

UNIVERSITY OF CALIFORNIA · SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL AND CHEMICAL DATA

CCOFI Cruise 6007-8

~~15~~ July - ~~29~~ August 1960

2 14

SIO Reference 62-9

1 May 1962

UNIVERSITY OF CALIFORNIA
SCRIPPS INSTITUTION OF OCEANOGRAPHY

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CCOFI CRUISE 6007-8

15² July - 29¹⁴ August 1960

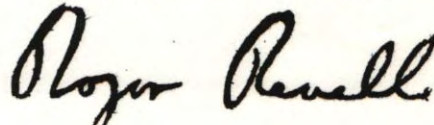
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SIO Reference 62-9

1 May 1962

Approved for distribution:



Roger Revelle, Director

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Roger Revelle, Director

INTRODUCTION

The data presented in this report were collected by the R/V Black Douglas of the Bureau of Commercial Fisheries, the USCGC Pontchartrain of the United States Coast Guard, and the R/V Horizon of the Scripps Institution of Oceanography on Cruise 6007-8 of the California Cooperative Oceanic Fisheries Investigations program. The first two figures in this cruise numbering system represent the year of the cruise; the last two figures, the month. (In the case of quarterly cruises the last figures are hyphenated.) The cruises preceding this one in the series are 6003 (Scripps Institution report, SIO Ref. 62-5), 6004 (SIO Ref. 62-6), 6005 (SIO Ref. 62-7) and 6006 (SIO Ref. 62-8).

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

STANDARD PROCEDURES

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

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

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

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

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

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

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

FOOTNOTES

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

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

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

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

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

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

p: pretrip or posttrip.

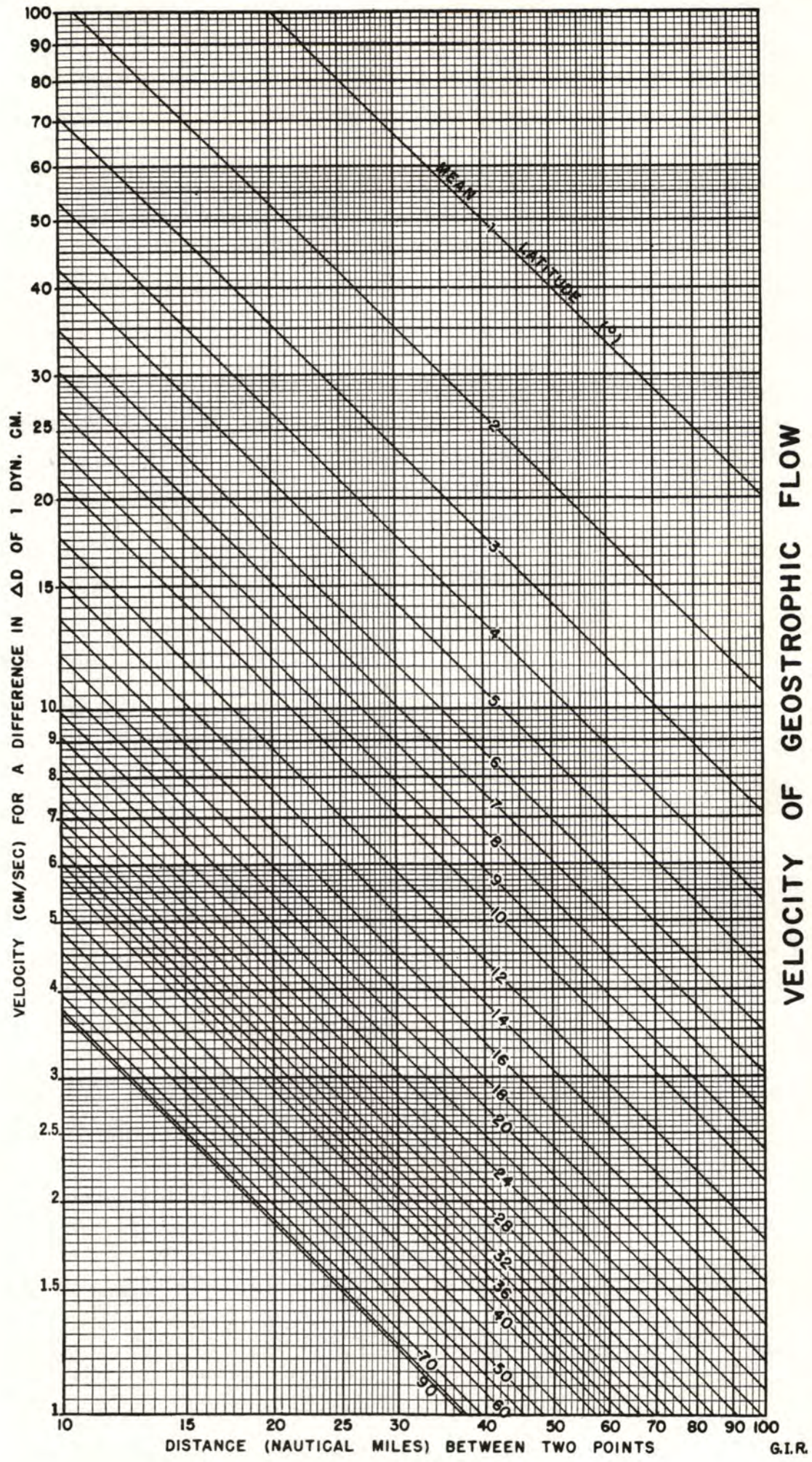
Values which are not drawn through because they seem to be in error without apparent reason are indicated by one of the following notations.

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

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

FORMAT

These data are typed in the format of the University of California Press publication, Oceanic Observations of the Pacific. So that these pages can be used as copy for the 1960 volume, the first page of Cruise 6007-8 data is numbered 273.



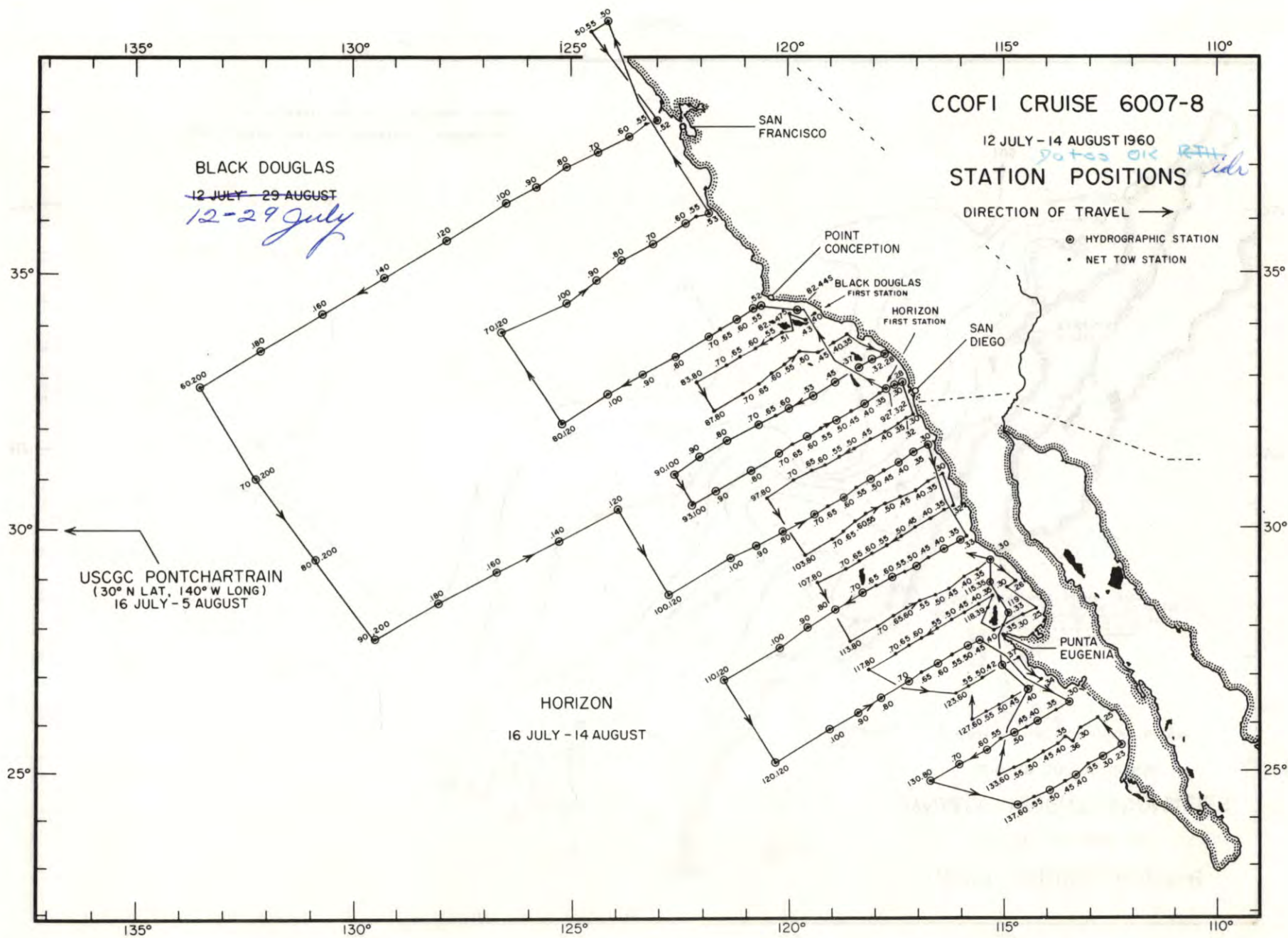


FIGURE 1

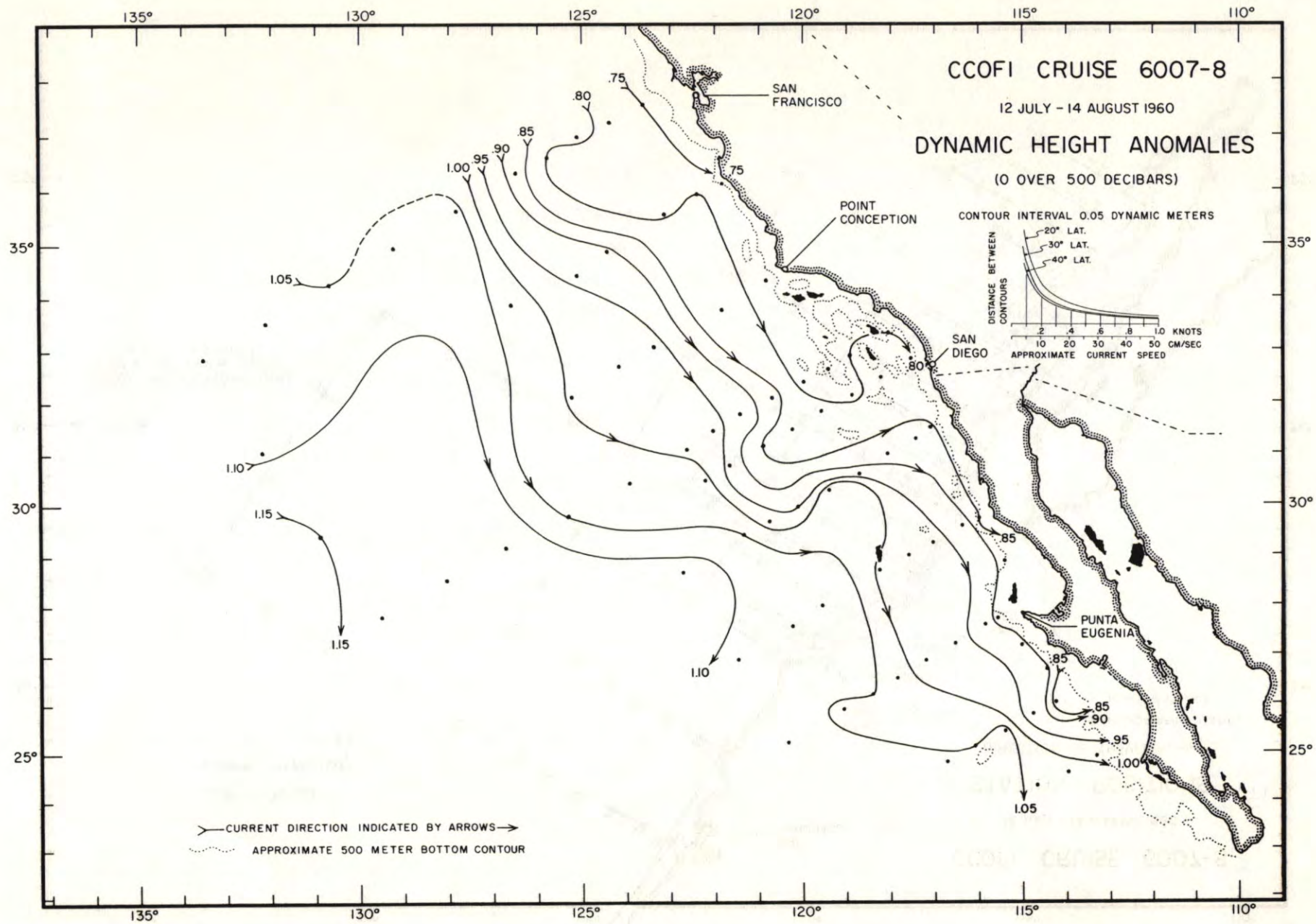


FIGURE 2

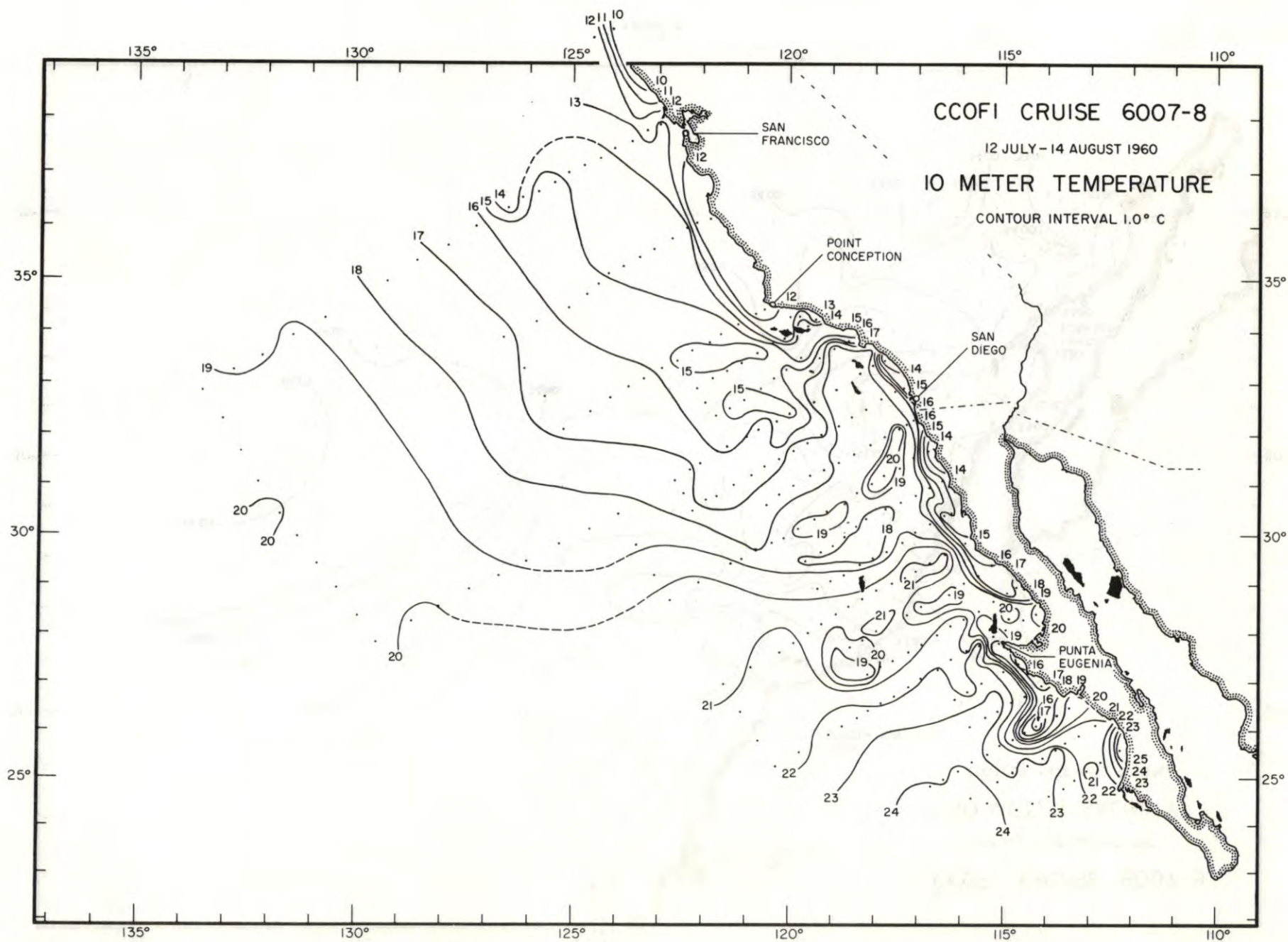


FIGURE 3

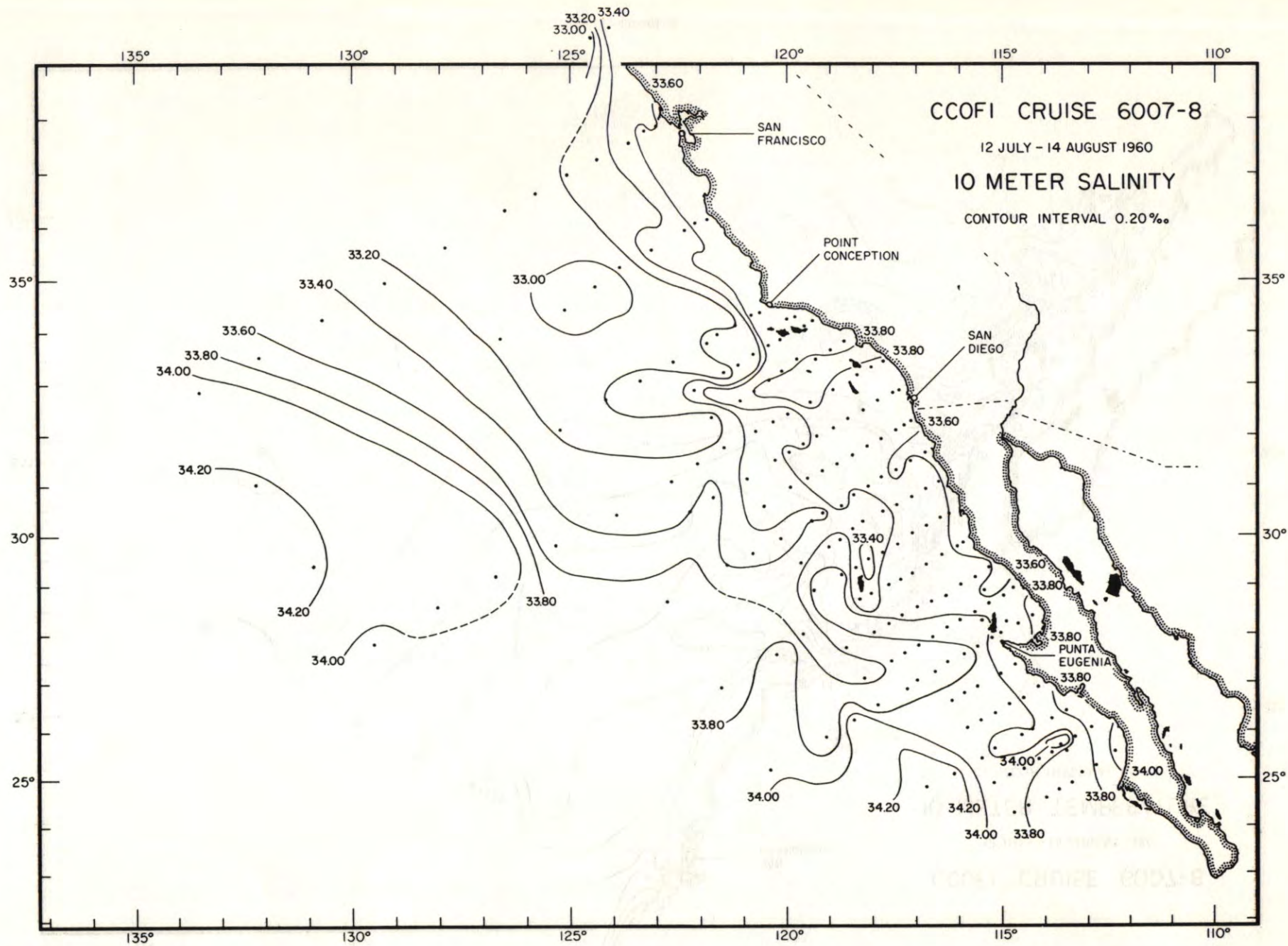


FIGURE 4

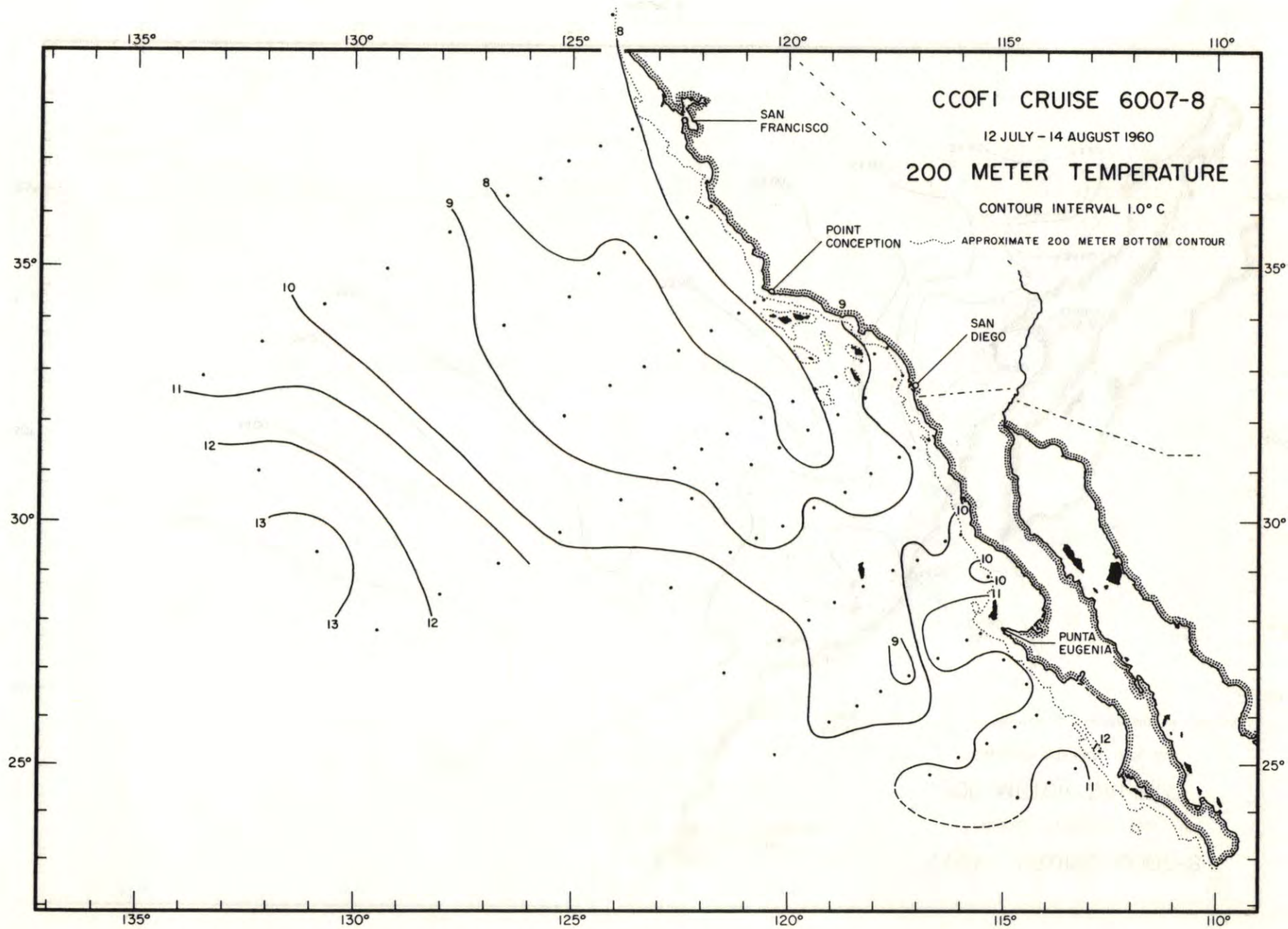


FIGURE 5

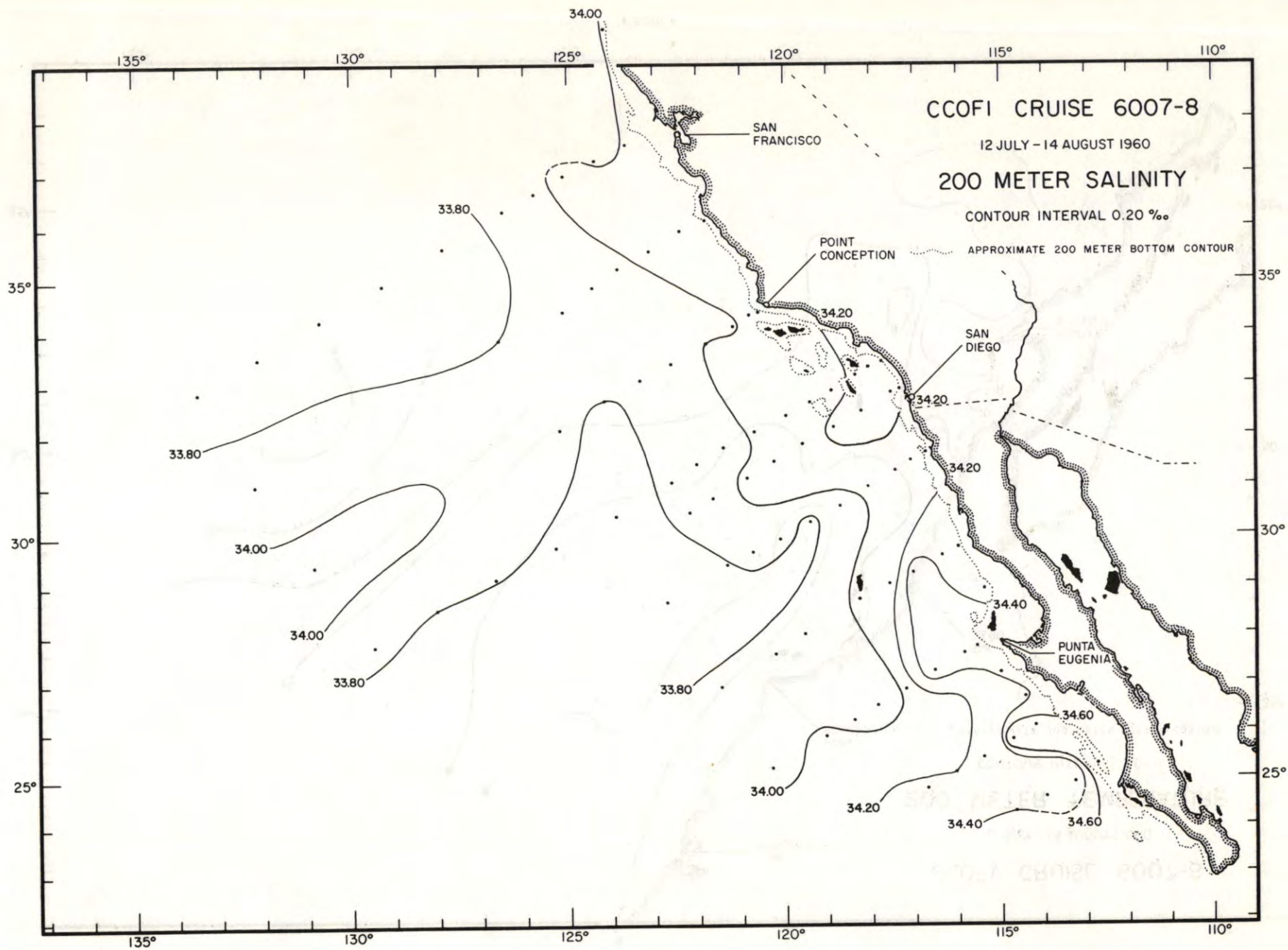


FIGURE 6

PERSONNEL

SHIPS' CAPTAINS

Atkinson, CDR, USCGC Pontchartrain
Collinson, Barnes, R/V Horizon
Forster, Charles W., R/V Black Douglas

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

R/V Black Douglas

Metoyer, Jack D., Fishery Aid, Bureau of Commercial Fisheries
*Armstrong, John, NSF Summer Trainee
*Costello, James P., Laboratory Technician II
*Hatton, William W., Fishery Aid, Bureau of Commercial Fisheries
*Leong, Roderick J. H., Fishery Research Biologist, Bureau of Commercial Fisheries
*Nieze, Thomas, NSF Summer Trainee
Perkins, Herbert, Fishery Aid, Bureau of Commercial Fisheries
*Pine, James S., Marine Technician
*Reiner, NaVadney, NSF Summer Trainee

R/V Horizon

Lawson, Jan B., Senior Marine Technician
*Bottom, Kenneth S., Marine Technician
Brennan, Robert E., Marine Technician
Bryan, Walter R., Marine Technician
Davies, Kenneth R., NSF Summer Trainee
Hester, Arthur W., Marine Technician
Joyal, Norman F., Marine Technician
Kasdan, Mark L., NSF Summer Trainee

USCGC Pontchartrain

Brown, Daniel M., Senior Marine Technician

*Participated in part of cruise only.

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

S10
CCOF1
6007-8

HORIZON; July 22, 1960; 0225 GCT; 39°40'N, 124°07'W; sounding, 480 fm; wind, 320°, force 7; weather, clear; sea, very high; wire angle, 43°.

50.50

1	9.96	33.56	5.48	215	0	(9.96)	(33.56)	(5.48)	(25.86)	(215)	(0.00)
10	9.95	33.56	5.56	215	10	9.95	33.56	5.56	25.86	215	0.02
26	9.86	33.57	5.58	213	20	9.91	33.57	5.57	25.87	214	0.04
34	9.50	33.62	5.21	204	30	9.70	33.60	5.43	25.93	208	0.06
45	9.01	33.62	4.26	197	50	8.76	33.62	3.81	26.10	192	0.10
54	8.53	33.65	3.55	187	75	8.20	33.72	3.52	26.26	177	0.15
70	8.25	33.70	3.52	179	100	7.99	33.85	3.51	26.40	164	0.19
83	8.12	33.75	3.53	173	125	7.77	33.89	3.38	26.46	158	0.23
97	8.01	33.83	3.52	166	150	7.43	33.93	3.09	26.54	151	0.27
116	7.85	33.87	3.48	160	200	7.21	34.01	2.21	26.63	142	0.35
135	7.67	33.91	3.30	156	250	6.50	34.00	2.03	26.72	133	0.42
161	7.32	33.95	2.95	147	300	6.07	34.00	1.84	26.78	127	0.48
182	7.32	33.98 1	2.62	145	400	6.30	34.19	0.62	26.90	116	0.61
217	7.03	34.02 4	2.03	138							
261	6.38	33.99 4	2.03	132							
331	5.99	34.02 4	1.53	125							
400	6.30	34.19 1	0.62	116							
459	5.88	34.22 2	0.46	109							

HORIZON; July 26, 1960; 0532 GCT; 37°54.5'N, 123°02.5'W; sounding, 42 fm; wind, 300°, force 3; weather, overcast; sea, rough; wire angle, 05°.

60.52

0	13.75	33.51 6	8.88a)	286	0	13.75	33.52	8.88	25.11	286	0.00
10	13.03	33.59 6	9.43	266	10	13.03	33.60	9.43	25.32	266	0.03
30	9.17	33.81 1	3.29	184	20	9.94	33.76	4.50	26.02	200	0.05
49	8.76	33.86 6	2.76	174	30	9.17	33.81	3.29	26.18	184	0.07
					50	(8.75)	(33.87)		(26.30)	(173)	(0.11)

HORIZON; July 26, 1960; 0600 GCT; 37°54.5'N, 123°02.5'W; sounding, 43 fm; wind, 300°, force 2; weather, missing; sea, moderate; wire angle, 05°.

60.52

0	13.45	33.50 5	8.78a)	281	0	13.45	33.50	8.78	25.17	281	0.00
10	11.01	33.74 2	6.25	220	10	11.01	33.74	6.25	25.81	220	0.02
30	9.03	33.82 5	3.14	181	20	9.48	33.80	4.07	26.12	190	0.05
49	8.62	33.89 3	2.59	170	30	9.03	33.82	3.14	26.21	181	0.06
					50	(8.61)	(33.90)		(26.34)	(169)	(0.10)

HORIZON; July 26, 1960; 0947 GCT; 37°37'N, 123°40'W; sounding, 1730 fm; wind, 320°, force 3; weather, overcast; sea, moderate; wire angle, 09°.

60.60

1	13.60	33.55	6.49	280	0	(13.60)	(33.55)	(6.49)	(25.17)	(280)	(0.00)
11	13.50	33.55	6.45	279	10	13.52	33.55	6.45	25.19	279	0.03
31	11.24	33.54	5.79	238	20	12.75	33.55	6.23	25.34	264	0.06
40	9.84	33.54	4.04	215	30	11.45	33.54	5.90	25.58	241	0.08
55	9.36	33.55	3.64	206	50	9.49	33.55	3.72	25.93	209	0.13
69	9.00	33.68	3.39	192	75	8.91	33.76	3.12	26.18	184	0.17
93	8.70	33.89	2.63	171	100	8.65	33.91	2.51	26.35	169	0.22
112	8.54	33.95	2.34	164	125	8.35	34.00	2.09	26.46	158	0.26
132	8.27	34.01	2.04	156	150	8.07	34.03	1.99	26.52	152	0.30
152	8.06	34.03	1.99	152	200	7.69	34.08	1.67	26.62	143	0.37
181	7.86	34.05	1.82	147	250	7.43	34.18	1.01	26.74	132	0.44
215	7.58	34.09	1.52	140	300	7.10	34.20	0.90	26.80	126	0.51
245	7.46	34.17 5	1.03	133	400	6.33	34.22	0.65	26.92	115	0.63
293	7.16	34.20 0	0.90	127	500	5.70	34.29	0.36	27.05	102	0.75
347	6.72	34.20 6	0.81	120	600	(5.39)	(34.32)	(0.34)	(27.11)	(96)	(0.85)
429	6.14	34.23 6	0.53	111							
513	5.66	34.28 9	0.34	101							
595	5.41	34.31 6	0.34	97							

a) The unusually high oxygen values in the upper levels have been carefully verified.

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CCOFI
6007-8

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

60.70 . HORIZON; July 26, 1960; 1458 GCT; 37°18.5'N, 124°24.5'W; sounding, 2160 fm; wind, 320°, force 4; weather, overcast; sea, very rough; wire angle, 13°.

1	14.52	33.32	5.79	315	0	(14.52)	(33.32)	(5.79)	(24.81)	(315)	(0.00)
11	14.49	33.32	5.90	314	10	14.50	33.32	5.90	24.81	315	0.03
30	14.26	33.36	5.84	307	20	14.41	33.34	5.90	24.84	312	0.06
39	11.58	33.35	5.76	258	30	14.26	33.36	5.84	24.89	307	0.09
53	9.86	33.42	5.17	224	50	10.12	33.41	5.30	25.71	229	0.15
68	9.32	33.48	4.80	211	75	9.19	33.51	4.56	25.94	207	0.20
91	8.97	33.69	3.36	191	100	8.89	33.77	3.11	26.19	183	0.25
111	8.77	33.83	2.93	177	125	8.53	33.88	2.69	26.33	170	0.30
130	8.44	33.88	2.66	169	150	8.02	33.90	2.69	26.43	161	0.34
150	8.02	33.90	2.69	161	200	7.27	33.95	3.00	26.57	148	0.42
180	7.68	33.95	2.68	152	250	6.67	33.98	2.54	26.69	137	0.49
212	7.02	33.95	3.17	145	300	6.65	34.11	1.15	26.79	127	0.56
242	6.68	33.96 0	2.78	139	400	5.80	34.14	0.80	26.92	114	0.68
288	6.68	34.08 8	1.32	129	500	5.24	34.21	0.45	27.04	103	0.79
342	6.43	34.15 0	0.86	121	600	(4.95)	(34.32)		(27.17)	(91)	(0.90)
424	5.60	34.14 3	0.76	111							
505	5.22	34.21 5	0.43	102							
587	4.96	34.30 7	0.30	92							

60.80 HORIZON; July 26, 1960; 1850 GCT; 37°00'N, 125°07.5'W; sounding, 2300 fm; wind, 350°, force 4; weather, overcast; sea, very rough; wire angle, 16°.

1	14.60	33.29	5.72	319	0	(14.60)	(33.29)	(5.72)	(24.76)	(319)	(0.00)
10	14.60	33.29	5.79	319	10	14.60	33.29	5.79	24.76	319	0.03
29	14.44	33.39	5.68	309	20	14.59	33.31	5.79	24.78	317	0.06
37	11.48	33.44	5.90	250	30	14.30	33.39	5.67	24.91	306	0.10
51	9.74	33.36	4.70	227	50	9.90	33.36	4.88	25.71	229	0.15
65	9.42	33.39	4.44	220	75	9.40	33.43	4.44	25.85	216	0.20
88	9.14	33.60	4.44	199	100	8.96	33.66	4.21	26.09	193	0.26
107	8.86	33.69	3.94	189	125	8.76	33.81	2.89	26.25	178	0.30
125	8.76	33.81	2.89	178	150	8.47	33.91	2.55	26.37	167	0.35
144	8.57	33.90	2.59	168	200	7.97	34.05	1.70	26.55	149	0.43
172	8.15	33.97	2.36	158	250	7.07	34.02	1.95	26.66	139	0.50
204	7.94	34.05 4	1.64	149	300	6.43	34.03	1.67	26.75	130	0.57
232	7.29	34.01 2	2.01	143	400	5.86	34.13	0.80	26.91	116	0.70
279	6.72	34.03 0	1.78	133	500	5.06	34.20	0.50	27.05	102	0.81
330	6.13	34.04 1	1.41	126							
411	5.79	34.13 5	0.76	114							
493	5.10	34.18 4	0.53	103							
576	4.94	34.29 7	0.27	93							

60.90 HORIZON; July 27, 1960; 0055 GCT; 36°40.5'N, 125°49.5'W; sounding, 2395 fm; wind, 310°, force 3; weather, overcast; sea, moderate; wire angle, 14°.

0	15.46	33.10	5.83	351	0	15.46	33.10	5.83	24.43	351	0.00
10	15.33	33.11	5.86	347	10	15.33	33.11	5.86	24.47	347	0.03
29	12.64	33.31	6.05	280	20	12.90	33.31	6.03	25.12	285	0.07
38	10.83	33.20	5.61	256	30	12.62	33.31	6.05	25.18	279	0.09
52	9.74	33.30	4.90	231	50	9.77	33.29	4.94	25.68	232	0.15
67	9.52	33.42	4.41	219	75	9.24	33.50	4.25	25.92	209	0.20
90	8.72	33.61	4.07	193	100	8.67	33.66	3.85	26.15	187	0.25
109	8.61	33.73	3.52	182	125	8.37	33.85	2.95	26.34	170	0.30
127	8.34	33.86	2.90	169	150	8.08	33.94	2.34	26.45	159	0.34
148	8.10	33.93	2.41	160	200	7.24	33.96	2.83	26.58	146	0.42
176	7.94	34.01	1.99	151	250	6.83	34.02	2.43	26.69	136	0.49
210	7.06	33.95	3.01	144	300	6.37	34.04	1.61	26.77	129	0.56
238	6.94	34.00 9	-	138	400	5.63	34.09	1.01	26.90	116	0.68
285	6.48	34.02 4	1.92	131	500	5.24	34.21	0.47	27.04	103	0.80
338	6.10	34.06 9	1.20	123	600	(4.94)	(34.29)		(27.14)	(93)	(0.90)
420	5.51	34.10 1	0.92	113							
504	5.23	34.20 8	0.46	103							
587	4.98	34.27 6	0.38	94							

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

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HORIZON; July 27, 1960; 0529 GCT; 36°21'N, 126°32'W; sounding, 2470 fm; wind, 320°, force 4; weather, overcast; sea, rough; wire angle, 25°.

60.100

0	14.04	33.11	5.72	322	0	14.04	33.11	5.72	24.74	322	0.00
8	13.96	33.11	5.79	320	10	13.92	33.10	5.80	24.76	319	0.03
25	12.30	32.90	5.93	304	20	12.54	32.92	5.92	24.89	307	0.06
33	12.05	32.91	5.96	299	30	12.15	32.90	5.95	24.96	301	0.09
45	11.80	32.95	5.77	291	50	11.75	32.99	5.75	25.10	287	0.15
58	11.66	33.09	5.72	279	75	10.75	33.16	5.38	25.41	257	0.22
78	9.96	33.15	5.18	245	100	9.52	33.44	4.80	25.83	217	0.28
95	9.66	33.38	5.02	223	125	9.13	33.63	3.97	26.05	197	0.33
111	9.18	33.50	4.32	208	150	8.77	33.78	3.11	26.22	181	0.38
128	9.11	33.65	3.91	195	200	7.82	33.92	3.05	26.47	157	0.47
152	8.76	33.79	3.04	179	250	7.16	33.98	2.51	26.62	143	0.54
182	8.53	33.94	2.26	165	300	6.68	34.03	1.75	26.73	133	0.62
208	7.60	33.91 5	3.30	154	400	5.89	34.09	1.09	26.87	119	0.75
249	7.17	33.97 4	2.52	143	500	5.33	34.18	0.50	27.01	106	0.86
295	6.74	34.02 9	1.80	134							
367	6.02	34.05 4	1.34	123							
440	5.72	34.12 0	0.84	115							
515	5.20	34.19 4	0.45	103							

HORIZON; July 27, 1960; 1332 GCT; 35°40'N, 127°53.5'W; sounding, 2000+ fm; wind, 320°, force 3; weather, overcast; sea, very rough; wire angle, 13°.

60.120

1	16.86	33.13	5.49	379	0	(16.86)	(33.13)	(5.49)	(24.13)	(379)	(0.00)
11	16.83	33.13	5.55	379	10	16.83	33.13	5.54	24.13	379	0.04
30	16.84	33.12	5.58	379	20	16.84	33.13	5.56	24.13	379	0.08
58	16.82	33.12	5.55	379	30	16.84	33.12	5.58	24.13	379	0.11
68	16.19	33.17	5.74	361	50	16.83	33.12	5.56	24.13	379	0.19
82	14.34	33.20	5.94	321	75	15.00	33.19	5.91	24.60	335	0.28
96	13.70	33.23	-	306	100	13.59	33.23	5.85	24.94	303	0.36
112	13.60	33.40	5.75	291	125	13.15	33.42	5.65	25.17	281	0.43
136	12.75	33.46	5.55	271	150	12.17	33.52	5.35	25.43	255	0.50
155	11.90	33.53	5.27	250	200	9.07	33.62	4.15	26.05	197	0.62
184	9.62	33.49	4.62	215	250	8.27	33.90	3.78	26.39	165	0.71
212	8.80	33.76	3.88	183	300	7.56	33.98	3.20	26.56	149	0.79
241	8.40	33.88 8	3.82	167	400	6.27	34.03	1.69	26.78	128	0.94
289	7.70	33.96 0	3.49	152	500	5.49	34.13	0.81	26.96	111	1.06
341	7.01	34.02 4	2.15	138	600	(4.93)	(34.19)		(27.07)	(101)	(1.17)
423	6.02	34.04 6	1.52	124							
505	5.46	34.13 6	0.79	110							
586	5.00	34.18 5	0.53	102							

HORIZON; July 27, 1960; 2145 GCT; 34°59'N, 129°15.5'W; sounding, 2000+ fm; wind, 320°, force 2; weather, overcast; sea, rough; wire angle, 11°.

60.140

0	17.59	33.22	5.59	389	0	17.59	33.22	5.59	24.03	389	0.00
10	17.52	33.22	5.60	387	10	17.52	33.22	5.60	24.05	387	0.04
29	17.48	33.21	5.66	387	20	17.50	33.21	5.63	24.05	387	0.08
58	16.74	33.22	5.76	370	30	17.47	33.21	5.66	24.05	387	0.12
67	15.50	33.31	6.04	336	50	16.97	33.21	5.75	24.17	375	0.19
82	14.86	33.44	6.01	314	75	14.55	33.31	6.03	24.79	317	0.28
96	14.19	33.40	5.98	303	100	13.80	33.38	5.94	25.00	297	0.36
111	13.67	33.49	5.84	286	125	13.44	33.57	5.78	25.21	277	0.43
135	13.28	33.60	5.75	271	150	12.47	33.58	5.51	25.41	257	0.50
154	12.04	33.56	5.36	251	200	9.24	33.64	3.69	26.04	198	0.61
183	9.71	33.50	4.10	216	250	8.50	33.89	3.26	26.35	168	0.71
212	9.00	33.73	3.53	188	300	7.93	34.01	2.42	26.53	151	0.79
241	8.60	33.86 5	3.38	172	400	6.94	34.10	1.47	26.74	131	0.94
289	8.04	34.00 1	2.53	154	500	6.11	34.13	0.96	26.87	119	1.07
342	7.47	34.04 8	2.02	142	600	(5.37)	(34.22)		(27.04)	(103)	(1.19)
425	6.72	34.10 9	1.28	127							
507	6.04	34.12 6	0.94	119							
589	5.44	34.20 3	0.53	105							

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

60.160 HORIZON; July 28, 1960; 0730 GCT; 34°14.5'N, 130°44.5'W; sounding, 2720 fm; wind, 340°, force 2; weather, overcast; sea, missing; wire angle, 11°.

0	18.44	33.55	5.42	385	0	18.44	33.55	5.42	24.07	385	0.00
10	18.42	33.55	5.36	384	10	18.42	33.55	5.36	24.08	384	0.04
29	18.44	33.56	5.42	384	20	18.43	33.55	5.39	24.08	384	0.08
37	17.92	33.74	5.57	359	30	18.43	33.56	5.42	24.08	384	0.12
52	15.41	33.53	5.96	318	50	15.53	33.54	5.94	24.75	321	0.19
66	15.16	33.67	5.81	303	75	15.10	33.81	5.70	25.05	292	0.26
90	15.00	33.88	5.63	285	100	14.79	33.87	5.62	25.17	281	0.34
110	14.22	33.83	5.60	272	125	13.07	33.62	5.64	25.34	265	0.40
128	12.90	33.60	5.65	264	150	11.97	33.53	5.51	25.49	251	0.47
148	12.04	33.53	5.54	253	200	9.80	33.66	4.94	25.97	205	0.59
176	10.70	33.54	5.21	229	250	8.81	33.92	4.66	26.33	171	0.68
210	9.48	33.74	4.84	195	300	7.96	33.97	4.29	26.50	155	0.77
238	8.98	33.88 8	4.69	176	400	6.42	33.96	2.84	26.70	135	0.92
287	8.18	33.97 4	4.48	158	500	5.44	34.01	1.70	26.86	120	1.05
340	7.25	33.95 3	3.45	147	600	(4.76)	(34.12)		(27.03)	(104)	(1.17)
423	6.14	33.97 0	2.53	131							
506	5.40	34.01 2	1.63	119							
588	4.84	34.10 5	0.84	106							

60.180 HORIZON; July 28, 1960; 1558 GCT; 33°32.5'N, 132°08.5'W; sounding, 2600 fm; wind, 340°, force 3; weather, cloudy; sea, very rough; wire angle, 16°.

0	18.84	33.63	5.35	389	0	18.84	33.63	5.35	24.03	389	0.00
9	18.81	33.62	5.36	388	10	18.81	33.62	5.36	24.04	388	0.04
28	18.36	33.58	5.43	380	20	18.64	33.61	5.38	24.06	386	0.08
55	16.65	33.82	5.78	324	30	18.10	33.59	5.48	24.19	374	0.12
63	16.05	33.82	5.82	310	50	16.74	33.81	5.77	24.68	327	0.19
78	15.09	33.73	5.79	297	75	15.37	33.76	5.80	24.96	301	0.26
91	14.36	33.66	5.84	287	100	14.30	33.70	5.82	25.14	283	0.34
106	14.23	33.72	5.79	280	125	13.93	33.79	5.55	25.29	269	0.41
128	13.88	33.80	5.51	268	150	13.32	33.83	5.46	25.45	254	0.47
147	13.51	33.84	5.49	257	200	10.47	33.77	4.87	25.93	208	0.59
174	11.77	33.75	5.10	232	250	9.05	33.86	4.09	26.23	180	0.69
202	10.38	33.77	4.83	207	300	8.15	33.96	3.33	26.46	158	0.78
229	9.54	33.80 3	4.43	190	400	6.66	34.01	2.20	26.71	134	0.93
275	8.54	33.91 8	3.70	167	500	5.62	34.06	1.29	26.88	118	1.07
325	7.75	33.98 1	2.98	151							
404	6.61	34.01 0	2.18	134							
484	5.75	34.04 8	1.41	120							
563	5.10	34.11 2	0.87	109							

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

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HORIZON; July 29, 1960; 0022, 0246 GCT; 32°51'N, 133°31'W; sounding, 2423 fm; wind, 340°, force 3; weather, cloudy; sea, very rough; wire angle, 10°, 14°.

60.200

0	20.34	34.08	5.31	393	0	20.34	34.08	5.31	23.99	393	0.00
10	19.41	34.09	5.29	369	10	19.41	34.09	5.29	24.24	369	0.04
29	19.31	34.09	5.24	366	20	19.34	34.09	5.26	24.26	367	0.07
57	16.95	33.94	5.65	322	30	19.31	34.10	5.24	24.27	366	0.11
66	16.39	33.89	5.65	313	50	19.28	34.11	5.25	24.29	364	0.18
81	15.58	33.83	5.62	300	75	15.75	33.83	5.63	24.93	303	0.27
94	15.50	33.93	5.53	292	100	15.10	33.91	5.48	25.13	284	0.34
108	15.20	33.98	5.46	281	125	14.80	34.03	5.41	25.29	269	0.41
133	15.04	34.12	5.41	268	150	13.92	33.96	5.51	25.42	257	0.48
151	13.83	33.95	5.51	256	200	10.59	33.71	4.85	25.87	214	0.60
180	11.82	33.78	5.17	231	250	8.97	33.88	4.26	26.27	176	0.70
208	10.12	33.70	4.71	207	300	8.21	33.97	4.03	26.45	159	0.79
237	9.20	33.82 8	4.32	183	400	6.54	33.97	2.65	26.70	135	0.94
285	8.48	33.96 1	4.15	163	500	5.55	34.04	1.44	26.88	119	1.07
338	7.52	33.96 9	3.55	149	600	5.01	34.14	0.64	27.01	105	1.19
420	6.30	33.98 8	2.24	131	700	4.65	34.23	0.33	27.13	94	1.30
502	5.54	34.04 1	1.44	118	800	4.28	34.32	0.26	27.24	84	1.40
583	5.06	34.13 1	0.75	107	1000	3.75	34.43	0.37	27.38	71	1.57
					1200	3.20	34.49	0.51	27.48	61	1.72
383a)	6.77	33.96 8	2.93	139	1500	2.62	34.56	1.00	27.59	51	1.91
480	5.72	34.03 5	1.44	121	2000	1.99	34.63	1.70	27.70	41	2.18
601	5.00	34.14 0	0.63	105	2500	1.71	34.65	2.20	27.74	37	2.42
777	4.36	34.30 5	0.23	86	3000	1.61	34.67	2.60	27.76	35	2.65
978	3.80	34.42 5	0.36	71	4000	1.50	34.69	3.21	27.78	33	3.00
1177	3.27	34.48 5	0.48	62							
1377	2.83	34.53 4	0.78	54							
1576	2.50	34.57 0	1.15	49							
1774	2.20	34.59 7	1.42	45							
1974	2.00	34.61 9	1.63	41							
2172	1.89	34.63 6	1.91	39							
2370	1.79	34.64 4	2.09	38							
2565	1.68	34.65 8	2.32	36							
2761	1.66	34.66 0	2.40	36							
3001	1.61	34.66 8	2.60	35							
3242	1.53	34.67 7	2.82	33							
3482	1.49	34.68 1	2.99	33							
3722	1.50	34.68 4	3.13	33							
3915	1.49	34.69 0	3.18	32							
4110	1.51	34.68 7	3.22	32							

HORIZON; July 21, 1960; 0054 GCT; 36°08.5'N, 121°50.5'W; sounding, 335 fm; wind, 320°, force 4; weather, cloudy; sea, very rough; wire angle, 20°.

70.53

1	11.25	33.78	5.39	221	0	(11.25)	(33.78)	(5.39)	(25.80)	(221)	(0.00)
10	11.05	33.78	5.40	217	10	11.05	33.78	5.40	25.83	217	0.02
29	10.36	33.80	4.44	204	20	10.90	33.79	5.17	25.88	213	0.04
37	10.16	33.81	4.09	200	30	10.35	33.80	4.43	25.98	203	0.06
46	9.92	33.80	3.64	196	50	9.85	33.81	3.50	26.07	195	0.10
56	9.76	33.82	3.05	193	75	9.45	33.85	2.84	26.17	186	0.15
65	9.61	33.84	2.89	189	100	8.81	33.88	2.68	26.29	174	0.20
79	9.34	33.84	2.82	184	125	8.55	33.93	2.55	26.37	167	0.24
90	9.00	33.86	2.66	178	150	8.27	33.99	2.31	26.46	158	0.28
104	8.77	33.88	2.67	173	200	8.23	34.11	1.50	26.56	148	0.36
128	8.52	33.93	2.51	165	250	8.01	34.15	1.28	26.62	143	0.43
155	8.24	34.00	2.21	156	300	7.66	34.18	1.06	26.70	135	0.50
187	8.24	34.08 9	1.61	150	400	7.07	34.21	0.76	26.81	125	0.64
232	8.13	34.13 4	1.35	145	500	(6.23)	(34.23)		(26.94)	(113)	(0.76)
278	7.8 b)	34.16 2	1.15	138							
374	7.26	34.20 3	0.84	128							
468	6.50	34.22 4	0.58	116							

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

b) Temperature inferred from pressure-thermometer and wire depth.

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

7060 HORIZON; July 20, 1960; 1955 GCT; 35°58'N, 122°22'W; sounding, 1640 fm; wind, 340°, force 5; weather, clear; sea, very high; wire angle, 25°.

0	14.38	33.47	5.91	302	0	14.38	33.47	5.91	24.95	302	0.00
8	14.31	33.47	5.95	301	10	14.29	33.47	5.94	24.96	300	0.03
30	13.78	33.49	5.89	289	20	14.20	33.47	5.93	24.97	298	0.06
38	13.12	33.58	5.70	269	30	18.78	33.49	5.89	25.08	289	0.09
51	12.10	33.67	5.53	244	50	12.13	33.67	5.54	25.55	244	0.14
65	11.71	33.70	5.17	234	75	10.40	33.74	4.05	25.92	209	0.20
86	9.51	33.82	2.97	188	100	9.20	33.88	2.63	26.23	180	0.25
104	9.12	33.90	2.54	177	125	8.71	33.99	2.10	26.40	164	0.29
121	8.75	33.98	2.17	166	150	8.52	34.06	1.61	26.49	156	0.33
146	8.55	34.05	1.70	157	200	8.26	34.11	1.49	26.56	149	0.41
172	8.36	34.09	1.50	151	250	7.84	34.13	1.30	26.64	141	0.48
207	8.22	34.12	1.47	148	300	7.51	34.18	1.02	26.72	133	0.55
233	8.02	34.12 0	1.37	145	400	6.64	34.21	0.68	26.86	120	0.68
275	7.60	34.15 8	1.18	136	500	6.03	34.27	0.39	26.99	107	0.80
333	7.4 a)	34.19 9	0.82	130							
422	6.44	34.21 6	0.61	116							
504	6.02	34.27 7	0.39	107							
574	5.50	34.28 0	0.33	100							

7070 HORIZON; July 20, 1960; 1434 GCT; 35°33.5'N, 123°07.5'W; sounding, 2000 fm; wind, 340°, force 5; weather, partly cloudy; sea, high; wire angle, 10°.

2	15.00	33.59	5.92	306	0	(15.00)	(33.59)	(5.92)	(24.90)	(306)	(0.00)
12	14.98	33.58	5.92	306	10	14.99	33.58	5.92	24.90	306	0.03
35	14.94	33.59	5.91	304	20	14.97	33.59	5.92	24.91	305	0.06
45	12.24	33.56	5.41	255	30	14.96	33.59	5.91	24.91	305	0.09
59	10.06	33.48	4.36	223	50	10.44	33.49	4.61	25.71	229	0.15
74	9.61	33.58	3.85	208	75	9.55	33.59	3.81	25.95	207	0.20
97	8.79	33.69	3.44	188	100	8.76	33.70	3.40	26.16	186	0.25
116	8.64	33.81	3.10	177	125	8.51	33.85	3.00	26.31	172	0.29
135	8.37	33.88	2.92	168	150	8.23	33.93	2.61	26.43	161	0.34
163	8.13	33.98	2.20	156	200	7.72	34.03	1.83	26.58	147	0.42
192	7.84	34.03	1.82	149	250	6.84	34.02	2.01	26.69	136	0.49
230	7.20	34.03	1.94	140	300	6.44	34.09	1.25	26.80	126	0.55
259	6.73	34.01 7	2.01	135	400	5.68	34.14	0.79	26.94	112	0.68
307	6.39	34.09 7	1.16	124	500	5.20	34.23	0.44	27.06	101	0.79
369	5.91	34.12 4	0.89	117	600	4.92	34.30	0.32	27.15	92	0.89
465	5.30	34.19 2	0.53	105							
552	5.06	34.27 7	0.35	96							
626	4.84	34.31 6	0.31	90							

7080 HORIZON; July 20, 1960; 0557 GCT; 35°15'N, 123°50.5'W; sounding, 2000+ fm; wind, 340°, force 5; weather, clear; sea, very rough; wire angle, 44°.

0	14.48	33.01	5.92	337	0	14.48	33.01	5.92	24.57	337	0.00
8	14.48	33.01	5.79	338	10	14.47	33.01	5.79	24.57	338	0.03
25	14.34	33.03	5.90	333	20	14.43	33.01	5.81	24.59	336	0.07
32	14.02	33.03	5.95	327	30	14.18	33.03	5.94	24.66	330	0.10
42	12.71	32.96	6.08	307	50	12.13	32.97	6.01	25.01	295	0.16
53	11.88	32.98	5.94	291	75	11.25	33.15	5.37	25.32	266	0.23
67	11.47	33.08	5.58	276	100	9.58	33.41	4.40	25.80	220	0.30
81	11.08	33.19	5.29	261	125	8.98	33.59	4.30	26.04	198	0.35
94	10.12	33.31	4.63	237	150	8.72	33.70	3.74	26.17	186	0.40
112	9.10	33.53	4.32	204	200	8.22	33.92	2.65	26.42	162	0.49
130	8.92	33.61	4.25	195	250	7.72	34.02	2.14	26.57	147	0.56
155	8.68	33.73	3.57	183	300	7.29	34.08	1.57	26.68	137	0.64
175	8.48	33.82 8	3.00	173	400	6.28	34.14	0.93	26.86	120	0.77
208	8.12	33.94 5	2.56	159							
249	7.73	34.01 7	2.17	148							
315	7.14	34.09 7	1.38	134							
378	6.54	34.13 7	1.00	123							
436	5.76	34.14 4	0.83	113							

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

HORIZON; July 20, 1960; 0035 GCT; 34°53'N, 124°25.5'W; sounding, 2000+ fm; wind, 340°, force 6; weather, clear; sea, high; wire angle, 32°.

70.90

1	15.87	32.96	5.67	370	0	(15.87)	(32.96)	(5.67)	(24.23)	(370)	(0.00)
9	15.84	32.96	5.63	369	10	15.83	32.96	5.63	24.24	369	0.04
30	15.62	32.95	5.68	365	20	15.80	32.96	5.66	24.25	368	0.07
55	13.06	33.04	6.01	308	30	15.62	32.95	5.68	24.28	365	0.11
64	12.14	33.20	5.63	278	50	14.70	32.92	5.78	24.46	348	0.18
80	11.11	33.30	4.91	253	75	11.52	33.27	5.19	25.36	263	0.26
93	10.46	33.36	4.67	238	100	10.12	33.43	4.43	25.73	227	0.32
106	9.82	33.51	4.04	217	125	9.19	33.70	3.38	26.09	193	0.37
132	9.06	33.72	3.30	189	150	8.72	33.77	3.19	26.23	180	0.42
148	8.74	33.77	3.18	181	200	8.06	33.92	2.98	26.44	160	0.51
173	8.26	33.78	3.38	173	250	7.56	34.01	2.20	26.59	146	0.59
203	8.04	33.94	2.90	158	300	6.91	34.03	1.81	26.69	136	0.66
228	7.84	34.00 7	2.24	151	400	6.11	34.11	1.00	26.86	120	0.79
271	7.26	34.01 3	2.11	142	500	5.10	34.11	0.79	26.98	108	0.91
326	6.65	34.05 6	1.54	131							
413	5.99	34.11 4	0.94	118							
494	5.14	34.11 2	0.81	109							
564	4.82	34.18 9	0.49	99							

HORIZON; July 19, 1960; 1811 GCT; 34°27'N, 125°07'W; sounding, 2500 fm; wind, 340°, force 5; weather, clear; sea, high; wire angle, 28°.

70.100

1	15.82	32.97	5.78	368	0	(15.82)	(32.97)	(5.78)	(24.25)	(368)	(0.00)
10	15.82	32.97	5.78	368	10	15.82	32.97	5.78	24.25	368	0.04
30	15.70	32.97	5.84	365	20	15.80	32.97	5.80	24.26	367	0.07
39	14.20	32.94	6.06	337	30	15.70	32.97	5.84	24.28	365	0.11
51	13.15	33.06	6.39a)	308	50	13.28	33.05	6.17	24.85	311	0.18
64	12.51	33.16	5.86	289	75	12.26	33.24	5.63	25.20	278	0.25
85	11.10	33.24	5.24	257	100	10.28	33.35	4.66	25.64	235	0.32
103	10.12	33.39	4.52	231	125	9.40	33.55	3.76	25.95	207	0.37
120	9.52	33.52	3.88	211	150	8.91	33.75	3.15	26.18	185	0.42
145	8.98	33.72	3.29	189	200	8.42	33.93	2.44	26.40	164	0.51
170	8.68	33.88	2.65	172	250	7.55	33.97	2.80	26.56	149	0.59
204	8.38	33.95	2.43	163	300	6.86	34.01	2.39	26.68	137	0.67
231	8.00	33.98 0	2.58	155	400	5.93	34.07	1.20	26.85	121	0.80
274	7.06	33.96 9	2.99	143	500	5.53	34.18	0.51	26.99	108	0.92
331	6.68	34.05 1	1.59	132							
418	5.77	34.07 8	1.09	118							
498	5.54	34.18 2	0.53	108							
568	5.21	34.22 4	0.35	101							

HORIZON; July 19, 1960; 0822 GCT; 33°51.5'N, 126°36.5'W; sounding, 2695 fm; wind, 340°, force 6; weather, cloudy; sea, very rough; wire angle, 37°.

70.120

0	17.22	33.19	5.61	383	0	17.22	33.19	5.61	24.09	383	0.00
8	17.21	33.18	5.52	383	10	17.21	33.18	5.51	24.09	383	0.04
28	17.20	33.18	5.49	383	20	17.21	33.18	5.50	24.09	383	0.08
52	17.02	33.16	5.52	381	30	17.20	33.18	5.49	24.09	383	0.12
60	16.12	33.10	5.64	365	50	17.20	33.18	5.50	24.09	383	0.19
75	13.99	33.12	6.03	320	75	13.99	33.12	6.03	24.76	320	0.28
88	13.33	33.21	6.02	300	100	13.00	33.30	5.78	25.10	287	0.36
100	13.00	33.30	5.78	287	125	11.69	33.35	5.14	25.39	260	0.43
125	11.69	33.35	5.14	260	150	10.03	33.40	4.54	25.71	229	0.49
140	10.48	33.34	4.78	240	200	8.79	33.80	3.43	26.24	179	0.59
165	9.52	33.57	4.04	207	250	8.12	33.96	3.17	26.46	158	0.68
193	8.92	33.77	3.49	184	300	7.29	33.97	3.26	26.59	146	0.76
219	8.49	33.89 2	3.30	169	400	6.34	34.05	1.59	26.78	128	0.90
261	7.97	33.96 5	3.15	155	500	5.70	34.15	0.68	26.94	113	1.03
316	7.05	33.96 7	3.26	143							
403	6.32	34.05 1	1.52	127							
484	5.84	34.13 7	0.77	115							
554	5.18	34.16 6	0.57	105							

a) Alternate value, 6.16 ml/L, not used in interpolation.

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

70.200 HORIZON; July 29, 1960; 1614 GCT; 31°02'N, 132°13'W; sounding, 2500 fm; wind, 350°, force 3; weather, cloudy; sea, rough; wire angle, 08°.

0	19.64	34.09	5.40	374	0	19.64	34.09	5.40	24.19	374	0.00
10	19.64	34.22	5.40	365	10	19.64	34.22	5.40	24.28	365	0.04
29	19.60	34.33	5.37	357	20	19.62	34.28	5.38	24.33	360	0.07
57	18.68	34.56	5.59	318	30	19.59	34.34	5.37	24.38	355	0.11
67	18.07	34.54	5.56	305	50	19.28	34.45	5.45	24.55	339	0.18
81	17.88	34.64	5.41	293	75	17.93	34.58	5.48	24.99	297	0.26
95	17.85	34.67	5.41	289	100	17.82	34.67	5.38	25.09	288	0.33
110	17.73	34.67	5.27	286	125	17.28	34.59	5.22	25.16	281	0.40
135	16.86	34.52	5.23	278	150	16.20	34.39	5.31	25.25	273	0.47
153	16.04	34.36	5.35	271	200	12.19	33.89	5.09	25.72	229	0.60
181	13.60	34.02	5.21	246	250	9.52	33.92	4.75	26.21	181	0.71
209	11.52	33.86	5.04	219	300	8.45	33.99	4.35	26.44	160	0.80
237	9.90	33.88 8	4.83	190	400	6.70	33.98	2.71	26.68	137	0.95
285	8.80	33.98 0	4.55	166	500	5.79	34.08	1.24	26.88	118	1.09
336	7.56	33.98 2	3.84	149	600	(5.21)	(34.18)		(27.02)	(104)	(1.20)
417	6.52	33.99 0	2.38	134							
499	5.80	34.07 8	1.25	118							
580	5.30	34.17 2	0.60	106							

80.52 HORIZON; July 17, 1960; 0538 GCT; 34°24.5'N, 120°36'W; sounding, 200 fm; wind, 320°, force 6; weather, clear; sea, very rough; wire angle, 42°.

1	11.83	33.73	4.60	235	0	(11.83)	(33.73)	(4.60)	(25.65)	(235)	(0.00)
8	11.85	33.70 8	4.59	236	10	11.84	33.71	4.58	25.64	236	0.02
23	11.53	33.71 5	4.24	230	20	11.80	33.71	4.55	25.64	236	0.05
36	9.98	33.78 6	2.96	199	30	9.99	33.77	3.02	26.01	201	0.07
55	9.65	33.81 5	2.75	191	50	9.71	33.81	2.80	26.09	193	0.11
72	9.57	33.83 4	2.67	189	75	9.57	33.83	2.68	26.14	189	0.16
90	9.58	33.83 8	2.69	189	100	9.51	33.85	2.64	26.16	186	0.20
119	9.40	33.88 4	2.53	183	125	9.39	33.89	2.50	26.21	182	0.25
148	9.32	33.92 4	2.31	178	150	9.31	33.93	2.29	26.25	178	0.30
185	9.10	33.97 3	2.10	171	200	8.96	34.02	1.94	26.38	166	0.38
221	8.70	34.08 4	1.64	157							

80.55 HORIZON; July 17, 1960; 0808 GCT; 34°20.5'N, 120°49'W; sounding, 445 fm; wind, 320°, force 6; weather, clear; sea, very rough; wire angle, 35°.

1	11.18	-	4.79	-	0	(11.18)	(33.76)	(4.79)	(25.80)	(221)	(0.00)
10	11.19	33.76	4.78	221	10	11.19	33.76	4.78	25.80	221	0.02
30	11.10	33.76	4.50	219	20	11.16	33.76	4.70	25.81	220	0.04
37	10.36	33.78	3.35	205	30	11.10	33.76	4.50	25.82	219	0.07
50	9.87	33.80	2.90	196	50	9.87	33.80	2.90	26.05	196	0.11
62	9.60	33.82	2.78	191	75	9.60	33.82	2.70	26.12	190	0.16
82	9.59	33.83	2.79	190	100	9.45	33.88	2.46	26.19	183	0.20
99	9.46	33.88	2.48	184	125	9.28	33.93	2.31	26.25	177	0.25
115	9.32	33.92	2.35	179	150	9.08	33.96	2.17	26.31	172	0.29
139	9.21	33.94	2.24	175	200	8.84	34.12	1.63	26.47	157	0.38
164	8.94	34.02	2.05	165	250	8.62	34.17	1.44	26.55	149	0.45
197	8.85	34.11	1.67	157	300	8.26	34.20	1.14	26.64	141	0.53
222	8.77	34.15 4	1.45	153	400	7.23	34.23	0.78	26.81	125	0.67
262	8.54	34.17 6	1.28	148	500	6.60	34.27	0.51	26.92	114	0.79
317	8.11	34.21 3	1.07	138							
405	7.20	34.24 1	0.72	124							
487	6.71	34.25 9	0.53	116							
558	6.06	34.30 1	0.38	105							

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

S10
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6007-8

HORIZON; July 17, 1960; 1205 GCT; 34°07'N, 121°12'W; sounding, 1100 fm; wind, 320°, force 6; weather, clear; sea, very rough; wire angle, 36°.

8060

0	14.80	33.20	5.84	330	0	14.80	33.20	5.84	24.66	330	0.00
8	14.78	33.20	5.92	330	10	14.78	33.20	5.92	24.66	330	0.03
27	14.78	33.20	5.89	330	20	14.78	33.20	5.90	24.66	330	0.07
36	13.99	33.20	5.92	314	30	14.72	33.20	5.90	24.67	328	0.10
48	12.52	33.26	5.73	281	50	12.30	33.27	5.66	25.21	277	0.16
61	11.10	33.28	5.16	255	75	10.25	33.23	4.52	25.55	244	0.22
81	10.10	33.23	4.39	242	100	9.30	33.58	3.56	25.98	204	0.28
97	9.46	33.54	3.69	209	125	8.94	33.72	3.06	26.15	188	0.33
114	9.20	33.67	3.29	195	150	8.47	33.86	2.89	26.33	171	0.38
137	8.61	33.76	2.91	179	200	7.87	33.95	2.29	26.49	155	0.46
162	8.35	33.90	2.83	166	250	7.27	34.01	1.87	26.63	142	0.54
194	7.93	33.94 1	2.37	156	300	6.94	34.03	1.39	26.69	136	0.61
219	7.67	33.98 8	2.09	149	400	6.14	34.09	0.76	26.85	121	0.74
259	7.18	34.01 4	1.80	141							
313	6.84	34.03 8	1.27	135							
400	6.14	34.09 2	0.76	121							

HORIZON; July 17, 1960; 1756 GCT; 33°47.5'N, 121°49.5'W; sounding, 1920 fm; wind, 320°, force 6; weather, partly cloudy; sea, high; wire angle, 44°.

8070

0	15.26	33.27	5.84	335	0	15.26	33.27	5.84	(24.60)	(335)	(0.00)
8	15.24	33.27	5.82	334	10	15.23	33.27	5.82	24.61	334	0.03
26	15.16	33.29	5.84	331	20	15.19	33.28	5.83	24.63	332	0.07
33	14.44	33.38	5.77	309	30	14.92	33.32	5.81	24.71	324	0.10
44	12.24	33.60	5.28	251	50	11.51	33.62	4.99	25.63	237	0.16
55	10.80	33.63	4.56	224	75	9.87	33.71	3.82	25.99	203	0.21
70	10.04	33.69	4.01	208	100	9.32	33.78	3.30	26.13	189	0.26
83	9.64	33.74	3.61	197	125	8.60	33.88	3.24	26.33	171	0.31
100	9.32	33.78	3.30	189	150	8.36	33.94	2.70	26.41	163	0.35
113	8.82	33.84	3.21	177	200	7.88	34.00	2.20	26.53	142	0.43
132	8.52	33.90	3.25	168	250	7.26	34.05	1.75	26.66	140	0.50
155	8.31	33.95	2.51	161	300	6.74	34.09	1.26	26.76	129	0.57
176	8.18	33.97 9	2.32	157	400	6.06	34.18	0.57	26.92	114	0.70
208	7.78	34.00 7	2.16	149	500	(5.44)	(34.25)		(27.05)	(102)	(0.81)
250	7.26	34.04 7	1.75	140							
322	6.56	34.11 4	1.05	125							
393	6.10	34.17 4	0.61	115							
457	5.66	34.22 2	0.39	107							

HORIZON; July 17, 1960; 2350 GCT; 33°25'N, 122°35'W; sounding, missing; wind, 320°, force 7; weather, cloudy; sea, high; wire angle, 45°.

8080

0	14.96	33.11	5.90	341	0	14.96	33.11	5.90	24.54	341	0.00
7	14.94	33.11	5.88	341	10	14.94	33.11	5.88	24.54	341	0.03
24	14.97	33.11	5.87	340	20	14.96	33.11	5.87	24.54	340	0.07
31	14.93	33.11	5.84	339	30	14.94	33.11	5.84	24.55	339	0.10
40	14.56	33.11	5.92	331	50	14.06	33.13	5.90	24.75	321	0.17
51	14.06	33.14	5.89	320	75	11.16	33.05	5.43	25.26	273	0.24
66	12.00	33.02	5.74	290	100	11.10	33.56	4.71	25.66	234	0.31
78	11.04	33.07	5.33	269	125	10.40	33.68	4.16	25.88	213	0.36
89	10.94	33.25	5.00	254	150	9.13	33.78	3.17	26.17	186	0.41
107	11.06	33.63	4.63	228	200	8.34	33.94	2.66	26.42	163	0.50
126	10.38	33.68	4.14	213	250	7.67	34.03	1.93	26.58	147	0.58
151	9.12	33.79	3.17	185	300	7.07	34.04	1.78	26.67	138	0.66
170	8.87	33.86 2	2.97	176	400	6.29	34.17	0.70	26.88	118	0.79
202	8.29	33.95 2	2.61	161							
244	7.75	34.02 4	1.99	148							
312	6.95	34.04 5	1.71	135							
378	6.44	34.14 9	0.86	121							
435	6.05	34.19 0	0.59	114							

S10

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6007-8

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

80.90

HORIZON; July 18, 1960; 0521 GCT; 33°04'N, 123°21.5'W; sounding, missing; wind, 340°, force 6; weather, missing; sea, very high; wire angle, 42°.

1	16.80	33.34	5.53	363	0	(16.80)	(33.34)	(5.53)	(24.31)	(363)	(0.00)
9	16.80	33.34	5.57	363	10	16.80	33.34	5.57	24.31	363	0.04
26	16.78	33.33	5.61	363	20	16.78	33.33	5.59	24.31	363	0.07
34	16.76	33.33	5.62	362	30	16.77	33.33	5.62	24.31	362	0.11
45	16.16	33.28	5.68	352	50	15.83	33.27	5.69	24.47	347	0.18
56	15.47	33.26	5.70	340	75	13.22	33.20	5.96	24.98	299	0.26
75	13.22	33.20	5.96	299	100	12.19	33.30	5.42	25.25	273	0.33
90	12.44	33.22	5.69	284	125	10.45	33.39	4.69	25.64	236	0.40
104	12.02	33.34	5.31	266	150	9.40	33.58	4.09	25.96	205	0.45
125	10.45	33.39	4.69	236	200	8.46	33.88	3.41	26.34	169	0.55
149	9.45	33.56	4.13	207	250	7.86	33.97	3.26	26.50	154	0.63
177	8.69	33.79	3.59	179	300	7.26	34.00	2.35	26.61	144	0.71
200	8.46	33.87 5	3.41	169	400	6.30	34.07	1.20	26.81	125	0.85
238	8.00	33.95 4	3.40	157	500	5.74	34.20	0.48	26.98	108	0.97
287	7.43	34.00 2	2.50	145							
364	6.53	34.00 4	1.63	133							
436	6.08	34.13 9	0.83	118							
500	5.74	34.20 3	0.48	108							

80.100

HORIZON; July 18, 1960; 1100 GCT; 32°41'N, 124°10'W; sounding, 2200 fm; wind, 340°, force 6; weather, clear; sea, very high; wire angle, 32°.

1	16.65	33.20	5.64	369	0	(16.65)	(33.20)	(5.64)	(24.23)	(369)	(0.00)
9	16.63	33.20	5.66	369	10	16.63	33.20	5.66	24.23	369	0.04
29	16.65	33.20	5.58	370	20	16.64	33.20	5.62	24.23	369	0.07
37	16.62	33.20	5.59	370	30	16.65	33.20	5.58	24.23	369	0.11
50	15.94	33.22	5.73	353	50	15.94	33.22	5.73	24.41	353	0.18
62	15.28	33.27	5.76	335	75	14.09	33.24	5.87	24.83	313	0.27
82	13.58	33.22	5.87	304	100	12.57	33.23	5.61	25.13	284	0.34
98	12.70	33.22	5.67	287	125	11.40	33.45	5.01	25.52	247	0.41
115	11.80	33.37	5.14	261	150	10.28	33.57	4.65	25.81	220	0.47
139	10.86	33.54	4.95	232	200	8.74	33.80	3.29	26.24	179	0.57
164	9.51	33.60	3.92	205	250	8.04	33.97	2.80	26.47	156	0.66
196	8.79	33.78	3.33	181	300	7.13	33.99	2.49	26.63	142	0.73
221	8.51	33.88 5	3.01	169	400	6.07	34.08	1.12	26.84	122	0.87
263	7.82	33.98 2	2.74	152	500	5.28	34.14	0.73	26.98	108	0.99
318	6.86	33.99 6	2.34	138							
403	6.04	34.08 7	1.11	122							
482	5.33	34.12 2	0.80	110							
551	5.21	34.22 6	0.42	101							

80.120

HORIZON; July 18, 1960; 1749 GCT; 32°07'N, 125°12'W; sounding, 2400 fm; wind, 340°, force 6; weather, partly cloudy; sea, very rough; wire angle, 42°.

1	16.74	33.19	5.65	372	0	(16.74)	(33.19)	(5.65)	(24.21)	(372)	(0.00)
9	16.73	33.19	5.60	372	10	16.73	33.19	5.60	24.21	372	0.04
28	16.70	33.18	5.62	371	20	16.72	33.18	5.61	24.21	371	0.07
34	16.64	33.17	5.59	371	30	16.69	33.18	5.61	24.21	371	0.11
44	15.98	33.14	5.67	359	50	15.81	33.32	5.71	24.52	342	0.18
55	15.68	33.43	5.75	331	75	13.45	33.13	6.00	24.88	308	0.26
71	13.22	33.02	6.01	312	100	13.38	33.46	5.54	25.15	283	0.34
84	14.44	33.58	5.65	295	125	11.46	33.48	5.06	25.53	246	0.41
97	13.57	33.46	5.59	287	150	10.12	33.57	4.61	25.84	217	0.46
117	12.06	33.48	5.21	257	200	8.86	33.86	4.18	26.27	176	0.57
138	10.66	33.50	4.85	231	250	8.03	33.96	4.03	26.47	157	0.65
163	9.62	33.65	4.38	204	300	7.12	33.96	3.47	26.61	144	0.73
184	9.10	33.79 9	4.18	184	400	6.10	34.03	1.71	26.80	126	0.87
218	8.61	33.91 6	4.18	168	500	(5.49)	(34.16)		(26.97)	(109)	(0.99)
264	7.76	33.96 4	3.90	152							
339	6.56	33.96 4	2.86	137							
410	6.04	34.03 9	1.57	125							
475	5.64	34.12 4	0.80	113							

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

HORIZON; July 30, 1960; 0441 GCT; 29°24'N, 130°52.5'W; sounding, 2700 fm; wind, 330°, force 4; weather, overcast; sea, rough; wire angle, 32°.

80200

0	19.94	34.21	5.22	373	0	19.94	34.21	5.22	24.19	373	0.00
8	19.92	34.20	5.24	373	10	19.95	34.22	5.23	24.20	372	0.04
24	20.11	34.33	5.20	369	20	20.07	34.29	5.22	24.23	370	0.07
48	20.19	34.63	5.20	349	30	20.17	34.40	5.20	24.28	365	0.11
56	20.06	34.66	5.21	344	50	20.17	34.64	5.20	24.46	348	0.18
68	19.12	34.51	5.28	331	75	18.50	34.41	5.39	24.71	324	0.27
80	18.50	34.44	5.42	322	100	18.22	34.58	5.31	24.92	305	0.35
91	18.38	34.56	5.36	309	125	17.93	34.67	5.10	25.06	291	0.42
112	18.02	34.61	5.26	298	150	17.76	34.68	5.01	25.10	287	0.50
127	17.91	34.67	5.09	291	200	13.94	34.13	4.80	25.55	244	0.63
154	17.68	34.68	4.98	285	250	10.89	33.88	4.49	25.95	207	0.75
173	16.07	34.40	4.86	270	300	8.96	33.91	4.06	26.29	174	0.85
197	14.12	34.15 7	4.80	246	400	7.12	34.01	2.33	26.64	141	1.01
237	11.66	33.92 1	4.60	217	500	(5.97)	(34.12)	(0.90)	(26.89)	(117)	(1.15)
280	9.54	33.86 3	4.36	186							
349	7.92	33.97 5	3.18	153							
419	6.84	34.02 7	2.03	136							
490	6.06	34.11 0	1.06	120							

HORIZON; July 16, 1960; 1751 GCT; ^{a)} 34°18'N, 119°47'W; sounding, 130 fm; wind, 240°, force 2; weather, clear; sea, moderate; wire angle, 12°.

8244

0	14.98	33.71 8	5.82	296	0	14.98	33.72	5.82	25.01	296	0.00
10	13.75	33.69 9	5.65	273	10	13.75	33.70	5.65	25.25	273	0.03
20	12.59	33.71 7	4.88	249	20	12.59	33.72	4.88	25.50	249	0.05
30	11.89	33.67 4	4.43	239	30	11.89	33.67	4.43	25.60	239	0.08
48	11.07	33.73 7	3.74	221	50	11.06	33.75	3.71	25.81	220	0.12
78	9.80	33.78 0	3.07	196	75	9.85	33.77	3.10	26.04	198	0.18
106	9.43	33.92 3	2.50	180	100	9.50	33.89	2.64	26.19	184	0.23
131	9.27	33.99 7	2.21	172	125	9.30	33.98	2.27	26.29	174	0.27
160	9.19	34.02 4	2.05	169	150	9.21	34.02	2.11	26.33	170	0.31

BLACK DOUGLAS; July 15, 1960; 0656 GCT; 33°28.5'N, 117°46.5'W; sounding, 260 fm; wind, 320°, force 2; weather, fog; sea, slight; wire angle, 17°.

9028

1	17.08	33.65	7.30	346	0	(17.08)	(33.65)	(7.30)	(24.48)	(346)	(0.00)
10	13.82	33.64	6.02	278	10	13.82	33.64	6.02	25.19	278	0.03
29	11.30	33.82	3.85	219	20	12.30	33.71	4.93	25.55	244	0.06
49	10.60	33.72	3.12	214	30	11.26	33.82	3.87	25.82	218	0.08
73	9.90	33.86	2.64	192	50	10.57	33.72	3.08	25.88	213	0.12
96	9.88	33.93	2.09	187	75	9.89	33.87	2.58	26.11	191	0.17
120	9.68	33.99	2.04	179	100	9.85	33.94	2.07	26.17	186	0.22
160	9.60	34.10	1.54	170	125	9.64	34.01	1.97	26.23	178	0.27
198	9.50	34.23	1.24	159	150	9.61	34.07	1.63	26.31	172	0.31
247	9.33	34.31	0.89	150	200	9.49	34.23	1.21	26.46	158	0.40
297	9.04	34.34	0.85	143	250	9.33	34.31	0.88	26.55	150	0.47
					300	(9.02)	(34.34)	(0.85)	(26.62)	(143)	(0.55)

a) Special cast for students.

SIO

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6007-8

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

90.32 BLACK DOUGLAS; July 15, 1960; 1015 GCT; 33°20.5'N, 118°03'W; sounding, 400 fm; wind, 320°, force 2; weather, fog; sea, slight; wire angle, 02°.

0	17.86	33.69	5.60	361	0	17.86	33.69	5.60	24.32	361	0.00
10	17.71	33.69	5.74	358	10	17.71	33.69	5.74	24.36	358	0.04
30	12.31	33.64	5.41	250	20	14.25	33.65	5.56	25.12	286	0.07
40	11.83	33.64	4.50	241	30	12.31	33.64	5.41	25.49	250	0.09
56	10.94	33.71	3.71	221	50	11.50	33.67	4.11	25.67	233	0.14
71	10.36	33.84	3.22	201	75	10.24	33.87	3.13	26.05	197	0.20
96	9.75	34.09	2.53	173	100	9.71	34.08	2.47	26.30	173	0.24
115	9.53	34.04	2.32	173	125	9.35	34.04	2.22	26.33	170	0.29
137	9.18	34.09	2.11	164	150	9.24	34.16	1.72	26.44	160	0.33
157	9.26	34.18	1.64	159	200	9.03	34.29	1.18	26.58	147	0.41
187	9.10	34.25	1.32	151	250	8.61	34.31	1.04	26.66	139	0.48
222	8.92	34.33	1.06	142	300	8.48	34.39	0.68	26.75	131	0.55
251	8.60	34.31	1.04	138	400	7.43	34.37	0.49	26.88	118	0.68
300	8.48	34.39	0.68	131	500	6.45	34.34	0.37	26.99	107	0.80
355	7.90	34.39	0.54	123	600	5.72	34.39	0.28	27.13	94	0.90
440	7.02	34.35	0.45	114							
525	6.22	34.34	0.35	104							
611	5.67	34.41	0.27	93							

90.37 BLACK DOUGLAS; July 15, 1960; 1350, 1410 GCT; 33°11'N, 118°22.5'W; sounding, 600 fm; wind, 270°, force 3; weather, overcast; sea, moderate; wire angle, 08°, 10°.

1	18.79	33.73	5.37	380	0	(18.79)	(33.73)	(5.37)	(24.12)	(380)	(0.00)
11	18.39	33.73	5.50	370	10	18.44	33.73	5.49	24.21	372	0.04
30	13.78	33.60	6.20	280	20	16.10	33.65	5.90	24.71	324	0.07
40	12.32	33.68	5.30	247	30	13.78	33.60	6.20	25.18	280	0.10
50	11.58	33.62	4.54	238	50	11.58	33.62	4.54	25.62	238	0.15
64	10.60	33.68	3.54	217	75	10.09	33.76	3.20	26.00	202	0.21
79	9.96	33.79	3.10	198	100	9.56	33.92	2.64	26.21	182	0.26
99	9.56	33.91	2.68	183	125	9.59	34.08	2.18	26.33	171	0.30
123	9.60	34.07	2.23	172	150	9.33	34.14	1.87	26.41	163	0.34
					200	8.91	34.22	1.41	26.55	150	0.42
143	9.42	34.12	1.95	166							
172	9.08	34.18	1.74	156							
202	8.90	34.22	1.40	150							
230	8.76	34.25	1.35	-							

90.45 BLACK DOUGLAS; July 15, 1960; 1830 GCT; 32°54.5'N, 118°55.5'W; sounding, 890 fm; wind, 270°, force 4; weather, overcast; sea, rough; wire angle, 05°.

1	18.48	33.76	5.33	371	0	(18.48)	(33.76)	(5.33)	(24.23)	(371)	(0.00)
10	18.34	33.77	5.36	366	10	18.34	33.77	5.36	24.27	366	0.04
31	15.00	33.71	5.48	297	20	17.40	33.77	5.41	24.50	345	0.07
41	12.60	33.68	4.98	252	30	15.08	33.71	5.48	24.99	298	0.10
56	11.19	33.69	4.20	226	50	11.80	33.70	4.55	25.64	236	0.16
71	10.42	33.72	3.60	211	75	10.10	33.73	3.40	25.97	205	0.21
96	9.40	33.84	2.93	186	100	9.33	33.86	2.79	26.19	183	0.26
116	9.19	33.95	2.36	174	125	9.26	33.99	2.27	26.31	172	0.31
136	8.98	34.04	2.00	164	150	8.69	34.04	1.87	26.44	160	0.35
156	8.62	34.04	1.86	159	200	8.25	34.12	1.51	26.57	148	0.43
186	8.42	34.10	1.59	152	250	7.92	34.22	1.06	26.70	136	0.50
222	7.96	34.15	1.38	141	300	7.23	34.23	0.99	26.80	126	0.57
250	7.92	34.22	1.06	136	400	6.79	34.32	0.47	26.94	113	0.69
300	7.23	34.23	0.99	126	500	6.15	34.33	0.45	27.03	104	0.80
355	7.01	34.29	0.61	118	600	5.54	34.36	0.43	27.12	95	0.91
440	6.54	34.33	0.44	109							
524	6.00	34.34	0.46	102							
610	5.50	34.36	0.42	94							

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

S10
CCOF1
6007-8

BLACK DOUGLAS; July 15, 1960; 2355 GCT; 32°39'N, 119°28.5'W; sounding, 640 fm; wind, 310°, force 5; weather, overcast; sea, rough; wire angle, 20°.

90.53

1	17.46	33.82	5.37	342	0	(17.46)	(33.82)	(5.37)	(24.52)	(342)	(0.00)
10	17.44	33.86	5.33	339	10	17.44	33.86	5.33	24.56	339	0.03
28	15.61	33.79	5.40	304	20	17.40	33.87	5.33	24.57	337	0.07
37	12.26	33.79	4.50	238	30	14.20	33.78	5.19	25.23	275	0.10
51	10.76	33.82	3.46	209	50	10.80	33.81	3.48	25.91	210	0.15
65	9.90	33.86	3.01	192	75	9.43	33.89	2.76	26.21	182	0.20
87	9.16	33.95	2.56	174	100	8.99	33.99	2.48	26.35	168	0.24
104	8.98	34.00	2.46	167	125	8.87	34.04	2.18	26.41	163	0.28
124	8.88	34.04	2.19	163	150	8.53	34.09	2.05	26.50	154	0.32
140	8.72	34.08	2.03	158	200	7.89	34.09	1.90	26.60	145	0.40
166	8.24	34.09	2.08	150	250	7.42	34.21	1.45	26.76	130	0.47
197	7.94	34.08	1.94	146	300	7.06	34.25	1.09	26.84	122	0.53
224	7.66	34.18	1.62	135	400	6.46	34.31	0.55	26.97	109	0.65
269	7.28	34.23	1.33	126	500	6.07	34.39	0.36	27.08	99	0.76
320	6.94	34.26	0.93	120							
399	6.47	34.31	0.56	110							
482	6.16	34.38	0.38	100							
566	5.70	34.41	0.32	93							

BLACK DOUGLAS; July 16, 1960; 0442 GCT; 32°25'N, 119°57.5'W; sounding, 500 fm; wind, 270°, force 5; weather, overcast; sea, rough; wire angle, 35°.

90.60

1	14.98	33.42	5.63	318	0	(14.98)	(33.42)	(5.63)	(24.78)	(318)	(0.00)
9	14.98	33.44	5.76	316	10	14.98	33.44	5.76	24.80	315	0.03
25	14.08	33.48	5.59	295	20	14.64	33.48	5.68	24.89	307	0.06
35	13.26	33.35	5.59	288	30	13.69	33.41	5.59	25.05	292	0.09
46	12.20	33.30	5.41	273	50	11.93	33.33	5.24	25.34	265	0.15
58	11.58	33.44	4.93	251	75	10.84	33.61	4.54	25.74	226	0.21
78	10.65	33.64	4.45	221	100	9.55	33.80	3.45	26.11	191	0.26
94	9.66	33.78	3.48	194	125	9.04	33.91	3.10	26.28	175	0.31
108	9.42	33.82	3.42	188	150	8.77	33.97	2.79	26.38	166	0.35
123	9.06	33.90	3.13	176	200	7.95	34.09	2.05	26.59	146	0.43
144	8.83	33.96	2.87	168	250	7.35	34.19	1.26	26.75	130	0.50
170	8.46	34.04	2.56	157	300	6.84	34.29	0.76	26.91	116	0.56
191	8.10	34.07	2.23	149	400	6.19	34.37	0.36	27.05	102	0.68
229	7.60	34.14	1.54	137	500	(5.93)	(34.41)	(0.45)	(27.11)	(96)	(0.78)
338	6.52	34.34	0.51	108							
411	6.16	34.37	0.35	101							
490	5.96	34.40	0.45	97							

BLACK DOUGLAS; July 16, 1960; 1116 GCT; 32°06'N, 120°41'W; sounding, 2000 fm; wind, 310°, force 5; weather, overcast; sea, rough; wire angle, 25°.

90.70

0	16.36	33.54	5.48	338	0	16.36	33.54	5.48	24.57	338	0.00
8	16.35	33.52	5.68	339	10	16.35	33.52	5.67	24.55	339	0.03
31	16.30	33.53	5.40	338	20	16.34	33.52	5.50	24.56	338	0.07
40	14.88	33.46	5.70	313	30	16.31	33.53	5.41	24.57	338	0.10
54	13.10	33.30	5.56	289	50	13.47	33.32	5.62	25.03	294	0.16
68	12.01	33.30	5.22	269	75	11.63	33.33	5.08	25.38	260	0.23
89	10.91	33.51	4.70	235	100	10.63	33.59	4.48	25.77	224	0.30
107	10.44	33.66	4.21	216	125	9.58	33.72	3.46	26.05	197	0.35
124	9.60	33.72	3.49	198	150	8.94	33.88	2.83	26.28	176	0.40
149	8.96	33.88	2.84	176	200	8.32	34.01	2.39	26.47	157	0.48
175	8.70	33.93	2.61	169	250	7.70	34.10	1.86	26.64	141	0.56
210	8.18	34.04	2.30	152	300	7.41	34.16	1.40	26.72	133	0.63
243	7.78	34.09	1.93	143	400	7.27	34.32	0.66	26.87	119	0.76
285	7.48	34.14	1.52	136	500	6.25	34.38	0.24	27.05	102	0.87
341	7.32	34.23	1.06	127	600	(5.40)	(34.46)		(27.22)	(85)	(0.97)
429	7.20	34.36	0.43	115							
509	6.14	34.38	0.24	101							
581	5.49	34.44	0.24	88							

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

90.80 BLACK DOUGLAS; July 16, 1960; 1633 GCT; 31°46'N, 121°27'W; sounding, 2050 fm; wind, 320°, force 5; weather, partly cloudy; sea, rough; wire angle, 20°.

0	15.36	-	5.56	-	0	15.36	(33.25)	5.56	24.57	338	0.00
10	15.33	33.21	5.63	340	10	15.33	33.21	5.63	24.55	340	0.03
35	15.15	33.24	5.63	334	20	15.29	33.22	5.63	24.57	338	0.07
43	14.66	33.30	5.79	320	30	15.21	33.23	5.63	24.58	336	0.10
59	13.86	33.17	5.76	314	50	14.10	33.18	5.78	24.79	317	0.17
72	13.08	33.19	5.61	297	75	12.50	33.22	5.43	25.13	284	0.24
97	11.80	33.33	5.05	263	100	11.35	33.35	4.88	25.45	254	0.31
117	10.60	33.46	4.55	233	125	10.23	33.52	4.34	25.78	223	0.37
136	9.82	33.58	4.08	212	150	9.44	33.67	3.76	26.03	199	0.42
166	9.12	33.78	3.45	186	200	8.52	33.96	2.80	26.41	163	0.52
196	8.59	33.95	2.88	165	250	7.97	34.06	2.23	26.57	148	0.60
236	8.10	34.04	2.37	152	300	7.38	34.12	1.77	26.69	136	0.67
265	7.81	34.08	2.08	144	400	6.46	34.23	0.79	26.90	116	0.80
315	7.20	34.14	1.59	132	500	5.78	34.26	0.50	27.02	105	0.92
379	6.65	34.22	0.89	119	600	5.33	34.34	0.30	27.14	93	1.02
481	5.88	34.25	0.56	107							
571	5.46	34.32	0.34	97							
646	5.15	34.38	0.27	89							

90.90 BLACK DOUGLAS; July 16, 1960; 2113 GCT; 31°27.5'N, 122°02'W; sounding, 2100 fm; wind, 340°, force 5; weather, clear; sea, rough; wire angle, 12°.

1	16.74	33.33	5.42	362	0	(16.74)	(33.33)	(5.42)	(24.31)	(362)	(0.00)
10	16.66	33.31	5.47	361	10	16.66	33.31	5.47	24.32	361	0.04
35	16.46	33.33	5.32a)	356	20	16.59	33.32	5.41	24.34	360	0.07
45	15.88	33.25	5.56	349	30	16.53	33.33	5.33	24.37	357	0.11
59	14.90	33.30	-	325	50	15.54	33.26		24.54	341	0.18
75	14.04	33.30	5.56b)	308	75	14.04	33.30	5.62	24.89	308	0.26
99	14.28	33.67	5.32	285	100	14.26	33.67	5.31	25.13	285	0.33
119	12.32	33.49	4.98	261	125	11.90	33.48	4.89	25.45	254	0.40
139	10.98	33.51	4.67	236	150	10.41	33.55	4.44	25.77	223	0.46
168	9.64	33.67	3.89	202	200	8.77	33.89	3.35	26.31	172	0.56
197	8.85	33.87	3.47	175	250	7.99	34.11	2.13	26.60	145	0.64
235	8.24	34.02	2.30	155	300	7.40	34.15	1.50	26.72	133	0.72
264	7.76	34.18	1.98	136	400	6.23	34.20	0.81	26.91	115	0.85
312	7.28	34.15	1.40	132	500	6.04	34.32	0.37	27.04	103	0.96
375	6.36	34.16	0.99	119	600	5.45	34.35	0.30	27.13	94	1.06
471	6.15	34.31	0.43	106							
558	5.73	34.34	0.31	98							
631	5.23	34.36	0.30	91							

90.100 BLACK DOUGLAS; July 17, 1960; 0337 GCT; 31°05'N, 122°39'W; sounding, 2200 fm; wind, 240°, force 5; weather, partly cloudy; sea, rough; wire angle, 22°.

1	17.58	33.31	5.33	382	0	(17.58)	(33.31)	(5.33)	(24.11)	(382)	(0.00)
10	17.62	33.32	5.26	383	10	17.62	33.32	5.26	24.10	383	0.04
34	17.37	33.32	5.30	376	20	17.61	33.32	5.26	24.11	382	0.08
43	16.54	33.28	5.49	361	30	17.61	33.32	5.26	24.11	382	0.11
56	14.87	33.24	5.71	329	50	15.10	33.22	5.69	24.60	335	0.19
70	14.14	33.29	5.74	310	75	13.91	33.33	5.71	24.94	302	0.27
94	13.79	33.53	5.59	286	100	13.48	33.58	5.41	25.22	276	0.34
112	13.37	33.66	5.22	268	125	12.03	33.54	4.97	25.47	252	0.41
130	11.61c)	33.51	4.91	247	150	10.41	33.55	4.67	25.77	224	0.47
157	10.14	33.57	4.57	218	200	8.96	33.82	3.65	26.22	181	0.57
184	9.25	33.73	3.81	192	250	8.29	33.97	3.11	26.45	159	0.66
221	8.68	33.89	3.50	171	300	7.43	34.07	2.52	26.65	140	0.73
247	8.35	33.96	3.19	161	400	6.54	34.17	1.02	26.85	121	0.87
292	7.54	34.06	2.67	142	500	5.90	34.24	0.54	26.99	108	0.99
353	6.88	34.12	1.53	129	600	5.51	34.39	0.29	27.16	92	1.10
446	6.26	34.21	0.77	115							
532	5.72	34.27	0.44	104							
604	5.50	34.40	0.29	91							

286

- a) Alternate value, 5.55 ml/L, not used in interpolation.
 b) Alternate value, 5.69 ml/L, not used in interpolation.
 c) Alternate value, 11.73°C, not used in interpolation.

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

SIO
CCOF1
6007-8

HORIZON; August 1, 1960; 0930 GCT; 30°25'N, 123°56'W; sounding, 2200 fm; wind, 350°, force 5; weather, cloudy; sea, very rough; wire angle, 18°.

90.120

1	18.32	33.39	5.52	393	0	(18.32)	(33.39)	(5.52)	(23.98)	(393)	(0.00)
10	18.26	33.39	5.54	392	10	18.26	33.39	5.54	24.00	392	0.04
30	17.78	33.37	5.60	383	20	18.25	33.39	5.54	24.00	392	0.08
57	16.02	33.36	5.93	344	30	17.78	33.37	5.60	24.10	383	0.12
67	15.60	33.40	5.92	332	50	16.28	33.36	5.88	24.45	349	0.19
81	15.12	33.48	5.88	316	75	15.29	33.46	5.88	24.74	321	0.27
95	14.36	33.45	5.75	303	100	14.06	33.42	5.70	24.98	299	0.35
109	13.51	33.39	5.61	290	125	12.65	33.42	5.34	25.26	272	0.43
133	12.19	33.44	5.17	262	150	11.27	33.47	4.94	25.56	243	0.49
151	11.20	33.47	4.92	242	200	9.31	33.71	4.06	26.08	194	0.60
180	9.86	33.61	4.31	210	250	8.31	33.94	3.27	26.42	162	0.69
207	9.10	33.75	4.00	188	300	7.60	34.01	2.39	26.57	147	0.77
236	8.56	33.89 3	3.58	169	400	6.46	34.11	1.26	26.81	125	0.92
283	7.90	33.98 6	2.70	153	500	5.83	34.20	0.61	26.96	110	1.04
335	7.06	34.04 5	1.88	137							
416	6.33	34.11 8	1.11	122							
497	5.84	34.19 9	0.62	110							
579	5.40	34.26 2	0.39	101							

HORIZON; August 1, 1960; 0038 GCT; 29°48'N, 125°20.5'W; sounding, 2290 fm; wind, 360°, force 4; weather, overcast; sea, rough; wire angle, 16°.

90.140

0	18.56	33.41	5.29	398	0	18.56	33.41	5.29	23.93	398	0.00
10	18.53	33.41	5.30	397	10	18.53	33.41	5.30	23.94	397	0.04
30	18.46	33.43	5.28	394	20	18.49	33.41	5.29	23.96	396	0.08
39	18.41	33.40	5.29	395	30	18.46	33.43	5.28	23.98	394	0.12
54	16.58	33.30	5.62	361	50	17.19	33.33	5.54	24.21	371	0.20
69	16.08	33.39	5.65	343	75	15.50	33.42	5.64	24.67	328	0.28
93	15.22	33.49	5.64	317	100	14.80	33.45	5.63	24.85	311	0.36
112	13.82	33.38	5.58	298	125	12.89	33.39	5.33	25.19	279	0.44
132	12.40	33.39	5.14	270	150	11.28	33.44	4.68	25.53	246	0.51
152	11.16	33.45	4.63	244	200	9.20	33.73	3.65	26.11	191	0.62
181	9.64	33.64	3.92	205	250	8.31	33.94	3.48	26.42	162	0.71
214	8.96	33.80	3.50	182	300	7.41	33.98	2.89	26.58	147	0.79
242	8.44	33.92 7	3.51	165	400	6.24	34.07	1.43	26.81	125	0.93
289	7.58	33.97 4	3.02	149	500	5.62	34.16	0.66	26.96	110	1.05
343	6.84	33.99 7	2.30	138	600	(5.13)	(34.28)		(27.11)	(96)	(1.16)
424	6.04	34.09 0	1.18	121							
509	5.56	34.17 4	0.60	109							
589	5.18	34.25 8	0.38	98							

HORIZON; July 31, 1960; 1531 GCT; 29°10'N, 126°43'W; sounding, 2300 fm; wind, 040°, force 4; weather, cloudy; sea, very rough; wire angle, 14°.

90.160

1	19.42	34.04	5.15	372	0	(19.42)	(34.04)	(5.15)	(24.21)	(372)	(0.00)
11	19.43	34.04	5.30	373	10	19.43	34.04	5.29	24.20	373	0.04
30	19.42	34.04	5.24	373	20	19.43	34.04	5.27	24.20	373	0.07
58	18.92	34.15	5.36	352	30	19.42	34.04	5.24	24.20	373	0.11
68	18.10	34.08	5.50	339	50	19.42	34.04	5.24	24.20	373	0.19
82	17.36	34.04	5.49	324	75	17.60	34.04	5.50	24.66	329	0.27
97	17.38	34.16	5.36	316	100	17.40	34.20	5.32	24.83	313	0.36
112	17.48	34.32	5.23	307	125	17.30	34.34	5.18	24.96	300	0.43
136	16.82	34.33	5.12	291	150	16.00	34.22	5.10	25.17	281	0.51
154	15.72	34.18	5.09	278	200	11.92	33.81	4.72	25.70	230	0.64
183	13.18	33.90	4.85	246	250	9.78	33.82	4.30	26.09	193	0.75
211	11.41	33.80	4.68	222	300	8.59	33.93	3.63	26.37	167	0.84
240	10.06	33.79 9	4.44	199	400	6.80	34.03	2.16	26.70	135	1.00
288	8.84	33.90 4	3.82	173	500	5.89	34.12	1.09	26.90	117	1.13
340	7.76	33.99 3	2.97	150	600	(5.28)	(34.23)		(27.06)	(101)	(1.25)
422	6.55	34.04 4	1.89	130							
503	5.87	34.12 3	1.06	116							
584	5.35	34.20 6	0.65	104							

SIO

CCOFI
6007-8

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

90.180

HORIZON; July 31, 1960; 0645 GCT; 28°31'N, 128°01'W; sounding, 2390 fm; wind, 360°, force 3; weather, overcast; sea, missing; wire angle, 10°.

0	20.00	34.09	5.18	384	0	20.00	34.09	5.18	24.08	384	0.00
10	20.00	34.09	5.27	384	10	20.00	34.09	5.27	24.08	384	0.04
29	20.16	34.19	5.32	380	20	20.02	34.14	5.31	24.12	381	0.08
57	18.40	34.26	5.61	332	30	20.20	34.21	5.32	24.13	380	0.11
66	18.10	34.28	5.59	323	50	19.80	34.21	5.38	24.23	370	0.19
80	17.70	34.30	5.64	313	75	17.82	34.29	5.62	24.79	317	0.28
94	17.56	34.33	5.58	308	100	17.60	34.39	5.51	24.92	304	0.36
108	17.68	34.47	5.46	300	125	17.50	34.50	5.35	25.04	293	0.43
133	17.26	34.50	5.24	288	150	15.85	34.24	5.25	25.22	276	0.50
151	15.76	34.22	5.25	275	200	11.81	33.80	4.84	25.71	229	0.63
181	13.65	34.03	4.98	246	250	9.77	33.89	4.56	26.15	188	0.74
209	11.23	33.77	4.80	221	300	8.48	33.95	3.79	26.40	163	0.83
240	10.02	33.87 4	4.66	193	400	6.94	34.04	2.10	26.69	136	0.99
288	8.77	33.93 5	4.04	169	500	5.90	34.13	1.03	26.90	116	1.12
342	7.58	33.99 0	2.91	148	600	(5.19)	(34.21)	(0.62)	(27.06)	(102)	(1.23)
426	6.62	34.06 1	1.73	130							
510	5.82	34.14 3	0.94	114							
593	5.24	34.21 0	0.62	103							

90.200

HORIZON; July 30, 1960; 1701, 1952 GCT; 27°47.5'N, 129°29.5'W; sounding, 2470 fm; wind, 360°, force 5; weather, cloudy; sea, very rough; wire angle, 17°, 22°.

1	19.90	33.98	5.26	389	0	(19.90)	(33.98)	(5.26)	(24.03)	(389)	(0.00)
10	19.90	33.98	5.33	389	10	19.90	33.98	5.33	24.03	389	0.04
33	19.88	33.98	5.29	388	20	19.90	33.98	5.31	24.04	388	0.08
42	19.26	34.06	5.48	367	30	19.89	33.98	5.30	24.04	388	0.12
56	18.56	34.27	5.47	335	50	18.83	34.21	5.50	24.48	346	0.19
70	17.78	34.24	5.46	319	75	17.71	34.25	5.44	24.60	316	0.27
93	17.60	34.35	5.38	307	100	17.61	34.39	5.36	24.92	304	0.35
112	17.64	34.46	5.31	300	125	17.67	34.54	5.26	25.02	295	0.43
132	17.68	34.60	5.21	290	150	16.70	34.45	5.08	25.18	279	0.50
158	16.04	34.34	5.02	272	200	12.30	33.87	4.88	25.68	232	0.63
187	13.48	33.98	4.94	247	250	9.70	33.83	4.32	26.11	191	0.74
224	10.57	33.80	4.64	207	300	8.48	33.96	3.87	26.41	163	0.83
252	9.64	33.83 1	4.30	190	400	6.75	34.04	1.90	26.72	133	0.99
299	8.49	33.95 5	3.88	163	500	5.89	34.13	0.92	26.91	116	1.12
360	7.29	34.00 9	2.56	143	600	5.24	34.23	0.50	27.06	101	1.23
453	6.23	34.08 2	1.35	123	700	4.67	34.31	0.37	27.19	89	1.34
538	5.65	34.16 2	0.72	111	800	4.32	34.37	0.44	27.28	80	1.43
					1000	3.79	34.48	0.73	27.41	68	1.59
367a)	7.18	34.01 0	2.40	141	1200	3.38	34.53	0.95	27.50	60	1.74
460	6.16	34.09 3	1.18	122	1500	2.79	34.57	1.30	27.59	51	1.93
576	5.40	34.20 4	0.56	105	2000	2.14	34.63	1.91	27.69	42	2.22
738	4.51	34.32 9	0.37	86	2500	1.72	34.65	1.30	27.73	37	2.46
924	3.98	34.44 2	0.61	72	3000	1.54	34.67	2.78	27.76	34	2.69
1109	3.56	34.50 4	0.87	63	4000	1.49	34.68	3.20	27.78	33	3.03
1292	3.20	34.54 2	1.02	57							
1476	2.83	34.56 6	1.27	52							
1662	2.50	34.59 4	1.43	47							
1848	2.28	34.61 5	1.69	44							
2034	2.11	34.62 7	1.97	42							
2220	1.93	34.63 9	2.12	39							
2406	1.78	34.64 8	2.26	38							
2594	1.68	34.65 3	2.43	37							
2828	1.60	34.66 5	2.63	35							
3064	1.52	34.67 3	2.87	34							
3301	1.50	34.67 6	2.98	33							
3541	1.50	34.68 1	3.10	33							
3780	1.51	34.68 6	3.20	33							
4023	1.48	34.68 3	3.20	33							

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

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

S10
CCOF1
6007-8

HORIZON; July 16, 1960; 0146 GCT; 32°48.5'N, 117°41.5'W; sounding, 568 fm; wind, 340°, force 2; weather, partly cloudy; sea, moderate; wire angle, 11°. a)

3
927.322

0	19.28	33.66 2	4.83	397
11	18.86	33.67 0	4.84	386
30	12.72	33.57 6	4.41	262
43	11.49	33.59 9	3.12	238
77	9.73	33.73 7	2.35	198
107	9.62	33.94 4	1.67	182
155	8.96	34.05 5	1.31	163
212	9.32	34.32 8	0.25	148
256	8.32	34.21 8	0.70	141
319	8.10	34.29 5	0.63	133
366	7.50	34.24 7	0.40	128
424	6.88	34.24 8	0.42	120
496	6.55	34.30 4	0.35	111
553	6.06	34.30 8	0.28	105
640	5.97	34.34 5	0.25	101
801	4.85	34.41 0	0.29	83
978	4.28	34.44 2	0.42	75
1033	4.11	34.47 4	0.40	71

BLACK DOUGLAS; July 19, 1960; 0823 GCT; 32°54.5'N, 117°22'W; sounding, 300 fm; wind, 280°, force 1; weather, clear; sea, slight; wire angle, 02°.

9328

0	19.46	33.75	5.96	395	0	19.46	33.75	5.96	23.97	395	0.00
10	14.50	33.62	6.54	293	10	14.50	33.62	6.54	25.04	293	0.03
30	11.10	33.65	3.99	228	20	12.08	33.63	4.74	25.53	246	0.06
50	10.21	33.74	3.42	206	30	11.10	33.65	3.99	25.73	228	0.08
75	10.06	33.85	3.02	196	50	10.21	33.74	3.42	25.95	206	0.13
100	9.98	33.96	2.48	186	75	10.06	33.85	3.02	26.06	196	0.18
125	9.80	34.02	2.24	179	100	9.98	33.96	2.48	26.17	186	0.23
166	9.66	34.07	2.01	173	125	9.80	34.02	2.24	26.24	179	0.27
205	9.70	34.22	1.53	162	150	9.69	34.05	2.10	26.28	175	0.32
255	9.37	34.31	1.11	150	200	9.70	34.20	1.61	26.40	164	0.40
303	8.86	34.30	0.98	143	250	9.40	34.31	1.13	26.54	151	0.48
					300	8.89	34.30	0.99	26.61	144	0.56

BLACK DOUGLAS; July 19, 1960; 0632 GCT; 32°50.5'N, 117°31'W; sounding, 420 fm; wind, 040°, force 2; weather, clear; sea, slight; wire angle, 02°.

9330

0	20.46	33.75	5.44	420	0	20.46	33.75	5.44	23.71	420	0.00
10	17.62	33.70	6.50	355	10	17.62	33.70	6.50	24.39	355	0.04
30	11.79	33.65	4.35	239	20	14.15	33.65	5.39	25.14	283	0.07
40	10.95	33.71	3.80	221	30	11.79	33.65	4.35	25.60	239	0.10
50	10.46	33.73	3.31	211	50	10.46	33.73	4.48	25.90	211	0.14
65	10.08	33.84	3.08	196	75	9.95	33.92	2.80	26.14	189	0.19
80	9.92	33.96	2.65	185	100	9.88	34.05	2.30	26.25	178	0.24
100	9.88	34.05	2.30	178	125	9.75	34.14	1.79	26.34	169	0.28
126	9.74	34.14	1.78	169	150	9.53	34.21	1.55	26.44	160	0.32
146	9.54	34.20	1.59	161	200	9.49	34.29	1.24	26.50	154	0.40
176	9.52	34.25	1.49	157	250	9.31	34.37	0.88	26.59	145	0.48
205	9.48	34.30	1.18	153	300	8.85	34.39	0.72	26.69	137	0.55
236	9.44	34.36	0.95	148	400	8.03	34.42	0.57	26.84	122	0.69
274	9.06	34.38	0.80	140	500	7.01	34.36	0.40	26.94	113	0.81
335	8.60	34.41	0.62	131							
410	7.94	34.42	0.56	121							
485	7.17	34.36	0.42	115							
565	6.42	34.38	0.36	104							

a) Shakedown station.

S10

CCOFI
6007-8

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

93.40

BLACK DOUGLAS; July 19, 1960; 0037 GCT; 32°30'N, 118°11.5'W; sounding, 950 fm; wind, 320°, force 2;
weather, overcast; sea, moderate; wire angle, 02°.

0	18.92	33.78	5.27	379	0	18.92	33.78	5.27	24.13	379	0.00
10	18.42	33.79	5.60a)	367	10	18.42	33.79	5.60	24.26	367	0.04
30	14.01	33.68	5.40	279	20	16.85	33.75	5.58	24.61	334	0.07
40	12.79	33.67	5.17	256	30	14.01	33.68	5.40	25.19	279	0.10
50	12.14	33.67	4.76	244	50	12.14	33.67	4.76	25.55	244	0.16
65	11.04	33.68	4.18	224	75	10.73	33.69	3.95	25.82	218	0.21
80	10.56	33.69	3.86	216	100	9.71	33.84	3.10	26.12	190	0.26
101	9.70	33.85	3.07	190	125	9.51	34.03	2.29	26.30	173	0.31
126	9.50	34.04	2.28	173	150	9.45	34.12	1.97	26.38	166	0.35
146	9.46	34.11	2.02	167	200	9.10	34.29	1.10	26.57	147	0.43
176	9.38	34.23	1.43	156	250	8.84	34.34	0.89	26.65	140	0.51
206	9.06	34.31	1.07	146	300	8.53	34.34	0.74	26.70	135	0.58
237	8.90	34.34	0.92	141	400	7.29	34.35	0.54	26.89	117	0.71
275	8.72	34.34	0.80	138	500	6.45	34.34	0.36	27.00	107	0.82
335	8.15	34.35	0.68	129							
410	7.19	34.35	0.51	116							
485	6.56	34.34	0.38	108							
565	6.01	34.38	0.32	99							

93.50

BLACK DOUGLAS; July 18, 1960; 1857 GCT; 32°10'N, 118°52.5'W; sounding, 660 fm; wind, 270°, force 2;
weather, overcast; sea, moderate; wire angle, 00°.

0	18.73	33.76	5.24	377	0	18.73	33.76	5.24	24.16	377	0.00
10	18.08	33.78	5.33	360	10	18.08	33.78	5.33	24.34	360	0.04
30	11.85	33.68	4.37	238	20	16.80	33.77	5.16	24.64	331	0.07
40	11.38	33.68	3.95	230	30	11.85	33.68	4.37	25.61	238	0.10
51	10.56	33.77	3.39	209	50	10.58	33.77	3.40	25.91	210	0.14
65	10.30	33.78	3.28	205	75	10.01	33.80	3.22	26.03	199	0.20
81	9.88	33.84	3.18	193	100	9.71	33.95	2.69	26.20	183	0.24
101	9.71	33.95	2.68	183	125	9.09	34.12	2.20	26.44	160	0.29
126	9.08	34.12	2.19	160	150	8.85	34.13	1.97	26.48	156	0.33
146	8.89	34.13	1.99	157	200	8.50	34.22	1.47	26.61	144	0.40
176	8.62	34.18	1.92	149	250	7.89	34.24	1.20	26.72	133	0.47
207	8.46	34.22	1.41	143	300	7.77	34.36	0.72	26.83	123	0.54
237	8.02	34.23	1.28	137	400	7.18	34.40	0.38	26.95	112	0.66
276	7.74	34.31	1.01	127	500	6.29	34.40	0.41	27.06	101	0.77
336	7.80	34.43	0.49	118							
411	7.08	34.40	0.38	111							
486	6.40	34.40	0.42	102							
568	5.88	34.39	0.29	96							

93.60

BLACK DOUGLAS; July 18, 1960; 0853 GCT; 31°50'N, 119°34'W; sounding, 1250 fm; wind, 320°, force 3;
weather, clear; sea, rough; wire angle, 00°.

3	17.37	33.52	5.30	362	0	(17.37)	(33.52)	(5.30)	(24.32)	(362)	(0.00)
12	17.38	33.51	5.34	363	10	17.38	33.51	5.33	24.31	363	0.04
31	14.10	33.53	5.85	292	20	16.55	33.51	5.50	24.50	344	0.07
42	12.84	33.49	5.47	271	30	14.24	33.53	5.85	25.02	295	0.10
56	11.70	33.60	4.87	242	50	12.11	33.54	5.10	25.46	253	0.16
71	11.20	33.69	4.52	226	75	11.10	33.70	4.47	25.76	224	0.22
97	10.64	33.71	4.19	215	100	10.54	33.72	4.11	25.88	213	0.27
117	9.61	33.84	3.34	189	125	9.23	33.87	3.12	26.22	181	0.32
138	8.85	33.91	2.98	172	150	8.74	33.95	2.91	26.36	167	0.37
158	8.68	33.97	2.86	165	200	7.78	34.06	2.17	26.59	146	0.45
188	8.02	34.04	2.36	151	250	7.39	34.14	1.53	26.71	134	0.52
224	7.46	34.09	1.93	139	300	7.00	34.18	1.05	26.79	126	0.58
252	7.38	34.14	1.52	134	400	6.51	34.31	0.48	26.97	110	0.71
302	6.99	34.18	1.03	126	500	6.01	34.38	0.26	27.08	99	0.82
358	6.68	34.29	0.63	114	600	5.44	34.42	0.24	27.18	90	0.92
443	6.34	34.34	0.33	106							
528	5.85	34.40	0.24	95							
613	5.40	34.42	0.24	89							

290

a) Alternate value, 4.73 ml/L, not used in interpolation.

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

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BLACK DOUGLAS; July 18, 1960; 0240 GCT; 31°30'N, 120°14'W; sounding, 2000 fm; wind, 330°, force 5; weather, clear; sea, very rough; wire angle, 10°.

9370

1	16.07	33.48	5.64	336	0	(16.07)	(33.48)	(5.64)	(24.59)	(336)	(0.00)
11	16.08	33.46	5.64	338	10	16.08	33.46	5.64	24.57	338	0.03
31	14.82	33.46	5.83	312	20	15.91	33.46	5.66	24.61	334	0.07
41	13.90	33.48	5.67	291	30	14.91	33.46	5.82	24.83	313	0.10
57	12.20	33.45	5.20	262	50	12.90	33.46	5.41	25.25	273	0.16
71	11.43	33.50	4.87	244	75	11.22	33.52	4.72	25.60	239	0.22
96	10.28	33.65	3.96	214	100	10.09	33.68	3.79	25.93	208	0.28
116	9.52	33.77	3.43	193	125	9.31	33.81	3.30	26.16	187	0.33
136	9.10	33.86	3.10	180	150	8.80	33.93	2.89	26.33	170	0.37
156	8.68	33.95	2.80	167	200	8.01	34.02	2.19	26.52	152	0.46
185	8.25	34.00	2.37	157	250	7.54	34.11	1.64	26.67	139	0.53
221	7.73	34.05	1.97	146	300	6.88	34.16	1.32	26.80	126	0.60
249	7.55	34.11	1.65	139	400	6.33	34.24	0.66	26.94	113	0.72
298	6.90	34.16	1.33	126	500	5.86	34.35	0.34	27.08	99	0.83
354	6.54	34.20	0.90	119	600	5.40	34.43	0.25	27.20	88	0.93
437	6.18	34.28	0.52	108							
520	5.76	34.37	0.31	97							
604	5.39	34.43	0.25	88							

BLACK DOUGLAS; July 17, 1960; 2057 GCT; 31°10'N, 120°54.5'W; sounding, 2100 fm; wind, 340°, force 5; weather, clear; sea, rough; wire angle, 07°.

9380

1	16.77	33.48	5.40	351	0	(16.77)	(33.48)	(5.40)	(24.43)	(351)	(0.00)
11	16.65	33.48	5.51	349	10	16.67	33.48	5.50	24.45	349	0.04
36	14.42	33.35	5.93	311	20	16.28	33.48	5.67	24.54	341	0.07
45	14.13	33.53	5.68	292	30	16.10	33.50	5.73	24.60	335	0.10
61	12.66	33.46	5.34	269	50	13.55	33.47	5.57	25.12	285	0.17
76	11.16	33.55	4.75	236	75	11.28	33.54	4.80	25.61	238	0.23
101	9.92	33.71	3.76	204	100	9.95	33.71	3.77	25.97	204	0.29
121	9.48	33.78	3.60	192	125	9.38	33.81	3.55	26.15	187	0.34
141	8.98	33.92	3.26	173	150	8.82	33.95	3.10	26.35	169	0.38
171	8.58	34.00	2.82	161	200	8.29	34.05	2.56	26.50	154	0.46
201	8.28	34.05	2.54	154	250	7.76	34.13	1.77	26.65	140	0.54
241	7.88	34.12	1.92	142	300	7.21	34.20	1.26	26.78	127	0.61
270	7.51	34.16	1.50	135	400	6.70	34.28	0.68	26.92	115	0.73
319	7.06	34.22	1.13	124	500	6.13	34.35	0.40	27.04	103	0.85
384	6.78	34.27	0.76	116	600	5.45	34.35	0.30	27.13	94	0.95
485	6.24	34.34	0.45	105							
573	5.62	34.35	0.28	97							
648	5.22	34.37	0.40	91							

BLACK DOUGLAS; July 17, 1960; 1451 GCT; 30°47'N, 121°41'W; sounding, 2100 fm; wind, 320°, force 4; weather, partly cloudy; sea, rough; wire angle, 06°.

9390

1	16.14	33.48	5.53	338	0	(16.14)	(33.48)	(5.53)	(24.57)	(338)	(0.00)
11	16.15	33.51	5.53	336	10	16.15	33.51	5.53	24.59	336	0.03
30	15.56	33.48	5.70	325	20	15.92	33.51	5.58	24.65	330	0.07
39	14.56	33.26	5.91	321	30	15.56	33.48	5.70	24.70	325	0.10
54	14.01	33.30	5.82	307	50	14.07	33.28	5.84	24.87	309	0.16
68	13.83	33.44	5.72	293	75	13.70	33.49	5.68	25.11	287	0.24
92	12.66	33.71	5.24	251	100	12.66	33.74	5.17	25.50	249	0.31
111	11.40	33.53	4.87	242	125	10.86	33.62	4.52	25.74	226	0.37
131	10.69	33.65	4.47	221	150	10.25	33.71	4.38	25.92	209	0.42
148	10.29	33.71	4.39	209	200	8.95	33.90	3.00	26.28	174	0.52
214	8.68	33.96	2.60	166	250	8.09	34.06	2.13	26.55	150	0.60
241	8.22	34.05	2.22	153	300	7.47	34.13	1.65	26.69	136	0.68
286	7.60	34.11	1.80	140	400	6.48	34.22	0.89	26.91	116	0.81
342	7.14	34.20	1.26	126	500	6.08	34.33	0.37	27.03	104	0.92
426	6.25	34.24	0.74	112	600	(5.47)	(34.33)	(0.35)	(27.11)	(96)	(1.03)
511	6.04	34.33	0.35	103							
596	5.50	34.33	0.35	96							

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

93.100 BLACK DOUGLAS; July 17, 1960; 0847 GCT; 30°30.5'N, 122°14'W; sounding, 2200 fm; wind, 320°, force 5; weather, clear; sea, rough; wire angle, 15°.

0	17.62	33.38	5.23	378	0	17.62	33.38	5.23	24.14	378	0.00
9	17.64	33.40	5.24	377	10	17.64	33.40	5.24	24.15	377	0.04
28	17.54	33.40	5.25	375	20	17.60	33.40	5.25	24.16	376	0.08
37	17.49	33.40	5.25	374	30	17.52	33.40	5.25	24.18	375	0.11
51	17.48	33.36	5.27	376	50	17.48	33.36	5.27	24.16	376	0.19
64	16.28	33.39	5.55	348	75	15.50	33.37	5.54	24.63	331	0.28
87	14.79	33.37	5.52	317	100	14.60	33.59	5.49	24.99	297	0.36
106	14.42	33.60	5.48	293	125	13.43	33.61	5.22	25.25	273	0.43
124	13.48	33.61	5.23	274	150	11.29	33.55	4.72	25.61	238	0.49
142	11.94	33.53	4.95	251	200	9.18	33.84	3.67	26.20	182	0.60
169	10.24	33.63	4.26	215	250	8.23	34.01	2.99	26.49	155	0.69
204	9.08	33.86	3.61	179	300	7.53	34.07	2.38	26.64	141	0.76
228	8.54	33.96	3.26	164	400	6.34	34.22	1.13	26.91	115	0.90
275	7.90	34.06	2.71	147	500	5.84	34.25	0.60	27.01	106	1.02
326	7.16	34.09	1.96	135							
407	6.30	34.22	1.10	114							
488	5.90	34.25	0.64	107							
572	5.42	34.31	0.56	97							

100.30 HORIZON; August 3, 1960; 2131 GCT; 31°39.5'N, 116°46.5'W; sounding, 240 fm; wind, 280°, force 2; weather, cloudy; sea, rough; wire angle, 11°.

0	18.42	33.63	6.62	378	0	18.42	33.63	6.62	24.14	378	0.00
10	13.64	33.53	6.10	282	10	13.64	33.53	6.10	25.15	282	0.03
30	12.18	33.55	4.70	254	20	12.93	33.55	5.50	25.31	267	0.06
48	11.20	33.66	3.64	228	30	12.18	33.55	4.70	25.45	254	0.09
73	10.86	33.70	3.40	219	50	11.16	33.67	3.59	25.73	227	0.13
96	10.16	33.82	2.93	199	75	10.82	33.70	3.38	25.82	219	0.19
121	9.84	33.89	2.83	189	100	10.09	33.83	2.90	26.05	197	0.24
160	9.58	34.05	2.14	173	125	9.80	33.91	2.76	26.15	187	0.29
199	9.51	34.15	1.75	164	150	9.62	34.02	2.31	26.27	176	0.34
247	9.39	34.27	1.29	154	200	9.51	34.15	1.74	26.40	164	0.42
296	9.33	34.35	0.94	147	250	9.38	34.28	1.25	26.51	153	0.51
398	8.35	34.35	0.62	132	300	9.32	34.35	0.91	26.58	147	0.58
					400	(8.33)	(34.35)	(0.62)	(26.74)	(132)	(0.73)

100.35 HORIZON; August 3, 1960; 1832 GCT; 31°31'N, 117°08'W; sounding, 420 fm; wind, 340°, force 4; weather, cloudy; sea, high; wire angle, 23°.

0	19.39	33.66	5.94	400	0	19.39	33.66	5.94	23.92	400	0.00
9	18.19	33.62	6.16	373	10	18.00	33.62	6.16	24.23	369	0.04
28	13.78	33.46	5.93	291	20	15.40	33.51	6.04	24.76	320	0.07
36	13.24	33.53	5.63	275	30	13.59	33.47	5.85	25.12	286	0.10
50	12.26	33.56	4.72	255	50	12.26	33.56	4.72	25.44	255	0.16
63	11.98	33.62	4.09	245	75	11.52	33.70	3.58	25.69	231	0.22
87	10.88	33.74	3.40	218	100	10.27	33.75	3.42	25.95	206	0.27
105	10.14	33.76	3.42	203	125	9.99	33.91	2.95	26.12	190	0.32
123	10.01	33.90	2.96	191	150	9.53	33.96	2.75	26.24	179	0.37
142	9.53	33.91	2.92	182	200	9.62	34.19	1.66	26.41	163	0.46
168	9.54	34.06	2.30	172	250	9.48	34.31	1.12	26.52	152	0.54
200	9.62	34.19	1.66	163	300	8.39	34.22	1.25	26.63	142	0.61
227	9.60	34.26 5	1.35	157	400	7.10	34.22	0.90	26.81	125	0.75
272	9.23	34.31 8	1.02	148	500	6.34	34.26	0.52	26.95	112	0.87
322	7.82	34.16 0	1.45	138							
400	7.10	34.22 2	0.90	125							
480	6.46	34.24 5	0.59	114							
561	6.12	34.34 6	0.30	102							

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

HORIZON; August 3, 1960; 1533 GCT; 31°20.5'N, 117°27'W; sounding, 980 fm; wind, 300°, force 5; weather, clear; sea, high; wire angle, 20°.

100.40

1	19.25	33.59	5.78	401	0	(19.25)	(33.59)	(5.78)	(23.90)	(401)	(0.00)
10	19.22	33.59	5.86	400	10	19.22	33.59	5.86	23.91	400	0.04
29	16.10	33.59	6.01	329	20	18.50	33.59	5.90	24.09	383	0.08
38	14.18	33.56	5.67	291	30	16.00	33.58	6.01	24.68	327	0.11
52	12.14	33.56	4.62	253	50	12.24	33.56	4.67	25.44	255	0.17
66	11.21	33.65	3.58	229	75	10.73	33.69	3.26	25.82	218	0.23
88	10.28	33.73	3.15	207	100	10.03	33.77	3.12	26.01	200	0.29
107	9.92	33.80	3.11	197	125	9.32	33.82	3.16	26.16	186	0.33
126	9.32	33.82	3.16	186	150	9.22	33.96	2.54	26.29	174	0.38
146	9.26	33.94	2.62	176	200	8.63	34.08	1.92	26.48	156	0.46
172	8.92	34.05	2.09	163	250	8.44	34.22	1.16	26.62	143	0.54
205	8.60	34.10	1.86	155	300	7.98	34.25	0.90	26.72	134	0.61
233	8.56	34.17 5'	1.39	148	400	7.33	34.32	0.49	26.86	120	0.74
279	8.17	34.25 0	0.97	137	500	6.44	34.35	0.32	27.00	107	0.86
330	7.74	34.25 8	0.84	130							
410	7.27	34.32 9	0.48	119							
492	6.52	34.34 5	0.34	107							
566	5.90	34.35 1	0.30	100							

HORIZON; August 3, 1960; 0955 GCT; 31°00'N, 118°05'W; sounding, 930 fm; wind, 340°, force 5; weather, clear; sea, very rough; wire angle, 18°.

100.50

1	20.24	33.68	5.26	419	0	(20.24)	(33.68)	(5.26)	(23.72)	(419)	(0.00)
10	20.22	33.68	5.27	419	10	20.22	33.68	5.27	23.72	419	0.04
33	14.69	33.54	5.54	303	20	18.35	33.63	5.37	24.16	377	0.08
43	13.45	33.54	4.86	278	30	15.20	33.55	5.52	24.84	313	0.12
62	12.26	33.55	4.48	255	50	12.95	33.55	4.65	25.30	268	0.17
71	11.54	33.62	4.04	237	75	11.43	33.64	3.98	25.66	234	0.24
94	10.24	33.67	3.72	212	100	10.12	33.69	3.61	25.93	208	0.29
113	9.89	33.76	3.16	199	125	9.70	33.82	2.90	26.10	192	0.34
132	9.57	33.86	2.79	187	150	9.17	33.91	2.68	26.26	177	0.39
160	8.97	33.94	2.65	172	200	8.41	34.04	2.36	26.48	156	0.48
188	8.58	34.02	2.47	160	250	7.83	34.13	1.67	26.64	141	0.55
224	8.10	34.09	1.98	148	300	7.59	34.23	0.96	26.75	130	0.62
253	7.80	34.13 2	1.63	141	400	7.31	34.34	0.47	26.88	118	0.75
299	7.59	34.22 5	0.99	130	500	6.41	34.35	0.36	27.01	106	0.87
359	7.54	34.32 1	0.58	123	600	5.61	34.37	0.30	27.13	95	0.97
453	6.86	34.34 8	0.39	112							
539	6.04	34.35 6	0.32	101							
611	5.57	34.37 6	0.29	94							

HORIZON; August 3, 1960; 0405 GCT; 30°37'N, 118°44'W; sounding, 1320 fm; wind, 290°, force 5; weather, cloudy; sea, high; wire angle, 24°.

100.60

0	19.22	33.61	5.35	399	0	19.22	33.61	5.35	23.93	399	0.00
9	19.20	33.61	5.36	399	10	19.20	33.61	5.36	23.93	399	0.04
31	15.63	33.42	6.02	331	20	17.00	33.45	5.75	24.34	359	0.08
40	14.88	33.47	6.03	312	30	15.90	33.43	5.99	24.59	336	0.11
53	13.29	33.29	5.79	293	50	14.00	33.38	5.91	24.96	301	0.18
67	12.48	33.31	5.45	277	75	12.40	33.38	5.34	25.27	271	0.25
89	11.75	33.44	5.13	253	100	10.90	33.49	4.75	25.64	236	0.31
107	10.80	33.52	4.62	232	125	10.27	33.64	4.21	25.87	214	0.37
124	10.29	33.64	4.22	215	150	9.38	33.75	3.46	26.10	192	0.42
150	9.38	33.75	3.46	192	200	8.54	33.91	2.61	26.36	167	0.51
176	8.92	33.83	3.14	179	250	7.93	34.02	2.16	26.54	150	0.59
210	8.42	33.95	2.46	163	300	7.53	34.08	1.68	26.65	140	0.67
236	8.10	34.00 8	2.26	153	400	6.94	34.25	1.64	26.86	120	0.80
278	7.66	34.05 0	1.98	145	500	5.79	34.25	0.42	27.01	106	0.92
334	7.34	34.14 2	1.27	134							
418	6.80	34.26 4	0.57	117							
497	5.83	34.25 0	0.44	106							
563	5.44	34.30 8	0.33	97							

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

100.70

HORIZON; August 2, 1960; 2232 GCT; 30°18.5'N, 119°24.5'W; sounding, 2030 fm; wind, 300°, force 5; weather, partly cloudy; sea, high; wire angle, 32°.

0	19.20	33.40	5.28	414	0	19.20	33.40	5.28	23.77	414	0.00
8	19.18	33.40	5.27	413	10	19.17	33.40	5.27	23.78	413	0.04
29	17.89	33.37	5.28	385	20	19.10	33.40	5.27	23.79	412	0.08
37	17.19	33.33	5.62	371	30	17.88	33.37	5.28	24.08	385	0.12
50	16.20	33.31	5.72	351	50	16.20	33.31	5.72	24.43	351	0.20
63	15.82	33.53	5.70	327	75	15.82	33.56	5.70	24.71	325	0.28
84	14.74	33.55	5.71	303	100	14.07	33.53	5.48	25.05	292	0.36
100	14.07	33.53	5.48	292	125	12.97	33.57	5.00	25.32	266	0.43
119	13.56	33.58	5.18	277	150	10.74	33.56	4.54	25.72	227	0.49
144	11.10	33.56	4.62	235	200	9.01	33.79	3.49	26.19	184	0.60
170	9.71	33.65	3.99	204	250	8.02	34.00	2.59	26.50	154	0.68
205	8.89	33.82	3.41	179	300	7.37	34.04	1.97	26.63	142	0.76
230	8.33	33.95	2.90	161	400	6.56	34.15	0.94	26.83	123	0.90
274	7.68	34.01 3	2.28	147	500	5.76	34.25	0.58	27.02	105	1.02
331	7.06	34.06 9	1.59	135							
420	6.41	34.17 4	0.78	119							
503	5.74	34.25 2	0.57	105							
575	5.44	34.31 7	0.31	97							

100.80

HORIZON; August 2, 1960; 1700 GCT; 29°58'N, 120°09'W; sounding, 2100 fm; wind, 320°, force 5; weather, cloudy; sea, high; wire angle, 30°.

0	18.40	33.30	5.45	402	0	18.40	33.30	5.45	23.90	402	0.00
8	18.38	33.30	5.35	401	10	18.38	33.30	5.35	23.90	401	0.04
29	16.20	33.40	5.75	345	20	17.95	33.33	5.42	24.02	390	0.08
38	15.64	33.33	5.77	337	30	16.18	33.40	5.75	24.50	344	0.12
52	14.13	33.20	5.89	317	50	14.32	33.20	5.87	24.76	320	0.18
64	13.65	33.23	5.73	305	75	13.39	33.37	5.70	25.08	289	0.26
85	13.16	33.41	-	282	100	12.21	33.42	5.26	25.34	264	0.33
103	11.98	33.43	5.07	259	125	11.02	33.53	4.80	25.64	235	0.39
120	11.29	33.52	4.88	241	150	9.71	33.64	4.11	25.96	205	0.45
145	9.89	33.59	4.34	212	200	8.68	33.88	3.26	26.31	172	0.55
171	9.15	33.78	3.38	186	250	7.93	34.03	2.09	26.55	150	0.63
205	8.60	33.90	3.21	169	300	7.27	34.07	1.71	26.67	138	0.70
232	8.16	34.00 0	2.33	155	400	6.36	34.17	0.87	26.88	118	0.84
275	7.62	34.06 1	1.84	143	500	5.69	34.25	0.55	27.02	105	0.95
333	6.86	34.08 9	1.52	131							
422	6.20	34.19 3	0.75	115							
505	5.66	34.25 4	0.54	104							
578	5.32	34.32 2	0.37	95							

100.90

HORIZON; August 2, 1960; 1220 GCT; 29°40'N, 120°45'W; sounding, 2050 fm; wind, 320°, force 5; weather, partly cloudy; sea, very rough; wire angle, 30°.

0	18.00	33.28	5.38	394	0	18.00	33.28	5.38	23.98	394	0.00
8	18.00	33.29	5.42	394	10	18.00	33.29	5.42	23.98	394	0.04
29	15.81	33.17	5.87	353	20	17.30	33.25	5.58	24.12	380	0.08
38	15.48	33.24	5.90	341	30	15.74	33.18	5.88	24.43	351	0.11
54	14.90	33.29	5.90	326	50	15.15	33.28	5.90	24.64	331	0.18
62	13.93	33.26	5.87	308	75	13.81	33.30	5.84	24.93	303	0.26
81	12.82	33.30	5.50	283	100	12.20	33.44	5.19	25.37	262	0.33
97	12.40	33.43	5.27	267	125	10.74	33.50	4.59	25.67	233	0.40
113	11.43	33.46	4.90	247	150	9.68	33.63	4.02	25.96	206	0.45
134	10.20	33.55	4.26	219	200	8.60	33.90	3.00	26.34	169	0.55
158	9.42	33.68	3.95	198	250	8.00	34.02	2.26	26.53	152	0.63
190	8.78	33.86	3.27	175	300	7.48	34.09	1.68	26.66	139	0.71
213	8.43	33.93 6	2.78	164	400	6.43	34.19	0.79	26.88	118	0.84
254	7.95	34.02 5	2.20	150	500	5.83	34.26	0.48	27.02	105	0.96
306	7.41	34.10 0	1.58	138							
389	6.49	34.18 0	0.83	120							
468	6.00	34.24 4	0.52	109							
540	5.60	34.29 2	0.43	101							

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

HORIZON; August 2, 1960; 0705 GCT; 29°26'N, 121°21'W; sounding, 2082 fm; wind, 320°, force 5; weather, cloudy; sea, very rough; wire angle, 34°.

100.100

0	19.14	33.40	5.29	412	0	19.14	33.40	5.29	23.79	412	0.00
8	19.16	33.40	5.26	412	10	19.16	33.40	5.26	23.79	412	0.04
28	19.14	33.40	5.31	412	20	19.15	33.40	5.28	23.79	412	0.08
52	17.40	33.55	5.67	361	30	19.13	33.41	5.31	23.80	411	0.12
60	17.28	33.63	5.64	352	50	18.00	33.49	5.54	24.13	379	0.20
75	17.25	33.88	5.56	333	75	17.25	33.88	5.56	24.62	333	0.29
86	16.93	33.97	5.51	319	100	16.93	34.15	5.34	24.89	306	0.37
98	16.94	34.14	5.36	307	125	14.27	33.90	5.06	25.31	268	0.45
121	15.07	34.00	5.09	277	150	11.99	33.63	4.88	25.56	244	0.51
135	13.29	33.78	5.02	258	200	9.28	33.77	4.07	26.13	189	0.62
159	11.13	33.57	4.69	234	250	8.26	33.95	3.11	26.44	160	0.71
186	9.60	33.71	4.23	198	300	7.55	34.01	2.41	26.59	146	0.79
209	9.08	33.82 1	3.94	183	400	6.59	34.13	1.08	26.82	124	0.93
249	8.27	33.94 9	3.14	160	500	5.89	34.21	0.58	26.96	110	1.05
304	7.49	34.01 6	2.33	145							
389	6.66	34.12 4	1.16	126							
468	6.12	34.18 5	0.70	115							
540	5.60	34.23 4	0.48	105							

HORIZON; August 1, 1960; 2149 GCT; 28°40.5'N, 122°46.5'W; sounding, 2245 fm; wind, 340°, force 5; weather, cloudy; sea, very rough; wire angle, 23°.

100.120

0	20.25	33.74	5.06	415	0	20.25	33.74	5.06	23.75	415	0.00
8	20.24	33.74	5.06	415	10	20.23	33.74	5.06	23.76	415	0.04
30	19.53	33.72	5.17	398	20	20.20	33.73	5.07	23.77	414	0.08
39	19.13	33.73	5.20	388	30	19.53	33.72	5.17	23.93	398	0.12
53	18.30	33.79	5.32	364	50	18.42	33.77	5.31	24.25	368	0.20
67	18.12	33.91	5.27	350	75	18.16	33.95	5.27	24.45	349	0.29
90	17.36	33.90	5.49	335	100	16.96	33.85	5.47	24.66	329	0.38
108	16.63	33.82	5.41	323	125	15.93	33.84	5.15	24.90	307	0.46
126	15.92	33.84	5.14	306	150	14.17	33.82	4.71	25.26	272	0.53
153	13.91	33.82	4.65	267	200	10.71	33.75	4.25	25.87	214	0.65
181	11.66	33.74	4.42	230	250	9.31	33.87	3.67	26.20	182	0.76
218	10.00	33.77	4.18	201	300	8.26	34.03	2.53	26.49	155	0.84
244	9.42	33.85 1	3.78	185	400	6.77	34.07	1.79	26.75	131	0.99
290	8.47	34.03 0	2.61	157	500	5.80	34.17	0.71	26.95	112	1.12
350	7.34	34.02 5	2.26	142	600	5.25	34.26	0.41	27.08	99	1.23
443	6.30	34.11 7	1.20	122							
529	5.59	34.20 0	0.59	107							
601	5.24	34.26 0	0.41	99							

HORIZON; August 5, 1960; 0806 GCT; 29°46.5'N, 116°00.5'W; sounding, 700 fm; wind, 320°, force 2; weather, cloudy; sea, very rough; wire angle, 30°.

110.35

1	17.32	33.57	6.09	357	0	(17.32)	(33.57)	(6.09)	(24.36)	(357)	(0.00)
9	17.24	33.56	6.11	356	10	17.22	33.56	6.11	24.38	356	0.04
26	13.39	33.53	5.34	277	20	14.36	33.56	5.59	25.03	294	0.07
34	12.84	33.62	4.38	260	30	13.10	33.58	4.86	25.30	268	0.10
46	11.70	33.67	3.72	236	50	11.50	33.69	3.57	25.68	232	0.15
58	11.19	33.73	3.20	223	75	10.57	33.83	2.93	25.97	205	0.20
78	10.54	33.84	2.92	204	100	10.59	33.94	2.58	26.05	197	0.25
94	10.52	33.90	2.74	199	125	10.34	34.05	2.04	26.18	185	0.30
111	10.78	34.06	2.06	192	150	10.94	34.28	1.19	26.25	178	0.35
127	10.32	34.05	2.03	185	200	10.41	34.39	1.00	26.43	161	0.43
152	10.95	34.30	1.17	177	250	10.07	34.49	0.53	26.56	149	0.51
181	10.17	34.24	1.48	169	300	9.88	34.53	0.31	26.63	141	0.59
206	10.46	34.42 6	0.80	159	400	8.21	34.37	0.56	26.77	128	0.73
249	10.08	34.48 7	0.54	149	500	7.15	34.35	0.40	26.91	115	0.85
296	9.92	34.53 7	0.30	142							
371	8.55	34.39 1	0.59	132							
448	7.70	34.36 0	0.44	122							
530	6.84	34.34 9	0.38	111							

SIO

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6007-8

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

110.40

HORIZON; August 5, 1960; 1130 GCT; 29°35.5'N, 116°22'W; sounding, 750 fm; wind, 320°, force 2; weather, overcast; sea, very rough; wire angle, 28°.

0	21.02	33.65	5.17	441	0	21.02	33.65	5.17	23.48	441	0.00
8	21.03	33.65	5.17	442	10	21.03	33.65	5.17	23.47	442	0.04
30	18.28	33.58	5.17	379	20	21.00	33.64	5.17	23.49	441	0.09
38	17.27	33.58	5.95	356	30	18.28	33.58	5.17	24.13	379	0.13
52	15.46	33.59	5.59	315	50	15.62	33.59	5.62	24.77	319	0.20
65	14.18	33.53	5.40	293	75	13.30	33.54	5.02	25.23	275	0.27
85	12.36	33.60	4.36	254	100	11.70	33.71	3.65	25.67	233	0.34
102	11.36	33.74	3.44	226	125	10.52	33.84	3.16	25.98	204	0.39
119	10.68	33.82	3.21	209	150	9.97	33.97	2.66	26.18	185	0.44
144	10.06	33.93	2.81	189	200	9.79	34.27	1.38	26.43	161	0.53
170	9.80	34.12	2.07	171	250	9.12	34.34	0.95	26.60	145	0.61
203	9.79	34.28	1.30	159	300	8.73	34.37	0.71	26.69	136	0.68
229	9.38	34.32 1	1.09	150	400	7.75	34.40	0.36	26.86	120	0.81
271	8.94	34.34 8	0.84	141	500	6.87	34.38	0.34	26.97	110	0.93
326	8.54	34.37 9	0.60	133							
413	7.62	34.39 7	0.35	118							
495	6.91	34.37 3	0.35	110							
567	6.25	34.38 5	0.29	101							

110.50

HORIZON; August 5, 1960; 1704 GCT; 29°15'N, 117°03'W; sounding, 1900 fm; wind, 320°, force 3; weather, overcast; sea, very rough; wire angle, 19°.

1	21.15	33.72	5.11	440	0	(21.15)	(33.72)	(5.11)	(23.50)	(440)	(0.00)
10	21.12	33.73	5.09	439	10	21.12	33.73	5.09	23.51	439	0.04
29	18.92	33.66	5.82	388	20	21.08	33.73	5.12	23.52	437	0.09
38	17.66	33.60	6.03	363	30	18.80	33.65	5.88	24.06	386	0.13
52	16.16	33.55	5.92	333	50	16.37	33.56	5.96	24.58	337	0.20
67	14.42	33.53	5.54	298	75	13.71	33.54	5.20	25.14	283	0.28
90	12.76	33.58	4.61	262	100	12.43	33.61	4.39	25.45	254	0.35
109	12.11	33.64	4.14	246	125	11.03	33.73	3.62	25.80	220	0.41
128	10.87	33.75	3.56	216	150	10.32	33.94	2.81	26.10	193	0.46
147	10.32	33.92	2.88	195	200	10.73	34.41	0.90	26.39	165	0.55
174	10.42	34.16	1.81	178	250	9.04	34.30	1.11	26.58	147	0.63
205	10.76	34.45	0.71	163	300	8.55	34.34	0.72	26.70	136	0.70
233	9.21	34.26 4	1.33	151	400	7.59	34.36	0.43	26.85	121	0.84
278	8.80	34.34 5	0.79	139	500	6.58	34.37	0.29	27.00	106	0.96
329	8.22	34.34 0	0.69	131							
408	7.50	34.35 9	0.40	119							
489	6.68	34.37 1	0.31	108							
570	6.10	34.40 5	0.21	98							

110.60

HORIZON; August 5, 1960; 2201 GCT; 29°01'N, 117°36'W; sounding, 1900 fm; wind, 320°, force 3; weather, cloudy; sea, rough; wire angle, 15°.

0	21.02	33.72	5.12	437	0	21.02	33.72	5.12	23.53	437	0.00
10	20.98	33.72	5.19	435	10	20.98	33.72	5.19	23.54	435	0.04
29	18.56	33.47	5.50	393	20	20.93	33.72	5.21	23.56	434	0.09
38	17.17	33.46	5.70	362	30	18.35	33.47	5.53	24.03	389	0.13
52	14.99	33.33	5.97	324	50	15.18	33.34	5.95	24.68	327	0.20
66	13.96	33.36	5.88	301	75	13.38	33.39	5.67	25.09	288	0.28
91	12.44	33.45	5.17	266	100	12.20	33.50	4.98	25.40	258	0.35
110	11.43	33.59	4.48	238	125	10.86	33.61	4.27	25.74	226	0.41
128	10.76	33.62	4.24	224	150	10.19	33.88	2.87	26.07	195	0.46
147	10.28	33.86	3.01	198	200	9.29	34.08	2.20	26.38	166	0.55
174	9.64	33.98	2.52	180	250	8.97	34.24	1.29	26.55	149	0.63
206	9.23	34.10	2.14	164	300	8.42	34.29	0.99	26.67	138	0.71
234	9.01	34.19 7	1.57	154	400	7.22	34.32	0.52	26.87	119	0.84
280	8.85	34.31 7	0.94	142	500	6.32	34.35	0.35	27.02	105	0.96
331	7.58	34.22 5	1.05	131							
410	7.16	34.32 6	0.48	117							
490	6.40	34.33 8	0.35	106							
571	5.93	34.36 9	0.26	98							

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

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6007-8

HORIZON; August 6, 1960; 0252 GCT; 28°41.5'N, 118°18'W; sounding, missing; wind, 320°, force 4; weather, cloudy; sea, rough; wire angle, 20°.

110.70

0	20.03	33.53	5.27	425	0	20.03	33.53	5.27	23.65	425	0.00
10	20.02	33.53	5.32	424	10	20.02	33.53	5.32	23.66	424	0.04
28	18.26	33.49	5.52	385	20	20.00	33.53	5.33	23.67	424	0.08
37	17.54	33.43	5.67	373	30	18.25	33.49	5.53	24.08	384	0.13
51	16.72	33.53	5.87	347	50	16.81	33.53	5.87	24.45	349	0.20
65	15.69	33.52	5.77	325	75	15.22	33.52	5.72	24.81	315	0.28
88	14.52	33.54	5.57	300	100	13.60	33.56	5.14	25.18	279	0.36
107	13.06	33.58	4.85	268	125	11.64	33.60	4.35	25.59	240	0.42
126	11.57	33.60	4.32	239	150	10.07	33.69	3.97	25.94	207	0.48
145	10.18	33.65	4.09	212	200	9.21	34.02	2.66	26.34	170	0.58
171	9.75	33.90	3.20	187	250	8.72	34.14	1.90	26.52	153	0.66
204	9.16	34.03	2.61	168	300	7.64	34.12	1.69	26.66	140	0.73
232	8.94	34.09 2	2.18	160	400	6.59	34.16	1.04	26.84	122	0.87
278	8.18	34.16 0	1.66	144	500	5.88	34.26	0.54	27.01	106	0.99
329	7.06	34.08 0	1.72	134							
408	6.54	34.17 4	0.96	120							
488	5.94	34.24 9	0.58	107							
568	5.62	34.31 2	0.40	99							

HORIZON; August 6, 1960; 0723 GCT;^{a)} 28°21'N, 118°55'W; sounding, missing; wind, 300°, force 2; weather, cloudy; sea, rough; wire angle, 10°.

110.80

58	15.72	33.37	5.74	336
63	15.64	33.39	5.93	334
68	15.92	33.58	5.70	325
72	16.26	33.76	5.54	320
76	16.26	33.79	5.47	318
80	16.08	33.75	5.62	317
84	15.86	33.73	5.45	313
88	15.50	33.71	5.50	307
90	15.46	33.74	5.37	304
94	15.02	33.71	5.37	298

HORIZON; August 6, 1960; 0808 GCT; 28°21'N, 118°55'W; sounding, missing; wind, 300°, force 2; weather, cloudy; sea, rough; wire angle, 19°.

110.80

0	20.58	5.19	0	20.58
10	20.56	5.21	10	20.56
28	19.65	5.36	20	20.50
37	18.52	5.54	30	19.58
51	16.44	5.87	50	16.67
65	15.62	5.88	75	16.26
88	15.42	5.55	100	14.22
108	13.29	5.35	125	11.98
127	11.81	4.91	150	10.17
145	10.34	4.32	200	9.19
173	9.55	4.05	250	8.93
205	9.14	3.10	300	8.38
233	9.12	2.11	400	7.47
278	8.58	1.66	500	6.38
328	8.12	1.18		
405	7.42	0.58		
483	6.56	0.42		
562	5.84	0.31		

a) Test cast.

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

110.90 HORIZON; August 6, 1960; 1305 GCT; 28°00'N, 119°33.5'W; sounding, missing; wind, 300°, force 2; weather, cloudy; sea, rough; wire angle, 14°.

1	20.50	33.52	5.14	437	0	(20.50)	(33.52)	(5.14)	(23.53)	(437)	(0.00)
11	20.50	33.53	5.13	437	10	20.50	33.53	5.13	23.53	437	0.04
30	19.14	33.48	5.36	406	20	20.53	33.53	5.13	23.53	437	0.09
39	18.14	33.42	5.52	387	30	19.14	33.48	5.36	23.85	406	0.13
53	17.33	33.41	5.68	369	50	17.49	33.41	5.64	24.20	373	0.21
68	16.76	33.53	5.70	348	75	16.20	33.52	5.70	24.59	336	0.30
92	15.41	33.53	5.72	319	100	15.07	33.54	5.67	24.85	311	0.38
112	14.52	33.51	5.58	301	125	13.79	33.53	5.25	25.12	285	0.45
131	13.41	33.55	5.00	276	150	12.01	33.75	4.15	25.63	237	0.52
150	12.01	33.75	4.15	237	200	9.91	33.83	3.47	26.08	194	0.63
179	10.65	33.78	3.70	210	250	8.80	34.00	2.94	26.39	165	0.72
211	9.58	33.88	3.36	186	300	7.92	34.07	2.17	26.58	147	0.80
240	8.98	33.96 9	3.09	169	400	6.93	34.21	1.00	26.83	123	0.94
288	8.10	34.06 5	2.31	150	500	6.37	34.32	0.42	26.98	108	1.07
340	7.46	34.11 3	1.78	137	600	(5.60)	(34.34)		(27.11)	(97)	(1.17)
422	6.78	34.23 7	0.79	119							
504	6.35	34.31 7	0.41	107							
585	5.72	34.33 9	0.34	98							

110.100 HORIZON; August 6, 1960; 1745 GCT; 27°37'N, 120°14'W; sounding, missing; wind, 310°, force 3; weather, overcast; sea, very rough; wire angle, 13°.

1	21.62	33.98	5.03	433	0	(21.62)	(33.98)	(5.03)	(23.57)	(433)	(0.00)
11	21.62	33.99	5.01	432	10	21.62	33.99	5.01	23.57	432	0.04
30	20.27	-	-	-	20	21.68	34.01	5.02	23.58	432	0.09
39	19.64	33.88	5.22	389	30	20.27	33.93	5.17	23.91	401	0.13
53	18.16	33.70	5.51	367	50	18.30	33.71	5.48	24.24	369	0.21
69	17.76	33.77	5.62	353	75	17.00	33.68	5.56	24.52	343	0.29
93	16.37	33.71	5.31	326	100	16.10	33.75	5.27	24.79	317	0.38
112	15.60	33.83	5.17	300	125	14.77	33.85	4.94	25.15	282	0.45
131	14.23	33.85	4.80	271	150	12.26	33.70	4.65	25.55	244	0.52
151	12.16	33.70	4.64	243	200	10.30	33.92	3.29	26.08	194	0.63
179	10.68	33.76	3.97	213	250	8.75	34.05	2.53	26.44	160	0.72
212	10.06	33.99	2.94	185	300	7.92	34.11	1.98	26.61	144	0.80
242	8.96	34.03 0	2.63	165	400	6.97	34.21	1.01	26.82	123	0.94
289	8.08	34.10 7	2.09	147	500	6.15	34.30	0.42	27.00	107	1.06
342	7.43	34.14 1	1.55	135	600	(5.61)	(34.36)		(27.12)	(96)	(1.17)
425	6.77	34.23 4	0.81	119							
507	6.10	34.30 3	0.40	105							
588	5.65	34.35 0	0.38	97							

110.120 HORIZON; August 7, 1960; 0136 GCT; 26°55'N, 121°31'W; sounding, 2240 fm; wind, 340°, force 2; weather, overcast; sea, very rough; wire angle, 10°.

1	20.66	33.71	5.03	427	0	(20.66)	(33.71)	(5.03)	(23.63)	(427)	(0.00)
11	20.65	33.71	5.06	427	10	20.65	33.71	5.06	23.63	427	0.04
31	19.58	33.85	5.28	397	20	20.80	33.78	5.07	23.64	426	0.09
40	17.71	33.59	5.50	365	30	19.57	33.75	5.27	23.94	398	0.13
54	17.96	33.82	5.45	354	50	17.90	33.76	5.49	24.37	357	0.20
69	17.94	33.93	5.38	345	75	17.87	33.93	5.41	24.51	343	0.29
94	16.86	33.81	5.48	329	100	16.40	33.80	5.37	24.76	320	0.37
113	16.80	34.10	5.32	315	125	16.30	34.03	5.15	24.95	301	0.45
133	15.52a)	34.04	4.96	283	150	13.62	33.86	4.73	25.40	259	0.52
152	13.40	33.84	4.70	255	200	10.34	33.87	3.66	26.03	199	0.64
181	10.96	33.75	4.31	217	250	8.70	33.96	3.14	26.38	166	0.73
215	9.85	33.93	3.33	186	300	8.63	34.18	1.87	26.56	149	0.82
244	8.70	33.93 5	3.23	168	400	7.40	34.28	0.73	26.82	124	0.96
293	8.68	34.16 3	1.99	151	500	6.39	34.33	0.34	26.99	107	1.08
345	8.08	34.24 4	1.26	136	600	(5.67)	(34.35)	(0.26)	(27.10)	(97)	(1.19)
426	7.10	34.29 4	0.55	119							
508	6.32	34.32 9	0.32	106							
590	5.73	34.34 9	0.26	97							

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

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HORIZON; August 14, 1960; 1319 GCT; 29°21.5'N, 115°17.5'W; sounding, 32 fm; wind, 290°, force 3; weather, partly cloudy; sea, rough; wire angle, 03°.

11330

0	16.10	33.63 2	5.23	326	0	16.10	33.63	5.23	24.69	326	0.00
10	16.00	33.63 1	5.25	324	10	16.00	33.63	5.25	24.72	324	0.03
20	14.98	33.63 1	4.64	302	20	14.98	33.63	4.64	24.94	302	0.06
30	12.60	33.66 0	3.84	253	30	12.60	33.66	3.84	25.45	253	0.09
34	12.28	33.66 3	3.63	248							
44	11.54	33.67 1	3.89	234							

HORIZON; August 14, 1960; 0938 GCT; 28°55'N, 115°24'W; sounding, 515 fm; wind, 310°, force 3; weather, cloudy; sea, rough; wire angle, 14°.

11535

1	18.78	33.57	5.49	391	0	(18.78)	(33.57)	(5.49)	(24.01)	(391)	(0.00)
11	18.74	33.57	5.58	391	10	18.74	33.57	5.58	24.01	391	0.04
30	15.15	33.52	5.73	314	20	17.00	33.54	5.66	24.42	352	0.08
39	14.50	33.52	5.42	300	30	15.15	33.52	5.73	24.82	314	0.11
53	13.19	33.56	4.56	271	50	13.37	33.56	4.66	25.23	275	0.17
68	12.38	33.60	4.26	254	75	11.77	33.66	3.95	25.61	239	0.23
91	10.83	33.79	3.25	212	100	10.59	33.85	2.94	25.98	203	0.29
111	10.44	33.91	2.72	197	125	10.38	33.97	2.49	26.10	191	0.34
131	10.36	33.98	2.46	191	150	10.06	34.06	2.19	26.23	180	0.39
150	10.06	34.06	2.19	180	200	9.70	34.23	1.48	26.43	161	0.47
179	9.82	34.19	1.66	166	250	9.35	34.34	0.98	26.56	148	0.55
211	9.61	34.26	1.38	158	300	9.22	34.44	0.55	26.66	139	0.63
240	9.35	34.30 6	1.13	151	400	8.16	34.39	0.41	26.80	126	0.76
288	9.40	34.45 7	0.53	140	500	7.29	34.40	0.28	26.94	113	0.89
340	8.38	34.32 8	0.73	134	600	(6.07)	(34.37)		(27.06)	(101)	(1.00)
422	8.02	34.41 2	0.33	123							
505	7.21	34.40 2	0.28	113							
585	6.22	34.36 7	0.40	102							

HORIZON; August 14, 1960; 0355 GCT; 28°18.5'N, 114°52'W; sounding, 58 fm; wind, 290°, force 5; weather, overcast; sea, rough; wire angle, 28°.

11933

0	20.76	33.69 6	5.38	431	0	20.76	33.70	5.38	23.59	431	0.00
8	20.75	33.69 3	5.53	431	10	20.75	33.69	5.53	23.59	431	0.04
26	19.76	33.66 6	5.50	409	20	20.29	33.68	5.51	23.70	421	0.09
43	16.14	33.58 4	5.44	330	30	18.90	33.64	5.49	24.03	389	0.13
65	12.28	33.64 8	3.95	249	50	14.99	33.60	5.09	24.91	305	0.20

HORIZON; August 9, 1960; 0246 GCT; 27°45'N, 115°37'W; sounding, 2080 fm; wind, 320°, force 3; weather, overcast; sea, rough; wire angle, 18°.

12045

1	22.34	33.81	5.05	464	0	(22.34)	(33.81)	(5.05)	(23.24)	(464)	(0.00)
10	22.34	33.81	5.05	464	10	22.34	33.81	5.05	23.24	464	0.05
33	14.62	33.64	5.03	294	20	22.00	33.80	5.05	23.32	456	0.09
43	13.06	33.68	4.06	261	30	14.74	33.64	5.03	25.00	297	0.13
57	11.88	33.72	3.71	236	50	12.00	33.70	3.76	25.60	240	0.18
71	11.40	33.82	3.18	220	75	11.28	33.85	2.99	25.85	215	0.24
94	10.88	34.02	2.32	196	100	10.97	34.07	2.20	26.08	194	0.29
113	11.44	34.23	1.21	190	125	11.51	34.33	0.90	26.18	185	0.34
132	11.54	34.39	0.77	180	150	11.62	34.48	0.60	26.28	175	0.39
161	11.63	34.52	0.54	173	200	11.32	34.57	0.30	26.40	163	0.47
189	11.48	34.56	0.39	167	250	10.55	34.56	0.53	26.53	151	0.55
226	10.82	34.57	0.32	155	300	9.78	34.51	0.41	26.63	142	0.63
254	10.50	34.55 3	0.34	150	400	7.94	34.37	0.50	26.82	124	0.77
300	9.78	34.50 8	0.41	142	500	6.71	34.36	0.34	26.97	109	0.89
360	8.68	34.42 0	0.51	132	600	6.08	34.41	0.24	27.09	97	1.04
453	7.10	34.33 1	0.45	116							
538	6.47	34.38 8	0.26	103							
612	6.00	34.40 8	0.24	96							

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

120.50 HORIZON; August 8, 1960; 2355 GCT; 27°36.5'N, 115°52.5'W; sounding, 2090 fm; wind, 320°, force 3; weather, overcast; sea, very rough; wire angle, 30°.

0	20.55	33.67	5.44	428	0	20.55	33.67	5.44	23.62	428	0.00
8	20.50	33.66	5.54	427	10	20.48	33.67	5.54	23.66	425	0.04
29	18.22	33.67	5.39	371	20	19.30	33.67	5.46	23.95	397	0.08
38	16.85	33.65	5.35	341	30	18.20	33.67	5.38	24.23	370	0.12
51	14.64	33.54	5.59	302	50	14.70	33.54	5.60	24.94	303	0.19
64	13.80	33.54	5.03	285	75	12.50	33.62	4.17	25.45	254	0.26
85	12.01	33.70	3.74	239	100	11.46	33.89	2.66	25.85	216	0.32
102	11.43	33.90	2.64	215	125	10.70	33.97	2.50	26.05	197	0.37
120	10.59	33.91	2.76	200	150	11.63	34.35	0.76	26.18	184	0.42
145	11.66	34.35	0.74	186	200	11.27	34.51	0.59	26.36	167	0.51
171	11.34	34.36	0.89	179	250	9.99	34.43	0.77	26.53	151	0.59
203	11.24	34.51	0.58	166	300	9.11	34.38	0.75	26.64	141	0.67
227	9.98	34.33 0	1.15	158	400	7.33	34.29	0.66	26.83	123	0.80
267	9.99	34.48 9	0.54	146	500	6.79	34.38	0.26	26.99	108	0.92
319	8.55	34.31 1	0.88	138							
402	7.32	34.28 3	0.64	122							
479	6.96	34.37 9	0.30	110							
546	6.38	34.39 0	0.22	102							

120.60 HORIZON; August 8, 1960; 1839 GCT; 27°14.5'N, 116°33.5'W; sounding, 1950 fm; wind, 320°, force 3; weather, overcast; sea, very rough; wire angle, 30°.

0	22.08	33.78	5.04	460	0	22.08	33.78	5.04	23.29	460	0.00
8	22.05	33.78	5.05	459	10	22.04	33.78	5.06	23.30	459	0.05
26	18.76	33.63	5.64	387	20	20.42	33.70	5.35	23.68	423	0.09
34	17.50	33.59	5.80	360	30	17.84	33.60	5.76	24.26	367	0.13
47	16.92	33.59	5.81	347	50	16.78	33.59	5.80	24.51	343	0.20
59	16.35	33.64	5.78	331	75	14.76	33.61	5.57	24.97	299	0.28
79	14.34	33.60	5.47	291	100	12.36	33.68	4.48	25.51	248	0.35
96	12.63	33.65	4.65	255	125	10.80	33.78	3.65	25.88	213	0.41
112	11.57	33.78	4.00	226	150	10.88	34.05	2.15	26.07	195	0.46
128	10.74	33.78	3.58	211	200	11.16	34.46	0.72	26.35	169	0.55
150	10.88	34.05	2.15	195	250	10.53	34.55	0.41	26.53	151	0.64
177	11.64	34.43	0.81	180	300	9.92	34.56	0.32	26.64	141	0.71
200	11.16	34.45 9	0.72	169	400	8.43	34.47	0.30	26.81	125	0.85
240	10.61	34.53 6	0.48	154	500	7.17	34.44	0.22	26.97	109	0.97
286	10.16	34.57 4	0.30	143							
360	8.94	34.48 0	0.36	131							
436	7.97	34.45 5	0.24	119							
516	6.98	34.43 1	0.22	107							

120.70 HORIZON; August 8, 1960; 1241 GCT; 26°52'N, 117°14.5'W; sounding, 1950 fm; wind, 320°, force 3; weather, cloudy; sea, very rough; wire angle, 27°.

0	21.76	33.77	5.12	452	0	21.76	33.77	5.12	23.37	452	0.00
9	21.72	33.77	5.11	451	10	21.72	33.77	5.11	23.38	451	0.05
27	19.77	33.68	5.47	407	20	20.97	33.73	5.25	23.56	434	0.09
35	18.16	33.56	5.79	377	30	19.10	33.63	5.60	23.97	395	0.13
48	16.54	33.55	5.78	342	50	16.39	33.54	5.78	23.56	339	0.20
61	15.42	33.53	5.81	319	75	14.36	33.55	5.56	25.01	295	0.28
83	13.71	33.55	5.26	282	100	12.70	33.62	4.56	25.40	258	0.35
100	12.70	33.62	4.56	258	125	11.48	33.74	4.16	25.73	227	0.42
117	11.81	33.73	4.24	234	150	10.29	33.79	3.85	25.98	203	0.47
135	11.00	33.76	4.00	218	200	8.87	34.01	2.85	26.39	165	0.56
160	9.84	33.83	3.76	193	250	8.63	34.18	1.69	26.55	149	0.64
190	9.01	33.96	3.16	171	300	8.30	34.25	1.14	26.66	139	0.72
215	8.76	34.08 2	2.31	157	400	7.03	34.25	0.88	26.85	121	0.85
258	8.58	34.19 8	1.52	146	500	6.32	34.34	0.35	27.01	105	0.97
307	8.22	34.25 6	1.09	137							
384	7.16	34.23 9	0.94	124							
463	6.56	34.30 8	0.45	111							
541	6.04	34.37 2	0.28	100							

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

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HORIZON; August 8, 1960; 0745 GCT; 26°32'N, 117°51.5'W; sounding, 1920 fm; wind, 320°, force 3; weather, cloudy; sea, rough; wire angle, 20°.

120.80

0	21.58	33.66	5.04	455	0	21.58	33.66	5.04	23.34	455	0.00
9	21.58	33.66	5.02	455	10	21.58	33.66	5.02	23.34	455	0.05
28	19.31	33.62	5.41	401	20	21.58	33.66	5.02	23.34	455	0.09
37	18.06	33.60	5.62	372	30	18.98	33.62	5.48	24.00	392	0.13
51	17.36	33.54	5.69	360	50	17.39	33.54	5.69	24.33	361	0.21
65	16.75	33.57	5.76	345	75	16.00	33.57	5.74	24.67	328	0.29
87	15.08	33.59	5.61	308	100	14.08	33.56	5.33	25.08	290	0.37
107	13.58	33.55	5.14	280	125	12.52	33.61	4.52	25.42	256	0.44
126	12.49	33.61	4.50	255	150	11.38	33.72	4.01	25.73	227	0.50
145	11.58	33.70	4.14	232	200	9.67	33.94	2.72	26.20	183	0.61
172	10.52	33.83	3.28	204	250	9.23	34.20	1.62	26.47	157	0.70
203	9.62	33.97	2.65	180	300	8.43	34.24	1.27	26.63	142	0.77
230	9.54	34.14 8	1.80	165	400	7.12	34.25	0.80	26.83	123	0.91
274	8.82	34.22 6	1.45	148	500	6.17	34.32	0.37	27.02	105	1.03
323	8.08	34.25 2	1.12	136							
401	7.10	34.25 0	0.79	122							
479	6.33	34.31 1	0.41	107							
558	5.70	34.34 4	0.30	97							

HORIZON; August 8, 1960; 0251 GCT; 26°13.5'N, 118°26'W; sounding, 2150 fm; wind, 340°, force 4; weather, cloudy; sea, rough; wire angle, 16°.

120.90

0	22.64	34.07	4.93	453	0	22.64	34.07	4.93	23.35	453	0.00
10	22.62	34.07	4.97	453	10	22.62	34.07	4.97	23.36	453	0.05
29	19.41	33.61	5.40	404	20	22.61	34.08	4.98	23.36	452	0.09
38	18.26	33.62	5.61	376	30	19.35	33.61	5.41	23.89	403	0.13
52	17.83	33.76	5.55	355	50	17.84	33.75	5.55	24.38	356	0.21
66	17.08	33.71	5.62	341	75	17.62	33.99	5.58	24.61	334	0.30
90	16.68	33.86	5.52	322	100	15.78	33.74	5.45	24.85	311	0.38
110	15.06	33.66	5.39	302	125	14.88	33.96	4.88	25.22	276	0.45
129	14.48	33.96	4.72	268	150	12.19	33.81	4.51	25.65	235	0.52
148	12.38	33.82	4.52	238	200	9.78	33.92	3.28	26.17	185	0.63
176	10.42	33.80	4.08	204	250	9.06	34.14	2.04	26.46	158	0.71
209	9.60	33.98	2.81	179	300	8.40	34.21	1.56	26.62	143	0.79
238	9.21	34.11 6	2.16	163	400	7.23	34.28	0.74	26.84	122	0.93
286	8.55	34.19 3	1.70	146	500	6.45	34.33	0.40	26.99	108	1.05
339	7.98	34.25 6	1.11	134	600	(5.74)	(34.38)		(27.11)	(96)	(1.16)
421	7.01	34.29 3	0.64	118							
503	6.43	34.33 7	0.40	107							
585	5.85	34.37 0	0.27	98							

HORIZON; August 7, 1960; 2157 GCT; 25°53'N, 119°04.5'W; sounding, 2200 fm; wind, 340°, force 3; weather, overcast; sea, rough; wire angle, 17°.

120.100

1	22.28	33.74	5.00	468	0	(22.28)	(33.74)	(5.00)	(23.20)	(468)	(0.00)
10	22.26	33.74	5.00	467	10	22.26	33.74	5.00	23.20	467	0.05
29	19.92	33.63	5.38	415	20	22.25	33.74	5.01	23.21	467	0.09
38	18.97	33.61	5.48	393	30	19.89	33.62	5.39	23.79	412	0.14
52	17.59	33.56	5.85	364	50	17.80	33.57	5.80	24.25	368	0.22
67	16.22	33.51	5.97	337	75	15.55	33.51	5.91	24.73	323	0.30
90	14.24	33.52	5.48	295	100	13.40	33.54	5.05	25.20	277	0.38
109	12.40	33.58	4.53	256	125	12.13	33.74	4.17	25.61	239	0.44
128	-	33.75	4.14	-	150	10.99	33.80	4.02	25.87	214	0.50
147	11.12	33.78	4.13	218	200	9.82	34.03	2.39	26.25	178	0.60
175	10.26	33.96	2.64	190	250	9.60	34.26	1.27	26.46	158	0.69
208	9.75	34.07	2.26	175	300	8.50	34.26	1.18	26.64	141	0.77
237	9.78	34.26 2	1.28	161	400	7.14	34.27	0.66	26.85	121	0.90
285	8.82	34.25 5	1.26	146	500	6.14	34.31	0.39	27.02	105	1.02
337	7.84	34.26 2	0.94	131	600	(5.72)	(34.38)		(27.12)	(95)	(1.13)
418	6.96	34.28 2	0.60	118							
500	6.14	34.31 4	0.39	105							
582	5.78	34.36 8	0.31	97							

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

120.120

HORIZON; August 7, 1960; 1340 GCT; 25°13'N, 120°20.5'W; sounding, 2100 fm; wind, 340°, force 3; weather, overcast; sea, very rough; wire angle, 15°.

1	21.85	33.92	5.13	443	0	(21.85)	(33.92)	(5.13)	(23.46)	(443)	(0.00)
11	21.82	33.92	5.11	443	10	21.82	33.92	5.11	23.47	443	0.04
30	20.26	33.96	5.40	399	20	21.80	33.93	5.12	23.48	441	0.09
39	18.98	33.95	5.59	369	30	20.26	33.96	5.40	23.93	399	0.13
53	18.56	33.99	5.62	356	50	18.56	33.99	5.62	24.38	356	0.21
68	17.84	33.92	5.59	344	75	17.64	33.96	5.66	24.59	336	0.29
92	17.85	34.22	5.71	322	100	17.90	34.28	5.68	24.77	319	0.38
111	17.56	34.33	5.47	308	125	17.60	34.38	5.40	24.92	305	0.46
130	17.26	34.40	5.29	295	150	15.15	34.02	5.18	25.21	277	0.53
149	15.22	34.04	5.20	277	200	10.63	33.86	3.25	25.98	204	0.65
176	12.08	33.80	4.08	234	250	9.49	34.09	2.19	26.35	168	0.75
208	10.36	33.89	3.07	197	300	8.83	34.24	1.54	26.57	147	0.83
236	9.74	34.03 6	2.48	177	400	7.50	34.29	0.68	26.81	125	0.97
282	9.00	34.20 3	1.73	153	500	6.77	34.36	0.36	26.97	109	1.09
333	8.52	34.27 9	1.16	140							
414	7.34	34.29 6	0.62	122							
496	6.80	34.36 1	0.37	110							
578	6.10	34.38 0	0.32	100							

123.42

HORIZON; August 13, 1960; 1928 GCT; 27°11.5'N, 115°01'W; sounding, 1200 fm; wind, 320°, force 5; weather, clear; sea, rough; wire angle, 30°.

0	21.96	33.80	5.32	455	0	21.96	33.80	5.32	23.34	455	0.00
8	21.90	33.80	5.39	454	10	21.88	33.79	5.40	23.35	453	0.05
30	18.02	33.68	6.27	365	20	21.82	33.79	5.41	23.37	452	0.09
38	16.10	33.61	5.90	328	30	18.02	33.68	6.27	24.28	365	0.13
51	14.92	33.61	5.61	302	50	15.01	33.61	5.63	24.91	305	0.20
64	13.97	33.62	5.14	282	75	13.00	33.68	4.36	25.39	259	0.27
84	12.50	33.79	3.58	242	100	12.56	34.15	1.88	25.84	217	0.33
100	12.56	34.15	1.88	217	125	12.80	34.42	0.95	26.04	198	0.38
118	12.58	34.36	1.16	202	150	12.30	34.55	0.51	26.20	183	0.43
142	12.68	34.58	0.37	187	200	10.67	34.41	0.97	26.40	164	0.52
168	10.96	34.34	1.06	174	250	9.92	34.43	0.70	26.54	150	0.60
201	10.66	34.41	0.96	163	300	9.32	34.45	0.58	26.66	139	0.67
226	10.48	34.47 9	0.69	155	400	8.19	34.45	0.28	26.84	122	0.81
270	9.56	34.41 8	0.72	145	500	6.88	34.35	0.35	26.95	112	0.93
326	9.08	34.48 2	0.38	133							
416	7.98	34.44 0	0.28	120							
500	6.88	34.35 2	0.35	112							
571	6.37	34.36 8	0.43	104							

127.40

HORIZON; August 13, 1960; 1415 GCT; 26°42.5'N, 114°29'W; sounding, 330 fm; wind, 320°, force 4; weather, overcast; sea, very rough; wire angle, 25°.

0	21.92	33.79	5.20	455	0	21.92	33.79	5.20	23.34	455	0.00
9	21.92	33.79	5.25	455	10	21.92	33.79	5.25	23.34	455	0.05
28	17.54	33.57	6.19	363	20	20.00	33.69	5.67	23.78	413	0.09
36	16.24	33.62	5.89	330	30	17.20	33.57	6.16	24.39	355	0.13
44	14.96	33.51	5.96	310	50	14.43	33.54	5.74	24.99	297	0.19
53	14.25	33.56	5.58	293	75	12.58	33.68	4.50	25.48	251	0.26
63	13.60	33.66	4.50	272	100	11.35	33.85	3.10	25.84	217	0.32
77	12.48	33.68	4.50	250	125	10.77	34.07	2.19	26.11	191	0.37
89	12.01	33.77	3.49	235	150	10.55	34.20	1.58	26.26	177	0.42
103	11.24	33.88	2.99	213	200	10.38	34.39	0.94	26.44	160	0.50
125	10.77	34.07	2.19	191	250	10.20	34.50	0.51	26.55	150	0.58
151	10.54	34.20 5	1.57	177	300	9.73	34.52	0.35	26.65	141	0.66
181	10.40	34.33 6	1.06	165	400	8.48	34.48	0.28	26.81	125	0.80
225	10.31	34.45 1	0.72	155	500	(7.33)	(34.44)		(26.95)	(111)	(0.92)
269	10.04	34.51 8	0.42	146							
363	8.96	34.50 1	0.29	130							
457	7.76	34.44 4	0.27	117							

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

HORIZON; August 9, 1960; 1541 GCT; 26°28'N, 113°30'W; sounding, 40 fm; wind, 320°, force 2; weather, cloudy; sea, moderate; wire angle, 03°.

130.30

0	20.42	33.97	5.25	403	0	20.42	33.97	5.25	23.88	403	0.00
10	19.33	33.91	5.11	380	10	19.33	33.91	5.11	24.13	380	0.04
20	16.03	33.94	2.18	301	20	16.03	33.94	2.18	24.95	301	0.07
30	13.56	33.99	1.03	247	30	13.56	33.99	1.03	25.52	247	0.10
39	12.46	34.04	1.76	223	50	13.04	34.37	0.20	25.92	209	0.15
49	13.03	34.36	0.20	210							
59	13.06	34.42	0.18	206							

HORIZON; August 9, 1960; 2101 GCT; 26°03'N, 114°14'W; sounding, 1850 fm; wind, 300°, force 1; weather, cloudy; sea, rough; wire angle, 03°.

130.40

0	20.74	33.72	5.52	429	0	20.74	33.72	5.52	23.61	429	0.00
10	15.37	33.80	5.39	298	10	15.37	33.80	5.39	24.98	298	0.04
30	11.97	33.76	3.48	234	20	13.02	33.77	4.19	25.46	253	0.06
39	11.30	33.80	3.39	220	30	11.97	33.76	3.48	25.66	234	0.09
49	11.82	34.05	1.53	210	50	11.87	34.07	1.50	25.92	210	0.13
64	12.02	34.20	0.72	203	75	11.87	34.28	0.66	26.08	194	0.18
79	11.86	34.30	0.66	193	100	11.80	34.38	0.67	26.16	186	0.23
98	11.82	34.37	0.68	187	125	11.98	34.57	0.39	26.28	175	0.28
123	12.00	34.56	0.39	176	150	11.64	34.58	0.34	26.35	168	0.32
143	11.70	34.57	0.38	170	200	11.01	34.61	0.25	26.49	155	0.40
173	11.54	34.64	0.28	162	250	10.66	34.61	0.19	26.55	149	0.48
202	10.99	34.61	0.24	155	300	10.17	34.59	0.19	26.63	143	0.55
231	10.80	34.61	0.17	151	400	8.94	34.50	0.20	26.76	130	0.70
271	10.48	34.60	0.21	147	500	7.93	34.48	0.17	26.90	117	0.82
330	9.82	34.56	0.17	139							
403	8.90	34.50	0.21	129							
477	8.21	34.49	0.17	119							
556	7.26	34.43	0.18	111							

HORIZON; August 10, 1960; 0519 GCT; 25°49'N, 114°46.5'W; sounding, 1915 fm; wind, 300°, force 2; weather, cloudy; sea, rough; wire angle, 13°.

130.50

0	21.65	33.77	5.36	449	0	21.65	33.77	5.36	23.40	449	0.00
10	20.76	-	5.53	-	10	20.76	-	5.53	23.63	427	0.04
29	16.80	33.63	5.90	341	20	18.32	33.67	5.85	24.19	373	0.08
38	15.06	33.64	5.03	303	30	16.70	33.63	5.90	24.56	338	0.12
52	13.26	33.62	4.62	269	50	13.40	33.62	4.64	25.26	272	0.18
67	12.14	33.73	3.64	240	75	12.05	33.83	3.06	25.69	231	0.24
91	12.36	34.41	0.30	194	100	12.26	34.47	0.14	26.15	187	0.30
110	12.25	34.49	0.10	186	125	12.23	34.52	0.10	26.19	183	0.34
130	12.23	34.53	0.10	183	150	12.25	34.57	0.08	26.23	180	0.39
149	12.25	34.57	0.08	180	200	11.82	34.68	0.09	26.39	164	0.48
178	12.10	34.65	0.10	171	250	11.31	34.68	0.10	26.49	155	0.56
210	11.70	34.68	0.09	161	300	10.67	34.64	0.11	26.58	147	0.64
239	11.42	34.68	0.10	157	400	9.26	34.55	0.12	26.75	131	0.78
285	10.89	34.66	0.10	149	500	8.10	34.49	0.14	26.88	118	0.91
336	10.12	34.60	0.12	140							
416	9.04	34.54	0.12	128							
498	8.12	34.48	0.14	118							
579	6.90	34.43	0.15	105							

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

130.60 HORIZON; August 10, 1960; 0622 GCT; 25°29'N, 115°25'W; sounding, 2035 fm; wind, 300°, force 1; weather, overcast; sea, rough; wire angle, 09°.

0	23.01	33.81	4.81	483	0	23.01	33.81	4.81	23.05	483	0.00
10	22.98	33.81	4.90	482	10	22.98	33.81	4.90	23.06	482	0.05
30	20.57	33.77	5.23	421	20	22.93	33.80	4.91	23.07	481	0.10
39	19.22	33.92	5.40	377	30	20.57	33.77	5.23	23.70	421	0.14
54	18.40	33.84	5.47	362	50	18.62	33.87	5.45	24.27	366	0.22
68	16.92	33.59	5.63	346	75	16.67	33.70	5.60	24.61	334	0.31
92	16.08	33.83	5.34	311	100	15.80	33.84	5.20	24.92	304	0.39
112	14.48	33.84	4.14	277	125	13.15	33.86	3.36	25.50	249	0.46
131	12.76	33.87	3.20	241	150	11.97	33.90	2.83	25.77	224	0.52
151	11.92	33.91	2.80	223	200	11.20	34.27	1.13	26.19	183	0.62
180	11.42	34.18	1.68	194	250	10.82	34.53	0.45	26.46	158	0.71
214	11.10	34.20u	0.82	-	300	9.93	34.49	0.46	26.59	146	0.79
244	10.92	34.53 4	0.45	159	400	8.93	34.49	0.27	26.74	131	0.93
291	10.02	34.49 2	0.48	147	500	8.29	34.57	0.08	26.91	115	1.06
343	9.51	34.50 1	0.31	138	600	(6.93)	(34.51)		(27.06)	(101)	(1.18)
424	8.74	34.48 0	0.25	128							
506	8.24	34.57 1	0.08	114							
587	7.08	34.51 3	0.09	102							

130.70 HORIZON; August 10, 1960; 1135 GCT; 25°09'N, 116°05'W; sounding, 2050 fm; wind, 310°, force 1; weather, cloudy; sea, moderate; wire angle, 07°.

0	24.09	34.22	4.81	483	0	24.09	34.22	4.81	23.04	483	0.00
10	24.08	34.21	4.81	483	10	24.08	34.21	4.81	23.04	483	0.05
30	20.96	34.06	5.26	410	20	24.07	34.21	4.81	23.04	483	0.10
39	20.06	34.03	5.35	389	30	20.96	34.06	5.26	23.81	410	0.14
54	19.34	34.04	5.43	371	50	19.52	34.04	5.41	24.17	375	0.22
69	17.86	33.89	5.41	347	75	17.55	33.86	5.39	24.53	341	0.31
93	15.88	33.82	5.26	307	100	15.36	33.82	5.06	25.01	296	0.39
113	14.36	33.82	4.37	276	125	13.52	33.83	3.85	25.40	258	0.46
133	12.92	33.83	3.59	246	150	11.58	33.83	3.38	25.78	222	0.52
153	11.44	33.83	3.34	220	200	10.52	34.20	1.62	26.26	177	0.62
182	10.78	34.08	2.17	190	250	9.66	34.32	1.20	26.50	154	0.71
216	10.32	34.28	1.34	167	300	9.23	34.39	0.69	26.63	142	0.79
245	9.71	34.31 7	1.23	155	400	8.35	34.46	0.32	26.82	124	0.92
294	9.27	34.38 7	0.77	143	500	7.12	34.44	0.21	26.98	109	1.05
347	9.00	34.46 3	0.41	133	600	(6.24)	(34.44)	(0.21)	(27.10)	(97)	(1.16)
431	7.97	34.45 7	0.31	119							
514	6.96	34.43 2	0.20	107							
598	6.26	34.43 8	0.21	97							

130.80 HORIZON; August 10, 1960; 1639 GCT; 24°49'N, 116°44'W; sounding, 2150 fm; wind, calm; weather, overcast; sea, moderate; wire angle, 05°.

0	24.12	34.37	4.81	473	0	24.12	34.37	4.81	23.15	473	0.00
10	24.10	34.37	4.80	472	10	24.10	34.37	4.80	23.16	472	0.05
30	22.78	34.24	5.03	445	20	24.09	34.37	4.80	23.16	472	0.09
39	20.74	33.98	5.26	410	30	22.78	34.24	5.03	23.44	445	0.14
49	19.66	33.97	5.35	383	50	19.65	33.98	5.35	24.09	383	0.22
64	18.52	33.98	5.45	355	75	17.91	33.93	5.55	24.50	345	0.31
79	17.72	33.92	5.58	340	100	16.24	33.88	5.31	24.85	311	0.40
98	16.40	33.88	5.37	314	125	13.97	33.84	4.25	25.32	266	0.47
123	14.12	33.84	4.35	270	150	12.57	33.98	2.75	25.71	229	0.53
143	12.75	33.92	3.04	237	200	11.18	34.31	1.34	26.23	180	0.64
173	12.22	34.20	1.73	207	250	9.46	34.27	1.46	26.49	155	0.72
202	11.05	34.31	1.34	178	300	8.84	34.33	1.07	26.64	141	0.80
231	9.70	34.24 5	1.58	160	400	7.75	34.38	0.40	26.85	121	0.94
271	9.22	34.30 0	1.28	149	500	6.83	34.43	0.21	27.01	106	1.06
330	8.48	34.34 8	0.82	134							
402	7.72	34.38 6	0.39	120							
476	7.02	34.42 3	0.23	108							
555	6.50	34.43 3	0.19	100							

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

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HORIZON; August 12, 1960; 0149 GCT; 25°35'N, 112°19'W; sounding, 33 fm; wind, 280°, force 4; weather, cloudy; sea, moderate; wire angle, 14°.

137.23

0	25.07	34.16 4	5.39	515	0	(25.07)	(34.16)	(5.39)	(22.71)	(515)	(0.00)
9	25.02	34.16 4	5.37	514	10	25.01	34.16	5.37	22.73	513	0.05
14	23.58	34.09 7	5.50	477	20	17.50	33.87	4.96	24.55	339	0.09
29	15.68	33.81 8	4.66	303	30	15.55	33.82	4.60	24.96	300	0.13
48	14.53	34.16 8	2.26	254	50	(14.5)	(34.18)	(2.25)	(25.46)	(253)	(0.18)

HORIZON; August 11, 1960; 2010 GCT; 25°19'N, 112°46.5'W; sounding, 195+ fm; wind, 280°, force 4; weather, partly cloudy; sea, moderate; wire angle, 19°.

137.30

0	22.97	33.90	6.00	475	0	22.97	33.90	6.00	23.13	475	0.00
10	21.70	33.81	6.17	447	10	21.70	33.81	6.17	23.42	447	0.05
24	18.29	33.61	6.02	377	20	19.40	33.67	6.06	23.93	399	0.09
37	16.80	33.77	5.56	331	30	17.16	33.68	5.73	24.49	345	0.13
56	14.27	33.72	4.89	281	50	15.06	33.75	5.08	25.01	296	0.19
65	12.76	33.67	4.40	256	75	11.88	33.70	4.18	25.62	237	0.26
75	11.88	33.70	4.18	237	100	12.45	34.27	1.57	25.96	206	0.31
79	11.66	33.77	3.78	229	125	13.39	34.65	0.39	26.07	195	0.36
97	12.32	34.20	1.79	208	150	12.95	34.71	0.14	26.20	182	0.41
106	12.66	34.37	1.06	202	200	12.19	34.67	0.09	26.32	171	0.50
115	13.10	34.52	0.52	200	250	11.50	34.65	0.08	26.43	161	0.59
129	13.42	34.69	0.35	193	300	10.87	34.62	0.08	26.52	152	0.67
138	13.26	34.73 3	0.24	187							
146	13.02	34.72 0	0.18	183							
160	12.78	34.70 0	0.10	181							
182	12.49	34.68 4	0.10	176							
218	11.90	34.66 7	0.08	167							
315	10.68	34.61 0	0.08	149							

HORIZON; August 11, 1960; 1455 GCT; 24°56.5'N, 113°20'W; sounding, 1580 fm; wind, 300°, force 3; weather, partly cloudy; sea, rough; wire angle, missing.

137.40

1	22.90	33.78	5.11	482	0	(22.90)	(33.78)	(5.11)	(23.06)	(482)	(0.00)
10	22.86	33.78	5.21	481	10	22.86	33.78	5.21	23.07	481	0.05
30	19.04	33.91	5.51	373	20	20.40	33.87	5.40	23.81	409	0.09
38	18.60	33.93	5.44	361	30	19.04	33.91	5.51	24.20	373	0.13
53	17.66	33.88	5.49	342	50	17.88	33.90	5.47	24.47	347	0.20
67	16.96	33.89	5.41	326	75	16.20	33.87	5.22	24.86	311	0.29
91	14.14	33.79	4.89	273	100	13.42	33.79	4.73	25.39	259	0.36
110	12.64	33.79	4.51	245	125	11.63	33.77	4.05	25.71	229	0.42
130	11.41	33.76	3.90	225	150	10.95	33.93	2.90	25.98	204	0.48
149	10.94	33.91	2.98	205	200	10.63	34.31	1.24	26.33	171	0.57
177	11.06	34.28	1.40	181	250	10.18	34.50	0.49	26.55	149	0.65
209	10.52	34.34	1.17	167	300	9.67	34.53	0.29	26.66	139	0.73
237	10.32	34.49 2	0.60	152	400	8.44	34.49	0.22	26.83	123	0.86
283	9.84	34.52 6	0.32	142	500	7.21	34.44	0.25	26.97	110	0.99
333	9.34	34.53 1	0.26	133							
413	8.26	34.48 2	0.22	121							
493	7.28	34.43 6	0.25	111							
575	6.40	34.45 2	0.25	98							

S10

CCOF1
6007-8

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

137.50

HORIZON; August 11, 1960; 0939 GCT; 24°37'N, 113°59'W; sounding, 2050 fm; wind, 320°, force 1; weather, partly cloudy; sea, moderate; wire angle, 11°.

0	23.48	33.79	4.76	497	0	23.48	33.79	4.76	22.89	497	0.00
10	23.40	33.78	4.80	495	10	23.40	33.78	4.80	22.92	495	0.05
30	20.34	33.75	5.21	417	20	23.33	33.78	4.81	22.94	493	0.10
38	18.84	33.77	5.48	379	30	20.34	33.75	5.21	23.74	417	0.14
48	18.56	33.88	5.37	364	50	18.46	33.87	5.37	24.31	362	0.22
63	17.14	33.67	5.48	346	75	16.40	33.76	5.49	24.73	322	0.31
77	16.28	33.77	5.49	320	100	13.93	33.63	4.94	25.17	281	0.39
97	14.15	33.62	5.01	286	125	12.06	33.74	4.20	25.62	238	0.45
122	12.36	33.74	4.33	244	150	10.98	33.87	3.26	25.92	209	0.51
141	11.00	33.80	3.53	215	200	10.82	34.34	1.08	26.32	171	0.60
170	10.96	34.04	2.32	196	250	10.64	34.51	0.47	26.48	156	0.69
199	10.82	34.34	1.10	172	300	9.97	34.52	0.35	26.61	144	0.77
228	10.85	34.47 2	0.64	163	400	8.39	34.45	0.27	26.81	125	0.91
267	10.41	34.53 1	0.41	151	500	7.38	34.45	0.18	26.96	111	1.03
325	9.56	34.50 3	0.33	139							
397	8.42	34.45 2	0.28	126							
471	7.68	34.46 6	0.18	114							
549	6.88	34.44 0	0.19	105							

137.60

HORIZON; August 11, 1960; 0417 GCT; 24°19'N, 114°41.5'W; sounding, 2050 fm; wind, direction missing, force 1; weather, partly cloudy; sea, moderate; wire angle, 06°.

0	24.24	33.82	4.91	515	0	24.24	33.82	4.91	22.70	515	0.00
10	23.71	33.81	4.91	502	10	23.71	33.81	4.91	22.85	502	0.05
30	21.68	34.06	5.26	429	20	23.38	33.83	4.92	22.96	491	0.10
39	19.93	34.06	5.47	384	30	21.68	34.06	5.26	23.61	429	0.15
49	18.82	33.92	5.60	367	50	18.73	33.91	5.62	24.28	365	0.23
64	17.60	33.88	5.68	341	75	16.76	33.84	5.55	24.71	325	0.31
79	16.45	33.83	5.49	319	100	14.82	33.80	4.65	25.11	286	0.39
98	14.96	33.80	4.76	290	125	12.78	33.83	3.61	25.55	244	0.46
124	12.81	33.83	3.65	245	150	11.78	33.98	2.59	25.87	214	0.52
143	11.92	33.91	2.92	222	200	11.28	34.40	1.03	26.27	176	0.61
172	11.39	34.20	1.64	192	250	10.56	34.49	0.63	26.47	157	0.70
201	11.28	34.40	1.01	175	300	9.84	34.49	0.51	26.60	145	0.78
230	10.76	34.46 3	0.75	161	400	8.51	34.47	0.26	26.80	125	0.92
269	10.36	34.49 8	0.54	152	500	7.43	34.44	0.24	26.95	112	1.04
326	9.38	34.47 3	0.45	138							
397	8.55	34.47 3	0.26	126							
470	7.74	34.45 0	0.25	116							
549	6.92	34.43 6	0.23	106							

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
50.55-H	VII-22	0541	39°30.0'	124°30.0'	940	320°	9	clear	very high	12.13	32.97
60.55-H	26	0705	37°48.0'	123°15.5'	67	300°	2	missing	moderate	12.27	33.72
70.55-H	20	2235	36°05.5'	122°05.0'	1160	330°	3	clear	very rough	11.41	33.70
80.65-H	17	1520	33°56.0'	121°34.0'	1800	310°	6	clear	high	15.30	33.30
82.47-B	12	1948	34°15.0'	119°58.0'	310	280°	5	clear	rough	12.61	33.76
83.40-B	12	1510	34°14.0'	119°22.0'	12	270°	3	partly cloudy	moderate	12.38	33.77
83.43-B	12	1645	34°08.0'	119°34.0'	135	320°	4	clear	rough	14.66	33.78
83.51-B	12	2320	33°52.0'	120°08.5'	65	280°	7	clear	very rough	12.87	33.72
83.55-B	13	0148	33°44.0'	120°24.5'	530	320°	7	partly cloudy	very rough	15.41	33.78
83.60-B	13	0420	33°34.0'	120°45.0'	740	300°	7	clear	very rough	14.12	33.31
83.65-B	13	0655	33°24.0'	121°06.0'	1940	320°	7	clear	very rough	15.26	33.33
83.70-B	13	0950	33°14.5'	121°26.0'	1800	300°	7	clear	very rough	15.04	33.16
83.80-B	13	1430	32°54.0'	122°08.0'	2200	270°	7	cloudy	very rough	15.02	33.57
87.35-B	14	1910	33°50.0'	118°37.5'	350	090°	1	fog	slight	15.05	33.70
87.40-B	14	1645	33°40.0'	118°58.0'	420	090°	1	overcast	slight	18.11	33.78
87.45-B	14	1427	33°30.0'	119°19.0'	900	240°	2	missing	moderate	16.06	33.81
87.50-B	14	1135	33°29.7'	119°44.0'	70	310°	2	cloudy	moderate	14.98	33.79
87.55-B	14	0820	33°15.0'	120°05.0'	640	320°	7	overcast	very rough	16.01	33.79
87.60-B	14	0525	33°03.0'	120°24.0'	410	320°	6	clear	very rough	15.72	33.80

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

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
87.65-B	VII-14	0253	32°51.0'	120°43.0'	2100	320°	7	overcast	high	15.34	33.80
87.70-B	14	0010	32°39.5'	121°02.0'	1800	320°	7	overcast	high	14.76	33.75
87.80-B	13	1855	32°19.5'	121°43.0'	2150	320°	7	overcast	high	15.24	33.16
90.65-B	16	0805	32°15.0'	120°19.0'	2050	270°	6	overcast	rough	15.94	33.52
93.35-B	19	0315	32°40.5'	117°51.5'	300	270°	2	overcast	moderate	18.42	33.73
93.45-B	18	2140	32°20.0'	118°32.0'	650	290°	2	overcast	moderate	18.13	33.76
93.55-B	18	1206	32°00.0'	119°13.5'	900	280°	5	clear	rough	16.98	33.76
93.65-B	18	0525	31°40.0'	119°53.5'	1950	330°	4	clear	very rough	17.28	33.78
97.30-B	20	2310	32°16.0'	117°07.0'	33	240°	1	overcast	moderate	17.24	33.69
97.32-B	21	0015	32°12.0'	117°15.0'	650	280°	2	cloudy	moderate	18.59	33.73
97.35-B	21	0146	32°05.5'	117°27.5'	600	280°	2	cloudy	moderate	20.45	33.78
97.40-B	21	0405	31°56.0'	117°48.0'	810	270°	3	cloudy	rough	18.76	33.75
97.45-B	21	0640	31°46.0'	118°08.5'	875	240°	2	partly cloudy	moderate	18.08	33.68
97.50-B	21	0910	31°36.0'	118°29.0'	1000	250°	1	partly cloudy	moderate	18.60	33.74
97.55-B	21	1140	31°25.5'	118°49.5'	300	260°	2	cloudy	moderate	18.72	33.75
97.60-B	21	1450	31°15.5'	119°10.0'	2000	280°	3	cloudy	rough	17.67	33.78
97.65-B	21	1910	31°10.0'	119°30.0'	1930	260°	3	cloudy	moderate	17.56	33.78
97.70-B	21	2220	30°59.0'	119°54.0'	2000	220°	2	cloudy	moderate	17.60	33.51
97.80-B	22	0238	30°35.0'	120°31.0'	2000	280°	3	cloudy	moderate	17.33	33.44

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

Station	Date	Time GCT	Latitude North	Longitude West	Sounding (fm)	Wind		Weather	Sea	10 Meters	
						Dir	Force			T	S
100.45-H	VIII-3	1259	31°10.5'	117°46.0'	500	330°	5	clear	very rough	20.86	33.71
100.55-H	3	0647	30°49.0'	118°24.5'	1344	330°	5	cloudy	high	18.76	33.46
100.65-H	3	0122	30°28.0'	119°05.0'	1980	300°	5	cloudy	high	18.44	33.38
103.30-B	VII-23	1010	31°04.0'	116°28.5'	50	310°	1	partly cloudy	moderate	15.44	33.69
103.35-B	23	0755	30°56.0'	116°45.0'	940	320°	1	partly cloudy	moderate	17.88	33.62
103.40-B	23	0515	30°46.0'	117°04.5'	1140	300°	2	partly cloudy	moderate	18.43	33.66
103.45-B	23	0240	30°38.0'	117°25.0'	950	300°	1	partly cloudy	moderate	18.64	33.71
103.50-B	23	0005	30°30.0'	117°46.0'	1400	320°	2	partly cloudy	rough	17.24	33.57
103.55-B	22	2110	30°18.0'	118°12.0'	1550	320°	2	partly cloudy	rough	17.59	33.49
103.60-B	22	1900	30°09.0'	118°27.0'	1580	300°	3	overcast	moderate	18.37	33.58
103.65-B	22	1640	29°56.5'	118°44.0'	1800	320°	2	partly cloudy	moderate	18.39	33.62
103.70-B	22	1435	29°46.0'	118°59.0'	1750	320°	2	partly cloudy	moderate	18.64	33.65
103.80-B	22	1040	29°28.0'	119°37.0'	1900	270°	1	clear	moderate	17.97	33.51
107.32-B	23	1447	30°26.0'	116°11.0'	220	320°	1	fog	slight	15.67	33.60
107.35-B	23	1635	30°21.5'	116°22.5'	900	270°	1	partly cloudy	moderate	14.18	33.62
107.40-B	23	1905	30°11.0'	116°42.0'	1500	300°	2	partly cloudy	slight	18.40	33.63
107.45-B	23	2150	30°01.5'	117°02.0'	600	230°	2	partly cloudy	moderate	18.90	33.65
107.50-B	24	0017	29°50.5'	117°22.0'	1300	320°	2	partly cloudy	moderate	19.35	33.77
107.55-B	24	0305	29°40.0'	117°44.0'	1800	320°	2	partly cloudy	moderate	18.03	33.60

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
107.60-B	VII-24	0501	29°31.0'	118°02.0'	1800	320°	2	clear	moderate	17.58	33.38
107.65-B	24	0710	29°21.0'	118°21.0'	1680	320°	2	clear	moderate	18.76	33.51
107.70-B	24	0937	29°11.0'	118°41.0'	1600	-	1	partly cloudy	moderate	19.72	33.87
107.80-B	24	1345	28°51.5'	119°20.5'	1800	210°	1	partly cloudy	moderate	19.26	33.84
110.33-H	VIII-5	0641	29°50.0'	115°53.0'	67	330°	3	overcast	moderate	15.47	33.57
110.45-H	5	1421	29°25.0'	116°43.5'	1800	320°	3	cloudy	very rough	20.95	33.69
110.55-H	5	1935	29°08.5'	117°19.0'	1800	320°	3	cloudy	rough	21.02	33.72
110.65-H	6	0015	28°50.5'	117°59.0'	1800	320°	3	cloudy	rough	20.04	33.59
113.30-B	VII-26	0018	29°21.0'	115°18.0'	35	270°	7	cloudy	rough	16.84	33.64
113.35-B	25	2158	29°09.5'	115°36.0'	750	280°	4	partly cloudy	moderate	16.74	33.67
113.40-B	25	1915	29°01.0'	115°57.0'	1140	320°	4	partly cloudy	moderate	19.29	33.62
113.45-B	25	1635	28°47.0'	116°17.5'	1180	320°	3	overcast	moderate	18.57	33.68
113.50-B	25	1402	28°40.0'	116°36.0'	1800	320°	3	overcast	moderate	19.08	33.68
113.55-B	25	1125	28°32.0'	116°57.0'	1750	280°	2	overcast	moderate	18.52	33.65
113.60-B	25	0845	28°22.0'	117°16.5'	1750	270°	2	overcast	moderate	19.59	33.66
113.65-B	25	0605	28°12.0'	117°36.0'	2000	320°	2	overcast	rough	-	33.86
113.70-B	25	0333	28°02.0'	117°55.0'	1800	320°	2	cloudy	rough	21.21	33.83
113.80-B	24	2250	27°42.0'	118°33.5'	2000	140°	1	partly cloudy	rough	19.80	33.65
117.26-B	26	0435	28°56.0'	114°41.5'	40	300°	4	clear	rough	17.90	33.75

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
117.30-B	VII-26	0700	28°48.0'	114°56.5'	55	270°	5	clear	rough	16.57	33.61
117.35-B	27	0750	28°38.0'	115°16.0'	110	270°	3	clear	rough	19.76	33.66
117.40-B	27	1030	28°28.0'	115°35.5'	400	250°	3	cloudy	moderate	19.81	33.68
117.45-B	27	1255	28°17.5'	115°56.0'	1700	320°	4	drizzle	moderate	21.71	33.86
117.50-B	27	1515	28°09.0'	116°13.5'	2200	320°	4	overcast	rough	21.12	33.82
117.55-B	27	1801	27°58.0'	116°34.5'	2200	320°	3	overcast	moderate	21.52	33.82
117.60-B	27	2045	27°45.0'	116°55.0'	1900	310°	3	overcast	moderate	20.24	33.77
117.65-B	27	2300	27°37.5'	117°13.5'	2000	320°	3	overcast	moderate	20.14	33.78
117.70-B	28	0130	27°28.0'	117°32.5'	2000	330°	4	overcast	rough	20.96	33.78
117.80-B	28	0555	27°08.0'	118°10.5'	2140	320°	5	partly cloudy	moderate	18.78	33.58
118.39-B	27	0455	28°18.5'	115°23.5'	130	280°	2	partly cloudy	rough	18.12	33.86
120.25-B	26	1145	28°22.5'	114°15.0'	35	290°	5	clear	rough	20.55	33.82
120.30-B	26	1405	28°13.0'	114°34.0'	50	280°	3	cloudy	rough	19.44	33.70
120.35-B	26	1610	28°03.0'	114°59.0'	47	320°	3	partly cloudy	rough	19.78	33.78
120.40-B	26	2200	27°56.5'	115°14.0'	21	260°	5	partly cloudy	rough	18.56	33.78
120.55-H	VIII-8	2107	27°26.0'	116°12.5'	2140	320°	3	overcast	rough	21.98	33.76
120.65-H	8	1527	27°03.0'	116°56.0'	2000	300°	3	cloudy	rough	21.96	33.74
123.37-B	VII-29	0608	27°24.0'	114°40.0'	40	320°	1	clear	slight	15.86	33.77
123.42-B	29	0355	27°14.0'	114°59.0'	780	320°	2	clear	slight	22.19	33.87

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
123.50-B	VII-29	0025	26°58.0'	115°31.0'	2000	340°	1	partly cloudy	moderate	22.54	33.89
123.55-B	28	2151	26°48.5'	115°49.5'	2000	330°	2	cloudy	moderate	21.68	33.84
123.60-B	28	1725	26°38.5'	116°09.0'	2000	360°	2	overcast	moderate	22.46	33.86
127.34-B	29	1040	26°55.0'	114°06.5'	45	300°	1	clear	slight	16.36	33.78
127.40-B	29	1326	26°43.5'	114°29.0'	1600	-	1	partly cloudy	slight	20.80	33.81
127.45-B	29	1540	26°33.0'	114°48.5'	1860	320°	3	clear	slight	22.10	33.82
127.50-B	29	1810	26°23.0'	115°08.0'	1860	320°	3	clear	moderate	23.22	33.93
127.55-B	29	2100	26°13.5'	115°27.0'	1800	320°	2	clear	moderate	23.52	33.96
127.60-B	29	2315	26°03.5'	115°46.5'	1750	320°	1	partly cloudy	moderate	23.06	33.90
130.35-H	VIII-9	1754	26°17.0'	113°48.5'	255	320°	2	cloudy	rough	18.26	33.70
130.45-H	9	2244	25°56.5'	114°29.0'	1797	-	1	cloudy	rough	16.96	33.65
130.55-H	10	0335	25°40.5'	115°05.0'	1900+	270°	2	cloudy	rough	22.36	33.79
133.25-H	12	0614	26°05.0'	112°49.5'	42	260°	3	cloudy	moderate	21.42	33.98
133.30-H	12	0905	25°52.5'	113°12.0'	85	290°	4	cloudy	rough	21.04	33.72
133.35-H	12	1126	25°41.5'	113°32.0'	117	300°	4	cloudy	rough	21.92	34.10
133.40-H	12	1640	25°33.5'	113°46.0'	1800	320°	5	cloudy	rough	23.49	33.85
133.45-H	12	1900	25°23.0'	114°05.0'	1900	300°	5	cloudy	rough	22.94	33.81
133.50-H	12	2109	25°13.0'	114°26.5'	2000	290°	5	cloudy	rough	23.60	33.83
133.55-H	12	2321	25°05.0'	114°47.5'	1950	290°	5	cloudy	rough	22.18	33.39

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
133.60-H	VII-13	0143	24°55.0'	115°09.0'	2000	290°	5	cloudy	rough	23.18	33.81
134.36-H		12 1400	25°37.0'	113°25.0'	90	300°	5	cloudy	rough	21.12	33.70
137.35-H		11 1730	25°09.0'	113°02.0'	480	330°	4	partly cloudy	rough	20.83	33.66
137.45-H		11 1225	24°46.0'	113°37.0'	1880	320°	1	partly cloudy	moderate	22.92	33.75
137.55-H		11 0659	24°28.5'	114°19.5'	1750	320°	1	partly cloudy	moderate	23.55	33.79

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

S10
CCOFI
6007-8

OBSERVED				INTERPOLATED				COMPUTED			
Z	T	S	O ₂	δT_{3-5}	Z	T	S	O ₂	σ_t	δT_{3-5}	ΔD
m	°C	‰	ml/L	10 cm/g	m	°C	‰	ml/L	g/L	10 cm/g	dyn. m

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USCGC PONTCHARTRAIN; July 16, 1960; 2016 GCT; 30°00'N, 140°00'W; sounding, 2300 fm; wind, 160°, force 3; weather, partly cloudy; sea, moderate; wire angle, 10°.

N-1

0	20.7	34.95		339	0	20.7	34.95		24.56	339	0.00
10	20.32	34.94		330	10	20.32	34.94		24.65	330	0.03
59	20.00	35.15		307	20	20.22	34.97		24.70	325	0.07
84	18.98	35.08		287	30	20.17	35.01		24.75	321	0.10
108	18.18	34.99		274	50	20.08	35.10		24.84	312	0.16
163	16.91	34.79		259	75	19.41	35.12		25.02	294	0.24
223	12.48	34.14		216	100	18.42	35.02		25.20	278	0.31
					125	17.80	34.93		25.29	269	0.38
					150	17.26	34.84		25.36	263	0.45
					200	14.52	34.42		25.65	235	0.57

USCGC PONTCHARTRAIN; July 18, 1960; 2001, 2032, 2105 GCT; 30°00'N, 140°00'W; sounding, 2300 fm; wind, 050°, force 5; weather, overcast; sea, moderate; wire angle, 34°, 33°, 45°.

N-2

0	21.4	35.14		343	0	21.4	35.14		24.51	343	0.00
8	21.32	35.14		341	10	21.29	35.14		24.54	340	0.03
46	20.27	35.19		311	20	21.13	35.17		24.62	334	0.07
71	19.42	35.06		299	30	20.88	35.21		24.71	325	0.10
					50	20.01	35.15		24.89	307	0.16
92	18.46	35.03		277	75	19.30	35.06		25.01	296	0.24
140	17.34	34.85		264	100	18.22	35.00		25.23	275	0.31
187	13.22	34.31		217	125	17.82	34.93		25.28	270	0.38
					150	16.43	34.73		25.45	254	0.45
241	10.88	34.20		183	200	12.48	34.24		25.92	209	0.56
282	10.07	34.11		176	250	10.64	34.18		26.22	181	0.66
333	9.06	34.14		158	300	9.73	34.13		26.34	169	0.76
376	8.02	34.05		150	400	7.57	34.03		26.60	144	0.92
473	6.20	34.02		128	500	(5.82)	(34.04)		(26.84)	(122)	(1.06)

USCGC PONTCHARTRAIN; July 20, 1960; 2015, 2101 GCT; 30°00'N, 140°00'W; sounding, 2300 fm; wind, 060°, force 5; weather, squalls; sea, moderate; wire angle, 35°, 45°.

N-3

0	21.2	34.97		350	0	21.2	34.97		24.44	350	0.00
12	20.72	35.01		335	10	20.74	35.01		24.59	336	0.03
51	20.58	35.34		308	20	20.70	35.06		24.64	331	0.07
77	18.78	35.01		287	30	20.70	35.17		24.72	323	0.10
104	18.32	35.00		276	50	20.59	35.34		24.88	308	0.16
157	16.76	34.94		245	75	18.98	35.04		25.08	289	0.24
212	12.68	34.19		216	100	18.38	35.00		25.20	278	0.31
					125	17.51	34.91		25.34	265	0.38
237	10.88	34.04		195	150	16.98	34.95		25.50	249	0.44
284	9.66	34.07		173	200	13.55	34.31		25.77	223	0.56
330	8.64	34.05		159	250	10.45	34.04		26.14	188	0.67
378	7.56	34.04		144	300	9.32	34.07		26.36	168	0.76
425	6.86	34.05		134	400	7.23	34.05		26.66	139	0.92
530	5.60	34.07		117	500	5.97	34.06		26.84	122	1.06

USCGC PONTCHARTRAIN; July 22, 1960; 2003, 2045 GCT; 30°00'N, 140°00'W; sounding, 2300 fm; wind, 050°, force 5; weather, squalls; sea, very rough; wire angle, 32°, 37°.

N-4

0	21.0	35.02		340	0	21.0	35.02		24.55	340	0.00
12	20.86	35.06		335	10	20.87	35.05		24.59	336	0.03
51	20.87	35.37		313	20	20.86	35.13		24.65	330	0.07
78	18.76	35.07		282	30	20.89	35.21		24.71	325	0.10
104	18.13	35.02		271	50	20.88	35.37		24.83	314	0.16
157	17.03	35.07		241	75	18.94	35.09		25.13	284	0.24
212	11.89	34.05		212	100	18.22	35.02		25.26	272	0.31
					125	17.70	35.04		25.40	259	0.38
191	14.32	34.38		234	150	17.21	35.08		25.55	245	0.44
244	10.96	34.09		192	200	12.70	34.09		25.77	224	0.56
295	9.66	34.11		169	250	10.81	34.10		26.13	190	0.66
348	8.56	34.07		156	300	9.54	34.11		26.35	168	0.76
399	7.56	34.05		143	400	7.54	34.05		26.62	143	0.92
509	5.76	34.06		119	500	5.92	34.06		26.85	121	1.06

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OBSERVED					INTERPOLATED				COMPUTED		
Z	T	S	O ₂	δT_3	Z	T	S	O ₂	σ_t	δT_3	ΔD
m	°C	‰	ml/L	10 cm/g	m	°C	‰	ml/L	g/L	10 cm/g	dyn. m

N-5 USCGC PONTCHARTRAIN; July 24, 1960; 2024, 2109 GCT; 30°00'N, 140°00'W; sounding, 2300 fm; wind, 040°, force 4; weather, squalls; sea, rough; wire angle, 28°, 15°.

0	21.2	35.35		323	0	21.2	35.35		24.72	323	0.00
13	21.06	35.35		319	10	21.09	35.35		24.76	320	0.03
54	20.75	35.34		312	20	21.01	35.35		24.78	318	0.06
81	19.21	35.24		280	30	20.97	35.35		24.79	317	0.10
109	18.22	35.08		268	50	20.83	35.34		24.82	314	0.16
165	16.08	34.65		251	75	19.23	35.23		25.16	282	0.23
224	11.83	34.11		206	100	18.61	35.15		25.25	273	0.30
					125	17.63	34.97		25.36	263	0.37
315	9.61	34.15		166	150	16.72	34.77		25.43	256	0.44
378	8.03	34.05		150	200	12.88	34.15		25.78	223	0.56
437	6.78	34.03		134	250	11.18	34.12		26.08	194	0.67
495	6.02	34.04		124	300	9.99	34.15		26.32	172	0.76
549	5.50	34.08		115	400	7.52	34.04		26.61	144	0.92
663	4.78	34.22		97	500	5.97	34.04		26.83	123	1.06
					600	5.18	34.15		27.00	106	1.19

N-6 USCGC PONTCHARTRAIN; July 26, 1960; 2014, 2053 GCT; 30°00'N, 140°00'W; sounding, 2300 fm; wind, calm; weather, cloudy; sea, slight; wire angle, 02°, 02°.

0	21.7	35.37		335	0	21.7	35.37		24.60	335	0.00
10	21.05	35.37		317	10	21.05	35.37		24.79	317	0.03
54	20.76	35.35		311	20	21.00	35.38		24.80	316	0.06
83	18.74	35.07		281	30	21.00	35.38		24.81	315	0.10
107	18.24	35.08		269	50	20.87	35.37		24.83	313	0.16
160	16.62	34.78		253	75	19.44	35.17		25.06	292	0.23
214	11.91	34.11		207	100	18.37	35.08		25.26	272	0.31
					125	17.88	35.02		25.34	264	0.37
268	10.60	34.14		183	150	17.09	34.86		25.41	258	0.44
325	8.96	34.10		160	200	13.19	34.28		25.81	219	0.56
374	7.86	34.07		146	250	11.02	34.13		26.11	191	0.67
431	6.81	34.05		133	300	9.64	34.12		26.35	169	0.76
479	6.02	34.08		121	400	7.35	34.06		26.65	140	0.92
588	5.14	34.16		105	500	5.80	34.10		26.88	118	1.06
					600	(5.07)	(34.17)		(27.03)	(104)	(1.17)

N-7 USCGC PONTCHARTRAIN; July 28, 1960; 2001, 2036 GCT; 30°00'N, 140°00'W; sounding, 2300 fm; wind, 080°, force 1; weather, partly cloudy; sea, slight; wire angle, 05°, 07°.

0	21.9	35.48		332	0	21.9	35.48		24.63	332	0.00
10	21.34	35.45		319	10	21.34	35.45		24.77	319	0.03
50	20.67	35.38		307	20	21.20	35.46		24.81	315	0.06
75	18.65	35.06		280	30	21.19	35.47		24.82	314	0.10
100	17.96	35.01		267	50	20.67	35.38		24.89	307	0.16
153	16.78	34.78		257	75	18.65	35.06		25.18	280	0.23
202	12.41	34.18		212	100	17.96	35.01		25.31	267	0.30
					125	17.47	34.92		25.36	262	0.37
251	10.66	34.17		182	150	16.88	34.80		25.40	258	0.43
304	9.62	34.15		166	200	12.52	34.19		25.88	213	0.55
353	8.60	34.09		155	250	10.69	34.17		26.21	182	0.66
401	7.53	34.02		145	300	9.70	34.15		26.36	167	0.75
449	6.67	34.02		134	400	7.54	34.02		26.60	145	0.91
552	5.60	34.09		116	500	6.09	34.05		26.82	124	1.05

OBSERVED					INTERPOLATED				COMPUTED			
Z	T	S	O ₂	δT	Z	T	S	O ₂	σ_t	δT	ΔD	
m	°C	‰	ml/L	$\frac{-5}{10} \frac{T}{cm/g}$	m	°C	‰	ml/L	g/L	$\frac{-5}{10} \frac{T}{cm/g}$	dyn. m	

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USCGC PONTCHARTRAIN; July 30, 1960; 1948, 2140 GCT; 30°00'N, 140°00'W; sounding, 2450 fm; wind, 090°, force 1; weather, squalls; sea, slight; wire angle, 08°, 02°.

N-8

0	22.6	35.35	360	0	22.6	35.35			24.33	360	0.00
10	21.43	35.33	330	10	21.43	35.33			24.65	330	0.03
55	20.92	35.39	312	20	21.22	35.35			24.73	323	0.07
80	20.12	35.28	300	30	21.13	35.37			24.76	320	0.10
165	16.92	34.80	259	50	20.98	35.39			24.82	314	0.16
200	14.03	34.33	232	75	20.34	35.32			24.93	304	0.24
221	12.12	34.11	211	100	18.64	35.06			25.17	280	0.31
				125	17.91	34.95			25.28	270	0.38
269	10.15	34.13	176	150	17.44	34.88			25.34	265	0.45
326	9.01	34.09	161	200	14.03	34.33			25.68	232	0.58
374	8.10	34.05	151	250	10.73	34.13			26.17	186	0.68
433	7.00	34.09	133	300	9.51	34.11			26.36	168	0.78
481	6.22	34.04	127	400	7.60	34.07			26.63	142	0.94
589	5.14	34.14	107	500	5.99	34.05			26.83	123	1.08
				600	(5.05)	(34.15)			(27.02)	(105)	(1.20)

USCGC PONTCHARTRAIN; August 1, 1960; 1954, 2048 GCT; 30°00'N, 140°00'W; sounding, 2450 fm; wind, 040°, force 3; weather, cloudy; sea, moderate; wire angle, 13°, 08°.

N-9

0	22.0	35.35	344	0	22.0	35.35			24.50	344	0.00
10	21.68	35.39	332	10	21.68	35.39			24.62	332	0.03
48	20.90	35.34	316	20	21.48	35.38			24.67	328	0.07
73	18.83	35.01	288	30	21.30	35.37			24.72	324	0.10
83	18.38	35.00	278	50	20.83	35.33			24.80	315	0.16
117	17.73	34.94	267	75	18.72	35.00			25.11	286	0.24
141	16.82	34.76	260	100	18.00	34.98			25.27	271	0.31
				125	17.52	34.90			25.33	265	0.38
178	13.77	34.35	225	150	16.67	34.73			25.41	258	0.44
193	12.80	34.20	218	200	12.52	34.17			25.86	214	0.56
223	11.72	34.14	202	250	10.87	34.15			26.15	187	0.67
238	11.15	34.16	191	300	(9.60)	(34.12)			(26.35)	(169)	(0.76)
262	10.62	34.14	183								
297	9.71	34.12	170								

USCGC PONTCHARTRAIN; August 5, 1960; 1949, 2028, 2109 GCT; 30°00'N, 140°00'W; sounding, 2450 fm; wind, 090°, force 5; weather, squalls; sea, very rough; wire angle, 22°, 25°, 28°.

N-10

0	21.81	35.37	338	0	21.81	35.37			24.57	338	0.00
9	21.76	35.37	336	10	21.74	35.37			24.59	336	0.03
28	21.54	35.42	327	20	21.67	35.39			24.63	332	0.07
51	21.05	35.39	316	30	21.43	35.41			24.71	324	0.10
60	20.76	35.38	309	50	21.06	35.39			24.79	317	0.16
74	18.83	35.05	285	75	18.63	35.03			25.15	282	0.24
83	18.32	35.00	276	100	18.25	35.08			25.29	269	0.31
				125	17.38	34.91			25.37	261	0.38
90	18.36	35.08	272	150	17.06	34.83			25.39	259	0.44
100	18.25	35.08	269	200	12.50	34.20			25.89	212	0.56
118	17.62	34.96	263	250	10.21	34.11			26.24	179	0.66
132	17.24	34.88	260	300	9.12	34.13			26.45	160	0.75
141	17.14	34.85	260								
150	17.06	34.88u	-								
158	16.82	34.79	257								
167	15.24	34.53	242								
175	14.62	34.43	236								
184	13.58	34.28	226								
193	12.90	34.22	218								
248	10.28	34.11	180								
296	9.20	34.14	161								
354	8.10	34.08	149								

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