	5.58	273	125	11.12	33.35	5.15	25.49	250	0.39
125	11.12	33.35 0	5.15	250	150	9.52	33.59	4.62	25.95	206	0.45
150	9.52	33.58 7	4.62	206	200	8.39	33.86	3.54	26.35	169	0.55
177	8.86	33.78 6	3.72	182	250	7.60	33.91	3.16	26.50	154	0.63
211	8.20	-	3.49	-	300	7.20	34.01	2.17	26.64	141	0.71
237	7.80	33.90 4	3.31	157	400	6.35	34.11	1.12	26.83	123	0.84
280	7.22	33.93 5	2.73	147	500	5.44	34.18	0.55	27.00	107	0.96
338	7.17	34.14 0	1.14	131	600	(5.05)	(34.20)		(27.06)	(101)	(1.08)
429	5.97	34.10 2	1.10	119							
513	5.38	34.18 9	0.51	105							
586	5.10	34.20 1	0.51	102							

BLACK DOUGLAS; February 8, 1961; 1425 GCT; 32°54.5'N, 117°22'W; sounding, 300 fm; wind, 320°, force 1; weather, cloudy; sea, slight; wire angle, 07°.

9328

0	14.95	33.55 7	6.00	307	0	14.95	33.56	6.00	24.89	307	0.00
10	14.98	33.52 9	5.97	309	10	14.98	33.53	5.97	24.87	309	0.03
30	13.92	33.51 3	5.31	290	20	14.96	33.53	5.92	24.87	309	0.06
50	13.06	33.52 4	4.52	272	30	13.92	33.51	5.31	25.08	290	0.09
74	10.92	33.63 0	3.97	226	50	13.06	33.52	4.52	25.26	272	0.15
100	10.29	33.74 3	3.42	207	75	10.88	33.64	3.93	25.76	225	0.21
124	9.80	33.85 0	3.04	191	100	10.29	33.74	3.42	25.94	207	0.26
163	9.32	33.98 1	2.48	174	125	9.79	33.86	3.02	26.12	190	0.32
203	8.89	34.09 2	-	159	150	9.48	33.94	2.68	26.24	179	0.36
253	8.55	34.18 4	1.37	147	200	8.92	34.08	1.92	26.43	161	0.45
303	8.17	34.23 0	1.05	138	250	8.56	34.18	1.38	26.57	147	0.53
407	7.36	34.27 1	0.69	124	300	8.19	34.23	1.06	26.66	139	0.60
					400	7.40	34.27	0.71	26.81	125	0.74

BLACK DOUGLAS; February 8, 1961; 1220 GCT; 32°50.5'N, 117°31.5'W; sounding, 400 fm; wind, 320°, force 1; weather, cloudy; sea, slight; wire angle, 02°.

9330

1	15.18	33.55 6	5.81	312	0	(15.18)	(33.56)	(5.81)	(24.84)	(312)	(0.00)
11	15.20	33.55 9	5.77	312	10	15.20	33.56	5.78	24.84	312	0.03
31	14.94	33.54 2	5.83	308	20	15.11	33.55	5.80	24.86	310	0.06
41	14.06	33.52 9	5.50	291	30	14.95	33.54	5.83	24.88	308	0.09
51	13.14	33.50 3	4.95	275	50	13.18	33.50	4.98	25.22	276	0.15
66	12.23	33.52 4	4.58	257	75	11.73	33.55	4.39	25.53	246	0.22
81	11.37	33.56 3	4.27	239	100	10.24	33.69	3.76	25.90	211	0.28
101	10.21	33.69 4	3.73	210	125	9.74	33.86	2.88	26.12	190	0.33
125	9.74	33.85 7	2.88	190	150	9.43	33.97	2.60	26.26	177	0.37
145	9.49	33.95 6	2.73	179	200	9.03	34.14	1.85	26.46	158	0.46
176	9.26	34.05 0	2.05	168	250	8.55	34.20	1.32	26.59	146	0.54
206	8.98	34.15 3	1.79	156	300	8.07	34.23	1.02	26.68	137	0.61
235	8.74	34.18 6	1.51	150	400	7.18	34.27	0.72	26.84	122	0.74
275	8.27	34.21 6	1.13	141	500	6.46	34.31	0.42	26.97	109	0.86
335	7.83	34.24 8	0.94	133							
410	7.10	34.27 6	0.68	121							
485	6.56	34.30 2	0.44	111							
565	6.10	34.34 5	0.36	103							

a) An assumed wire angle of 20° was used in depth determination.



SIO  
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 6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

93.40 BLACK DOUGLAS; February 8, 1961; 0622, 0639 GCT; 32°30'N, 118°12.5'W; sounding, 950 fm; wind, 320°, force 4; weather, missing; sea, moderate; wire angle, 10°, 10°.

1	15.26	33.52 6	5.58	315	0	(15.26)	(33.53)	(5.58)	(24.81)	(315)	(0.00)
11	15.27	33.53 3	5.69	315	10	15.27	33.53	5.68	24.81	315	0.03
31	14.94	33.52 5	5.92	309	20	15.24	33.53	5.77	24.81	315	0.06
60	12.94	33.46 5	4.95	274	30	14.98	33.53	5.91	24.86	310	0.09
70	12.09	33.46 3	4.69	258	50	13.91	33.49	5.43	25.06	291	0.15
85	11.71	33.54 7	4.36	246	75	11.94	33.49	4.59	25.45	254	0.22
99	11.22	33.58 6	4.01	234	100	11.18	33.59	3.96	25.67	233	0.28
115	10.43	33.70 0	3.56	213	125	10.08	33.78	3.16	26.01	201	0.34
139	9.78	33.88 0	2.72	189	150	9.64	33.94	2.52	26.21	182	0.39
158	9.57	33.96 7	2.38	179	200	9.22	34.07	1.73	26.38	166	0.48
					250	8.68	34.23	1.62	26.59	146	0.56
194	9.32	34.05 6	1.79	169	300	8.27	34.24	1.01	26.66	139	0.63
223	8.83	34.14 7	1.62	155	400	7.26	34.28	0.74	26.84	122	0.77
253	8.68	34.22 6	1.21	146	500	6.43	34.32	0.46	26.98	109	0.89
302	8.25	34.23 8	1.00	139	600	5.83	34.35	0.33	27.08	99	1.00
356	7.66	34.24 9	0.91	130							
439	6.92	34.30 2	0.59	116							
525	6.23	34.32 3	0.41	106							
612	5.78	34.34 8	0.31	98							

93.45 BLACK DOUGLAS; February 8, 1961; 0253 GCT; 32°20'N, 118°32'W; sounding, 900 fm; wind, 320°, force 4; weather, partly cloudy; sea, rough; wire angle, 30°.

0	15.67	33.64 4u	5.69	-	0	15.67	(33.56)	5.69	(24.74)	(322)	(0.00)
9	15.70	33.56 3	5.69	322	10	15.70	33.56	5.70	24.74	322	0.03
31	15.13	33.52 9	5.76	313	20	15.60	33.56	5.71	24.76	320	0.06
39	14.20	33.50 0	5.52	296	30	15.20	33.53	5.76	24.83	313	0.10
53	12.98	33.53 3	4.85	270	50	13.30	33.51	4.99	25.20	277	0.16
65	12.36	33.55 6	4.76	257	75	12.25	33.58	4.67	25.46	253	0.22
87	11.42	33.58 8	4.17	238	100	11.07	33.65	3.75	25.73	227	0.28
104	10.93	33.67 7	3.66	223	125	10.00	33.82	3.22	26.05	197	0.34
120	10.10	33.78 8	3.33	201	150	9.55	33.92	2.81	26.20	183	0.38
145	9.66	33.90 2	2.88	185	200	9.00	34.09	2.06	26.43	161	0.47
170	9.25	33.96 8	2.63	174	250	8.70	34.17	1.43	26.55	150	0.55
204	8.98	34.10 0	1.98	160	300	8.29	34.25	1.06	26.66	139	0.63
278	8.50	34.21 7	1.18	144	400	7.34	34.26	0.69	26.81	125	0.76
328	8.02	34.25 9	0.96	134	500	6.52	34.29	0.46	26.95	112	0.89
417	7.20	34.26 2	0.62	123							
503	6.49	34.28 8	0.45	111							
574	5.98	34.31 6	0.36	103							

93.50 BLACK DOUGLAS; February 7, 1961; 2335 GCT; 32°10'N, 118°52.5'W; sounding, 800 fm; wind, 350°, force 4; weather, partly cloudy; sea, rough; wire angle, 25°.

1	14.74	33.46 3	5.86	309	0	(14.74)	(33.46)	(5.86)	(24.87)	(309)	(0.00)
10	14.76	33.46 2	5.86	310	10	14.76	33.46	5.86	24.86	310	0.03
29	14.48	33.45 7	5.95	305	20	14.64	33.46	5.90	24.88	308	0.06
55	13.54	33.44 3	5.57	287	30	14.46	33.46	5.95	24.92	304	0.09
65	12.86	33.41 3	5.18	276	50	14.30	33.47	5.92	24.97	300	0.15
77	11.91	33.50 3	4.77	252	75	12.06	33.49	4.84	25.42	257	0.22
90	11.26	33.57 2	4.37	236	100	10.72	33.63	3.90	25.78	223	0.28
103	10.56	33.63 9	3.81	219	125	10.02	33.74	3.63	25.98	203	0.34
123	10.04	33.72 7	3.65	205	150	9.41	33.84	3.09	26.16	187	0.39
139	9.62	33.80 2	3.32	192	200	8.67	33.99	2.50	26.41	163	0.48
164	9.22	33.88 0	2.88	181	250	7.97	34.09	1.86	26.59	146	0.56
188	8.92	33.96 6	2.67	169	300	7.77	34.21	1.10	26.71	134	0.63
214	8.36	34.01 4	2.29	157	400	7.09	34.29	0.66	26.87	119	0.76
256	7.94	34.10 2	1.77	144	500	6.40	34.31	0.44	26.98	108	0.88
302	7.76	34.21 5	1.09	134							
376	7.24	34.27 6	0.77	123							
453	6.72	34.30 5	0.52	113							
536	6.15	34.31 5	0.40	105							



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10  
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6101-2

BLACK DOUGLAS; February 7, 1961; 2007 GCT; 32°02.5'N, 119°14'W; sounding, 850 fm; wind, 320°, force 5; weather, cloudy; sea, rough; wire angle, 15°.

93.55

1	15.18	33.53 3	5.74	313	0	(15.18)	(33.53)	(5.74)	(24.83)	(313)	(0.00)
10	15.18	33.52 5	5.74	314	10	15.18	33.52	5.74	24.82	314	0.03
29	15.17	33.51 8	5.69	314	20	15.18	33.52	5.73	24.82	314	0.06
58	13.22	33.45 3	5.25	280	30	15.17	33.52	5.68	24.82	314	0.09
69	12.83	33.46 2	5.00	272	50	13.70	33.45	5.42	25.08	289	0.15
84	11.62	33.42 6	4.72	253	75	12.45	33.46	4.89	25.33	265	0.22
98	10.96	33.59 2	4.22	229	100	10.82	33.60	4.16	25.73	227	0.29
113	10.24	33.67 2	3.86	212	125	10.00	33.73	3.67	25.98	203	0.34
137	9.74	33.78 9	3.45	195	150	9.38	33.89	3.00	26.22	181	0.39
156	9.25	33.92 4	2.79	177	200	8.82	34.14	1.71	26.49	155	0.48
185	8.91	34.03 8	2.11	164	250	8.69	34.23	1.20	26.59	146	0.55
214	8.77	34.19 7	1.48	150	300	8.07	34.27	0.88	26.71	134	0.62
243	8.74	34.21 9	1.30	148	400	7.16	34.29	0.57	26.86	120	0.76
292	8.17	34.27 4	0.91	135	500	6.36	34.31	0.40	26.98	108	0.88
347	7.63	34.28 0	0.76	127	600	(5.72)	(34.38)	(0.30)	(27.12)	(95)	(0.98)
429	6.93	34.29 4	0.50	117							
523	6.18	34.31 4	0.38	105							
598	5.74	34.37 3	0.30	96							

BLACK DOUGLAS; February 7, 1961; 1651 GCT; 31°55'N, 119°37'W; sounding, 1200 fm; wind, 320°, force 5; weather, cloudy; sea, moderate; wire angle, 15°.

93.60

1	15.00	33.51 9	5.84	311	0	(15.00)	(33.52)	(5.84)	(24.85)	(311)	(0.00)
11	14.99	33.51 2	5.63	311	10	14.99	33.51	5.64	24.85	311	0.03
30	15.00	33.50 9	5.58	312	20	14.99	33.51	5.60	24.85	311	0.06
60	15.01	33.51 5	5.73	312	30	15.00	33.51	5.58	24.84	312	0.09
69	14.14	33.44 2	5.48	299	50	15.00	33.51	5.68	24.84	312	0.16
85	12.70	33.45 3a)	5.27	270	75	13.34	33.45	5.38	25.14	283	0.23
99	11.40	33.42 4	4.73	249	100	11.33	33.43	4.68	25.52	247	0.30
114	10.62	33.60 0a)	4.27	223	125	10.20	33.65	4.03	25.89	212	0.36
138	9.58	33.72 9	3.60	196	150	9.37	33.80	3.14	26.14	188	0.41
157	9.26	33.82 9	2.99	185	200	8.62	33.99	2.54	26.41	163	0.50
187	8.84	33.95 0	2.72	169	250	8.07	34.11	1.52	26.59	146	0.58
216	8.38	34.02 8	2.24	156	300	7.66	34.17	1.11	26.69	136	0.65
244	8.12	34.22 3b)	1.57	138	400	6.90	34.24	0.68	26.86	120	0.78
293	7.72	34.16 5	1.14	137	500	6.30	34.29	0.41	26.98	109	0.90
347	7.31	34.20 3	0.86	128	600	(5.33)	(34.30)	(0.31)	(27.10)	(97)	(1.01)
428	6.71	34.25 9	0.60	116							
512	6.22	34.29 6	0.39	108							
597	5.37	34.29 6	0.31	97							

BLACK DOUGLAS; February 7, 1961; 1107 GCT; 31°33'N, 120°16.5'W; sounding, 2000 fm; wind, 320°, force 5; weather, cloudy; sea, moderate; wire angle, 12°.

93.70

1	15.56	33.38 1	5.59	333	0	(15.56)	(33.38)	(5.59)	(24.62)	(333)	(0.00)
11	15.59	33.37 2	5.63	334	10	15.59	33.37	5.62	24.61	334	0.03
30	15.60	33.37 5	5.63	334	20	15.60	33.37	5.63	24.61	334	0.07
40	15.56	33.37 4	5.64	333	30	15.60	33.38	5.63	24.61	334	0.10
54	15.14	33.34 9	5.65	326	50	15.32	33.36	5.65	24.66	329	0.17
68	14.42	33.35 6	5.56	311	75	14.00	33.40	5.52	24.97	299	0.24
93	12.90	33.44 1	5.36	275	100	12.34	33.41	5.26	25.31	267	0.32
112	11.40	33.34 8	5.01	255	125	10.50	33.43	4.49	25.66	234	0.38
130	10.30	33.46 9	4.38	227	150	9.88	33.60	4.30	25.90	211	0.44
148	9.92	33.58 3	4.32	213	200	8.75	33.87	3.24	26.29	174	0.53
177	9.30	33.79 5	3.67	188	250	8.05	34.00	2.72	26.50	154	0.62
210	8.57	33.89 8	3.12	169	300	7.37	34.04	1.97	26.64	141	0.70
238	8.20	33.98 2	2.92	157	400	6.47	34.14	0.99	26.84	122	0.83
285	7.58	34.03 4	2.10	145	500	5.73	34.21	0.61	26.99	108	0.95
339	6.85	34.06 3	1.72	133	600	(5.28)	(34.23)		(27.06)	(101)	(1.06)
419	6.34	34.16 3	0.81	119							
503	5.72	34.21 9	0.61	107							
588	5.33	34.23 1	0.77	102							

- a) Possible evaporation; value falls on property curve.  
b) Possible evaporation; value does not fall on property curve.



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6101-2

OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

93.80 BLACK DOUGLAS; February 7, 1961; 0510 GCT; 31°11.5'N, 120°55.5'W; sounding, 2050 fm; wind, 320°, force 5; weather, cloudy; sea, moderate; wire angle, 12°.

2	15.22	33.35 7	5.94	327	0	(15.22)	(33.36)	(5.94)	(24.68)	(327)	(0.00)
12	15.24	33.35 7	5.80	328	10	15.24	33.36	5.82	24.67	328	0.03
31	15.24	33.36 6	5.70	327	20	15.24	33.36	5.72	24.68	327	0.07
56	14.72	33.33 7	5.80	318	30	15.24	33.37	5.71	24.68	327	0.10
66	13.85	33.27 9	5.71	305	50	15.00	33.36	5.76	24.72	323	0.16
76	13.06	33.28 7	5.43	289	75	13.12	33.29	5.44	25.07	290	0.24
91	12.32	33.32 8	5.28	273	100	11.40	33.42	4.88	25.49	250	0.31
106	10.92	-	4.65	-	125	10.02	33.59	4.05	25.87	214	0.37
130	9.85	33.60 3	3.95	210	150	9.22	33.66	3.52	26.05	197	0.42
149	9.24	33.65 2	3.55	198	200	8.44	33.98	2.55	26.43	161	0.51
173	8.74	33.90 9	2.89	171	250	7.96	34.05	1.90	26.57	148	0.59
202	8.43	33.98 8	2.53	161	300	7.10	34.05	1.72	26.68	137	0.66
230	8.32	34.06 7	1.80	153	400	6.35	34.14	0.84	26.86	120	0.80
270	7.54	34.04 1	1.98	144	500	5.74	34.23	0.46	27.01	106	0.92
327	6.82	34.07 9	1.41	131							
400	6.35	34.14 4	0.84	120							
473	5.84	34.20 4	0.53	110							
552	5.60	34.30 0	0.26	100							

93.90 BLACK DOUGLAS; February 6, 1961; 2340 GCT; 30°50'N, 121°31'W; sounding, 2200 fm; wind, 320°, force 4; weather, partly cloudy; sea, moderate; wire angle, 12°.

2	16.06	33.42 9	5.89	340	0	(16.06)	(33.43)	(5.89)	(24.55)	(340)	(0.00)
12	16.06	33.41 2	5.84	341	10	16.06	33.41	5.85	24.54	341	0.03
31	15.98	33.42 8	5.92	338	20	16.03	33.42	5.90	24.55	339	0.07
62	15.38	33.40 7	5.51	327	30	15.99	33.43	5.91	24.56	338	0.10
71	15.41	33.42 8	5.41	326	50	15.40	33.40	5.60	24.67	328	0.17
86	14.45	33.45 1	5.54	305	75	15.35	33.44	5.41	24.71	324	0.25
101	13.69	33.51 6	5.35	284	100	13.72	33.51	5.36	25.12	285	0.33
115	12.76	33.54 0	5.08	265	125	12.03	33.53	4.93	25.46	253	0.40
139	11.02	33.50 7	4.69	237	150	10.44	33.53	4.53	25.75	225	0.46
159	10.04	-	-	-	200	8.89	33.86	3.59	26.27	176	0.56
189	9.14	33.80 5	3.80	185	250	8.01	33.98	2.72	26.49	155	0.64
218	8.52	33.92 3	3.29	166	300	7.33	34.03	1.99	26.64	141	0.72
247	8.07	33.97 5	2.77	156	400	6.50	34.13	0.97	26.83	123	0.86
296	7.38	34.03 1	2.01	142	500	5.84	34.22	0.49	26.98	109	0.98
350	6.83	34.08 4	1.39	131	600	5.27	34.29	0.39	27.10	97	1.09
433	6.30	34.16 7	0.74	118							
516	5.74	34.23 7	0.44	106							
601	5.26	34.29 7	0.39	96							

93.100 BLACK DOUGLAS; February 6, 1961; 1812 GCT; 30°26'N, 122°14'W; sounding, 2150 fm; wind, 320°, force 4; weather, cloudy; sea, moderate; wire angle, 10°.

0	15.92	33.42 8	5.58	337	0	15.92	33.43	5.58	24.58	337	0.00
10	15.94	33.41 7	5.73	338	10	15.94	33.42	5.73	24.57	338	0.03
30	15.92	33.43 4	5.68	336	20	15.93	33.42	5.71	24.58	337	0.07
39	15.92	33.41 9	-	337	30	15.92	33.43	5.68	24.59	336	0.10
55	15.92	33.46 6	5.49	334	50	15.92	33.45	5.53	24.60	335	0.17
70	15.53	33.42 3	4.08	329	75	15.29	33.44	4.09	24.73	323	0.25
94	13.98	33.46 7	4.40	294	100	13.94	33.48	4.44	25.05	292	0.33
114	12.95	33.51 9	4.95a)	270	125	12.57	33.53	4.94	25.36	263	0.40
134	11.92	33.53 3	4.93	250	150	10.68	33.60	4.62	25.76	224	0.46
154	10.44	-	-	-	200	8.87	33.85	3.67	26.26	177	0.56
183	9.42	33.72 7	4.01	195	250	7.91	33.97	2.80	26.50	154	0.65
217	8.43	33.93 3	3.34	165	300	7.20	34.04	1.95	26.66	139	0.72
246	7.98	33.96 9	2.85	155	400	6.46	34.16	0.87	26.85	121	0.86
295	7.26	34.03 1	2.01	141	500	5.84	34.27	0.44	27.02	105	0.98
350	6.68	34.07 8	1.40	130	600	5.21	34.34	0.26	27.15	93	1.08
433	6.31	34.20 7	0.58	115							
517	5.72	34.28 7	0.40	102							
602	5.20	34.33 9	0.26	93							



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

S10  
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6101-2

BLACK DOUGLAS; February 2, 1961; 0225 GCT; 32°46'N, 117°25.5'W; sounding, 250 fm; wind, 320°, force 3; weather, partly cloudy; sea, moderate; wire angle, 02°. a)

936.296

0	15.02	33.51	5.82	312
10	15.02	33.51 0	5.91	312
20	14.95	33.52 6	5.93	309
30	14.41	33.50 0	6.05	300
40	14.04	33.49 0	5.83	294
50	13.01	33.46 3	5.17	276
60	11.89	33.51 4	4.61	251
70	11.18	33.53 3	4.34	237
81	10.56	33.61 2	3.93	221
91	10.22	33.71 8	3.46	208
101	10.02	33.74 9	3.30	203
111	9.89	33.76 8	3.28	199
121	9.62	33.83 6	3.18	190
130	9.52	-	2.90	-
139	9.36	33.90 7	2.77	180
149	9.30	-	2.52	-
160	9.23	33.96 2	2.25	174
170	9.24	34.01 6	2.80u	170

a) Shakedown station.



*should be double-spaced*

SIO  
CCOFI  
6101-2

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
60.55-H	I-12	0115	37°47.5'	123°15.5'	66	300°	3	partly cloudy	very rough	12.44	33.54 7
70.55-H	10	1145	36°02.0'	122°05.0'	800	320°	3	clear	very rough	13.23	33.36 5
80.65-H	7	1035	33°56.0'	121°30.5'	1800	260°	1	partly cloudy	moderate	13.80	33.34 5
90.65-H	22	1855	32°10.0'	120°13.0'	1890	120°	1	partly cloudy	rough	14.86	33.46 1
100.55-M	29	0243	30°50.0'	118°27.0'	1280	340°	2	partly cloudy	rough	15.76	33.46 8
100.65-M	29	0905	30°31.0'	119°07.0'	1800	360°	2	overcast	rough	15.77	33.51 7
110.33-M	II-2	2110	29°49.0'	115°52.0'	47	320°	4	overcast	rough	15.67	33.64 8
110.45-M	2	1220	29°24.5'	116°33.0'	380	360°	4	overcast	rough	16.22	33.70 9
110.55-M	2	0446	29°05.5'	117°16.5'	2000	360°	5	cloudy	very rough	16.58	33.57 9
110.65-M	1	1800	28°47.0'	118°00.0'	1920	360°	6	cloudy	rough	16.52	33.57 9
120.40-M	3	1030	27°56.0'	115°14.0'	25	330°	6	cloudy	rough	16.49	33.84 0
120.55-M	3	2125	27°22.5'	116°12.0'	2000	330°	5	cloudy	rough	17.12	33.90 3
120.65-M	4	0400	27°02.5'	116°51.5'	2050	330°	6	overcast	rough	16.98	33.68 9
130.35-M	8	0840	26°19.5'	113°45.0'	60	350°	3	partly cloudy	moderate	17.98	34.07 9
130.45-M	8	0250	25°59.0'	114°27.0'	1950	010°	1	partly cloudy	moderate	18.30	34.04 8
130.55-M	7	2030	25°39.0'	115°04.0'	1980	350°	1	partly cloudy	slight	17.66	33.90 7
137.35-M	9	0440	25°10.5'	113°06.0'	600	320°	4	clear	moderate	18.50	34.08 6
137.45-M	9	1130	24°47.0'	113°48.0'	1800	360°	4	partly cloudy	rough	19.20	34.22 8
137.55-M	9	1750	24°30.0'	114°20.0'	1930	360°	4	partly cloudy	rough	18.30	34.05 8

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
82.47-B	II-4	2230	34°15.0'	119°58.0'	300	320°	3	clear	moderate	-	33.62
83.40-B	5	0255	34°14.0'	119°22.0'	11	290°	3	clear	moderate	14.84	33.65
83.43-B	5	0105	34°08.0'	119°34.0'	130	290°	2	partly cloudy	moderate	14.44	33.62
83.51-B	4	1903	33°52.0'	120°07.5'	75	320°	3	clear	moderate	13.56	33.58
83.55-B	4	1645	33°44.0'	120°24.5'	520	320°	6	clear	rough	13.96	33.62
83.65-B	4	0820	33°27.5'	121°09.0'	-	320°	7	cloudy	rough	14.34	33.33
83.70-B	4	0520	33°16.0'	121°28.0'	2100	320°	7	partly cloudy	rough	14.50	33.42
83.80-B	4	0000	32°56.0'	122°05.0'	2200	320°	6	partly cloudy	rough	15.09	33.57
87.35-B	5	0740	33°50.0'	118°37.5'	300	350°	2	clear	slight	14.92	33.61
87.40-B	5	1020	33°39.5'	118°58.0'	420	310°	3	clear	moderate	15.08	33.65
87.45-B	5	1300	33°30.0'	119°19.0'	920	310°	3	clear	moderate	14.33	33.58
87.50-B	5	1510	33°20.0'	119°39.5'	40	310°	3	clear	moderate	13.70	33.52
87.55-B	5	1755	33°10.0'	120°00.5'	650	270°	2	clear	moderate	13.91	33.46
87.60-B	5	2015	33°00.0'	120°21.5'	400	300°	2	clear	moderate	13.94	33.50
87.65-B	5	2315	32°50.0'	120°45.0'	2000	320°	3	clear	moderate	14.98	33.55
87.70-B	6	0125	32°40.0'	121°06.0'	2100	320°	2	partly cloudy	moderate	14.93	33.53
87.80-B	6	0600	32°19.5'	121°43.0'	2200	270°	3	partly cloudy	moderate	15.08	33.60
93.35-B	8	0915	32°40.5'	117°51.5'	300	320°	2	partly cloudy	slight	15.07	33.60
93.65-B	7	1415	31°44.5'	119°57.0'	2050	320°	5	cloudy	rough	15.53	33.42

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

SIO  
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6101-2



Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
97.30-B	II-10	0120	32°16.0'	117°07.0'	30	280°	2	partly cloudy	moderate	14.88	33.59
97.32-B	10	0230	32°12.0'	117°15.0'	650	300°	2	partly cloudy	moderate	15.16	33.57
97.35-B	10	0420	32°05.5'	117°27.5'	620	270°	2	clear	moderate	16.08	33.64
97.40-B	10	0640	31°56.0'	117°48.0'	820	270°	3	clear	moderate	16.16	33.62
97.45-B	10	0855	31°46.0'	118°08.5'	700	320°	4	clear	moderate	16.14	33.64
97.50-B	10	1120	31°36.0'	118°29.0'	1100	320°	4	partly cloudy	rough	15.69	33.59
97.55-B	10	1415	31°25.5'	118°49.5'	380	320°	4	cloudy	rough	15.58	33.64
97.60-B	10	1700	31°15.5'	119°10.0'	1850	320°	3	cloudy	rough	15.58	33.64
97.65-B	10	1930	31°05.0'	119°30.5'	1900	320°	4	cloudy	rough	15.22	33.57
97.70-B	10	2150	30°57.0'	119°48.0'	1800	320°	4	cloudy	rough	15.24	33.58
97.80-B	11	0245	30°35.0'	120°31.0'	2100	320°	3	cloudy	moderate	15.38	33.58
103.30-B	12	1245	31°06.0'	116°24.5'	40	320°	5	partly cloudy	rough	14.72	33.59
103.35-B	12	1035	30°56.0'	116°45.0'	900	320°	5	partly cloudy	rough	15.25	33.62
103.40-B	12	0720	30°46.0'	117°04.5'	1000	320°	5	partly cloudy	rough	15.74	33.67
103.45-B	12	0435	30°36.0'	117°24.0'	1080	320°	5	partly cloudy	rough	15.78	33.76
103.50-B	12	0200	30°26.0'	117°44.5'	1400	330°	4	cloudy	moderate	16.01	33.58
103.55-B	11	2305	30°16.0'	118°05.0'	1000	320°	3	cloudy	moderate	15.95	33.64
103.60-B	11	2045	30°06.0'	118°25.0'	1700	320°	3	cloudy	moderate	15.88	33.57
103.65-B	11	1815	29°56.5'	118°44.0'	1680	320°	3	cloudy	moderate	15.88	33.56

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
103.70-B	II-11	1537	29°46.5'	119°04.0'	1800	320°	3	cloudy	moderate	15.83	33.50
103.80-B	11	1045	29°26.5'	119°44.0'	1900	320°	3	partly cloudy	moderate	15.77	33.50
107.32-B	12	1740	30°26.0'	116°11.0'	340	320°	5	cloudy	rough	15.38	33.63
107.35-B	12	1920	30°21.5'	116°22.5'	900	320°	6	cloudy	rough	15.71	33.69
107.40-B	12	2210	30°11.0'	116°42.0'	1800	320°	6	cloudy	rough	15.16	33.62
107.45-B	13	0040	30°01.5'	117°02.0'	700	320	6	partly cloudy	rough	15.82	33.63
107.50-B	13	0335	29°50.5'	117°23.0'	1500	320°	6	partly cloudy	very rough	15.96	33.56
107.55-B	13	0635	29°39.0'	117°41.0'	1700	320°	6	partly cloudy	rough	16.00	33.58
107.60-B	13	0845	29°28.0'	117°58.0'	1800	320°	6	partly cloudy	very rough	15.88	33.58
107.65-B	13	1125	29°20.0'	118°20.0'	1400	320°	5	cloudy	rough	16.12	33.55
107.70-B	13	1350	29°11.0'	118°41.0'	1450	320°	5	cloudy	rough	16.55	33.70
107.80-B	13	1820	28°51.5'	119°20.5'	1980	320°	5	cloudy	very rough	16.32	33.60
113.30-B	15	0630	29°22.0'	115°18.0'	24	300°	3	clear	rough	15.50	33.85
113.35-B	15	0350	29°11.5'	115°38.0'	700	320°	5	partly cloudy	rough	15.93	33.69
113.40-B	15	0115	29°02.0'	115°57.0'	1000	320°	5	partly cloudy	rough	16.22	33.73
113.45-B	14	2230	28°52.0'	116°18.0'	1400	320°	5	clear	rough	16.20	33.76
113.50-B	14	1920	28°44.0'	116°39.0'	1840	320°	4	partly cloudy	rough	15.98	33.60
113.55-B	14	1735	28°41.0'	116°56.0'	1780	330°	4	partly cloudy	rough	15.90	33.58
113.60-B	14	1345	28°27.0'	117°23.0'	1900	330°	5	partly cloudy	rough	16.08	33.64

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

SIO  
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6101-2



Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
113.65-B	11-14	1105	28°15.0'	117°41.0'	2000	320°	5	partly cloudy	rough	17.00	33.91
113.70-B	14	0815	28°05.0'	117°58.0'	1800	320°	5	clear	rough	17.07	33.93
113.80-B	14	0250	27°42.0'	118°33.5'	2000	330°	5	cloudy	rough	16.80	33.80
117.26-B	15	1120	28°56.0'	114°41.5'	40	320°	4	clear	moderate	16.48	33.94
117.30-B	15	1320	28°48.0'	114°56.5'	55	320°	3	partly cloudy	moderate	15.50	33.70
117.35-B	16	0520	28°38.0'	115°16.0'	120	290°	4	cloudy	rough	16.59	33.93
117.40-B	16	0805	28°28.0'	115°35.5'	480	320°	5	cloudy	rough	16.49	33.93
117.45-B	16	2230	28°18.0'	115°56.0'	1700	320°	5	cloudy	rough	16.59	33.90
117.50-B	17	0055	28°08.0'	116°15.0'	2500	330°	5	partly cloudy	rough	16.34	33.87
117.55-B	17	0305	27°58.0'	116°34.5'	2000	300°	5	cloudy	rough	16.91	33.94
117.60-B	17	0605	27°48.0'	116°53.0'	1800	320°	4	cloudy	rough	16.92	33.83
117.65-B	17	0830	27°37.5'	117°13.5'	2000	320°	4	partly cloudy	rough	17.02	33.87
117.70-B	17	1110	27°28.0'	117°32.5'	2000	310°	5	drizzle	rough	16.82	33.77
117.80-B	17	1600	27°08.0'	118°10.5'	2100	310°	4	overcast	high	16.58	33.80
118.39-B	16	1000	28°18.5'	115°23.5'	140	300°	5	cloudy	rough	16.78	33.95
119.33-B	16	0130	28°19.0'	114°53.0'	60	320°	4	partly cloudy	rough	16.60	33.95
120.25-B	15	1830	28°22.5'	114°15.0'	30	090°	1	cloudy	slight	16.58	33.73
120.30-B	15	2045	28°13.0'	114°34.0'	50	320°	4	clear	slight	16.46	33.89
120.35-B	15	2325	28°03.0'	114°54.0'	45	340°	4	clear	moderate	15.94	33.78

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
123.37-B	II-18	2040	27°24.0'	114°40.0'	40	300°	4	partly cloudy	moderate	15.82	33.86
123.42-B	18	1330	27°14.0'	114°59.0'	850	320°	5	partly cloudy	rough	16.04	33.84
123.45-B	18	1150	27°08.0'	115°11.5'	2000	310°	5	partly cloudy	rough	16.98	33.93
123.50-B	18	0905	26°58.0'	115°31.0'	2000	300°	5	cloudy	rough	17.12	33.83
123.55-B	18	0625	26°48.0'	115°49.5'	1980	300°	4	partly cloudy	very rough	16.99	33.78
123.60-B	18	0320	26°38.5'	116°09.0'	2000	320°	4	cloudy	very rough	17.46	33.89
127.34-B	19	0120	26°55.0'	114°06.5'	44	270°	6	cloudy	rough	16.28	33.86
127.40-B	19	0400	26°43.5'	114°29.0'	1600	320°	6	partly cloudy	rough	17.52	33.96
127.45-B	19	0630	26°33.0'	114°48.5'	1850	320°	7	partly cloudy	very rough	17.22	34.04
127.50-B	19	0900	26°23.0'	115°07.0'	1800	320°	6	overcast	rough	16.92	33.84
127.55-B	19	1130	26°14.0'	115°25.0'	2000	320°	6	overcast	very rough	17.68	34.04
127.60-B	19	1355	26°05.0'	115°43.0'	1800	320°	6	overcast	rough	17.56	33.99
133.25-B	20	1735	26°04.5'	112°48.0'	40	320°	4	clear	rough	16.62	34.08
133.30-B	20	1350	25°49.0'	113°16.5'	80	320°	4	clear	rough	17.64	34.08
133.35-B	20	1100	25°40.5'	113°34.0'	300	330°	5	clear	rough	17.82	34.05
133.40-B	20	0815	25°31.5'	113°50.5'	2000	330°	5	clear	rough	18.15	34.07
133.45-B	20	0535	25°22.0'	114°07.5'	1750	320°	5	clear	rough	17.50	33.87
133.50-B	20	0240	25°13.5'	114°25.0'	2000	330°	5	partly cloudy	rough	17.51	33.93
133.55-B	20	0015	25°04.5'	114°43.0'	1950	330°	5	partly cloudy	rough	18.12	34.07
133.60-B	19	2140	24°54.5'	115°02.0'	2000	330°	5	cloudy	rough	18.31	34.13

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

SIO  
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6101-2



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

USCG  
STATION  
NOVEMBER

USCGC MINNETONKA; January 25, 1961; 2228 GCT; 30°02'N, 139°56'W; sounding, 2310 fm; wind, 320°, force 3; weather, cloudy; sea, high; wire angle, 38°.

H-1

2	17.98	34.79 6	4.83	283	0	(17.98)	(34.80)	(4.83)	(25.14)	(283)	(0.00)
10	17.96	34.79 1	4.92	283	10	17.96	34.79	4.92	25.14	283	0.03
21	17.93	34.78 4	4.77	283	20	17.93	34.78	4.77	25.14	283	0.06
54	17.95	34.79 7	4.85	283	30	17.93	34.79	4.80	25.14	283	0.09
61	17.92	34.79 2	4.71	282	50	17.94	34.79	4.84	25.14	283	0.14
77	17.97	34.78 6	4.68	284	75	17.96	34.79	4.69	25.13	284	0.21
87	17.92	34.79 4	4.86	282	100	17.94	34.78	4.86	25.14	283	0.28
98	17.94	34.78 3	4.86	283	125	16.46	34.52	4.74	25.29	269	0.35
119	16.84	34.58 1	4.78	273	150	14.91	34.26	4.75	25.44	255	0.42
135	15.98	34.44 0	4.69	264	200	12.20	34.01	4.73	25.80	221	0.54
154	14.62	34.21 4	-	252	250	10.68	34.02	4.67	26.09	193	0.65
177	13.50	34.11 1	4.93	237	300	9.39	34.03	4.45	26.32	171	0.74
197	12.37	34.01 1	4.76	224	400	7.49	33.98	3.47	26.57	148	0.91
228	11.24	34.00 2	4.69	204	500	(6.15)	(34.03)	(2.43)	(26.79)	(127)	(1.05)
270	10.20	34.03 9	4.64	184							
339	8.53	34.01 4	4.10	160							
411	7.32	33.98 1	3.35	145							
480	6.38	34.01 3	2.59	131							

USCGC MINNETONKA; January 26, 1961; 2039 GCT; 30°10'N, 140°06'W; sounding, 2575 fm; wind, 180°, force 6; weather, cloudy; sea, high; wire angle, 45°.

H-2

3	18.06	34.84 0	5.04	282	0	(18.06)	(34.84)	(5.04)	(25.15)	(282)	(0.00)
10	18.05	34.83 8	5.02	282	10	18.05	34.84	5.02	25.15	282	0.03
28	18.04	34.84 3	4.94	282	20	18.04	34.84	4.97	25.15	282	0.06
48	18.03	34.83 7	5.05	282	30	18.04	34.84	4.95	25.15	282	0.08
56	18.00	34.84 4	5.03	280	50	18.02	34.84	5.04	25.16	281	0.14
70	18.03	34.83 6	4.98	281	75	18.02	34.84	5.01	25.16	281	0.21
80	18.02	34.83 9	5.05	281	100	18.02	34.83	4.99	25.16	281	0.28
89	18.03	34.83 9	4.99	281	125	18.02	34.83	5.03	25.16	281	0.35
108	18.01	34.83 2	5.00	281	150	17.00	34.67	4.96	25.29	270	0.42
120	18.02	34.83 1	5.03	281	200	12.98	34.05	4.88	25.68	232	0.55
138	17.79	34.80 4	5.01	278	250	10.64	34.01	4.68	26.09	193	0.66
157	16.43	34.56 5	4.94	265	300	9.52	34.05	4.60	26.31	172	0.76
172	14.91	34.26 6	5.05	254	400	7.19	33.98	3.30	26.61	144	0.92
200	12.98	34.05 0	4.88	232							
237	11.01	33.99 8	4.70	200							
304	9.44	34.04 7	4.58	171							
373	7.84	33.99 5	3.91	151							
437	6.38	33.98 4	2.36	133							

USCGC MINNETONKA; January 27, 1961; 1926 GCT; 30°00'N, 140°00'W; sounding, 2650 fm; wind, 160°, force 4; weather, rain; sea, very rough; wire angle, 37°.

H-3

1	17.85	34.76 4	5.07	282	0	(17.85)	(34.76)	(5.07)	(25.15)	(282)	(0.00)
9	17.82	34.75 7	5.09	282	10	17.82	34.76	5.09	25.15	282	0.03
29	17.80	34.75 4	4.98	282	20	17.81	34.75	5.03	25.15	282	0.06
53	17.82	34.76 4	5.02	282	30	17.80	34.75	4.98	25.15	282	0.08
61	17.80	34.75 9	5.03	282	50	17.82	34.77	5.01	25.15	282	0.14
77	17.80	34.75 7	4.97	282	75	17.80	34.76	4.98	25.15	282	0.21
89	17.80	34.75 9	5.03	282	100	17.81	34.76	5.03	25.15	282	0.28
100	17.81	34.75 9	5.03	282	125	17.53	34.70	5.05	25.17	280	0.35
122	17.66	34.71 9	5.06	282	150	16.09	34.46	5.00	25.33	265	0.42
137	17.01	34.60 8	5.02	275	200	12.47	34.00	4.84	25.73	227	0.55
159	15.12	34.31 2	4.97	255	250	10.44	34.03	4.74	26.14	188	0.65
184	13.30	34.07 2	4.87	237	300	9.78	34.06	4.61	26.28	175	0.75
205	12.20	33.98 4	4.82	222	400	7.56	33.99	3.62	26.57	148	0.92
242	10.59	34.02 9	4.76	191	500	5.97	34.00	1.94	26.80	126	1.06
291	9.95	34.06 1	4.65	178							
370	8.26	34.01 3	4.13	156							
451	6.58	33.98 0	2.61	135							
520	5.76	34.01 4	1.71	123							



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OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

H-4 USCGC MINNETONKA; January 28, 1961; 1931 GCT; 30°00'N, 140°08'W; sounding, 2300 fm; wind, 270°, force 4; weather, cloudy; sea, high; wire angle, 25°.

1	18.06	34.81 6	5.06	284	0	(18.06)	(34.82)	(5.06)	(25.13)	(284)	(0.00)
10	18.02	34.81 0	5.05	283	10	18.02	34.81	5.05	25.14	283	0.03
34	18.02	34.81 2	4.94	283	20	18.02	34.81	5.00	25.14	283	0.06
63	18.00	34.81 3	5.03	283	30	18.02	34.81	4.95	25.14	283	0.09
73	17.98	34.81 0	5.09	282	50	18.01	34.81	4.98	25.14	283	0.14
92	18.01	34.81 0	5.02	283	75	17.98	34.81	5.08	25.15	282	0.21
105	17.96	34.81 1	5.01	282	100	17.97	34.81	5.01	25.15	282	0.28
120	17.85	34.78 4	5.06	281	125	17.17	34.64	5.06	25.22	276	0.36
147	15.18	34.26 9	5.06	260	150	15.06	34.26	5.05	25.40	258	0.42
165	14.55	34.21 6	5.03	251	200	12.33	34.00	5.01	25.77	223	0.54
193	12.69	34.02 4	5.06	228	250	10.54	34.00	4.80	26.09	193	0.65
224	11.34	33.96 1	4.81	209	300	9.21	34.04	4.59	26.35	168	0.74
252	10.48	33.99 9	4.80	192	400	7.34	33.99	3.40	26.60	145	0.91
299	9.22	34.04 1	4.60	168	500	5.92	34.04	1.76	26.83	123	1.05
357	8.16	34.00 4	4.06	155	600	5.15	34.13	0.86	27.00	107	1.17
449	6.49	33.99 0	2.52	134							
535	5.60	34.07 7	1.30	117							
605	5.12	34.13 3	0.82	107							

H-5 USCGC MINNETONKA; January 29, 1961; 1943 GCT; 29°54'N, 140°06'W; sounding, 2000 fm; wind, 220°, force 5; weather, rain; sea, very high; wire angle, 35°.

3	17.84	34.76 9	5.01	282	0	(17.84)	(34.77)	(5.01)	(25.15)	(282)	(0.00)
11	17.84	34.79 6	5.02	280	10	17.84	34.80	5.02	25.17	280	0.03
32	17.83	34.78 1	4.98	281	20	17.83	34.79	5.00	25.17	280	0.06
56	17.83	34.79 2	5.02	280	30	17.83	34.78	4.99	25.17	281	0.08
64	17.82	34.79 0	5.01	280	50	17.83	34.79	5.01	25.17	280	0.14
81	17.84	34.80 1	5.01	280	75	17.83	34.80	5.00	25.17	280	0.21
92	17.82	34.78 4	5.04	280	100	17.82	34.78	5.03	25.16	281	0.28
104	17.82	34.78 1	5.02	281	125	17.75	34.75	4.97	25.17	280	0.35
127	17.71	34.74 3	4.97	280	150	15.78	34.42	5.00	25.37	261	0.42
141	16.22	34.49 3	5.01	265	200	12.31	34.01	4.75	25.78	223	0.54
163	15.15	34.32 6	4.93	255	250	10.44	34.01	4.67	26.12	190	0.65
187	13.02	34.05 6	4.75	232	300	9.42	34.04	4.46	26.32	172	0.74
208	11.92	33.98 6	4.76	217	400	7.39	34.00	3.45	26.60	145	0.91
245	10.57	34.00 9	4.68	192	500	(6.00)	(34.01)		(26.80)	(126)	(1.05)
295	9.54	34.03 9	4.49	173							
377	7.76	34.00 3	3.76	149							
455	6.58	33.99 8	2.56	134							

H-6 USCGC MINNETONKA; January 30, 1961; 2243 GCT; 30°00'N, 139°44'W; sounding, 2550 fm; wind, 180°, force 6; weather, clear; sea, very high; wire angle, 22°.

3	18.16	34.85 6	5.14	283	0	(18.16)	(34.86)	(5.14)	(25.14)	(283)	(0.00)
12	18.14	34.84 1	5.07	283	10	18.15	34.85	5.09	25.14	283	0.03
26	18.06	34.82 7	5.05	283	20	18.08	34.83	5.06	25.14	283	0.06
54	18.02	34.83 5	5.12	281	30	18.03	34.83	5.06	25.14	283	0.09
72	18.00	34.81 1	5.05	283	50	18.02	34.83	5.10	25.16	281	0.14
91	17.94	34.79 0	5.08	283	75	17.99	34.81	5.05	25.14	283	0.21
105	17.90	34.78 8	5.07	282	100	17.91	34.79	5.07	25.15	282	0.28
119	17.83	34.78 3	5.07	281	125	17.79	34.78	5.07	25.17	280	0.36
147	15.88	34.41 7	5.01	264	150	15.76	34.39	5.02	25.36	263	0.42
166	14.92	34.27 0	5.03	254	200	12.27	33.98	5.04	25.76	225	0.55
194	12.55	33.99 2	5.05	228	250	10.49	33.99	4.85	26.10	192	0.65
227	11.26	33.96 7	4.90	207	300	9.39	34.03	4.65	26.32	172	0.75
256	10.31	33.99 7	4.83	189	400	7.46	33.99	3.56	26.58	147	0.91
303	9.36	34.03 0	4.60	171	500	5.97	34.02	2.01	26.81	125	1.06
364	8.11	33.99 7	4.03	155	600	5.17	34.10	1.13	26.96	111	1.18
460	6.44	33.98 7	2.58	133							
548	5.47	34.05 4	1.49	117							
622	5.06	34.11 2	0.98	108							



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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USCGC MINNETONKA; January 31, 1961; 1950 GCT; 30°07'N, 139°59'W; sounding, 2700 fm; wind, 220°, force 5; weather, rain; sea, high; wire angle, 38°.

H-7

2	18.14	34.79 4	5.08	288	0	(18.14)	(34.79)	(5.08)	(25.10)	(288)	(0.00)
10	18.14	34.81 9	5.10	286	10	18.14	34.82	5.10	25.11	286	0.03
29	18.16	34.83 7	4.93	285	20	18.15	34.83	5.01	25.12	285	0.06
54	18.16	34.84 0	4.97	285	30	18.16	34.84	4.93	25.12	285	0.09
62	18.16	34.84 4	4.97	284	50	18.16	34.84	4.97	25.12	285	0.14
77	18.15	34.84 0	4.95	285	75	18.15	34.84	4.95	25.12	285	0.21
84	18.13	34.85 3	4.98	283	100	18.09	34.84	5.00	25.15	283	0.29
98	18.10	34.84 5	5.00	283	125	17.64	34.74	5.00	25.18	280	0.36
120	17.82	34.76 2	5.01	282	150	15.55	34.39	5.00	25.40	258	0.43
132	16.92	34.62 6	4.99	271	200	12.30	34.02	4.80	25.79	222	0.55
150	15.55	34.39 4	5.00	258	250	10.56	34.02	4.74	26.11	191	0.65
172	14.48	34.22 9	4.98	248	300	9.61	34.05	4.59	26.30	173	0.75
191	12.89	34.05 0	4.81	230	400	7.52	34.00	3.59	26.58	146	0.91
225	11.10	33.98 8	4.81	202	500	(5.97)	(34.01)		(26.80)	(126)	(1.06)
272	10.17	34.05 2	4.66	182							
349	8.58	34.11 2u	4.40	-							
423	7.06	33.99 3	3.09	141							
490	6.08	34.00 7	1.99	128							

USCGC MINNETONKA; February 1, 1961; 1900 GCT; 29°56'N, 140°08'W; sounding, 2600 fm; wind, 180°, force 5; weather, rain; sea, high; wire angle, 35°.

H-8

3	18.06	34.80 0	5.05	285	0	(18.06)	(34.80)	(5.05)	(25.12)	(285)	(0.00)
19	18.07	34.80 3	5.07	285	10	18.07	34.80	5.07	25.12	285	0.03
32	18.05	34.79 7	5.04	285	20	18.07	34.80	5.07	25.12	285	0.06
57	18.04	34.79 1	5.02	285	30	18.05	34.80	5.04	25.12	285	0.09
65	18.02	34.78 8	5.05	285	50	18.04	34.79	5.02	25.12	285	0.14
82	17.99	34.78 5	5.05	284	75	18.00	34.79	5.05	25.12	285	0.21
94	17.98	34.78 6	5.07	284	100	17.97	34.79	5.06	25.14	283	0.29
106	17.97	34.79 6	5.05	283	125	18.18	34.88	5.01	25.16	282	0.36
129	18.20	34.89 8	5.01	281	150	16.10	34.47	5.03	25.34	265	0.43
146	16.45	34.53 7	5.02	268	200	12.91	34.01	5.02	25.67	233	0.55
169	14.55	34.21 2	5.15	251	250	10.49	33.99	4.71	26.11	191	0.66
195	13.16	34.03 5	5.04	236	300	9.32	34.04	4.50	26.34	169	0.76
218	12.04	33.97 2	4.98	221	400	7.20	33.99	3.25	26.62	143	0.92
257	10.14	34.00 4	4.63	185	500	5.87	34.02	1.80	26.82	124	1.06
309	9.13	34.04 2	4.47	167							
393	7.31	33.98 5	3.36	145							
473	6.16	34.00 2	2.11	129							
546	5.40	34.04 4	1.36	117							

USCGC MINNETONKA; February 2, 1961; 2017 GCT; 29°46'N, 140°07'W; sounding, 2000+ fm; wind, 120°, force 2; weather, overcast; sea, high; wire angle, 21°.

H-9

1	18.70	34.92 3	4.96	291	0	(18.70)	(34.92)	(4.96)	(25.06)	(291)	(0.00)
10	18.68	34.91 9	4.99	291	10	18.68	34.92	4.99	25.06	291	0.03
29	18.66	34.92 5	4.94	291	20	18.67	34.92	4.97	25.06	291	0.06
57	18.64	34.93 0	4.92	289	30	18.66	34.93	4.94	25.06	291	0.09
66	18.62	34.93 0	4.88	289	50	18.65	34.93	4.92	25.07	290	0.15
80	18.64	34.93 9	4.92	289	75	18.62	34.93	4.90	25.09	289	0.22
95	18.76	35.00 8	4.92	286	100	18.74	34.99	4.92	25.11	286	0.29
109	18.13	34.82 3	4.94	285	125	17.72	34.77	4.95	25.18	279	0.36
132	17.57	34.75 2	4.95	277	150	16.98	34.67	4.92	25.29	269	0.43
151	16.93	34.66 3	4.92	269	200	13.28	34.07	4.92	25.63	237	0.56
181	14.78	34.27 3	4.92	251	250	11.00	34.02	4.78	26.03	199	0.67
208	12.72	34.01 2	4.91	230	300	9.59	34.05	4.59	26.30	173	0.77
237	11.44	33.99 1	4.82	209	400	7.48	34.03	3.35	26.61	144	0.93
285	9.94	34.05 0	4.68	179							
339	8.75	34.05 3	4.26	160							
422	7.00	34.01 0	3.01	139							



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OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

H-10 USCGC MINNETONKA; February 3, 1961; 1948 GCT; 30°03'N, 140°09'W; sounding, 2600 fm; wind, 160°, force 5; weather, partly cloudy; sea, high; wire angle, 40°.

2	18.42	34.85 3	5.08	290	0	(18.42)	(34.85)	(5.08)	(25.07)	(290)	(0.00)
10	18.40	34.84 3	5.12	290	10	18.40	34.84	5.12	25.07	290	0.03
29	18.33	34.83 5	5.07	288	20	18.37	34.84	5.10	25.08	289	0.06
51	18.26	34.82 0	5.11	288	30	18.33	34.84	5.07	25.09	288	0.09
59	18.17	34.80 1	5.10	287	50	18.26	34.83	5.11	25.09	288	0.14
74	18.84a)	35.03 1a)	5.00	287	75	18.84	35.03	5.00	25.11	287	0.22
84	18.23	34.85 8	5.11	285	100	18.16	34.84	5.08	25.13	284	0.29
94	18.18	34.83 9	5.08	285	125	18.01	34.83	5.08	25.16	282	0.36
115	18.08	34.83 7	5.09	283	150	16.00	34.50	5.05	25.38	260	0.43
130	17.94	34.82 7	5.07	280	200	13.27	34.16	5.02	25.71	230	0.55
149	16.06	34.51 4	5.05	261	250	11.44	34.05	4.87	25.98	204	0.66
174	14.90	34.30 1	5.03	252	300	9.89	34.04	4.64	26.24	179	0.76
197	13.41	34.17 1	5.01	231	400	7.79	34.02	3.87	26.56	149	0.93
232	12.14	34.07 0	4.95	215	500	6.17	34.02	2.21	26.78	128	1.08
281	10.36	34.03 6	4.71	186							
359	8.70	34.04 7	4.46	160							
436	7.02	33.99 3	3.24	141							
505	6.10	34.02 0	2.08	127							

H-11 USCGC MINNETONKA; February 4, 1961; 1840 GCT; 30°00'N, 139°57'W; sounding, 2650 fm; wind, 180°, force 5; weather, cloudy; sea, high; wire angle, 32°.

10	17.98	34.80 1	5.20	283	0	(17.98)	(34.80)		(25.14)	(283)	(0.00)
18	17.96	34.79 6	5.25	283	10	17.98	34.80	5.20	25.14	283	0.03
39	17.95	34.80 4	5.13	282	20	17.96	34.80	5.24	25.14	283	0.06
64	17.92	34.77 9	5.14	283	30	17.95	34.80	5.20	25.15	282	0.08
72	17.90	34.76 8	5.11	283	50	17.95	34.79	5.12	25.15	282	0.14
87	17.90	34.76 6	5.11	284	75	17.90	34.77	5.10	25.14	283	0.21
100	17.86	34.77 4	5.13	282	100	17.86	34.77	5.13	25.15	282	0.28
111	17.83	34.77 9	5.15	281	125	17.30	34.69	5.13	25.23	275	0.35
134	16.74	34.59 2	5.08	270	150	15.50	34.36	5.12	25.39	259	0.42
152	15.34	34.33 6	5.14	258	200	12.60	34.03	4.96	25.74	226	0.54
176	14.06	34.14 3	5.14	246	250	10.36	33.98	4.78	26.13	190	0.65
206	12.24	34.01 4	4.93	221	300	9.23	34.02	4.58	26.33	170	0.74
232	10.86	33.97 0	4.82	200	400	7.29	33.98	3.30	26.60	144	0.91
275	9.77	34.01 4	4.69	179	500	5.89	34.01	1.96	26.81	125	1.05
331	8.62	34.01 3	4.32	161							
420	6.95	33.98 1	3.02	141							
504	5.84	34.01 0	1.93	124							
575	5.24	34.08 7	1.11	112							

H-12 USCGC MINNETONKA; February 5, 1961; 1838 GCT; 30°00'N, 139°58'W; sounding, 2300 fm; wind, 200°, force 3; weather, rain; sea, high; wire angle, 16°.

12	18.12	34.78 8	5.13	287	0	(18.12)	(34.79)		(25.10)	(287)	(0.00)
21	18.12	34.79 3	5.09	287	10	18.12	34.79		25.10	287	0.03
45	18.13	34.79 9	5.09	287	20	18.12	34.79	5.10	25.10	287	0.06
73	18.50	34.95 1	5.01	285	30	18.12	34.79	5.09	25.10	287	0.09
83	18.55	34.97 3	4.96	284	50	18.18	34.82	5.07	25.11	286	0.14
101	18.55	34.97 4	4.96	284	75	18.51	34.96	5.00	25.12	285	0.22
116	18.44	34.95 8	5.03	283	100	18.55	34.97	4.96	25.13	284	0.29
130	17.62	34.78 4	4.96	276	125	17.71	34.79	4.97	25.20	277	0.36
158	14.44	34.20 2	5.01	249	150	15.17	34.30	5.00	25.41	257	0.43
175	13.01	34.04 7	5.00	233	200	11.79	33.96	4.96	25.84	216	0.55
203	11.64	33.95 6	4.94	215	250	10.10	34.01	4.70	26.18	185	0.65
235	10.50	33.98 6	4.74	193	300	9.08	34.03	4.48	26.36	167	0.74
265	9.76	34.02 6	4.66	177	400	7.27	34.00	3.44	26.61	144	0.90
311	8.87	34.02 4	4.42	164	500	5.81	34.02	1.81	26.83	123	1.04
374	7.76	33.99 7	3.86	150							
481	6.02	34.01 1	2.02	127							
561	5.25	34.09 1	1.20	112							

a) The temperature and salinity values were carefully verified; they result in a smooth density-depth structure. Compare also Station 12.



OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

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USCGC MINNETONKA; February 6, 1961; 1937 GCT; 29°51'N, 139°57'W; sounding, 2000 fm; wind, 090°, force 2; weather, cloudy; sea, high; wire angle, 08°.

H-13

2	18.06	34.75 9	5.11	288	0	(18.06)	(34.76)	(5.11)	(25.09)	(288)	(0.00)
12	18.03	34.75 2	5.09	287	10	18.03	34.75	5.09	25.09	288	0.03
32	18.02	34.75 1	5.08	287	20	18.02	34.75	5.09	25.10	287	0.06
62	17.95	34.82 8	5.07	280	30	18.02	34.75	5.08	25.10	287	0.09
72	17.92	34.78 8	4.94	282	50	17.98	34.80	5.07	25.15	282	0.14
87	17.98	34.82 1	5.00	281	75	17.92	34.79	4.95	25.15	282	0.21
102	17.87	34.79 6	5.05	281	100	17.88	34.80	5.04	25.17	281	0.28
118	17.56	34.73 4	5.01	278	125	16.79	34.61	4.99	25.29	270	0.36
142	15.48	34.37 7	4.96	259	150	15.10	34.32	4.96	25.45	254	0.42
163	14.66	34.26 6	4.96	249	200	12.08	33.98	4.88	25.80	220	0.54
192	12.70	34.03 6	4.95	228	250	10.48	34.04	4.72	26.14	188	0.65
222	11.08	33.96 0	4.71	205	300	9.40	34.04	4.51	26.32	171	0.74
253	10.40	34.04 0	4.73	187	400	7.47	34.01	3.46	26.59	145	0.90
303	9.34	34.04 0	4.50	170	500	5.91	34.03	1.85	26.83	124	1.04
358	8.31	34.00 4	4.10	157	600	5.07	34.12	0.98	27.00	107	1.17
442	6.55	34.00 7	2.63	133							
530	5.63	34.04 7	1.49	119							
614	4.98	34.13 9	0.87	105							

USCGC MINNETONKA; February 7, 1961; 1850 GCT; 29°57'N, 139°55'W; sounding, 2000+ fm; wind, 200°, force 3; weather, cloudy; sea, high; wire angle, 12°.

H-14

2	18.07	34.75 8	5.09	290	0	(18.07)	(34.75)	(5.09)	(25.07)	(290)	(0.00)
12	18.06	34.75 4	5.07	289	10	18.06	34.75	5.07	25.08	289	0.03
31	18.04	34.76	5.05	288	20	18.05	34.76	5.06	25.09	288	0.06
60	17.84	34.75 9	5.05	283	30	18.04	34.76	5.05	25.09	288	0.09
70	17.83	34.76 2	5.08	283	50	17.92	34.76	5.05	25.13	284	0.14
85	17.81	34.76 0	5.05	282	75	17.82	34.76	5.07	25.15	282	0.21
101	17.52	34.72 4	5.05	278	100	17.56	34.73	5.05	25.19	278	0.28
115	17.22	34.67 1	5.02	275	125	16.80	34.59	5.03	25.27	271	0.36
139	16.11	34.47 3	5.05	265	150	15.75	34.43	4.98	25.38	260	0.42
158	15.44	34.39 0	4.89	257	200	12.31	34.02	4.84	25.79	222	0.54
187	13.16	34.08 6	4.93	233	250	10.53	33.99	4.71	26.09	192	0.65
217	11.44	33.96 2	4.77	211	300	9.44	34.03	4.55	26.31	172	0.75
244	10.66	33.98 4	4.73	195	400	7.25	33.99	3.29	26.61	144	0.91
293	9.58	34.03 5	4.58	174	500	5.72	34.03	1.65	26.85	121	1.05
343	8.49	34.01 7	4.27	159	600	(5.07)	(34.11)		(26.99)	(108)	(1.17)
423	6.80	33.98 3	2.88	138							
502	5.70	34.02 7	1.64	121							
582	5.17	34.10 2	0.99	110							

USCGC MINNETONKA; February 8, 1961; 1858 GCT; 29°51'N, 140°05'W; sounding, 2575 fm; wind, 180°, force 4; weather, rain; sea, high; wire angle, 17°.

H-15

3	18.36	34.80 9	5.09	292	0	(18.36)	(34.81)	(5.09)	(25.05)	(292)	(0.00)
12	18.32	34.79 1	5.07	292	10	18.33	34.79	5.07	25.05	292	0.03
36	18.14	34.80 2	5.04	286	20	18.27	34.79	5.06	25.07	291	0.06
66	18.06	34.83 8	5.07	282	30	18.18	34.80	5.05	25.10	288	0.09
75	17.80	34.76 5	5.08	282	50	18.10	34.82	5.06	25.14	283	0.14
95	17.82	34.77 4	5.05	281	75	17.80	34.76	5.08	25.16	282	0.21
109	17.68	34.77 4	5.07	278	100	17.81	34.77	5.06	25.17	280	0.29
124	16.98	34.63 3	5.03	272	125	17.03	34.63	5.03	25.26	272	0.36
153	15.66	34.40 6	5.02	257	150	15.85	34.46	5.02	25.40	258	0.42
172	13.96	34.20 1	4.99	240	200	11.90	33.97	4.91	25.85	216	0.54
202	11.75	33.96 8	4.90	215	250	10.36	34.00	4.64	26.13	190	0.65
236	10.67	33.98 9	4.65	195	300	9.39	34.03	4.58	26.32	172	0.74
266	10.05	34.01 6	4.62	183	400	7.42	33.99	3.41	26.59	146	0.91
315	9.10	34.03 3	4.52	167	500	5.98	34.01	1.87	26.80	126	1.05
380	7.78	33.99 2	3.71	151	600	5.17	34.09	0.94	26.96	110	1.17
480	6.20	34.00 1	2.10	129							
571	5.37	34.06 1	1.18	115							
646	4.88	34.15 8	0.64	103							



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OBSERVED				COMPUTED	INTERPOLATED				COMPUTED		
Z	T	S	O <sub>2</sub>	δ <sub>T</sub>	Z	T	S	O <sub>2</sub>	σ <sub>t</sub>	δ <sub>T</sub>	ΔD
m	°C	‰	ml/L	cl/ton	m	°C	‰	ml/L	g/L	cl/ton	dyn m

H-16

USCGC MINNETONKA; February 9, 1961; 1857 GCT; 30°05'N, 139°43'W; sounding, 1900 fm; wind, 300°, force 6; weather, rain; sea, high; wire angle, 28°.

1	18.30	34.82	7	5.05	288	0	(18.30)	(34.83)	(5.05)	(25.09)	(288)	(0.00)
10	18.30	34.81	8	5.04	290	10	18.30	34.82	5.04	25.07	290	0.03
33	18.30	34.82	9	4.99	288	20	18.30	34.82	5.01	25.08	289	0.06
59	18.04	34.78	6	5.03	286	30	18.30	34.83	4.99	25.09	288	0.09
67	18.02	34.76	5	5.05	286	50	18.06	34.79	5.01	25.11	286	0.14
86	18.01	34.79	9	4.98	284	75	18.01	34.78	5.01	25.11	286	0.22
98	17.98	34.79	7	5.02	283	100	17.98	34.79	5.02	25.15	283	0.29
112	17.98	34.79	9	5.03	283	125	17.72	34.72	5.00	25.17	281	0.36
137	16.96a)	34.58	1	4.99	276	150	15.92	34.39	5.03	25.32	266	0.43
153	15.62	34.34	7	5.05	263	200	12.86	34.02	5.01	25.68	232	0.56
178	13.82	34.15	4	5.11	241	250	10.47	34.00	4.78	26.11	191	0.66
207	12.54	33.98	1	4.96	229	300	9.35	34.04	4.54	26.34	169	0.76
230	11.06	33.97	0	4.80	203	400	7.44	34.00	3.47	26.59	146	0.92
267	10.08	34.02	5	4.77	183	500	6.04	(34.00)		(26.78)	(128)	(1.06)
320	8.92	34.04	4	4.33	163							
402	7.40	33.99	5	3.45	145							
482	6.28	33.99	2	2.38	131							
550	5.48	34.13	9	-	-							

H-17

USCGC MINNETONKA; February 10, 1961; 1858 GCT; 29°59'N, 140°16'W; sounding, 2600 fm; wind, 300°, force 6; weather, partly cloudy; sea, high; wire angle, 38°.

2	18.80	34.99	0	5.05	289	0	(18.80)	(34.99)	(5.05)	(25.08)	(289)	(0.00)
10	18.80	34.98	2	5.05	289	10	18.80	34.98	5.05	25.08	289	0.03
30	18.79	34.98	5	5.03	289	20	18.80	34.98	5.04	25.08	289	0.06
53	18.82	35.00	1	5.03	288	30	18.79	34.98	5.03	25.08	289	0.09
61	18.82	35.00	0	5.05	288	50	18.81	35.00	5.03	25.09	288	0.14
77	18.86	34.99	6	5.05	290	75	18.85	34.98	5.05	25.08	290	0.22
89	18.76	34.99		5.05	289	100	18.35	34.95	5.04	25.11	287	0.29
100	18.35	34.87		5.04	287	125	17.63	34.85	4.97	25.22	276	0.36
125	17.63	34.79		4.97	246	150	16.10	34.57	4.97	25.41	258	0.43
140	16.60	34.64		4.97	263							
164	15.74	34.52		4.97	253							

H-18

USCGC MINNETONKA; February 11, 1961; 1930 GCT; 30°04'N, 140°03'W; sounding, 2500 fm; wind, 360°, force 3; weather, cloudy; sea, high; wire angle, 16°.

3	18.06	34.83		5.19	283	0	(18.06)	(34.83)	(5.19)	(25.14)	(283)	(0.00)
12	18.06	34.82		5.10	283	10	18.06	34.82	5.11	25.14	283	(0.03)
36	18.08	34.85		5.07	282	20	18.06	34.83	5.07	25.14	283	(0.06)
65	18.08	34.83		5.03	283	30	18.07	34.85	5.07	25.15	282	(0.08)
75	18.06	34.83		5.06	283	50	18.08	34.84	5.04	25.15	282	(0.14)
94	18.09	34.82		5.07	284	75	(18.06)	(34.83)	(5.06)	(25.14)	(283)	(0.21)
108	18.04	34.81		5.18	284	100	18.07	34.81	5.09	25.13	284	(0.28)
122	17.40	34.69		5.08	278	125	17.12	34.65	5.04	25.24	274	(0.36)
152	15.46	34.40		4.99	256	150	15.58	34.42	5.00	25.42	257	(0.42)
171	14.19	34.19		5.07	245	200	12.37	34.02	4.91	25.78	223	(0.54)
200	12.37	34.02	0	4.91	223	250	10.55	33.99	4.70	26.09	193	(0.65)
234	11.14	33.97	8	4.78	204	300	9.34	34.02	4.45	26.32	171	(0.74)
263	10.14	34.00	6	4.64	185	400	7.37	34.00	3.54	26.61	144	(0.91)
311	9.11	34.02	1	4.39	168	500	5.83	34.02	1.76	26.83	123	(1.05)
374	7.90	34.00	7	3.99	151	600	5.10	34.13	0.83	27.00	107	(1.17)
470	6.10	34.00	0	2.12	128							
558	5.41	34.08	4	1.10	114							
630	4.88	34.15	1	0.71	103							

a) Alternate value, 16.81°C, not used in interpolation.



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