# UNIVERSITY OF CALIFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

# Physical and Chemical Data

# Cruise 23 Marine Life Research Program

8-23 March 1951

Prepared by

Marine Life Research Program Division of Oceanography

Sponsored by

Marine Research Committee

Reference 52-9 20 February 1952

# UNIVERSITY OF CALTFORNIA SCRIPPS INSTITUTION OF OCEANOGRAPHY

# PHYSICAL AND CHEMICAL DATA CRUISE 23

MARINE LIFE RESEARCH PROGRAM
8-23 March 1951

Prepared by

Marine Life Research Program Division of Oceanography

Sponsored by

Marine Research Committee

Reference 52-9.

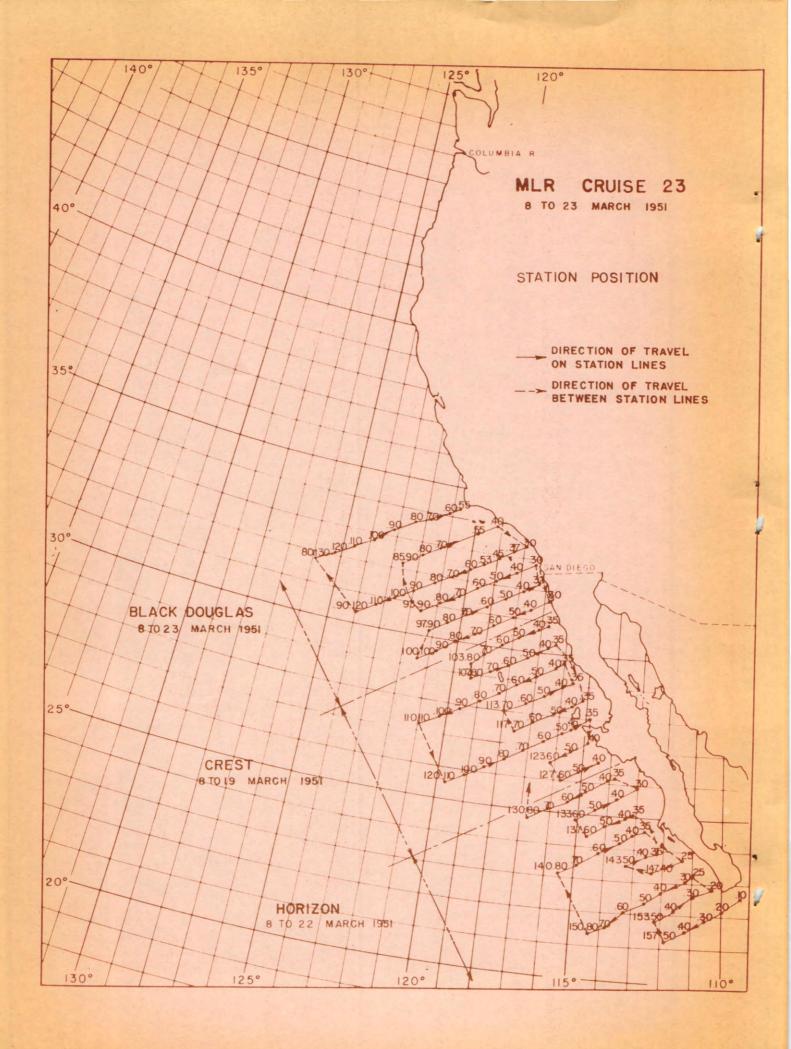
15 February 1952

#### CONTENTS

List of Figures
Introduction
Personnel
Tabulated Data
Distribution List

#### FIGURES

- 1. MLR Cruise 23. Station Positions
- 2. Herizontal Distribution of Dynamic Height Anomaly (O over 1000 d-bar) Corrected for Tidal Effect
- 3. Horizontal Distribution of Temperature at the Surface
- 4. Horizontal Distribution of Salinity at the Surface
- 5. Horizontal Distribution of Temperature at 30 Meters



#### INTRODUCTION

The data presented in this report were collected on the twenty-third full-scale cruise conducted in the Marine Life Research Program The three ships participating were the MV BLACK DOUGLAS, of the U.S. Fish and Wildlife Service, and the MV CREST and the MV HORIZON, of the Scripps Institution of Oceanography.

Data are presented in the form of tabulated values at standard depths and of charts of horizontal distributions. On the charts of horizontal distributions a circle is drawn around the station dot if the quantity is missing for that station. An "x" is drawn through the station dot if the value observed does not conform to the field and was not used in drawing the contours.

In the tabulated data extrapolated values are indicated by parentheses. The time given is the time that the messenger was released. When more than one cast was made on a station, both messenger times and both wire angles are given; the time and the wire angle given first are for the shallow cast. Horizontal lines signify the depth to which each cast reached.

Because of Nansen bottle pretripping on stations 85.80, 93.90, 103.60, 107.70, 110.50, 113.70, 130.40, 137.50, 140.40, 140.80, 147.25, 150.40, 150.50 and 150.80, it was difficult to ascertain depths of observations on those stations. In processing data given in this report and in all previous reports of this series an effort has been made to correct for pretripping whenever it has occurred.

The original data and the data as modified during various steps in processing are on file with the Division of Oceanography. Copies may be made available. The data are processed on the six standard forms of this division.

The presentation of data in these Physical and Chemical Data Reports does not constitute publication, and this information may be subject to modification as the program continues. Results of various phases of the investigations will be published in scientific journals for general distribution.

#### PERSONNEL

Roger R. Revelle, Director of the Scripps Institution of Oceanography

#### Oceanographers

Horrer, Paul L., Assistant Oceanographer Lewis, George J., Jr., Associate in Oceanography Reid, Joseph L., Jr., Associate in Oceanography

#### Marine Superintendent

Stose, Clemens W.

#### Ships! Captains

Brandal, G., MV CREST Joelson, S.M., MV BLACK DOUGLAS Miller, F., MV HORIZON

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

#### MV BLACK DOUGLAS

Smith, Alan C., Marine Technician, Scripps Institution Thrailkill, James R., Marine Biologist Colter, John C., Chemistry Aid Eshleman, John J., Biological Aid Fast, Thomas N., Student, Stanford University

#### MV CREST

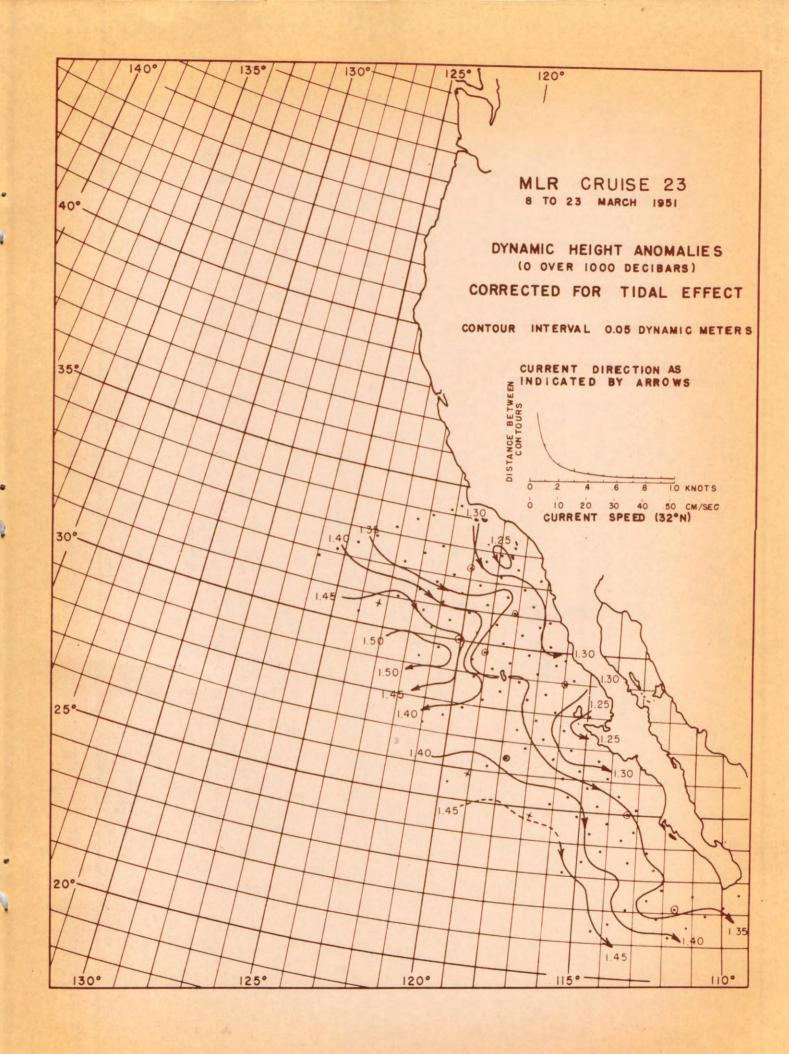
Gossett, David A., Marine Technician
Herreshoff, Karl F., Marine Technician, Chemical
Jellison, Donald L., Marine Technician
Mooney, John E., Marine Technician
Berner, Leo D., Jr., Student
Walser, Carl W., Marine Biologist, U.S. Fish and Wildlife Service

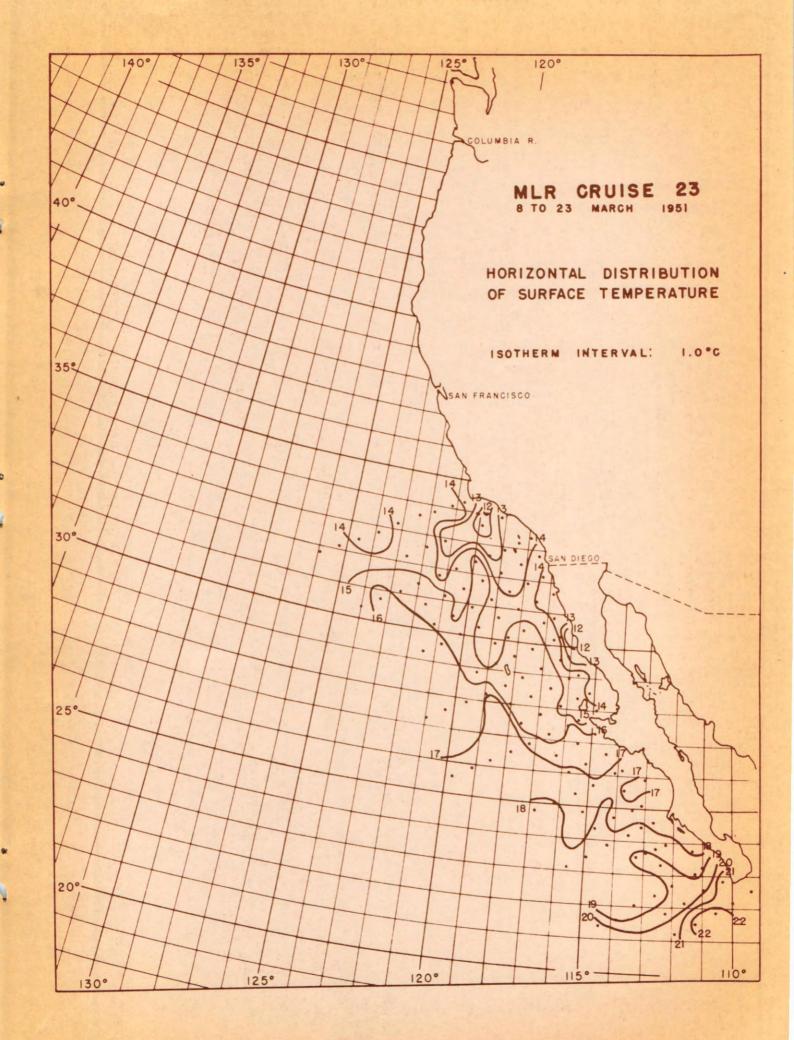
#### MV HORIZON

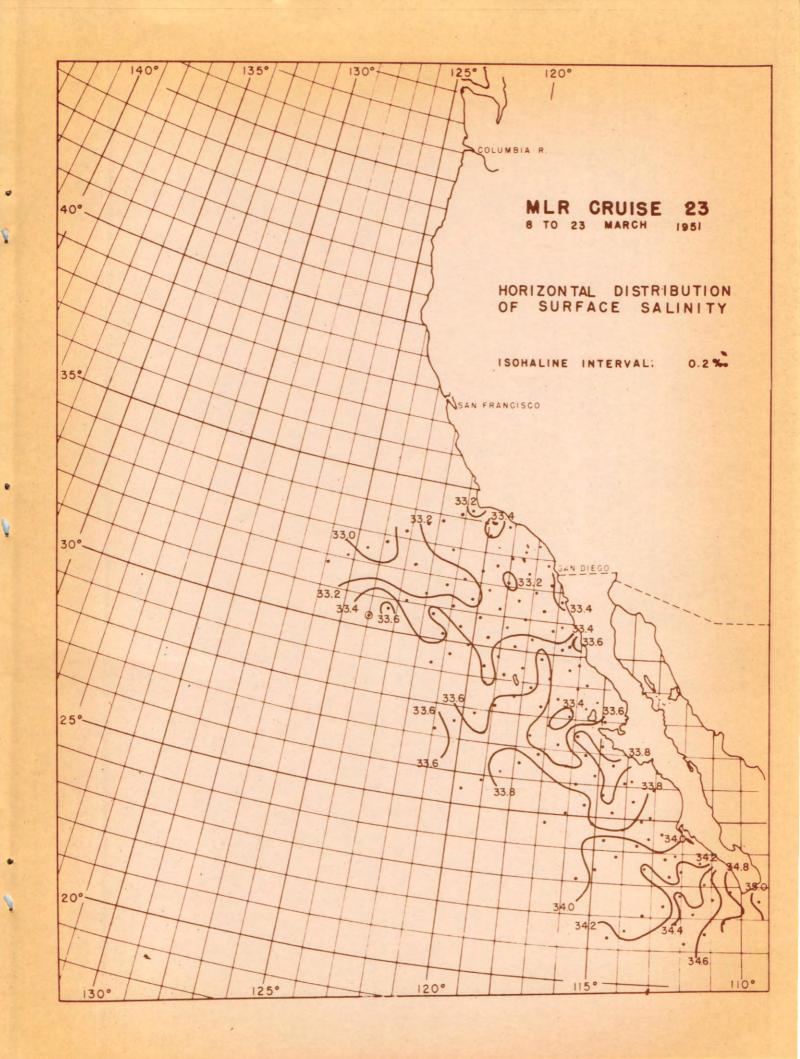
Cunningham, Leorard M., Jr., Marine Technician
Anderson, Robert F., Marine Technician
Rockman, John N., Marine Technician, Chemical
Bramson, Jay H., U.S.C.G., Student
Chew, Frank, Student
Counts, Robert C., Marine Biologist, U.S. Fish & Wildlife Service

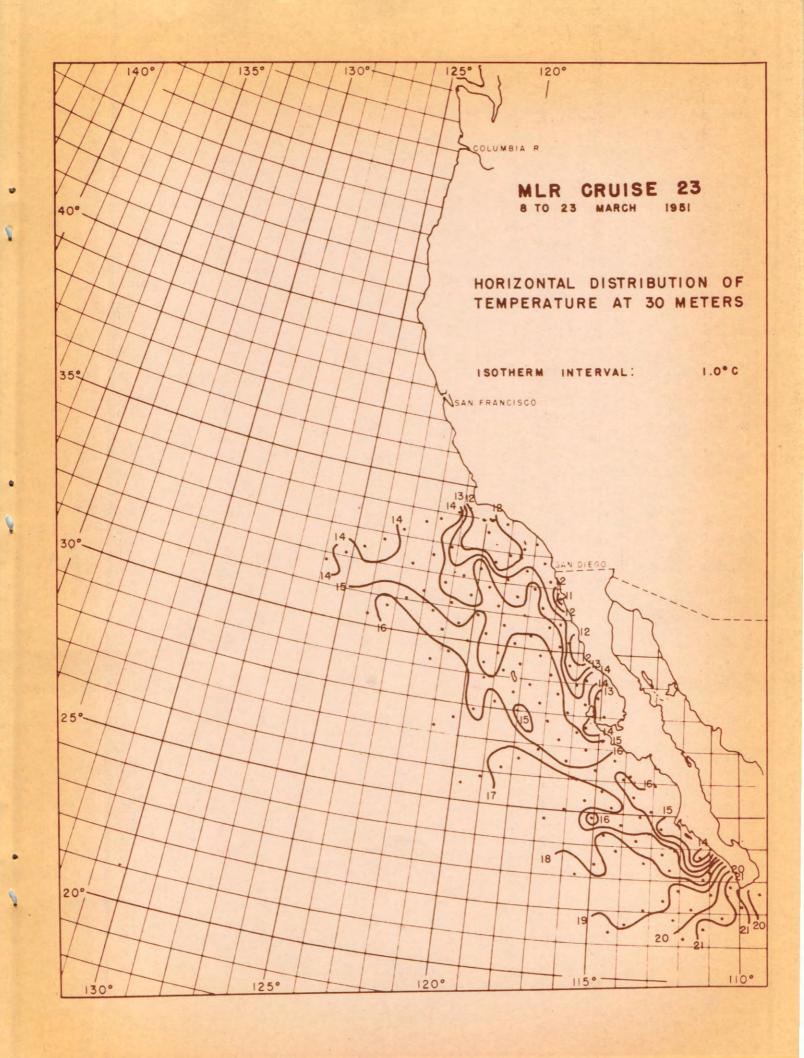
#### PERSON EL PARTICIPATING IN PREPARATION OF DATA

Barney, Ruth M., Stenographer Barstow, Mary C., Laboratory Technician Beckwith, Warren W., Jr., Senior Marine Technician Berkey, Max L., Jr., Marine Technician Brown, Curthie F., Engineering Aid Browne, Geneva S., Engineering Aid Coolidge, Richard N., Marine Technician Cunningham, Leonard M., Jr., Seniar Marine Technician Gilkey, Robert W., Marine Technician Gossett, David A., Senior Marine Technician Haddow, Robert W., Marine Technician Herreshoff, Karl F., Marine Technician, Chemical Hutchins, Dorsey M., Typist-Clerk James, Lois L., Laboratory Technician Kaatz, E. James, Marine Technician, Chemical Kirk, Robert W., Laboratory Technician Kelin, Hans T., Principal Laboratory Technician Larimore, Wayne H., Marine Technician Love, Cuthbert M., Research Assistant Madden, Dorothy A., Laboratory Technician Mao, Han-Lee, Research Assistant McClendon, Robert I., Marine Technician McCoy, Willis M., Engineering Aid Mead, Richard V., Principal Marine Technician Messner, Gordon P., Marine Technician Metzger, June C., Typist-Clerk Miller, Bernadette L., Engineering Aid Payne, Miles M., Marine Technician Propsner, Ruth O., Engineering Aid Ratty, Donald K., Marine Technician Ridgely, Johanna W., Laboratory Technician Sease, Jean R., Marine Technician Smith, Alan C., Senior Marine Technician Whitney, Alice D., Senior Engineering Aid Wilburn, Virginia A., Statistician Wilkes, Frances C., Engineering Aid Worrall, Charles G., Senior Marine Technician









STATION 80.55 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 34°19'N 120°48'W March 23, 1951 1615 GCT Wire angle: 13° Sounding: 440 fms. Depth of observation: 677 m. Weather: cloudy Sea: rough Wind: calm

Depth (m)	T (°C)	S (‰)	ot (mg/cm <sup>3</sup> )	1058	ΔD (dyn.m.)	<sup>C</sup> 2 (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600	13.57 13.57 11.70 11.66 11.64 10.21 9.95 8.82 8.51 7.98 7.55 6.82 6.14 5.57	33.13 33.11 33.09 33.09 33.33 33.57 33.81 34.09 34.10 34.16 34.23 34.22 34.37 34.40	24.85 24.84 25.18 25.19 25.38 25.82 26.05 26.46 26.51 26.64 26.76 26.85 27.06 27.15	311.2 312.8 279.8 279.5 261.9 220.4 198.9 161.4 156.8 145.4 134.8 127.0 108.1 99.9	.0000 .0313 .0611 .0892 .1436 .2042 .2569 .348 .428 .504 .574 .706 .825	5.71 5.84 5.80 5.74 5.89 4.88 3.70 2.43 2.01 1.58 1.25 .89 .64	

# STATION 80.60 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 34°09'N 121°09'W March 23, 1951 1153 GCT Wire angle: 14° Sounding: 1,280 fms. Depth of observation: 1,124 m. Weather: partly cloudy Sea: very rough Wind: 320°, force 2

0	14.45	33.25	24.76	319.6	.0000	(5.90)	
10	14.45	33.10	24.65	331.0	.0327	5.90	-
20	14.45	33.16	24.69	326.7	.0657	5.78	-
30	14.45	33.24	24.75	321.2	.0982	5.75	_
50	14.45	33.31	24.81	316.5	.1623	5.77	-
75	10.63	33.04	25.34	266.5	.2356	5.69	
100	9.37	33.33	25.77	225.3	.2974	4.73	-
150	8.71	33.83	26.27	178.9	.399	3.40	
200	7.86	34.09	26.60	147.9	.481	2.73	
250	7.42	34.14	26.71	138.8	.554	2.14	_
300	7.03	34.16	26.77	132.9	.622	1.62	
400	6.30	34.19	26.90	122.1	.751	.96	-
500	5.63	34.35	27.11	103.0	.864	.54	-
600	5.18	34.42	27.22	93.4	.963	.53	-
700	4.84	34.38	27.23	93.1	1.057	.54	-
800	4.52	34.40	27.28	88.7	1.149	.57	-
1000	3.93	34.51	27.42	75.6	1.315	.76	-

STATION 80.70 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°49'N 121°51'W March 23, 1951 0203, 0411 GCT Wire angle: 14°, 20° Sounding: 2,200 fms. Depth of observation: 1,169 m., 1,506 m. Weather: overcast Sea: very rough Wind: 360°, force 5

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)(	PO <sub>4</sub> -P µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000 1500 2000	14.50 14.51 14.49 14.45 14.31 12.83 10.85 9.17 8.40 7.61 6.77 5.37 4.54 4.25 3.74 3.35 2.79 2.13	33.28 33.13 33.30 33.30 33.15 33.10 33.22 33.74 33.99 34.11 34.13 34.06 34.19 34.24 34.33 34.43 34.61 34.63 34.64	24.77 24.66 24.79 24.80 24.71 24.98 25.44 26.13 26.44 26.65 26.79 26.87 27.01 27.11 27.22 27.33 27.49 27.63 27.63 27.69	318.5 329.9 317.3 316.8 325.5 301.0 257.3 192.6 163.1 144.0 131.5 124.5 111.6 103.0 93.2 83.3 69.0 62.9 56.8 50.9	.0000 .0326 .0650 .0969 .1614 .2402 .3104 .424 .513 .591 .660 .789 .908 1.016 1.115 1.205 1.359 1.492 1.674 1.947	5.72 5.72 5.72 5.75 5.86 5.01 3.81 3.11 2.78 2.50 1.47 .71 .60 .50 .39 .73 .96 1.25 1.82	- 1.1 (1.1 (1.1 (1.1 (1.1 (1.1 (1.1 (1.1

# STATION 80.80 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°39'N 122°24'W March 22, 1951 2129 GCT Wire angle: 14° Sounding: 2,220 fms. Depth of observation: 1,158 m. Weather: overcast Sea: high Wind: 330°, force 5

0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800	14.49 14.47 14.40 14.43 14.48 14.42 11.30 9.18 8.33 7.57 6.89 5.88 5.39 4.78 4.47 4.22	33.25 33.13 33.16 33.21 33.26 33.26 33.08 33.77 33.90 34.00 34.07 34.18 34.28 34.35 34.45 34.52	24.75 24.67 24.70 24.74 24.78 25.25 26.15 26.38 26.57 26.94 27.08 27.20 27.32 27.40	320.6 329.1 325.7 322.9 320.9 320.2 275.2 190.6 168.7 151.3 137.6 117.4 105.1 93.7 983.3 76.5	.0000 .0326 .0655 .0980 .1627 .2433 .3182 .435 .526 .607 .679 .808 .920 1.020 1.110	5.70 5.70 5.72 5.67 5.66 5.38 3.07 2.62 2.26 1.37 .60 .50	
	4.22 3.78	34.52 34.61	27.40	76.5 66.5	1.190	.47	
	- 1	-	-1-7-			.00	-

STATION 80.90 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°15'N 123°11'W March 22, 1951 1504 GCT Wire angle:20° Sounding: 2,340 fms. Depth of observation: 1,126 m. Weather: cloudy Sea: very rough Wind: 360°, force 5

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	1058	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 390 400 500 600 700 800 1000	14.06 14.05 14.05 14.05 13.97 12.54 11.10 9.17 8.37 7.67 6.90 5.79 5.32 4.83 4.57 4.36 3.37	33.12 33.12 33.12 33.10 33.02 33.06 33.54 33.96 34.01 34.04 34.19 34.28 34.43 34.43 34.43	24.74 24.75 24.75 24.75 24.75 24.75 24.75 25.27 25.97 26.42 26.57 26.57 26.96 27.09 27.23 27.28 27.32 27.40	321.4 321.5 321.7 322.0 322.3 301.4 273.5 207.5 165.0 152.1 139.9 115.6 104.4 92.1 87.5 84.6 77.7	.0000 .0323 .0646 .0969 .1616 .2400 .3123 .433 .527 .607 .681 .809 .920 1.019 1.110 1.197 1.361	5.80 5.80 5.77 5.76 5.79 5.84 5.65 4.25 3.18 2.62 2.23 1.18 .47 .49 .70	

# STATION 80.100 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°49'N 123°54'W March 22, 1951 0708 GCT Wire angle: 2° Sounding: 2,450 fms. Depth of observation: 1,185 m. Weather: cloudy Sea: very rough Wind: 360°, force 4

STATION 80.110 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°29'N 124°34.5'W March 21, 1951 0014 GCT Wire angle: 3° Sounding: 2,400 fms. Depth of observation: 1,153 m. Weather: cloudy Sea: moderzte Wind: 360°, force 2

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>2</sup> 8	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	13.93 13.84 13.77 13.68 13.38 11.75 9.62 8.81 8.12 7.41 6.81 6.22 5.39 4.80 4.46 4.19 3.62	32.96 32.99 33.000 33.01 32.94 33.06 33.13 33.81 33.97 34.05 34.11 34.20 34.20 34.33 34.40 34.46 34.53	24.65 24.69 24.71 24.74 25.15 25.58 26.24 26.64 26.76 26.92 27.02 27.19 27.28 27.36 27.47	330.6 326.7 325.0 322.8 322.6 284.2 243.9 181.9 160.7 145.3 133.7 120.4 111.1 95.5 87.0 80.5 70.5	.0000 .0330 .0657 .0982 .1631 .2394 .3058 .413 .499 .576 .647 .775 .891 .996 1.088 1.172 1.324	5.88 5.82 5.79 5.78 5.78 5.91 5.02 3.44 2.65 1.54 -77 .49 .52	

STATION 80.120 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°09'N 125°15.5'W March 21, 1951 1755 GCT Wire angle: 7° Sounding: 2,440 fms. Depth of observation: 1,170 m. Weather: cloudy Sea: moderate Wind: 360°, force 2

10       14.05       32.99       24.65       331.0         20       14.05       33.01       24.66       329.8         30       14.05       33.08       24.71       325.0         50       14.02       33.12       24.75       321.9         75       13.87       32.96       24.66       331.2         100       12.50       38.84       24.84       314.5         150       9.06       33.18       25.71       232.4         200       8.43       33.80       26.29       177.8         250       7.81       33.96       26.51       157.7         300       7.10       34.03       26.66       143.3         400       5.96       34.05       26.83       128.2         500       5.35       34.17       27.00       112.9         600       5.03       34.28       27.12       101.9         700       4.59       34.32       27.21       94.4         800       4.28       34.35       27.26       89.6	.1642 5.77 .2463 5.82 .3275 5.89 .465 5.03 .568 3.51 .653 3.03 .729 2.70 .866 1.59 .987 .80 1.096 .53 1.195 .50	
800 4.28 34.35 27.26 89.6 1000 3.69 34.47 27.42 75.7	1:288 .51 1.455 .49	

STATION 80.130 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°49'N 125°56'W Merch 21, 1951 1000, 1123 GCT Wire angle: 8°, 3° Sounding: 2,240 fms. Depth of observation: 1,173 m., 1,264 m. Weather: cloudy Sea: moderate Wind: 330°, force 2

Depth (m)	T (°C)	S (‰)	(mg.cm <sup>3</sup> )	1058	ΔD (dyn.m.)	(ml/L)(	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	14.11 13.92 13.85 13.75 13.42 12.38 10.83 9.45 8.58 7.91 7.33 6.35 5.78 5.25 4.29	33.02 33.01 33.10 33.10 32.99 32.98 33.00 33.40 33.81 33.96 34.03 34.12 34.22 34.33 34.14 34.44	24.66 24.69 24.77 24.77 24.77 25.27 25.27 25.82 26.49 26.63 26.84 26.99 27.14 27.24 27.33	329.7 326.9 319.2 317.6 319.7 301.6 273.2 222.2 179.2 159.2 146.4 128.0 114.6 101.0 91.6 83.0	.0000 .0330 .0654 .0974 .1614 .2395 .3118 .437 .538 .623 .700 .838 .960 1.069 1.166 1.255	5.76 5.77 5.65 5.88 5.56 5.89 2.43 2.43 3.40 3.40	
1200	3.78	34.51	27.43	75.2	1.415	.62	

### STATION 85.40 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°57'N 119°10.5'W March 17, 1951 2209 GCT Wire angle: 5° Sounidng: 410 fms. Depth of observation: 686 m. Weather: cloudy Sea: moderate Wind: calm

0	13.65	33.35	25.01	296.5	.0000	6.03	
10	13.15	33.30	25.07	290.8	.0295	6.06	
20	12.75	33.32	25.16	282.1	.0582	6.02	-
30	12.27	33.38	25.30	268.9	.0859	5.80	
50	10.96	33.46	25.60	240.4	.1371	4.60	
75	9.66	33.58	25.92	210.8	.1938	3.80	
100	9.27	33.78	26.14	190.4	.2443	3.25	
	9 70	22.10		190.4			-
.150	8.79	33.98	26.38	169.0	•335	2.54	•
200	8.74	34.04	26.43	164.6	.419	2.25	
250	7.86	34.15	26.65	144.4	.497	1.84	-
300	7.81	34.23	26.72	138.7	.568	1.52	
400		34.26					
	6.91		26.87	125.3	.701	.79	-
500	6.31	34.29	26.97	116.3	.823	.52	-
600	5.85	34.34	27.07	108.0	.936	.31	-
		5	-1.01		-/5-	- )-	

STATION 85.50 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°37'N 119°52'W March 17, 1951 1702 GCT Wire angle: 1° Sounding: 120 fms. Depth of observation: 188 m. Weather: partly cloudy Sea: rough Wind: 090°, force 2

Depth (m)	T (°C)	S (‰)	(mg.cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.n.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150	11.68 11.68 11.69 11.13 9.57 9.34 9.09	33.46 33.46 33.46 33.54 33.54 33.80 33.88 34.04	25.47 25.47 25.47 25.47 25.63 26.11 26.21 26.38	251.9 252.1 252.3 252.7 237.7 193.0 184.0 169.0	.0000 .0253 .0506 .0760 .1253 .1794 .2268	5.85 5.77 5.75 5.75 5.10 3.22 2.88 2.30	.89 .87 .87 .88 1.14 1.85 1.97 2.19

#### STATION 85.70 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°57'N 121°14.5'W March 16, 1951 2227 GCT Wire angle: 7° Sounding: 2000 fms. Depth of observation: 1,169 m. Weather: cloudy Sea: high Wind: 330°, force 6

		- 00	,				
0	12.36	33.24	25.17	280.4	.0000	6.05	.66
10	12.40	33.17	25.11	286.5	.0285	6.04	:70
20	12.36	33.25	25.18	280.0	.0569	6.04	.74
30	12.26	33.25	25.20	278.3	.0849	6.00	.79
50.	11.10	33.17	25.35	264.3	.1395	5.40	1.03
75	10.03	33.49	25.79	223.4	.2008	4.55	1.40
100	9.59	33.66	26.00	204.2	.2546	3.73	1.70
150	8.56	33.95	26.39	167.8	.348	2.62	2.04
200	8.17	34.03	26.51	157.0	.430	2.50	2.17
250	7.75	34.08	26.61	148.0	.507	2.11	2.31
300	7.23	34.14	26.73	137.0	.579	1.40	2.50
400	6.41	34.23	26.91	120.7	.708	.93	2.89
500	5.81	34.28	27.03	110.5	.825	.61	3.03
600	5.29	34.37	27.17	98.4	.930	.45	3.11
700	4.86	34.40	27.24	91.9	1.027	.45	3.15
800	4.48	34.43	27.31	85.9	1.116	.47	3.16
1000	3.84	34.50	27.43	75.2	1.279	.93	3.22

STATION 85.80 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°37'N 121°55.5'W March 16, 1951 1356 GCT Wire angle: 35° Sounding: 2,260 fms. Depth of observation: 984 m. Weather: overcast Sea: very rough Wind: 320°, force 6

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	1058	ΔD (dyn.m.)	O <sub>2</sub>	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	14.75 14.75 14.74 14.74 14.72 13.15 10.12 8.40 7.66 7.03 6.08 5.65 5.36 4.99 4.55 (3.97)	33.21 33.22 33.25 33.31 33.16 33.19 33.60 34.01 34.10 34.24 34.31 34.34 34.45 34.52 (34.46)	24.67 24.68 24.68 24.70 24.75 24.64 24.98 25.86 26.34 26.57 26.73 26.97 27.07 27.13 27.26 27.37 (27.38)	328.6 328.1 328.2 326.2 322.3 333.7 301.0 218.1 172.9 151.9 151.9 151.9 106.3 101.6 89.7 80.3 (79.7)	.0000 .0330 .0659 .0988 .1639 .2464 .3263 .457 .555 .637 .710 .838 .949 1.054 1.151 1.237 (1.399)	(6.55) 6.54 5.70 5.88 5.68 5.62 4.10 3.25 2.79 2.43 1.35 .40 .42 .42 (.63)	.48 .51 .53 .51 .55 .56 .82 1.56 1.96 2.17 2.40 2.84 3.07 3.18 3.16 (3.11)

# STATION 85.90 Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°17'N 122°37'W March 16, 1951 0607 GCT Wire angle: 22° Sounding: 2,300 fms. Depth of observation: 1,079 m. Weather: cloudy Sea: rough Wind: 320°, force 3

0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800	14.44 14.40 14.41 14.43 14.35 13.57 9.55 8.61 7.82 9.76 5.76 5.77 4.58 4.54	33.17 33.12 33.12 33.17 33.26 33.20 33.17 33.37 33.92 34.10 34.09 34.07 34.43 34.47 34.43	24.70 24.67 24.67 24.71 24.77 24.74 24.88 25.78 26.61 26.69 26.80 27.07 27.28 27.30	325.4 328.7 325.6 319.8 323.2 310.6 225.4 171.6 147.7 140.6 130.9 107.0 95.2 88.2 86.8	.0000 .0328 .0658 .0987 .1636 .2444 .3241 .459 .559 .640 .712 .849 .969 1.071 1.164 1.252	5.70 5.72 5.88 5.88 5.84 5.75 5.66 4.65 3.98 2.57 1.67 80 .45	.61 .63 .63 .61 .54 .63 .75 1.56 1.94 2.13 2.34 2.34 2.31 3.15 3.19
1000	3.80	34.44	27.38	79.1	1.420	.73	3.18

#### STATION 90.30 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°24.5'N 117°55'W March 18, 1951 0709 GCT Wire angle: 4° Sounding: 340 fms. Depth of observation: 580 m. Weather: clear Sea: moderate Wind: 320°, force 1

Depth (m)	T (°C)	S (‰)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500	13.77 13.74 13.73 12.07 10.67 9.90 9.50 9.28 8.78 8.47 7.64 6.91 6.34	33.35 33.28 33.31 33.36 33.45 33.64 33.70 34.07 34.15 34.23 34.24 34.23	24.98 24.93 24.96 25.32 25.65 25.93 26.04 26.37 26.51 26.62 26.75 26.85 26.96	298.8 303.7 301.5 266.9 236.3 210.2 199.9 157.2 147.5 135.5 127.6 117.4	.0000 .0303 .0606 .0892 .1397 .1959 .2475 .341 .423 .500 .571 .704	6.17 6.24 6.15 5.85 4.71 3.90 3.30 2.29 1.74 1.32 1.16	

#### STATION 90.37 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 33°11'N 118°23.5'W March 18, 1951 1204 GCT Wire angle: 13° Sounding: 650 fms. Depth of observation: 1,169 m. Weather: partly cloudy Sea: moderate Wind: 160°, force 1

0       13.40       33.26       24.99         10       13.30       33.24       24.99         20       13.05       33.40       25.17         30       12.10       33.40       25.35         50       10.35       33.40       25.67         75       9.72       33.62       25.94         100       9.16       33.78       26.16         150       8.72       34.09       26.47         200       8.65       34.14       26.52         250       8.19       34.16       26.61         300       7.28       34.18       26.76         400       6.66       34.22       26.87         500       6.09       34.28       27.00         600       5.64       34.49       27.22         700       5.23       34.48       27.26         800       4.87       34.45       27.28         1000       4.23       34.43       27.33	298.4 .0000 298.1 .0299 281.8 .0591 264.6 .0865 234.7 .1367 208.8 .1924 188.5 .2424 159.9 .330 155.9 .410 148.2 .486 134.5 .557 124.7 .688 114.0 .808 94.1 .913 90.8 1.007 89.5 1.098 85.1 1.274	5.96 6.20 6.16 5.85 4.69 3.76 3.27 2.55 1.87 1.49 1.17 .60 .51 .41 .36 .55	
---	--	---	--

#### STATION 90.45 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°54.5'N 118°56'W March 18, 1951 1743 GCT Wire angle: 0° Sounding: 950 fms. Depth of observation: 1,184 m. Weather: clear Sea: moderate Wind: 080°, force 1

Depth (m)	T (°C)	S (‰)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)(μ	PO <sub>4</sub> -P g at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	13.65 13.32 13.03 11.80 9.98 9.29 9.04 8.40 7.62 7.62 7.62 7.64 6.64 6.05 5.59 5.17 4.81 4.05	33.38 33.35 33.36 33.40 33.58 33.75 33.86 34.20 34.20 34.20 34.20 34.20 34.21 34.31 34.31 34.51	25.03 25.07 25.14 25.41 25.87 26.12 26.24 26.51 26.67 26.72 26.77 26.93 27.02 27.11 27.23 27.33 27.41	294.3 290.3 284.3 259.0 215.3 192.2 180.8 155.8 141.3 137.4 133.1 119.3 111.4 104.4 93.6 84.4 77.0	.0000 .0294 .0582 .0855 .1331 .1844 .2313 .316 .391 .461 .529 .656 .773 .881 .981 1.071 1.235	5.97 5.97 5.97 5.45 4.00 3.29 2.86 2.25 1.80 1.45 1.15 .70 .64 .40 .41 .44	

### STATION 90.53 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°38.5'N 119°29'W March 18, 1951 2301 GCT Wire angle: 2° Sounding: 730 fms. Depth of observation: 1,186 m. Weather: clear Sea: moderate Wind: calm

Dec.	model are	willa. Carill						
0		33.39	25.22	276.4	.0000	5.97	-	
		33.29	25.25	273.8	.0276	6.01	-	
20	12.02	33.31	25.29	269.5	.0549	5.99	-	
30	11.93	33.35	25.34	265.0	.0817	5.85	-	
50	11.27	33:42	25.52	248.7	.1334	5.20	-	
. 75	10.00	33.62	25.90	213.3	.1914	3.80		
100	9.60	33.91	26.19	185.8	.2416	3.32	-	
150	8.85	33.91	26.31	175.1	.332	2.59	-	
200	8.45	34.07	26.50	158.1	.416	2.06		
250	7.92	34.18	26.66	143.1	.492	1.64		
300	7.31	34.22	26.78	132.3	.562	1.23	-	
400	6.75	34.23	26.87	125.2	.691	.77	-	
500	6.28	34.33	27.01	112.7	.811	.58	-	
600	5.77	34.33	27.07	107.6	.922	.36	-	
700	5.25	34.37	27.17	99.1	1.027	.40	-	
800	4.70	34.42	27.26	89.6	1.122	. 44	-	
1000	4.12	34.47	27.37	:80.8	1.294	.58	-	

#### STATION 90.60 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°25'N 119°57.5'W March 19, 1951 0330 GCT Wire angle: 5° Sounding: 560 fms. Depth of observation: 882 m. Weather: clear Sea: very rough Wind: calm

Depth (m)	T (°C)	S (‰)	(mg.cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800	15.44 15.34 14.90 14.40 13.85 12.12 10.42 8.68 8.18 7.76 7.29 6.17 5.38 5.25 4.80 4.64	33.26 33.24 33.24 33.15 33.17 33.77 33.93 34.05 34.11 34.14 34.19 34.42	24.56 24.56 24.66 24.77 24.81 25.14 25.47 26.23 26.59 26.59 26.70 26.87 27.01 27.22 27.25 27.28	339.2 338.9 329.9 320.1 316.2 285.8 253.9 182.9 164.5 150.3 139.9 124.5 111.8 93.6 90.5 88.8	.0000 .0340 .0676 .1002 .1642 .2399 .3078 .418 .505 .584 .658 .791 .910 1.014 1.107	5.65 5.73 5.82 5.91 5.90 5.73 5.16 3.40 2.67 2.16 1.76 1.22 .79 .48 .49	

### STATION 90.70 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°04.5'N 120°39'W March 19, 1951 0941, 1126 GCT Wire angle: 1°, 1° Sounding: 2,100 fms. Depth of observation: 1,187 m., 2,676.m. Weather: clear Sea: rough Wind: 330°, force 2

0 10 20 30 50 75 100 150 200 250 300 400 500 600	14.27 14.07 14.00 13.21 12.65 11.20 9.55 8.25 7.67 7.10 6.31 5.69 5.34	33.17 33.18 33.19 33.22 33.22 33.42 33.86 34.06 34.14 34.22 34.25 34.30	24.74 24.79 24.81 24.99 25.13 25.38 25.81 26.27 26.44 26.61 26.75 26.92 27.02 27.10	322.0 317.5 315.6 298.6 285.4 262.8 221.4 178.6 163.3 148.3 135.2 120.3 111.2 104.4	.0000 .0321 .0639 .0947 .1534 .2223 .2832 .384 .470 .549 .620 .749 .865 .974	5.88 5.90 5.95 5.98 5.94 5.10 3.05 2.11 1.46 2.14 1.92		
500	5.69	34.25	27.02	111.2	.865	-59	-	
700	4.96	34.41	27.24	92.3	1.074	.41	-	
800	4.53	34.51 34.44*	27.36 27.38	80.8	1.161	.51	-	
1200	3.37	34.44 * 34.68 *	27.43 27.67	75.5 53.0	1.481	.99 1.28		
2000	2.07	34.63 * 34.60 *	27.69	50.8 51.0	1.940	1.98	-	
	initer wal			one of nos	2.199		of	

Salinity value questionable because of possible malfunctioning of automatic titrating machine.

STATION 90.80 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°45'N 121°19'W March 19, 1951 1816 GCT Wire angle: 20° Sounding: 2,100 fms. Depth of observation: 1,089 m. Weather: partly cloudy Sea: moderate Wind: 330°, force 1

Depth (m)	T (°C)	S (‰)	(mg.cm <sup>3</sup> )	1058	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)(	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	13.79 13.63 13.40 13.20 12.84 11.28 10.21 8.93 8.28 7.55 6.84 5.78 5.62 5.40 4.73 4.31 3.79	33.10 33.05 33.09 33.12 33.10 33.11 33.66 33.92 34.11 34.10 34.33 34.40 34.40 34.49	24.78 24.74 24.82 24.90 24.99 25.27 25.46 26.10 26.41 26.66 26.76 26.89 27.09 27.17 27.23 27.30 27.43	317.5 322.0 314.3 307.7 299.0 272.9 254.9 195.0 166.6 142.9 134.1 122.1 104.4 97.8 92.5 86.4 75.3	,0000 .0321 .0640 .0953 .1562 .2281 .2945 .408 .499 .577 .647 .776 .890 .992 1.088 1.178 1.342	5.76 5.84 5.89 5.91 5.60 5.19 3.49 2.50 2.08 1.25 5.54 5.58 70	

#### STATION 90.90 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°25'N 121°59'W March 19, 1951 2352 GCT Wire angle: 10° Sounding: 2,180 fms. Depth of observation: 1,176 m. Weather: cloudy Sea: rough Wind: 330°, force 2

0 10 20 30 50 75 100 150 200 250 300 400 500 600	15.35 15.05 14.85 14.71 14.62 14.61 12.64 9.77 8.41 7.62 7.03 6.11 5.33 5.04	33.19 33.20 33.21 33.20 33.13 33.15 33.03 33.42 33.91 33.99 34.04 34.12 34.21 34.21	24.52 24.59 24.65 24.65 24.65 24.65 24.65 25.78 26.38 26.56 26.68 27.03 27.14 27.27	342.5 335.8 331.1 329.4 333.1 332.1 303.1 225.8 169.4 152.8 141.8 124.9 109.8 100.6	.0000 .0341 .0675 .1007 .1673 .2509 .3308 .464 .563 .645 .719 .853 .972	5.71 5.73 5.75 5.76 5.75 5.75 4.38 3.44 2.17 1.44 83 .50	
700 800 1000	4.75 4.38 3.84	34.42 34.48 34.49	27.27 27.36 27.42	89.1 81.2 76.0	1.173 1.259 1.418	.50 .50 .80	:

STATION 90.100 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°04.5'N 122°40'W March 20, 1951 o543 GCT Wire angle: 10° Sounding: 2,240 fms. Depth of observation: 1,175 m. Weather: cloudy Sea: rough Wind: 350°, force 2

Depth (m)	T (°C)	S (‰)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	O <sub>2</sub>	PO <sub>4</sub> -P
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	15.74 15.73 15.68 15.65 15.91 16.06 16.26 10.25 8.97 8.22 7.54 6.33 5.53 4.89 4.59 4.38 3.78	33.28 33.26 33.35 33.40 33.49 33.53 33.17 33.71 33.97 34.04 34.10 34.21 34.24 34.34 34.34	24.51 24.49 24.57 24.59 24.56 24.59 24.58 25.50 26.45 26.61 26.82 27.01 27.11 27.22 27.32 27.48	344.0 345.6 338.3 336.4 340.4 337.9 339.9 252.0 192.6 163.0 148.8 129.4 112.2 103.2 93.0 84.2 70.2	.0000 .0346 .0690 .1028 .1708 .2561 .3414 .490 .602 .692 .770 .911 1.032 1.141 1.240 1.330 1.486	5.55 5.21 5.48 5.57 5.45 5.45 5.17 3.97 2.43 1.57 .80 .47 .66	

# STATION 90.110 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 30°44.5'N 123°20'W March 20, 1951 1149 GCT Wire angel: 6° Sounding: 2,200 fms. Depth of observation: 1,184 m. Weather: cloudy Sea: moderate Wind: 360°, force 2

		,	10100 -				
0 10 20 30 50 75 100 150 200 250 300 400 500	16.66 16.63 16.64 16.59 16.59 15.55 11.48 9.40 8.35 7.54 6.00 5.42	33.72 33.66 33.66 33.68 33.68 33.53 33.55 33.55 33.86 34.00 34.04 34.02 34.19	24.63 24.59 24.59 24.59 24.62 24.62 24.62 24.62 24.62 26.18 26.46 26.61 26.80 27.00	331.8 336.0 336.5 336.6 334.6 335.3 324.5 245.1 188.3 162.7 148.8 130.9	.0000 .0335 .0673 .1011 .1685 .2527 .3357 .479 .588 .677 .755 .896	5.21 5.35 5.00 5.48 5.48 5.45 3.23 2.56 2.12	
		34.19 34.32			1.019		
700	4.59	34.46 34.56	27.32 27.41	84.2	1.215	.46	-
1000	3.77	34.49	27.43	75.2	1.449	.71	

STATION 90.120 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 30°24.5'N 124°00.5'W March 20, 1951 1644, 1830 GCT Wire angle: 5°, 4° Sounding: 2,250 fms. Depth of observation: 1,172 m., 1,647 m. Weather: overcast Sea: moderate Wind: 350°, force 2

	-						
Depth (m)	T (°C)	S (‰)	(mg/cm <sup>3</sup> )	1058	ΔD (dyn.m.)	0 <sub>2</sub>	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1200 1500	15.90 15.89 15.88 15.87 15.81 15.81 13.20 10.50 8.93 8.10 7.42 6.24 5.78 5.20 4.72 4.14 3.75 3.29 2.72	33.37 33.33 33.39 33.35 33.35 33.35 33.76 33.97 34.05 34.08 34.22 34.37 34.40 34.42 34.47 34.53 34.59	24.54 24.51 24.56 24.63 24.54 24.57 24.93 25.60 26.18 26.47 26.63 26.82 26.99 27.16 27.25 27.33 27.41 27.51 27.60	341.0 343.9 339.6 333.3 341.9 339.7 306.4 242.9 188.4 161.2 146.3 129.6 114.6 98.6 90.2 82.9 76.4 68.0 59.1	.0000 .0344 .0687 .1025 .1703 .2560 .3373 .476 .584 .672 .750 .889 1.012 1.120 1.215 1.302 1.463 1.609 1.803	5.52 5.55 5.57 5.56 5.57 5.77 5.84 3.25 2.74 1.23 .68 .37 .49 .73 1.15 1.45	

# STATION 93.30 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°50'N 117°31.5'W March 14, 1951 0354 GCT Wire angle: 4° Sounding: 480 fms. Depth of observation: 782 m. Weather: partly cloudy Sea: slight Wind: 150°, force 1

0 10 20 30 50 75 100 150 200 250 300 400 500 600 700	14.96 13.67 12.95 10.55 10.55 10.00 9.74 9.04 8.86 8.60 8.20 7.34 6.51 5.87	33.35 33.28 33.34 33.36 33.39 33.73 34.03 34.22 34.22 34.26 34.29 34.41 34.41	24.73 24.95 25.14 25.62 25.68 26.26 26.45 26.55 26.59 26.83 26.99 27.13	322.8 302.3 284.3 272.0 238.8 205.1 179.3 161.8 153.2 150.3 142.2 129.1 115.3 102.9	.0000 .0314 .0608 .0888 .1401 .1959 .2443 .330 .409 .486 .560 .696 .820	5.90 6.17 6.07 5.75 4.63 3.29 2.43 1.83 1.47 1.39 .50 .48	.58 .67 .92 11.48 1.85 2.00 2.08 2.14 2.47 2.68 2.88 3.03 3.05	
	5.37 (5.00)	34.42 (34.43)	27.19 (27.25)	97.0	1.031	.45	3.09	
000	().00)	(37.43)	(61.6)	(92.5)	(1.126)	-	-	

STATION 93.40 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°30'N 118°12.5'W March 14, 1951 0944 GCT Wire angle: 1° Sounding: 940 fms. Depth of observation: 1,186 m. Weather: clear Sea: slight Wind: calm

Depth (m)	T (°C)	S (‰)	(mg.cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub>	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	13.97 13.93 13.62 13.24 12.10 11.92 10.35 9.05 7.72 7.41 6.67 6.14 5.64 5.62 4.85 4.08	(33.24) 33.22 33.21 33.33 33.44 33.48 33.89 34.03 34.10 34.16 34.22 34.31 34.36 34.44 34.49 34.51	24.85 24.85 24.90 24.98 25.29 25.42 25.73 26.26 26.53 26.63 26.72 26.87 27.01 27.11 27.23 27.31 27.41	310.9 311.8 306.6 299.6 270.1 259.2 229.8 179.5 155.3 146.1 138.1 124.7 112.6 103.8 93.5 86.2 77.4	.0000 .0313 .0623 .0927 .1500 .2165 .2780 .381 .465 .541 .613 .745 .865 .974 1.074 1.165 1.330	5.87 5.95 5.90 5.82 5.71 5.54 4.40 3.27 2.33 1.45 5.57 5.50 80	.39 .38 .43 .57 .72 .89 1.36 1.85 2.28 2.55 2.86 3.01 3.24 3.24

# STATION 93.50 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°10'N 118°53.5'W March 14, 1951 1544 GCT Wire angle: 8° Sounding: 700 fms. Depth of observation: 1,172 m. Weather: clear Sea: slight Wind: calm

bea	· prrem M	Tim. Cari						
10 30 50 7: 100 15x 200 250 300 400	13.48 13.38 13.34 13.27 11.17 9.95 9.84 8.73 8.34 7.99 7.64 6.99	33.16 33.17 33.26 33.28 33.13 33.28 33.44 34.03 34.19 34.21 34.22 34.30	24.89 24.92 25.00 25.03 25.31 25.64 25.78 26.42 26.61 26.68 26.74 26.89	307.2 304.9 297.6 295.1 268.4 237.5 224.6 164.5 147.6 141.7 137.0 123.3	.0000 .0307 .0610 .0907 .1474 .2119 .2691 .367 .446 .518 .589	5.90 5.95 5.95 5.92 5.44 4.96 4.33 3.15 2.23 1.70 1.38	.48 .57 .57 .58 .98 1.32 1.57 2.01 2.28 2.56 2.76 2.96	
500	6.18	34.35	27.04	110.1	.838	.50	3.14	
700	5.17	34.48 34.48	27.13	89.9	.945 1.042	.36	3.24	
1000		34.53 34.48	27.35	82.7	1.129	.52	3.37	

STATEON 93.60 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°50'N 119°34'W March 14, 1951 2125 GCT Wire angle: 3° Sounding: 1,600 fms. Depth of observation: 1;177 m. Weather: partly cloudy Sea: moderate Wind: 080°, force 1

Depth (m)	T (°C)	S (‰)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	(ml/L)	PO <sub>4</sub> -P
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	15.44 15.01 14.98 14.92 14.47 12.66 10.88 9.72 8.84 7.90 6.46 5.54 5.54 5.54 5.54 5.54 3.96	33.34 33.22 33.33 33.34 33.07 33.24 33.18 33.72 33.96 34.08 34.12 33.97 34.15 34.49 34.52 34.61	24.62 24.62 24.71 24.73 24.62 25.12 25.40 26.02 26.35 26.73 26.76 26.70 26.96 27.21 27.30 27.37 27.50	333.4 333.5 325.1 323.3 334.4 287.6 260.8 202.8 172.1 136.7 134.6 140.5 116.8 94.3 86.0 80.1 68.6	.0000 .0335 .0665 .0991 .1652 .2434 .3124 .429 .523 .601 .670 .808 .938 1.045 1.136 1.219 1.370	5.66 5.65 5.65 5.67 5.81 5.38 3.86 4.14 3.50 2.80 1.51 .73 .47 .50 .55 .68	.57 .50 .54 .56 .58 .74 1.04 1.38 1.64 1.95 2.30 2.93 3.19 3.24 3.31 3.26

### STATION 93.70 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°29'N 120°14'W March 15, 1951 0306 GCT Wire angle: 5° Sounding: 2,180 fms. Depth of observation: 1,180 m. Weather: partly cloudy Sea: rough Wind: calm

0 10 20 30 50 75 100 150 200 250 300 400 500 600	14.94 14.49 13.80 13.27 12.78 11.98 10.25 8.58 7.95 7.46 6.90 5.57 5.30 5.19	33.17 33.22 33.27 33.27 33.16 33.29 33.34 33.93 34.05 34.10 34.12 34.03 34.24 34.30	24.60 24.73 24.91 25.02 25.03 25.29 25.64 26.37 26.56 26.76 26.86 27.06 27.12	335.4 322.9 305.8 295.0 271.4 238.5 169.5 152.1 142.3 134.0 124.7 107.1	.0000 .0331 .0646 .0948 .1542 .2254 .2895 .392 .473 .547 .617 .747	5.80 5.83 5.78 5.76 5.95 5.80 4.63 3.20 2.50 2.03 1.71 1.29 .66	.59 .55 .57 .61 .70 .80 1.41 1.99 2.35 2.52 2.68 3.00 3.20
	5.30	34.24	27.06	107.1	.864	.66	3.20
700	4.89	34.41	27.24	91.4	.970 1.068	.42	3.23
800	4.50 3.98	34.49 34.56	27.35	81.7	1.155	.50	3.28
				1		. 17	3.27

STATION 93.80 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°10'N 120°54.5'W March 15, 1951 1015 GCT Wire angle: 12° Sounding: 2,240 fms. Depth of observation: 1,146 m. Weather: clear Sea: rough Wind: calm

Depth (m)	T (°C)	S (%)	(ng/cm <sup>3</sup> )	1058	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)(	PO <sub>4</sub> -P ug at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	15.26 15.17 14.87 14.32 14.19 13.10 11.67 9.55 8.57 7.87 7.17 5.84 5.40 4.45 3.84	33.30 33.14 33.22 33.21 33.12 33.16 33.38 33.93 34.09 34.14 34.08 34.25 34.25 34.35 34.45 34.51	24.63 24.52 24.65 25.76 24.72 24.95 25.24 25.78 26.60 26.74 26.60 27.06 27.11 27.22 27.32 27.43	332.6 342.7 330.7 320.7 325.2 303.9 276.0 225.2 170.2 148.9 136.1 124.5 107.6 103.1 93.4 84.2 74.5	.0000 .0339 .0677 .1004 .1653 .2444 .3173 .444 .543 .623 .695 .827 .944 1.050 1.149 1.239 1.399	5.65 5.68 5.72 5.82 5.79 5.62 6.91 2.52 2.39 1.49 .52 .76	.44 .44 .48 .50 .48 .63 .86 1.53 2.16 2.30 2.42 2.84 3.09 3.30 3.30 3.32 3.32 3.23

# STATION 93.90 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 30°50'N 121°35'W March 15, 1951 1554 GCT Wire angle: 3° Sounding: 2,260 fms. Depth of observation: 979 m. Weather: clear Sea: moderate Wind: calm

0 10 20 30 50. 75 100 150 200 250 300 400 500 600	15.85 15.85 15.82 15.78 15.76 15.76 13.50 11.66 8.75 8.06 7.58 6.24 5.63 5.15	33.49 33.38 33.42 33.42 33.39 33.49 33.35 33.64 33.89 33.96 34.08 34.08 34.19 34.32	24.64 24.56 24.60 24.59 24.66 25.04 25.62 26.31 26.47 26.58 26.98 27.14	331.1 339.4 336.1 335.6 337.8 331.2 296.1 241.6 175.9 161.3 151.4 129.6 115.0	.0000 .0337 .0676 .1013 .1690 .2531 .3320 .467 .572 .657 .736 .878	5.63 5.57 5.62 5.60 5.61 5.67 4.94 3.61 3.27 1.79	.50 .46 .47 .51 .58 .56 .68 1.29 1.68 1.92 2.13 2.67 2.89
500	5.63	34.19	26.98	115.0	1.001	.96	
700	4.75	34.38	27.24	100.5	1.110	.60	3.03
800	4.43 (3.89)	34.40 (34.54)	27.29 (27.45)	87.7 (72.9)	1.298	.48	3.19
		10	1-1 )	116.71	(1.400)	(.96)	(3.10)

STATION 97.32 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 32°11:5'N 117°17'W March 13, 1951 0221 GCT Wire angle: 24° Sounding: 760 fms. Depth of observation: 1,101 m. Weather: clear Sea: moderate Wind: 340°, force 3

		-				
Depth T (m) (°	S C) (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 13. 10 13. 20 12. 30 12. 50 10. 75 9. 100 9. 150 8. 200 8. 250 8. 300 7. 400 7. 500 6. 600 5. 700 5. 800 4. 1000 (4.	40 33.33 69 33.39 40 33.41 38 33.45 73 33.63 17 33.83 83 34.07 52 34.24 20 34.31 82 34.30 34.27 34 36 34 36 36 36 37 36 38 36	25.07 25.04 25.23 25.30 25.70 25.95 26.20 26.44 26.62 26.72 26.77 28.87 27.03 27.12 27.20 27.26 (27.35)	290.7 293.5 275.7 269.3 231.6 208.3 185.0 163.1 146.6 137.6 33.6 125.8 111.4 103.6 96.0 91.1 (83.7)	.0000 .0293 .0579 .0853 .1356 .1909 .2404 .328 .406 .478 .546 .677 .796 .905 1.006 1.100 (1.277)	6.04 5.10 6.00 5.95 4.15 4.02 3.21 2.50 2.18 1.65 1.17 .99 .51 .47 .50 .50	.53 .52 .56 .98 1.48 1.59 1.84 2.21 2.41 2.60 2.75 2.97 3.20 3.25 3.27 3.20

### STATION 97.40 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°55.5'N 117°50'W March 12, 1951 2112 GCT Wire angle: 13° Sounding: 760 fms. Depth of observation: 1,126 m. Weather: clear Sea: rough Wind: 340°, force 2

0	14.40	33.37	24.87	309.8	.0000	5.79	.53	
10	14.20	33.28	24.84	312.7	.0313	5.82	.57	
20	14.17	33.55	25.05	292.7	.0616	5.81	.56	
30	14.14	33.55	25.06	292.4	.0910	5.81	.54	
50	14.10	33.33	24.90	308.1	.1514	5.83	.55	
75	12.44	33.28	25.19	280.6		5.46	.86	
	10.80				.2254			
100		33.57	25.72	230.7	.2897	4.55	1.22	
150	9.50	33.82	26.14	191.8	.396	3.47	1.82	
200	8.96	34.02	26.38	169.5	.487	3.00	2.02	
250	8.47	34.16	26.56	152.7	.568	1.99	2.42	
300	7.95	34.20	26.67	142.8	.643	1.55	2.70	
400	6.92	34.22	26.84	128.4	.779	1.29	3.00	
500	6.35	34.31	26.98	115.4	.902	.54	3.21	
600	5.68	34.36	27.11	104.2				
		34.30			1.013	.45	3.26	
700	5.15	34.42	27.22	94.1	1.113	.48	3.29	
800	4.68	34.47	27.31	85.5	1.204	.50	3.30	
1000	3.95	34.50	27.42	76.6	1.368	-	3.28	
							-	

STATION 97.50 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°35.5'N 118°30'W March 12, 1951 1451 GCT Wire angle: 3° Sounding: 1,060 fms. Depth of observation: 1,189 m. Weather: clear Sea: rough Wind: 340°, force 2

Depth (m)	T (°C)	S (‰)	(mg/cm <sup>3</sup> )	1058	ΔD (dyn.m.)	O <sub>2</sub> P (ml/L)(μg	O <sub>4</sub> -P at/L)
0 10 20 30 50 75	13.92 13.92 13.90 13.88 13.35 10.17 9.10 8.26 7.90 7.62 6.54 6.50 5.57 5.12 4.73 4.00	33.31 33.17 33.22 33.22 33.17 33.13 33.22 33.80 34.13 34.21 34.28 34.41 34.38 34.41 34.45 34.45	24.92 24.81 24.85 24.86 24.93 25.28 25.56 26.57 26.57 26.67 26.73 26.94 27.10 27.14 27.22 27.29 27.43	304.6 315.2 311.4 311.3 305.2 272.0 246.1 186.9 150.9 142.7 137.4 118.7 104.6 101.4 94.5 87.8 75.6	.0000 .0311 .6626 .0938 .1558 .2283 .2935 .403 .488 .562 .632 .761 .874 .978 1.077 1.169 1.334	5.75 5.64 5.60 5.85 5.49 8.38 2.264 1.12 1.45 1.49	.51 .52 .52 .54 .87 1.16 1.82 2.18 2.46 2.74 3.26 3.26 3.23

# STATION 97.60 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°15'N 119°11'W March 12, 1951 0751 GCT Wire angle: 13° Sounding: 2,010 fms. Depth of observation: 1,159 m. Weather: clear Sea: very rough Wind: 340°, force 3

		-					
0	14.88	33.22	24.65	330.5	.0000	5.63	.50
10	14.88	33.22	24.65	330.8	.0332	5.70	.40
20	14.87	33.22	24.65	330.9	.0664	5.45	.37
30	14.85	33.22	24.65	330.7	.0996	5.37	.37
50	14.40	33.21	24.74	322.8	.1653	5.74	.40
75	14.16	33.13	24.73	324.5	.2467	5.72	.38
100	12.69	33.12	25.02	297.4	.3249	5.61	.60
150	10.65	33.48	25.67	235.9	.459	4.96	1.29
200	8.90	33.85	26.25	181.2	.564	3.35	1.82
250	8.11	34.02	26.51	157.8	.650	2.81	2.11
300	7.56	34.08	26.64	146.0	2726	2.23	2.33
400	6.31	34.12	26.84	127.7	.864	1.12	2.60
500	5.60	34.24	27.02	110.9	.984	.66	3.04
600	5.39	34.35	27.14	101.2	1.091	.47	3.17
700	5.06	34.41	27.22	93.7	1.190	.42	3.18
800	4.67	34.47	27.32	85.4	1.280	.41	3.18
1000	4.12	34.55	27.44	75.0	1.442	.62	3.21

STATION 97.70 (Interpolated Values at Standard Depths)

BLACK Deuglas: 30°55'N 119°50.5'W March 12, 1951 0126 GCT Wire angle: 4° Sounding: 2,120 fms. Depth of observation: 1,159 m. Weather: partly bloudy Sea: very rough Wind: 340°, force 5

Depth (m)	T (°¢)	S (‰)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	15.25 15.25 15.23 15.20 15.14 13.91 13.29 10.85 9.02 8.18 7.61 6.21 5.39 4.99 4.69 4.38 3.92	33.38 33.24 33.26 33.28 33.11 33.13 33.21 33.62 33.91 34.00 34.06 34.19 34.28 34.36 34.44 34.52	24.69 24.58 24.60 24.62 24.64 24.77 24.91 25.43 26.06 26.41 26.57 26.81 27.01 27.13 27.23 27.32 27.43	326.6 337.0 335.3 333.5 332.9 321.0 308.0 259.1 200.2 166.8 152.8 130.7 111.9 101.4 92.7 84.1 74.7	.0000 .0333 .0671 .1006 .1676 .2498 .3289 .472 .587 .680 .760 .903 1.025 1.133 1.231 1.320 1.481	5.43 5.68 5.57 5.52 5.70 5.52: 5.70 5.52: 3.68 2.39 1.92 .55 .52 .55 .52	.52 .52 .52 .52 .56 .62 .74 1.19 1.79 2.09 2.34 2.85 3.10 3.29 3.36 3.40 3.32

# STATION 97.80 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 30°35.5'N 120°31'W March 11, 1951 1820 GCT Wire angle: 19° Sounding: 2,120 fms. Depth of observation: 1,002 m. Weather: partly cloudy Sea: very rough Wind: 340°, force 4

0 10 20 30 50 75 100 150 200 250 300 400 500 600	14.82 14.80 14.79 14.78 14.29 13.72 12.72 9.61 8.36 7.64 5.64 5.25	33.30 33.21 33.29 33.30 33.12 33.22 33.27 33.70 33.94 34.05 34.05 34.09 34.19	24.72 24.66 24.72 24.73 24.70 24.89 25.13 26.02 26.32 26.50 26.60 26.91 26.98	323.3 329.9 323.9 323.3 327.2 309.2 287.0 202.5 175.0 159.1 149.5 121.3 115.0	.0000 .0328 .0686 .0981 .1635 .2435 .3185 .442 .537 .621 .699 .835	5.60 5.60 5.60 5.60 5.55 4.13 3.240 88	.45 .42 .46 .50 .52 .51 .69 1.28 1.81 2.02 2.62 2.99
500	5.64	34.19	26.98	115.0	.954	2.40	2.62
700 800	4.89	34.42 34.48	27.12 27.25	90.7	1.064	.49	3.10
1000	3.89	34.52	27.35	82.2	1.249	.52	3.22

STATION 97.90 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 30°15'N 121°11'W March 11, 1951 0956 GCT Wire angle: 10° Sounding: 2,140 fms. Depth of observation: 1,173 m. Weather: clear Sea: very rough Wind: 340°, force 6

Depth (m)	T (°C)	S (‰)	(mg/cm <sup>3</sup> )	1058	ΔD (dyn.m.)	(ml/L)(	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	15.44 15.44 15.44 15.39 14.87 11.17 9.60 8.75 8.18 7.62 6.17 5.68 5.26 4.62 (3.91)	33.37 33.24 33.28 33.40 33.49 33.37 33.40 33.71 33.98 34.17 34.22 34.18 34.28 34.41 34.42 34.44 (34.59)	24.64 24.54 24.57 24.66 24.74 24.76 25.52 26.03 26.38 26.62 26.74 26.91 27.05 27.20 27.25 27.30 (27.49)	331.2 341.0 338.4 329.9 322.7 321.4 249.6 201.6 169.2 147.7 136.7 121.2 108.8 95.2 91.2 (69.5)	.0000 .0337 .0679 .1014 .1670 .2480 .3198 .433 .527 .607 .678 .808 .924 1.027 1.121 1.211 (1.370)	5.74 5.66 5.62 5.59 5.57 4.95 4.16 3.62 2.76 2.01 1.51 .75 .41 (.80)	.49 .49 .52 .53 .47 .59 1.08 1.53 1.93 2.21 2.44 2.77 2.99 3.12 3.21 3.23 (3.13)

# STATION 100.30 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°40.5'N 116°46.5'W March 8, 1951 2239 GCT Wire angle: 22° Sounding: 260 fms. Depth of observation: 333 m. Weather: cloudy Sea: moderate Wind: 320°, force 2

0 10 20 30 50 75 100 150 200	12.16 11.32 10.52 10.13 9.84 9.75 9.59 9.26 9.12	33.46 33.56 33.69 33.80 33.97 34.07 34.10 34.22 34.24	25.38 25.62 25.86 26.01 26.19 26.29 26.34 26.49 26.53	260.5 238.4 215.4 201.2 184.4 176.1 171.7 158.7	.0000 .0250 .0478 .0687 .1075 .1528 .1965 .280	5.58 5.35 3.60 3.08 2.35 1.78 1.53 1.22	.62 .88 1.43 1.73 1.92 2.04 2.26 2.43
200	9.12	34.24	26.53	155.6	.280	1.22	2.43
250 300	8.79	34.31 34.31	26.63	146.4	·435 ·507	.97	2.62
		-			. , 0	.90	C . LT

#### STATION 100.40 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°21'N 117°27'W March 9, 1951 0809 GCT Wire angle: 9° Sounding: 1,040 fms. Depth of observation: 1,169 m. Weather: partly though Sea: very rough Wind: 320°, force 4

Depth (m)	T (°C)	S (‰)	ot (mg/cm <sup>3</sup> )	1058	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)(	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	13.75 13.76 13.67 13.42 11.93 10.37 9.92 9.33 8.91 8.53 8.15 7.14 6.33 5.63 5.63 4.68 4.04	33.28 33.30 33.34 33.41 33.45 33.50 33.65 33.94 34.27 34.27 34.27 34.27 34.33 34.36 34.39 34.49	24.93 24.94 24.99 25.10 25.41 25.74 25.93 26.26 26.58 26.64 26.70 26.85 27.00 27.09 27.18 27.25 27.40	303.6 302.7 298.1 288.5 258.8 210.2 180.3 150.4 145.6 140.8 127.6 113.6 105.9 98.2 91.4 78.4	.0000 .0304 .0606 .0901 .1451 .2063 .2614 .360 .443 .518 .590 .725 .847 .957 1.060 1.156 1.328	5.92 5.90 5.83 5.69 5.17 3.88 3.10 2.32 1.45 1.03 .84 .44 .31 .35 .45 .79	.40 .35 .33 .34 .94 1.39 1.52 1.79 2.12 2.51 2.65 2.90 3.00 3.11 3.15 3.16 3.16

# STATION 100.50 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 31°01'N 118°07'W March 9, 1951 1608 GCT Ware angle: 20° Sounding: 980 fms. Depth of observation: 1,229 m. Weather: cloudy Sea: very rough Wind: 320°, force 5

200       9.01       34.09       26.43       165.2       .492       2.39         250       8.31       34.22       26.63       145.9       .570       1.99         300       7.67       34.30       26.79       131.4       .640       1.57         400       6.89       34.42       27.00       113.1       .764       .79         500       6.32       34.56       27.18       96.6       .869       .52         600       5.68       34.41       27.15       100.5       .969       .37         700       5.16       34.44       27.24       92.7       1.066       .35         800       4.72       34.50       27.33       83.9       1.155       .40	1.32 1.73 2.08 2.37 2.59 2.94 3.09 3.12 3.11 3.11
---	--

STATION 100.60 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 30°41'N 118°47.5'W March 9, 1951 2236 GCT Wire angle: 23° Sounding: 1,500 fms. Depth of observation:1,255 m. Weather: cloudy Sea: very rough Wind: 320°, force 5

Depth	T	Ç	ot a	1058	ΔD	02	PO <sub>4</sub> -P
(m)	(°C)	(%)	(mg/cm <sup>3</sup> )		(dyn.m.)		(µg at/L)
0 10 20 30 50 75	14.42 14.40 14.39 14.37 14.31 11.87	33.33 33.30 33.33 33.39 33.44 33.13	24.83 24.81 24.84 24.89 24.94 25.18	313.1 315.2 313.0 308.6 304.2 281.2	.0000 .0315 .0631 .0943 .1559 .2295	5.75 5.92 5.82 5.80 5.85 5.63	.55 .54 .54 .57 .74
100 150 200 250 300 400	10.75 9.40 8.76 8.25 7.75 6.84	33.30 33.71 34.00 34.15 34.25 34.39	25.52 26.06 26.39 26.59 26.74 26.98	249.8 198.6 167.9 150.3 136.2 114.5	.2963 .409 .501 .582 .654	5.14 3.86 2.91 2.11 1.49	1.15 1.70 2.06 2.36 2.62 3.01
500 600 700 800 1000	6.12 5.68 5.17 4.65 4.00	34.42 34.41 34.50 34.54 34.50	27.10 27.15 27.28 27.37 27.41	104.0 100.5 88.4 80.1 77.1	.890 .994 1.089 1.174 1.333	.48 .42 .40 .45 .88	3.08 3.15 3.21 3.24 3.21

### STATION 100.70 (interpolated Values at Standard Depths)

BLACK DOUGLAS: 30°20.5'N 119°27'W March 10, 1951 0503 GCT Wire angle: 15° Sounding: 2,100 fms. Depth of observation: 1,030 m. Weather: partly cloudy Sea: very rough Wind: 320°, force 4

#### STATION 100.80 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 30°01'N 120°07'W March 10, 1951 1218 GCT Wire angle: 18° Sounding: 2,100 fms. Depth of observation: 1,063 m. Weather: overcast Sea: very rough Wind: 340°, force 4

Depth (m)	T (°C)	S (‰)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> ô	ΔD (dyn.m.)	0 <sub>2</sub>	PO <sub>4</sub> -P
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	15.72 15.72 15.70 15.71 15.75 15.70 14.66 11.15 9.74 8.76 7.85 5.90 5.47 4.89 4.55 4.03	33.40 33.32 33.35 33.35 33.44 33.36 33.45 33.45 33.45 34.15 34.15 34.15 34.15 34.40 34.48 34.52	24.60 24.54 24.57 24.60 24.63 24.63 24.87 25.49 26.50 26.65 26.86 27.01 27.13 27.24 27.34 27.42	334.8 340.9 338.6 336.1 334.0 339.4 311.8 254.0 195.2 158.6 145.1 125.7 112.3 102.3 92.2 83.2 76.0	.0000 .0339 .0608 .1019 .1693 .2539 .3358 .478 .591 .680 .757 .893 1.013 1.122 1.220 1.309 1.470	5.62 5.48 5.59 5.55 5.55 5.64 4.90 3.65 2.30 1.35 .48 .39 .51 .83	.46 .40 .43 .43 .45 .51 .90 1.58 2.12 2.46 2.81 2.96 3.05 3.09 3.09

#### STATION 100.90 (Interpolated Values at Standard Depths)

BLACK DOUGLAS: 29°40.5'N 120°47'W March 10, 1951 1848 GCT Wire angle: 20° Sounding: 2,200 fms. Depth of observation: 1,213 m. Weather: cloudy Sea: very rough Wind: 340°, force 4

-	0	-	,					
0	16.08	33.46	24.56	338.5	.0000	5.49	.49	
10	16.09	33.39	24.51	344.0	.0343	5.51	.49	
20	16.08	33.41	24.53	342.7	.0687	5.56	.46	
30	16.09	33.46	24.56	339.5	.1030	5.55	.46	
50	16.10	33.51	24.60	336.6	.1709	5.44	.52	
75	15.09	33.40	24.52	345.1	.2566	5.46	.47	
100	15.46	33.37	24.64	334.3	.3421	5.50	.48	
150	12.90	33.53	25.29	272.6	.495	5.09	.70	
200	10.37	33.72	25.91	214.3	.617	4.56	1.16	
250	8.91	33.95	26.33	174.9	.715	3.83	1.64	
300	8.05	34.13	26.60	149.6	.797	2.94	2.05	
400	6.98	34.20	26.81	130.6	.938	1.49	2.70	
500	6.00	34.33	27.05	109.2	1.059	.99	2.88	
600	5.34	34.27	27.08	106.6	1.168	.49	3.03	
700	4.91	34.31	27.16	99.3	1.272	.47	3.07	
800	4.58	34.39	27.26	90.3	1.368	.52	3.08	
1000	3.97	34.58	27.48	70.8	1.531	.73	3.09	

STATION 100.100 (Interpolated Values at Standard Depths)

BLACK DCUGLAS: 29°20.5'N 121°27'W March 11, 1951 0036 GCT Wire angle: 22° Sounding: 2,240 fms. Depth of observation: 1,106 m. Weather: partly cloudy Sea: very rough Wind: 340°, force 4

Depth (m)	T (°C)	(%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	(ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	16.52 16.54 16.52 16.52 16.55 16.60 16.57 11.83 10.09 8.77 7.84 6.91 6.20 5.44 5.04 4.64 3.92	33.51 33.49 33.50 33.60 33.69 33.60 33.52 33.36 33.99 34.09 34.21 34.23 34.26 34.41 34.48 34.56	24.50 24.48 24.50 24.57 24.64 24.55 24.50 25.37 26.39 26.39 26.60 26.83 26.94 27.23 27.23 27.47	344.2 346.4 345.4 338.5 333.1 341.6 347.5 265.1 203.1 169.8 149.4 129.0 119.2 108.6 93.4 71.8	.0000 .0347 .0694 .1037 .1712 .2560 .3427 .497 .615 .709 .789 .929 1.055 1.170 1.272 1.361 1.519	5.50 5.34 5.50 5.52 5.57 5.53 4.40 3.71 2.94 1.43 .64	.48 .45 .47 .47 .45 .46 .52 .82 1.34 1.72 2.08 2.78 3.16 3.24 3.24

# STATION 103.35 (Interpolated Values at Standard Depths)

CREST: 30°54'N 116°45'W March 8, 1951 1129 GCT Wire angle: 30° Sounding: 1,135 fms. Depth of observation: 1,042m. Weather: partly cloudy Sea: moderate Wind: 320°, force 4

STATION 103.40 (Interpolated Values at Standard Depths)

CREST: 3044'N 117°05.5'W March 8, 1951 1533 GCT Wire angle: 10° Sounding: 850 fms. Depth of observation: 1204 m. Weather: cloudy Sea: moderate Wind: 350°, force 4

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	1058	ΔD (dyn.m.)	<sup>0</sup> 2 (dyn.m.)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	14.22 14.24 14.24 14.22 13.25 11.16 10.50 9.51 8.46 7.48 7.12 6.28 5.62 5.62 5.11 4.69 4.01	33.32 33.31 33.41 33.40 33.44 33.59 34.17 34.18 34.20 34.51 34.43 34.43 34.43 34.43	24.86 24.85 24.93 24.93 25.13 25.55 25.79 26.36 26.57 26.68 26.74 27.04 27.09 27.17 27.26 27.37 27.54	309.9 311.3 304.3 304.0 286.3 245.9 224.2 170.6 150.8 141.4 136.1 109.4 98.2 89.9 80.5 65.5	.0000 .0312 .0621 .0926 .1520 .2189 .2780 .377 .458 .532 .602 .726 .834 .937 1.032 1.118 1.265	5.55 5.27 5.11 5.07 5.23 5.53 3.70 2.42 2.35 .48 .37 .49 .62	.93 .73 .67 .75 1.16 1.63 2.17 2.24 2.45 2.74 3.02 3.17 3.28 3.26 3.26 3.28

#### STATION 103.50 (Interpolated Values at Standard Depths)

CREST: 30°28'N 117°45.5'W March 8, 1951 2130 GCT Wire angle: 26° Sounding: 1,450 fms. Depth of observation: 1,070 m. Weather: cloudy Sea: very rough Wind: 320°, force 4

STATION 103.60 (Interpolated Values at Standard Depths)

CREST: 30°07'N 118°23'W March 9, 1951 0326 GCT Wire angle: 33° Sounding: 1,650 fms. Depth of observation: 1,021 m. Weather: cloudy Sea: rough Wind: 240°, force 5

Depth (m)	T (°C)	S (‰)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	<sup>0</sup> 2 (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	15.53 15.54 15.54 15.54 14.29 12.22 10.42 9.36 7.39 7.26 6.22 5.61 5.09 4.02	33.55 33.40 33.51 33.49 33.35 33.18 33.69 33.69 34.36 34.36 34.36 34.35 34.48 34.52 34.57	24.76 24.64 24.72 24.71 25.16 25.37 26.06 26.36 26.57 26.90 27.03 27.17 27.28 27.46	319.8 331.1 323.8 325.3 310.3 283.7 263.3 199.3 170.9 151.9 157.7 122.6 110.6 98.2 88.9 80.7 72.2	.0000 .0327 .0656 .0981 .1620 .2367 .3055 .422 .515 .596 .669 .801 .918 1.024 1.118 1.204 1.358	5.00 5.05 5.15 5.28 5.35 5.10 5.12 4.10 3.39 2.71 1.86 .69 .42 .31 .32 .37 .52	.58 .54 .54 .55 .82 1.14 2.17 2.67 2.81 2.91 3.04 3.13 3.22

# STATION 103.70 (Interpolated Values at Standard Depths)

CREST: 29°46'N 119°01'W March 9, 1951 0933 GCT Wire angle: 25° Sounding: 1,950 fms. Depth of observation: 1,088 m. Weather: cloudy Sea: missing Wind: 320°, force 5

0 10 20 30 50 75 1.00 150 200 250 300	14.15 14.16 14.16 14.12 13.95 10.81 10.18 9.17 8.51 7.85 7.21	33.55 33.50 33.52 33.53 33.59 33.82 33.99 33.90 34.00 34.11	25.06 24.92 25.02 25.04 25.08 25.73 26.32 26.35 26.35 26.53	291.7 305.3 296.0 294.1 290.4 228.8 201.8 174.1 171.7 155.3 139.0	.0000 .0300 .0602 .0898 .1485 .2138 .2680 .363 .450 .532	5.61 5.65 5.67 5.68 5.62 4.11 3.59 2.87 2.59 2.18 1.56	.49 .49 .49 .51 1.64 2.03 2.20 2.40 2.66
			26.71				
400	6.38	34.22	26.91	121.0	•737	.70	3.04
500	5.49	34.29	27.08	105.6	.851	.47	3.16
600 700	4.98	34.39 34.45	27.22	93.1	.952	.40	3.21
800	4.48	34.54	27.29	87.0 77.9	1.042	.36	3.23
1000	3.87	34.66	27.55	63.8	1.269	.65	3.27

STATION 103.80 (Interpolated Values at Standard Depths)

CREST: 29°24'N 119°28'W March 9, 1951 1535 GCT Wire angle: 37° Sounding: 1,950 fms. Depth of observation: 862 m. Weather: cloudy Sea: rough Wind: 320°, force 4

T	S	ot 3	1058	ΔD	02	PO <sub>4</sub> -P
14.46	33.39	24.87	309.4	.0000	5.67	(μg at/L)
14.49	33.40 33.44	24.87	310.0 307.1	.0637	5.31 5.33	.56 .60 .59
14.47	33,33 33.31	24,82 25.19	316.1 280.9	.3096	5.33	.57 .64 .86
9.46 8.52	34.22 34.13	26.45 26.53	162.7	·523 ·604	3.04	1.68 2.31 2.39
6.28 5.67	34.16 34.32	26.88	124.1	.926	1.00	2.49 3.03 3.18
5.01 4.58	34.47 34.58 34.64 (34.68)	27.25 27.36 27.46 27.57	80.5	1.025 1.112 1.189 1.325	-35	3.29 3.34 3.33
	(°C)  14.46 14.49 14.49 14.47 14.47 12.55 10.01 9.46 8.52 7.15 6.28 5.67 5.27 5.01	(°C) (%)  14.46 33.39 14.49 33.20 14.49 33.40 14.48 33.44 14.47 33.36 14.47 33.33 12.55 33.31 10.01 33.78 9.46 34.22 8.52 34.13 7.15 34.10 6.28 34.16 5.67 34.32 5.27 34.47 5.01 34.58 4.58 34.64	(°C) (%) (mg/cm³)  14.46 33.39 24.87 14.49 33.20 24.71 14.49 33.40 24.87 14.48 33.44 24.90 14.47 33.36 24.92 14.47 33.33 24.82 12.55 33.31 25.19 10.01 33.78 26.02 9.46 34.22 26.45 8.52 34.13 26.53 7.15 34.10 26.71 6.28 34.16 26.88 5.67 34.32 27.08 5.27 34.47 27.25 5.01 34.58 27.36 4.58 34.64 27.46	(°C) (%) (mg/cm³)  14.46 33.39 24.87 309.4  14.49 33.20 24.71 324.5  14.49 33.40 24.87 310.0  14.48 33.44 24.90 307.1  14.47 33.46 24.92 306.0  14.47 33.33 24.82 316.1  12.55 33.31 25.19 280.9  10.01 33.78 26.02 203.1  9.46 34.22 26.45 162.7  8.52 34.13 26.53 155.7  7.15 34.10 26.71 138.8  6.28 34.16 26.88 124.1  5.67 34.32 27.08 105.8  5.27 34.47 27.25 90.8  5.01 34.58 27.36 80.5  4.58 34.64 27.46 71.9	(°C) (%) (mg/cm³) (dyn.m.)  14.46 33.39 24.87 309.4 .0000  14.49 33.20 24.71 324.5 .0318  14.49 33.40 24.87 310.0 .0637  14.48 33.44 24.90 307.1 .0947  14.47 33.46 24.92 306.0 .1563  14.47 33.33 24.82 316.1 .2345  12.55 33.31 25.19 280.9 .3096  10.01 33.78 26.02 203.1 .431  9.46 34.22 26.45 162.7 .523  8.52 34.13 26.53 155.7 .604  7.15 34.10 26.71 138.8 .678  6.28 34.16 26.88 124.1 .810  5.67 34.32 27.08 105.8 .926  5.27 34.47 27.25 90.8 1.025  5.01 34.58 27.36 80.5 1.112  4.58 34.64 27.46 71.9 1.189	(°C) (%) (mg/cm³) (dyn.m.) (ml/L)  14.46 33.39 24.87 309.4 .0000 5.67  14.49 33.20 24.71 324.5 .0318 5.48  14.49 33.40 24.87 310.0 .0637 5.31  14.48 33.44 24.90 307.1 .0947 5.33  14.47 33.46 24.92 306.0 .1563 5.49  14.47 33.33 24.82 316.1 .2345 5.33  12.55 33.31 25.19 280.9 3096 4.64  10.01 33.78 26.02 203.1 .431 3.74  9.46 34.22 26.45 162.7 523 3.04  8.52 34.13 26.53 155.7 604 2.55  7.15 34.10 26.71 138.8 678 2.00  6.28 34.16 26.88 124.1 .810 1.00  5.67 34.32 27.08 105.8 .926 .55  5.27 34.47 27.25 90.8 1.025 .35  5.01 34.58 27.36 80.5 1.112 -  4.58 34.64 27.46 71.9 1.189 -

### STATION 107.35 (Interpolated Values at Standard Depths)

CREST; 30°20'N 116°22'W March 11, 1951 0026 GCT Wire angle: 34° Sounding: 600 fms. Depth of observation: 755 m. Weather: partly cloudy Sea: rough Wind: 320°, force 5

0 10 20 30 50 75 100 150 200 250 300 400 500 600	11.96 11.92 11.62 11.46 11.11 10.25 9.75 9.17 9.44 9.44 8.82 7.70 6.72 6.07	33.60 33.47 33.58 33.59 33.60 33.70 33.90 34.49 34.45 34.45 34.45 34.45	25.53 25.44 25.58 25.61 25.69 25.92 26.40 26.61 26.67 26.74 26.91 27.03 27.07	246.5 255.5 242.4 239.2 232.9 211.3 189.0 166.6 147.6 143.4 137.4 122.2 111.4 105.5	.0000 .0252 .0502 .0744 .1218 .1777 .2280 .318 .397 .470 .541 .671 .789	5.85 5.64 5.28 5.00 4.25 3.39 2.49 1.27 6.86 6.52 4.49	1.04 1.13 1.22 1.29 1.58 1.74 1.82 2.32 2.72 2.86 2.91 3.00 3.16 3.30
700	5.53	34.51	27.24	92.6	1.002	.51	3.30

STATION 107.40 (Interpolated Values at Standard Depths)

CREST: 30°10°N 116°42'W March 10, 1951 2005 GCT Wire angle: 26° Sounding: 1,500 fms. Depth of observation: 1,116 m. Weather: cloudy Sea: very rough Wind: 320°, force 5

					-		
Depth (m)	T (°C)	S (‰)	ot (mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub>	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	14.33 14.34 14.31 14.28 14.25 11.09 10.52 9.77 9.74 8.61 8.01 7.79 6.72 6.03 5.51 5.03 4.14	33.45 33.30 33.57 33.56 33.47 33.39 33.51 33.97 34.28 34.29 34.56 34.56 34.56 34.52 34.52	24.94 24.82 25.04 25.04 25.53 25.72 26.21 26.49 26.64 26.74 26.94 27.13 27.27 27.26 27.31 27.47	302.6 314.0 294.0 294.3 300.9 248.5 230.5 185.1 159.1 145.9 137.1 119.2 101.9 89.5 91.4 86.3 71.5	.0000 .0310 .0615 .0910 .1508 .2199 .2801 .385 .471 .548 .619 .748 .860 .957 1.048 1.138	5.67 5.74 5.75 5.67 5.09 4.52 3.37 1.76 1.19 .89 .56 .33 .25 .30 .34 .52	.63 .60 .56 .56 .64 1.22 1.48 1.81 2.32 2.42 2.56 3.00 3.10 3.21 3.27 3.33 3.32

### STATION 107.50 (Interpolated Values at Standard Depths)

CREST: 29°50.5'N 117°22.5'W March 10, 1951 1404 GCT Wire angle: 30° Sounding: 1,400 fms. Depth of observation: 1,128 m. Weather: cloudy Sea: rough Wind: 320°, force 5

### STATION 107.60 (Interpolated Values at Standard Depths)

CREST: 29°31.5'N 118°02.5'W March 10, 1951 0804 GCT Wire angle: 24° Sounding: 1,950 fms. Depth of observation: 1,167 m. Weather: cloudy Sea: rough Wind: 310°, force 5

Depth	T	S	o <sub>t</sub>	10 <sup>5</sup> 8	ΔD	02	PO <sub>14</sub> -P
(m)	(°C)	(%) (m	g/cm <sup>3</sup> )		(dyn.m.)	(ml/L)	(µg at/L)
0 10 20 30 50	15.79 15.78 15.79 15.80 15.78	33.58 33.48 33.62 33.65 33.66	24.72 24.65 24.75 24.77 24.79	323.3 330.7 321.0 319.4 318.8	.0000 .0328 .0656 .0977 .1618	5.38 5.42 5.40 5.37 5.34	. 49 . 46 . 45 . 45
75 100 150 200 250 300 400 500	15.80 13.32 10.62 9.56 9.05 8.65 7.93 7.00	33.58 33.76 34.04 34.26 34.35 34.43 34.48	24.72 25.10 25.90 26.30 26.55 26.68 26.86 27.03	325.5 290.2 214.6 177.5 154.2 142.3 127.2 111.8	.2428 .3203 .447 .546 .630 .704 .840	5.31 5.17 3.48 2.68 2.15 1.71 .61	.69 1.50 1.91 2.07 2.38 2.90 3.04
600 700 800 1000	6.26 5.61 4.94 4.07	34.49 34.51 34.53 34.58	27.14 27.24 27.33 27.47	102.3 93.4 84.4 72.1	1.069 1.167 1.257 1.415	.28 .33 .36 .45	3.14 3.16 3.17 3.26

### STATION 107.70 (Interpolated Values at Standard Depths)

CREST: 29°13'N 118°42.5'W March 10, 1951 0222 GCT Wire angle: 13° Sounding: 1,600 fms. Depth of observation: 1,051 m. Weather: cloudy Sea: rough Wind: 320°, force 5

800 4.69 34.52 27.35 82.0 1.180 .24 3.2		33.58 33.44 33.57 33.57 33.53 33.35 33.43 34.39 34.48 34.48 34.55 34.55 34.55	24.77 24.67 24.75 24.75 24.75 24.88 25.43 26.67 26.67 26.81 26.94 27.10 27.24 27.31 27.35	.0000 .0325 .0651 .0973 .1618 .2413 .3128 .428 .520 .598 .667 .793 .906 1.005 1.095	5.38 5.09 5.09 5.02 5.09 5.12 4.29 1.57 2.29 1.57 2.29 2.24	.57 .51 .52 .54 .52 .62 1.09 1.83 2.36 2.78 3.14 3.25 3.28 3.28	
800 4.69 34.52 27.35 82.0 1.180 .24 3.2		34.52 34.60		1.180	.24		

STATION 107.80 (Interpolated Values at Standard Depths)

CREST: 28°55'N 119°21'W March 9, 1951 2043 GCT Wire angle: 25° Sounding: 2,050 fms. Depth of observation: 1,149 m. Weather: cloudy Sea: very rough Wind: 320°, force 5

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	(ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 250 250 300 400 500 600 700 800 1000	15.46 15.46 15.44 15.44 14.48 12.17 9.80 76.60 54.57 76.60 54.57	33.37 33.37 33.37 33.37 33.38 33.55 33.55 34.07 34.25 34.25 34.37 34.43 34.60	24.64 24.64 24.64 24.66 24.82 25.32 25.88 26.54 26.65 26.82 26.98 27.11 27.20 27.30 27.50	331.4 331.7 332.0 332.2 330.3 316.4 268.3 216.2 173.2 155.2 144.9 129.5 115.9 104.1 95.2 86.4 68.1	.0000 .0333 .0666 .1000 .1665 .2478 .3214 .443 .541 .624 .700 .838 .962 1.073 1.173 1.265 1.421	5.55 5.55 5.55 5.55 5.55 5.55 5.55 5.5	.49 .49 .49 .47 .50 .84 .49 .2.38 .2.53 .2.99 .3.28 .3.36 .3.41

# STATION 110.35 (Interpolated Values at Standard Depths)

CREST: 29°47'N 116°00'5'W March 13, 1951 1852 GCT Wire angle: 11° Sounding: 600 fms. Depth of observation: 961 m. Weather: partly cloudy Sea: missing Wind: 300°, force 1

0 10 20 30 50 75 100 150 250 300 400 500 600 700 800	12.75 12.35 12.05 11.77 10.52 9.61 9.64 9.19 8.59 7.66 5.36 5.36 5.36 5.36	33.44 33.40 33.55 33.57 33.57 33.78 33.78 33.39 34.49 34.49 34.49 34.49 34.49	25.26 25.30 25.47 25.54 25.78 26.03 26.23 26.46 26.63 26.63 26.86 27.04 27.13 27.19	272.7 268.6 252.3 246.1 224.3 200.1 181.4 160.8 145.6 142.3 138.4 110.5 103.0 97.5	.0000 .0272 .0533 .0783 .1256 .1790 .2270 .313 .390 .463 .533 .667 .786 .995	5.66 5.48 5.91 3.36 2.34 .77 .64 .32 .32 .32	72 69 68 69 73 1.57 1.78 2.36 2.59 2.69 2.69 2.09 3.09 3.19 2.22
1000	(4.22)	(34.52)	(27.40)	(78.4)	(1.257)	(.52)	(3.12)

STATION 110.40 (Interpolated Values at Standard Depths)

CREST: 29°37'N 116°20'W March 13, 1951 2220 GCT Wire angle: 12° Sounding: 1,375 fms. Depth of observation: 1,148 m. Weather: cloudy Sea: slight Wind: 280°, force 3

Depth (m)	T (°C)	S (%) (m	g/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	13.90 13.32 12.85 12.61 12.41 10.82 10.29 9.49 8.81 8.60 7.42 6.37 5.81 5.28 4.77 4.13	33.55 33.58 33.58 33.58 33.58 33.58 33.58 33.58 33.58 33.58 33.58 34.28 34.35 34.35 34.35 34.42 34.52 34.52 34.52	25.11 25.34 25.39 25.39 25.75 26.58 26.66 26.72 26.93 27.15 27.20 27.38 27.47	286.7 287.3 264.8 260.6 261.2 226.8 207.2 177.0 150.7 143.7 138.7 120.4 100.1 96.4 87.6 79.3 72.1	.0000 .0288 .0565 .0829 .1354 .1967 .2513 .348 .430 .505 .576 .706 .817 .917 1.009 1.094 1.247	5.96 5.88 5.67 5.51 5.47 3.45 2.52 1.79 3.7 2.25 3.40 5.55	- .85 1.39 1.67 1.99 2.23 2.54 2.84 3.01 3.06 3.19 3.28 3.37

### STATION 110.50 (Interpolated Values at Standard Depths)

CREST: 29°16'N 116°59.5'W March 14, 1951 0352 GCT Wire angle: 11° Sounding: 1,950 fms. Depth of observation: 965 m. Weather: cloudy Sea: slight Wind: 310°, force 3

0 10 20 30 50 75 100 150 200 250 300 400 500 600 700	15.48 15.28 15.26 15.25 15.21 14.80 12.13 10.06 9.28 8.74 8.24 7.04 6.44 5.96 5.43 4.92	33.42 33.45 33.45 33.45 33.46 33.46 33.42 33.42 34.27 34.20 34.26 34.39 34.46	24.67 24.69 24.72 24.74 24.80 24.85 25.36 26.00 26.36 26.58 26.69 26.81 26.93 27.10 27.19 27.28	328.3 326.7 324.2 322.3 317.5 313.3 265.1 204.6 171.5 151.6 142.0 131.4 120.2 105.7 97.0 89.4	.0000 .0329 .0656 .0980 .1623 .2416 .3144 .433 .527 .609 .683 .820 .947 1.061 1.164 1.258	5.56 5.55 5.59 5.57 5.57 5.57 5.35 2.55 2.55 2.50 3.35 3.35	.44 .42 .45 .47 .42 .57 .90 1.72 2.30 2.41 2.51 2.79 2.98 3.10 3.14 3.13
800 1000				89.4 (76.3)			

STATION 110.60 (Interpolated Values at Standard Depths)

CREST: 28°55'N 117°38.5'W March 14, 1951 0854, 1028 GCT Wire angles: 5°, 0° Sounding: 2,000 fms. Depths of observation: 1,180, 3,048 m. Weather: cloudy Sea: slight Wind: 300°, force 3

Depth (m)	(°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	<sup>0</sup> 2 (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1500 2500 3000 2500 3000	15.72 15.77 15.72 15.66 15.67 14.10 12.23 10.33 10.39 9.82 9.18 6.96 6.91 5.42 4.92 4.11 3.54 2.18 1.79 1.59	33.53 33.54 33.56 33.57 33.56 33.57 33.48 34.45 34.45 34.45 34.45 34.45 34.45 34.45 34.45 34.45 34.45 34.72 34.72 34.75	24.70 24.65 24.71 24.74 24.74 24.74 24.93 25.98 26.25 26.50 26.68 26.82 27.01 27.19 27.23 27.44 27.55 27.79 27.82	325.4 330.9 325.1 322.7 322.8 305.7 262.5 206.7 182.3 159.2 143.2 130.5 113.4 101.9 97.7 93.8 74.9 64.2 59.6 45.5 42.3 39.0 40.8	.0000 .0330 .0659 .0984 .1633 .2423 .3138 .432 .530 .616 .692 .830 .953 1.062 1.162 1.259 1.430 1.570 1.759 2.025 2.449 2.456	5.21 5.34 5.17 5.04 5.02 5.21 3.94 2.72 1.79 1.34 1.03 .34 2.8 27 .31 .50 .69 1.53 2.53	.40 .38 .39 .41 .44 .47 1.03 1.93 2.14 2.20 2.25 2.86 3.02 3.11 3.16 3.17 3.18 3.14 3.01 2.91 2.73 2.63

STATION 110.70 (Interpolated Values at Standard Depths)

CREST: 28°35'N 118°18'W March 14, 1951 1746 GCT Wire angle: 3° Sounding: 2,200 fms. Depth of observation: 1,143 m. Weather: cloudy Sea; moderate Wind: 150°, force 1

STATION 110.80 (Interpolated Values at Standard Depths)

CREST: 28°16'N 118°57.5'W March 15, 1951 0004 GCT Wire angle: 4° Sounding: 2,200 fms. Depth of observation: 1,173 m. Weather: cloudy Sea: moderate Wind: 150°, force 2

Depth (m)	T (°C)	S (‰) (m	σ <sub>t</sub> g/cm <sup>3</sup> )	1058	ΔD (dyn.m.)	<sup>0</sup> 2 (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	17.05 16.12 16.19 16.21 15.40 15.56 12.12 10.33 9.27 8.68 8.26 7.08 5.55 5.68 5.55 5.68 4.69 3.97	33.62 33.52 33.52 33.57 33.57 33.57 33.57 33.57 33.57 33.57 33.57 34.13 34.33 34.43 34.43 34.48 34.48	24.46 24.60 24.78 24.80 24.77 25.27 26.05 26.66 26.81 26.90 27.02 27.28 27.32 27.36	348.0 335.0 316.4 319.2 317.1 321.0 273.8 200.1 166.4 144.0 130.5 122.4 112.1 89.3 88.7 84.9 63.5	.0000 .0343 .0670 .0989 .1629 .2431 .3179 .437 .529 .608 .677 .804 .923 1.024 1.114 1.202 1.352	5.31 5.12 5.10 5.13 5.32 5.49 5.01 3.28 2.51 1.90 1.34 .77 .50 .34 .41 .65	41 40 40 41 42 38 90 1.61 2.08 2.47 2.71 2.86 2.93 3.16 3.17 3.10

### STATION 110.90 (Interpolated Values at Standard Depths)

CREST: 27°56'N 119°37.5'W March 15, 1951 0514 GCT Wire angle: 0° Sounding: 2,250 fms. Depth of observation: 1,178 m. Weather: clear Sea: moderate Wind: calm

0 16.22 10 15.84 20 15.80 30 15.79 50 15.79 75 15.58 100 13.62 150 10.19 200 8.88 250 8.17 300 7.65 400 6.94 500 6.34 600 5.75 700 5.18 800 4.63 1000 3.96	33.53 33.35 33.35 33.43 33.51 33.40 33.59 34.24 34.42 34.42 34.46 34.56	24.59 24.54 24.57 24.67 24.63 25.57 26.58 25.57 26.75 26.95 27.15 27.25 27.46	336.1 341.4 340.0 335.0 329.8 334.1 291.7 245.9 178.1 151.2 135.6 117.6 107.2 100.8 91.5 81.4 72.2	.0000 .0340 .0652 .1021 .1689 .2524 .3311 .466 .573 .656 .728 .856 .969 1.074 1.171 1.259	5.50 5.55 5.55 5.55 5.55 5.55 5.55 5.55	.49 .46 .49 .50 .55 1.38 1.99 2.56 2.89 3.11 3.15 3.19 3.22
--	--	---	--	--	--	---

#### STATION 110.100 (Interpolated Values at Standard Depths)

CREST: 27°36.5'N 120°17.5'W March 15, 1951 1035 GCT Wire angle: 0° Sounding: 2,250 fms. Depth of observation: 1,182 m. Weather: partly cloudy Sea: moderate Wind: 200°, force 1

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	16.88 16.62 16.62 16.62 16.66 16.68 13.70 10.22 8.84 8.19 7.66 6.59 6.59 6.59 6.59 6.59 6.59	33.71 33.53 33.54 33.56 33.60 33.74 34.24 34.24 34.24 34.45 34.45 34.43	24.57 24.48 24.51 24.52 24.53 25.95 26.40 26.59 26.75 26.97 27.19 27.23 27.30 27.49	337.5 346.5 344.6 341.9 334.0 297.0 209.8 150.6 115.6 113.8 93.2 87.0 69.2	.0000 .0343 .0690 .1036 .1725 .2574 .3368 .464 .559 .639 .711 .838 .953 1.059 1.155 1.246 1.404	5.22 5.33 5.40 5.42 5.42 5.42 5.62 4.66 3.66 3.66 3.66 48 .50 .42 .43 .72	. 43 . 41 . 43 . 44 . 39 . 43 . 58 1. 31 1. 73 2. 18 2. 54 2. 97 3. 12 3. 15 3. 17 3. 18 3. 19

STATION 110.110 (Interpolated Values at Standard Depths)

CREST: 27°17'N 120°58'W March 15, 1951 1526, 1719 GCT Wire angles: 4°, 8° Sounding: 2,180 fms. Depths of observation: 1,181, 3,019 m. Weather: cloudy Sea: rough Wind: calm

0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	16.19 16.15 16.11 16.02 15.67 14.38 12.95 10.21 9.00 7.98 7.11 6.29 6.11 5.36 4.98 4.54 3.85	33.48 33.35 33.36 33.42 33.48 33.48 33.48 33.48 34.16 34.16 34.55 34.53 34.53 34.53 34.55 34.55	24.56 24.47 24.48 24.52 24.63 24.77 25.25 26.40 26.62 26.76 26.95 27.05 27.32 27.32 27.38 27.54	339.1 348.1 347.0 343.8 333.6 320.9 276.0 209.2 167.1 147.4 133.8 117.6 109.3 94.1 84.5 79.3 73.9	.0000 .0345 .0694 .1041 .1722 .2544 .3295 .452 .546 .626 .696 .823 .938 1.040 1.130 1.213 1.368 1.509	5.48 5.51 5.51 5.59 5.60 5.166 5.466 6.94 6.94 6.94 6.94 6.94 6.94 6.94	.42 .44 .45 .41 .46 .85 1.58 1.97 2.23 2.47 2.93 3.10 3.24 3.23 3.24 3.15
1500 2000 2500 3000	2.77 2.09 1.79 1.60	34.56 34.70 34.73 34.79	27.58 27.74 27.79 27.86	61.8 46.1 41.6 36.5	1.509 1.702 1.976 2.199 2.398	1.24 1.97 2.37 2.68	3.03 2.88 2.79 2.67

STATION 113.35 (Interpolated Values at Standard Depths)

CREST: 29°10'N 115°39'W March 13, 1951 1255 GCT Wire angle: 15° Sounding: 900 fms. Depth of observation: 1,141 m. Weather: partly cloudy Sea: rough Wind: 070°, force 4

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800	14.25 14.31 14.27 13.78 12.98 10.64 9.31 9.94 8.84 7.64 6.04 5.42 4.92	33.43 33.48 33.48 33.46 33.50 33.62 34.39 34.39 34.40 34.50 34.55 34.55 34.55	24.94 24.87 24.98 25.06 25.26 25.79 26.57 26.65 26.69 26.88 26.99 27.17 27.27 27.35 27.46	302.5 309.8 300.7 300.0 292.3 274.5 224.3 173.2 151.3 145.0 142.1 125.1 115.4 98.7 89.5 82.6 73.2	.0000 .0307 .0614 .0916 .1511 .2223 .2851 .385 .467 .541 .614 .748 .870 .978 1.073 1.160 1.317	5.46 5.50 5.47 5.41 5.52 1.94 1.15 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24	.38 .39 .41 .42 .62 1.36 1.90 2.20 2.54 2.77 2.87 2.98 3.08 3.14 3.18 3.22

# STATION 113.40 (Interpolated Values at Standard Depths)

CREST: 29°00'N 115°59'W March 13, 1951 0852 GCT Wire angle: 6° Sounding: 400 fms. Depth of observation: 681 m. Weather: clear Sea: rough Wind: 320°, force 4

0 10 20 30 50 75 100 150 250 300 400 500 600	14.30 14.31 14.12 13.79 13.32 11.99 10.37 9.59 9.02 8.76 8.12 7.22 6.45 6.09	33.55 33.49 33.49 33.48 33.50 33.92 34.27 34.25 34.25 34.40	25.02 24.85 25.02 25.08 25.17 25.40 25.74 26.20 26.48 26.57 26.70 26.82 27.04	294.8 311.7 296.1 289.7 281.8 260.5 228.3 185.9 160.2 152.5 140.2	.0000 .0305 .0610 .0904 .1478 .2160 .2775 .382 .469 .548 .621	5.62 5.67 5.66 5.70 4.17 3.10 2.26 1.60 1.00	.41 .38 .38 .39 .48 .58 1.76 2.00 2.76 2.76 2.76
600	6.09	34.42	27.10	105.2	.987	.25	2.94

STATION 113.50 (Interpolated Values at Standard Depths)

CREST: 28°40.5'N 116°38.5'W March 13, 1951 0309 GCT Wire angle: 12° Sounding: 1,950 fms. Depth of observation: 1,161 m. Weather: partly cloudy Sea: rough Wind: 060°, force 4

Depth (m)	T (°C)	S (%)	(ng/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	<sup>0</sup> 2 (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	15.52 15.27 15.22 15.18 15.08 13.33 11.94 10.37 9.02 8.51 7.63 7.63 5.42 4.95 4.24	33.42 33.38 33.52 33.556 33.571 34.10 34.24 34.47 34.44 34.44 34.44 34.61	24.66 24.69 24.74 24.81 24.86 25.52 25.52 26.43 26.55 26.62 26.87 27.16 27.20 27.26 27.47	329.0 327.1 322.0 315.6 312.0 284.1 249.9 214.0 164.6 154.5 148.3 125.9 113.7 99.8 91.2 71.9	.0000 .0329 .0655 .0975 .1606 .2355 .3027 .420 .515 .595 .671 .810 .930 1.038 1.137 1.232 1.397	4.96 4.77 4.98 5.13 5.07 4.58 3.42 2.61 1.96 1.37 -39 -34 -38 -36	51 49 49 52 72 1.12 1.70 2.12 2.43 2.66 2.96 3.14 3.24 3.32 3.32

# STATION 113.60 (Interpolated Values at Standard Depths)

CREST: 28°21.5'N 117°18'W March 12, 1951 0923 GCT Wire angle: 1° Sounding: 2,000 fms. Depth of observation: 1,163 m. Weather: cloudy Sea: moderate Wind: 240°, force 2

500 6.89 34.45 27.02 112.3 .901 38 3. 600 6.22 34.56 27.20 96.6 1.007 25 3. 700 5.61 34.53 27.25 91.9 1.102 29 3.	600 700	6.22 5.61	34.56 34.53	27.20 27.25	96.6	1.007	.25	.66 .61 .83 1.65 2.38 2.69 2.80 2.86 3.02 3.21 3.32 3.32
---	------------	--------------	----------------	----------------	------	-------	-----	---

STATION 113.70 (Interpolated Values at Standard Depths)

CREST: 28°02'N 117°57.5'W March 12, 1951 1526 GCT Wire angle: 14° Sounding: 2,000 fms. Depth of observation: 1,042 m. Weather: partly cloudy Sea: moderate Wind: 040°, force 4

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	<sup>0</sup> 2 (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800	15.01 15.03 14.98 14.70 12.92 11.63 10.33 10.35 10.157 8.89 7.50 5.36 4.88 4.08	33.68 33.56 33.70 33.75 33.75 33.78 34.68 34.67 34.63 34.53 34.53 34.58 34.57	24.97 24.88 24.99 25.07 25.46 25.73 25.97 26.34 26.70 26.85 27.00 27.06 27.17 27.28 27.38 27.46	299.6 309.0 298.0 291.1 254.2 299.1 207.2 172.5 133.8 126.7 113.7 108.4 99.0 88.6 80.0 72.9	.0000 .0306 .0610 .0906 .1454 .2061 .2610 .357 .435 .504 .570 .691 .803 .908 1.002 1.087 1.242	5.16 5.21 5.34 5.34 4.06 3.44 3.11 1.73 .77 .59 .53 .35 .42 .49 .60	55 51 54 66 1.12 1.58 2.06 2.60 2.82 2.92 2.99 3.12 3.20 3.28 3.34 3.38 3.36

### STATION 117.35 (Interpolated Values at Standard Depths)

CREST: 28°38'N 115°16'W March 11, 1951 1247 GCT Wire angle: 17° Sounding: 96 fms. Depth of observation: 141 m. Weather: partly cloudy Sea: missing Wind: 320°, force 5

0 10 20 30 50 75 100	13.04 13.00 12.86 12.62 12.07 10.57	33.46 33.36 33.49 33.47 33.42 33.59 33.88	25.21 25.14 25.27 25.30 25.37 25.78 26.02	276.8 283.6 271.5 269.0 262.9 224.8 201.6	.0000 .0281 .0560 .0831 .1366 .1979 .2515	5.42 5.34 5.32 5.28 5.16 4.82 3.11	.79 .79 .81 .82 1.00 1.48 1.85
--	--	---	---	---	---	--	--

STATION 117.40 (Interpolated Values at Standard Depths)

CREST: 28°27.5'N 115°35'W March 11, 1951 1600 GCT Wire angle: 7° Sounding: 520 fms. Depth of observation: 705 m. Weather: partly cloudy Sea: rough Wind: 320°, force 4

Depth (m)	T (°C)	S (‰)	· $\sigma_t$ (mg/cm <sup>3</sup> )	1058	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700	14.33 14.34 14.32 14.27 12.30 11.02 10.18 10.27 9.78 9.39 8.56 7.37 6.23 5.53	33.46 33.33 33.34 33.37 33.47 33.47 33.47 33.47 33.47 33.47 33.47 33.47 33.47 33.47 33.47 33.47 33.47 33.47 33.47 33.47 33.47 33.47 33.47 34.52 34	24.95 24.85 24.86 24.89 25.37 25.72 26.05 26.48 26.69 26.77 26.72 26.99 27.14 27.25	301.9 311.9 310.9 308.0 263.2 230.2 198.8 159.3 145.5 140.9 134.7 140.5 116.4 101.9 92.3	.0000 .0308 .0621 .0931 .1506 .2126 .2665 .357 .433 .505 .575 .714 .843 .953	5.62 5.64 5.49 5.14 4.15 2.82 1.21 6.69 4.48 5.50 4.44 2.88 2.88	.63 .65 .67 .70 1.56 2.03 2.59 2.94 2.98 3.00 3.11 3.17 3.26

### STATION 117.50 (Interpolated Values at Standard Depths)

CREST: 28°08'N 116°15'W March 11, 1951 2142 GCT Wire angle: 29° Sounding: 2,100 fms. Depth of observation: 1,242 m. Weather: overcast Sea: rough Wind: 320°, force 4

0 10 20 30 50 75 100 150 200 250 300 400 500 600 700	14.91 14.89 14.81 14.66 13.88 11.70 10.91 10.49 10.35 10.14 9.26 7.83 6.86 6.00 5.41	33.37 33.45 33.45 33.45 33.47 33.45 34.55 34.53 34.55 34.54 34.47 34.47 34.47 34.47	24.76 24.73 24.84 24.87 24.98 25.46 25.82 26.55 26.55 26.59 26.72 27.05 27.10 27.20	320.2 322.9 312.7 310.6 300.5 254.7 220.6 181.4 154.2 151.2 139.0 128.0 109.7 105.7 96.0	.0000 .0323 .0642 .0955 .1569 .2865 .386 .472 .549 .622 .757 .877 .985	5.56 5.46 5.47 5.58 4.87 3.54 3.96 6.69 6.47 3.30 3.30	111111111111111
800 1000	4.94	34.52	27.32	96.0 85.2	1.087		-
1000	4.17	34.58	27.46	73.1	1.339	•54	-

STATION 117.60 (Interpolated Values at Standard Depths)

CREST: 27°48'N 116°55'W March 12, 1951 0330 GCT Wire angle: 2° Sounding: 2,100 fms. Depth of observation: 1,273 m. Weather: partly cloudy Sea: rough Wind: 330°, force 4

Sea: ro	ough Wind:	3300, 10	orce 4				
Depth (m)	T (°C)	S (%)	ot (mg/cm <sup>3</sup>	10 <sup>5</sup> 8	ΔD (dyn.m.)	02 (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	15.12 15.14 15.19 15.29 15.50 15.47 14.28 11.97 10.85 10.16 9.74 8.36 7.06 5.45 5.00 4.19	33.40 33.40 33.48 33.70 33.78 33.76 34.08 34.59 34.47 34.47 34.47 34.51 34.57	24.74 24.73 24.78 24.93 24.94 24.91 25.90 26.34 26.57 26.70 26.79 26.79 27.25 27.25 27.31 27.45	322.2 322.9 318.5 304.6 303.6 307.4 281.4 214.7 173.9 152.9 141.8 133.9 117.7 101.2 91.9 86.6 74.1	.0000 .0324 .0646 .0959 .1570 .2338 .3079 .433 .531 .613 .662 .801 .928 1.038 1.136 1.226 1.388	5.46 5.26 5.31 5.37 5.34 5.38 2.47 2.03 1.57 1.07 27 29 35 50	

# STATION 117.70 (Interpolated Values at Standard Depths)

CREST: 27°28'N 117°34.5'W March 12, 1951 0909 GCT Wire angle: 14°
Sounding: 1,950 fms. Depth of observation: 1,212 m. Weather: partly cloudy
Sea: rough Wind: 360°, force 4

2000	-0-						
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800	15.23 15.25 15.20 14.96 13.25 11.29 10.67 10.51 9.36 9.14 8.67 7.68 6.58 5.38 4.88 4.01	33.49 33.46 33.62 33.59 33.95 34.49 34.59 34.59 34.59 34.59 34.59 34.59	24.78 24.75 24.89 24.93 25.61 26.00 26.52 26.68 26.79 27.16 27.26 27.39 27.43	318.0 320.9 308.4 304.4 281.9 240.7 204.1 176.6 156.3 141.6 132.0 116.8 105.7 99.4 90.3 75.8	.0000 .0321 .0637 .0944 .1533 .2190 .2750 .371 .455 .530 .598 .724 .836 .940 1.035 1.121 1.278	5.63 5.60 5.60 5.20 4.24 2.92 1.57 1.50 1.19 .37 .33 .26	.62 .59 .64 1.59 1.59 2.69 2.86 2.31 3.33 3.30

#### STATION 120.35 (Interpolated Values at Standard Depths)

CREST: 28°03'N 114°54'W March 18, 1951 1040 GCT Wire angle: 4° Sounding: 46 fms. Depth of observation: 75 m. Weather: partly cloudy Sea: slight Wind: 360°, force 4

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	AD (dynam.)	O <sub>2</sub>	PO <sub>4</sub> -P
0 10 20 30 50 75	13.84 13.86 13.13 12.40 11.70	33.62 33.42 33.73 33.72 33.68 33.88	25.17 25.02 25.40 25.54 25.64 25.91	280.5 295.7 259.1 246.5 237.1 212.6	.0000 .0289 .0568 .0822 .1308	5.59 5.77 5.30 4.71 3.62 2.12	.64 .59 .76 1.20 1.59 2.20

# STATION 120.45 (Interpolated Values at Standard Depths)

CREST: 27°41.5'N 115°33'W March 18, 1951 0530 GCT Wire angle: 26° Sounding: 1,280 fms. Depth of observation: 1,145 m. Weather: partly cloudy Sea: moderate Wind: 330°, force 4

0 10 20 30 50 75 100 150 250 300 400 500 600 700 800	14.90 14.94 14.55 13.29 11.96 10.15 10.10 10.18 9.81 9.30 8.03 6.88 6.16 5.51 4.26	33.73 33.76 33.76 33.79 33.996 34.59 34.59 34.63 34.63 34.59	25.04 24.91 25.12 25.68 26.00 26.14 26.56 26.56 26.77 26.86 27.04 27.25 27.34 27.38 27.42	293.6 305.8 286.3 260.2 233.3 203.6 191.0 166.1 153.0 142.0 134.7 127.3 110.7 91.3 83.2 79.6 76.5	.0000 .0301 .0598 .0872 .1368 .1918 .2414 .331 .412 .486 .556 .688 .808 .910 .998 1.080 1.238	5.95 5.93 5.73 4.73 3.60 3.11 2.68 1.68 1.68 1.68 2.9 2.28 2.28 3.10 2.40	54 58 64 74 1.58 2.02 2.18 2.53 2.77 2.92 3.10 3.17 3.29 3.35 3.43
--	--	---	---	---	---	---	--

STATION 120.50 (Interpolated Values at Standard Depths)

CREST: 27°31'N 115°52.5'W March 18, 1951 0046 GCT Wire angle: 9° Sounding: 2,150 fms. Depth of observation: 1,179 m. Weather: cloudy Sea: rough Wind: 050°, force 4

Depth	Т	S	~	1058	ΔD		DO D
			ot a	and the same		02	PO <sub>4</sub> -P
(m)	(°C)	(%)	(mg/cm)	)	(dyn.m.)	(m1/L)	(µg at/L)
0	16.06	33.87	24.89	307.8	.0000	4.61	•55
10	15.93	33.75	24.82	314.1	.0312	5.29	•57
20	15.78	33.91	24.98	299.5	.0620	5.30	.61
30	15.62	33.91	25.02	296.3	.0919	5.21	.66
50	13.52	33.59	25.22	277.5	.1496	4.72	1.02
75	11.47	33.75	25.74	228.4	.2132	3.72	1.53
100	10.45	33.84	25.99	204.7	.2677	3.14	1.78
150 200	10.06	34.39 34.45	26.49	158.1	• 359	1.66	2.42
250	9.21	34.45	26.67	148.3	.436	1.04	2.69
300	8.80	34.44	26.73	137.9	.509 .580	.47	2.82
400	7.85	34.47	26.90	123.0	.712	.31	3.02
500	6.88	34.56	27.11	104.1	.826	.31	3.17
600	6.00	34.51	27.19	97.5	.928	.24	3.23
700	5.42	34.47	27.23	93.9	1.024	.31	3.31
800	4.94	34.43	27.25	91.7	1.118	.42	3.35
1000	4.17	34.50	27.39	78.9	1.291	.58	3.32

### STATION 120.60 (Interpolated Values at Standard Depths)

CREST: 27°11.5'N 116°32'W March 17, 1951 1520, 1745, 1849 GCT Wire angles: 33°, 30°, 33° Sounding: 2,050 fms. Depths of observation: 1,071, 1,664, 3,040 m. Weather: cloudy Sea: rough Wind: 270°, force 4

0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1200 1200 1500	15.74 15.75 15.66 15.51 15.08 13.72 11.86 10.33 10.03 9.39 8.57 7.44 6.69 5.76 5.66 3.99 3.52 2.85 2.15	33.57 33.52 33.57 33.57 33.73 33.91 33.99 34.48 34.48 34.49 34.49 34.60 34.60	24.73 24.69 24.75 24.83 25.00 25.37 26.49 26.67 26.78 26.94 27.07 27.15 27.32 27.48 27.54 27.60 27.69	322.9 327.1 321.7 314.4 298.7 263.7 234.1 192.9 159.3 143.1 133.0 119.3 107.4 100.8 93.1 85,4 70.4 65.6 59.9	.0000 .0326 .0652 .0971 .1588 .2294 .2921 .400 .488 .564 .634 .761 .875 .980 1.078 1.168 1.326 1.464 1.654	5.46 5.44 5.25 5.33 5.37 4.50 3.01 2.88 1.26 .86 .86 .44 .29 .30 .31 .38 .62 .78 1.08 1.82	.51 .50 .51 .50 .49 1.55 1.66 1.77 2.48 2.70 2.89 3.05 3.17 3.21 3.22 3.16 2.98
				59.9	1.654	The same of the sa	2.98
					1.934	1.82	3.10
2500	1.79	34.70	27.77	44.1	2.174	2.31	3.28
3000	1.60	34.72	27.80	41.4	2.392	2.47	3.26

STATION 120.70 (Interpolated Values at Standard Depths)

CREST: 26°52'N 117°10'W March 17, 1951 0914 GCT Wire angle: 17° Sounding: 2,150 fms. Depth of observation: 1,182 m. Weather: partly cloudy Sea: moderate Wind: 320°, force 4

Depth (m)	T (°C)	S (%)	ot (mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	O <sub>2</sub>	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	16.69 16.68 16.67 16.64 16.26 15.92 13.92 10.39 9.44 9.06 8.72 7.72 6.48 5.79 5.28 4.69 3.93	33.75 33.71 33.60 33.71 33.68 33.68 33.95 34.33 34.33 34.55 34.55 34.51	24.65 24.54 24.62 24.63 24.70 24.74 25.00 26.48 26.64 26.98 27.31 27.38 27.42	330.4 341.5 333.5 333.2 327.4 323.7 280.1 196.7 159.9 145.4 137.5 122.5 115.5 94.6 86.1 79.0 75.7	.0000 .0337 .0676 .1011 .1675 .2493 .3253 .445 .535 .612 .683 .514 .934 1.040 1.131 1.215 1.371	5.41 5.41 5.41 5.49 5.49 1.93 84 1.93 84 1.35 1.30 1.30 1.30 1.30 1.30 1.30 1.30 1.30	54 .46 .49 .51 .52 .50 .86 1.91 2.64 2.85 2.97 3.28 3.34 3.35 3.32

### STATION 120.80 (Interpolated Values at Standard Depths)

CREST: 26°32.5'N 117°48.5'W March 17, 1951 0340 GCT Wire angle: 26° Sounding: 2,100 fms. Depth of observation: 917 m. Weather: cloudy Sea: moderate Wind: 320°, force 3

0 10 20 30 50	17.41 17.39 17.25 17.15 17.06	33.82 33.69 33.75 33.78 33.80	24.53 24.44 24.52 24.56 24.60	341.5 350.8 343.5 339.5 336.5	.0000 .0348 .0696 .1039	5.11 5.32 5.35 5.36 5.36	.50 .46 .48 .48
---------------------------	---	---	---	---	----------------------------------	--------------------------------------	--------------------------

STATION 120.90 (Interpolated Values at Standard Depths)

CREST: 26°13'N 118°27.5'W March 16, 1951 2016 GCT Wire angle: 15° Sounding: 2,250 fms. Depth of observation: 1,229 m. Weather: partly cloudy Sea: moderate Wind: 320°, force 3

					and the second s		
Depth (m)	T (°C)	S (‰)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	17.51 17.27 17.25 17.22 17.20 16.60 14.75 11.05 9.72 8.78 7.99 7.03 6.28 5.57 5.02 4.65 3.93	33.82 33.67 33.83 33.71 33.74 33.80 33.93 34.15 34.26 34.30 34.44 34.40 34.39 34.44 34.58	24.51 24.45 24.58 24.58 24.50 24.66 25.12 25.96 26.75 26.75 26.92 27.15 27.21 27.21 27.48	343.8 349.5 337.5 346.3 331.2 288.0 209.5 172.0 149.9 136.1 121.0 104.9 99.9 94.6 87.5	.0000 .0348 .0693 .1032 .1719 .2571 .3350 .460 .556 .637 .709 .839 .953 1.056 1.154 1.246 1.406	5.37 5.37 5.38 5.38 5.40 4.95 3.11 2.27 1.77 1.32 .80 .53 .37 .36 .44	.52 .47 .53 .53 .47 .51 .64 1.61 2.40 2.61 2.95 3.17 3.24 3.27 3.22

#### STATION 120.100 (Interpolated Values at Standard Depths)

CREST: 25°53.5'N 119°07'W March 16, 1951 1208, 1405 GCT Wire angles: 4°, 5° Sounding: 2,300 fms. Depths of observation: 1,250, 3,306 m. Weather: clear Sea: rough Wind: 300°, force 4

0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000 1200	17.02 17.00 16.94 16.86 16.45 15.20 12.34 10.19 9.00 8.21 7.64 6.14 5.38 4.49 3.81 3.27 2.71 2.76	33.77 33.69 33.63 33.73 33.58 33.75 34.18 34.25 34.32 34.40 34.40 34.40 34.40 34.40 34.40 34.40 34.58 34.58	24.59 24.53 24.50 24.51 24.69 24.82 25.97 26.62 26.76 26.76 27.24 27.24 27.55 27.55 27.60	336.2 342.1 345.5 327.9 316.6 257.2 208.2 170.9 147.3 134.6 105.3 97.4 91.4 83.9 75.7 64.1 59.7	.0000 .0341 .0686 .1032 .1708 .2518 .3240 .441 .537 .688 .816 .930 1.032 1.128 1.216 1.378 1.519 1.707 1.973	5.04 5.35 4.99 5.42 4.31 3.50 3.62 1.56 2.62 1.00 1.46	.42 .43 .47 .50 .41 .94 1.55 2.35 2.35 2.96 3.25 3.29 3.10 3.01
		34.71 34.73				1.46	3.01
3000	1.63	34.74	27.82	40.6	2.405	2.02	3.13

STATION 120.110 (Interpolated Values at Standard Depths)

CREST: 25°33'N 119°44'W March 16, 1951 0714 GCT Wire angle: 20° Sounding: 2,200 fms. Depth of observation: 1,106 m. Weather: clear Sea: moderate Wind: 320°, force 1

Depth (m)	T (°C)	S (‰)	ot (mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	<sup>0</sup> 2 (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	17.21 16.94 16.90 16.88 16.77 12.50 10.89 9.79 9.43 7.32 6.44 5.73 5.17 4.72 4.04	33.73 33.66 33.75 33.76 33.66 33.55 33.55 33.90 34.28 34.36 34.38 34.43 34.47 34.59	24.51 24.52 24.60 24.60 24.65 25.60 26.42 26.66 26.89 27.16 27.21 27.48	343.5 343.0 335.6 335.7 337.2 332.2 262.3 242.9 191.7 166.4 144.1 123.5 111.5 99.8 95.0 86.2 71.0	.0000 .0345 .0685 .1022 .1699 .2540 .3288 .456 .565 .656 .734 .869 .987 1.094 1.192 1.284 1.442	(4.69) 4.78 4.89 5.03 5.55 5.55 5.56 6.56 3.2 3.54 5.59 5.59 5.59 5.59 5.59 5.59 5.59 5	53 -53 -52 -53 -52 -53 -52 -57 -65 -22 -23 -23 -23 -23 -23 -23 -23

# STATION 123.40 (Interpolated Values at Standard Depths)

CREST: 27°18'N 114°53'W March 18, 1951 1640 GCT Wire angle: 8° Sounding: 300 fms. Depth of observation: 489 m. Weather: clear Sea: rough Wind: 320°, force 3

0 10 20 30 50 75 100 150 200 250	16.10 16.09 16.02 15.37 12.74 11.34 9.95 10.17 10.35	33.71 33.66 33.80 33.80 33.87 33.87 33.82 34.24 34.59 34.69	24.75 24.72 24.84 25.52 25.66 26.35 26.35 26.67	320.5 324.2 312.7 299.2 248.7 217.4 198.0 171.8 151.1 142.6	.0000 .0324 .0643 .0951 .1501 .2087 .2610 .354 .435	5.53 5.37 5.47 5.46 4.15 3.37 2.76 1.64	.52 .56 .57 .59 1.74 2.04 2.46 2.76
250	10.29	34.69	26.68	142.6	•509	.38	2.86
300 400	9.74	34.61	26.71 26.94	140.6	.712	•37	2.96
500	(7.24)	(34.60)	(27.09)	(106.3)	(.826)	-	71

STATION 123.50 (Interpolated Values at Standard Depths)

CREST: 26°58'N 115°30.5'W March 18, 1951 2210 GCT Wire angle: 4° Sounding: 1,750 fms. Depth of observation: 1,180 m. Weather: partly cloudy Sea: rough Wind: 300°, force 4

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	(ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	16.58 16.31 16.14 15.25 14.04 11.76 10.93 9.62 8.85 9.19 7.92 6.83 5.48 5.00 4.05	33.76 33.57 33.57 33.57 33.79 34.16 34.60 34.56 34.60 34.60	24.68 24.60 24.64 24.84 25.16 25.65 25.87 26.57 26.67 26.67 26.67 27.09 27.19 27.29 27.38 27.49	327.2 335.7 332.3 313.4 282.7 236.5 216.6 167.1 150.9 142.9 127.0 115.4 105.4 96.9 80.0 70.3	.0000 .0333 .0668 .0992 .1591 .2244 .2814 .378 .458 .532 .600 .722 .834 .936 1.029 1.114 1.266	5.10 5.25 5.28 5.28 5.26 3.33 2.19 88 29 .25 .24 .25 .27 .32	54 52 52 54 73 1.18 1.73 2.15 2.32 2.73 3.06 3.17 3.28 3.30 3.35

### STATION 123.60 (Interpolated Values at Standard Depths)

CREST: 26°38.5'N 116°09'W March 19, 1951 0221 GCT Wire angle: 26° Sounding: 2,050 fms. Depth of observation: 1,100 m. Weather: partly cloudy Sea: rough Wind: 020°, force 4

30       15.87       33.57       24.70         50       15.17       33.60       24.88         75       12.93       33.55       25.30         100       11.42       33.51       25.56         150       10.13       33.99       26.16         200       9.57       34.26       26.47         250       8.97       34.39       26.67         300       8.30       34.41       26.78         400       7.03       34.37       26.94	189.5 .412 161.4 .501	4.44 .50 4.68 .50 5.21 .50 4.99 .84 3.64 1.36 2.62 2.02 1.84 2.45 1.19 2.69 1.01 2.83 .56 3.03 .36 3.20 .33 3.24 .30 3.26 .37 3.27 .61 3.22
--	--------------------------	---

STATION 127.40 (Interpolated Values at Standard Depths)

CREST: 26°45'N 114°29'W March 19, 1951 1844 GCT Wire angle: 7° Sounding: 1,650 fms. Depth of observation: 1,165 m. Weather: clear Sea: rough Wind: 040°, force 4

Depth T (m) (°C)	S $\sigma_t$ (%) (mg/cm <sup>3</sup> )	1058	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)	PO <sub>4</sub> -P
0 16.48 10 16.40 20 16.36 30 16.27 50 15.80 75 13.25 100 11.46 150 10.31 200 8.81 250 9.03 300 9.08 400 7.88 500 6.91 600 6.17 700 5.56 800 5.00	(%) (mg/cm <sup>3</sup> )  33.81 24.74  33.70 24.68  33.83 24.79  33.84 24.82  33.82 24.91  33.75 25.40  33.88 25.84  26.25  34.14 26.25  34.31 26.60  34.48 26.72  34.51 26.93  34.53 27.08  34.54 27.27  34.57 27.36  34.53 27.41	321.5 328.1 317.9 315.5 307.3 261.3 219.2 181.3 164.4 150.1 139.4 120.7 106.9 103.9 90.5 82.2 77.2	.0000 .0326 .0650 .0968 .1594 .2309 .2914 .392 .479 .558 .631 .762 .877 .983 1.082 1.169 1.330	(m1/L) 5.52 5.51 5.49 5.49 5.49 5.49 5.49 5.49 5.49 5.49 5.49 5.49 5.49 5.49 5.49 5.49 5.49 5.49 5.49 5.49 6.20	(µg at/L)  47  49  50  53  1.29  1.77  2.16  2.24  2.67  2.96  3.14  3.24  3.26  3.33

### STATION 127.50 (Interpolated Values at Standard Depths)

CREST: 26°24'N 115°07'W March 19, 1951 1404 GCT Wire angle: 10° Sounding: 2,040 fms. Depth of observation: 1,176 m. Weather: partly cloudy Sea: maderate Wind: 040°, force 2

0 10 20 30 50 75 100 150 250 300 400 500 600 700 800 1000	16.22 16.24 16.25 15.26 12.35 11.50 9.59 9.17 9.31 7.74 5.50 5.50 5.50 5.50 5.50 5.50 5.50 5.5	33.64 33.66 33.66 33.62 33.37 33.37 33.34 34.47 34.47 34.53 34.59	24.67 24.68 24.68 24.68 24.87 25.74 26.45 26.64 26.67 26.68 27.19 27.32 27.32 27.46	328.1 327.5 328.1 328.3 310.5 272.4 228.7 191.1 162.5 143.7 125.2 111.7 96.7 90.4 85.9 72.7	.0000 .0329 .0658 .0988 .1630 .2362 .2993 .405 .494 .572 .644 .780 .899 1.005 1.099 1.188	5.51 5.554 5.556 5.558 6.27 2.29 3.29 3.29 3.29 3.29 3.29	68 63 65 66 1.24 1.88 1.89 2.57 2.75 3.07 3.07 3.11 3.17
1000	4.19	34.59	27.46	72.7	1.348	.51	3.21

STATION 127.60 (Interpolated Values at Standard Depths)

CREST: 26°03.5'N 115°44.5'W March 19, 1951 0833 GCT Wire angle: 22° Sounding: 1,973 fms. Depth of observation: 1,171 m. Weather: clear Sea: rough Wind: 070°, force 5

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	(dyn.m.)	O <sub>2</sub> PO <sub>4</sub> -P (ml/L) (μg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	17.46 17.45 17.42 17.35 17.22 17.22 17.22 17.22 17.22 17.22 17.22 17.35 17.22 17.22 17.35 17.22 17.35 17.22 17.35 17.42	33. 78 33. 73 33. 90 33. 89 33. 87 33. 87 34. 23 34. 45 34. 45 34. 45 34. 47 34. 43	24.49 24.45 24.59 24.60 24.66 24.54 25.71 26.54 26.70 26.95 27.25 27.25 27.39	345.5 349.3 336.4 335.9 335.7 343.8 232.5 180.3 155.4 117.7 109.4 91.8 79.5	.0000 .0349 .0693 .1031 .1706 .2545 .3395 .485 .588 .673 .748 .878 .993 1.095 1.189 1.283 1.456	5.31 .58 5.32 .54 5.31 .57 5.35 .57 5.43 .56 5.57 .65 4.05 .2.34 1.55 .2.34 1.55 .2.65 1.20 .2.85 .82 .3.10 .55 .3.25 .40 .3.37 .37 .3.47 .39 .64 .3.47

# STATION 130.35 (Interpolated Values at Standard Depths)

HORIZON: 26914.5'N 113948.5'W March 20, 1951 2052, 2120 GCT Wire angles: missing, 2° Sounding: 360 fms. Depths of observation: 499, 606 m. Weather: cloudy Sea: moderate Wind: 220°, force 3

150 10.74 33.76 25.88 215.7 2961 3.150 11.88 34.69 26.39 168.4 393 200 11.51 34.65 26.43 165.9 477 250 10.68 34.63 26.57 153.7 557 300 10.05 34.61 26.66 145.7 633 400 8.78 34.54 26.81 132.2 773	12 .44 27 .49 45 .81 78 1.40 68 2.52 70 2.61 47 2.71 37 2.77 27 2.84	
500 1.32 34.61 27.09 106.6 .893	30 2.96	
600 6.45 34.61 27.21 95.9 .996	28 3.05	

STATION 130.40 (Interpolated Values at Standard Depths)

HORIZON: 26°09'N 114°07.5'W March 21, 1951 0035, 0105 GCT Wire angles: 7°, 4° Sounding: 1,250 fms. Depths of observation: 456, 1,200 m. Weather: cloudy Sea: moderate Wind: 320°, force 1

Depth (m)	T (°C)	S (%)	σ <sub>t</sub> (mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 250 300 400 500 600 700 800 1000	17.48 16.82 16.64 15.75 14.15 12.25 11.37 10.29 9.25 8.86 8.74 8.00 7.10 6.38 5.77 5.20 4.41	33.68 33.66 33.69 33.68 33.63 34.26 34.37 34.45 34.59 34.59 34.59 34.51	24.41 24.55 24.62 24.81 25.06 25.38 25.66 26.17 26.52 26.67 26.75 26.98 27.10 27.18 27.25 27.31 27.38	353.4 340.1 334.2 315.9 292.3 262.3 236.0 189.1 156.4 143.0 136.4 115.6 104.9 98.7 92.5 87.1 81.3	.0000 .0348 .0687 .1013 .1624 .2321 .2948 .402 .489 .564 .635 .762 .873 .976 1.072 1.163 1.333	5.34 5.19 5.07 5.07 5.32 4.50 3.90 3.14 1.30 2.23 2.23 2.29 2.29 2.29 2.29	.47 .45 .44 .43 .41 .40 .50 1.58 2.67 2.72 2.92 3.04 3.11 3.14 3.18

#### STATION 130.50 (Interpolated Values at Standard Depths)

HORIZON: 25°47'N 114°47.5'W March 21, 1951 0655 GCT Wire angle: 25° Sounding: 1,800 fms. Depth of observation: 1,015 m. Weather: partly cloudy Sea: slight Wind: 320°, force 3

STATION 130.60 (Interpolated Values at Standard Depths)

HORIZON: 25°26'N 115°27.5'W March 21, 1951 1251, 1322, 1431 GCT Wire angles: 14°, missing, 10° Sounding: 1,910 fms. Depths of observation: 795, 1,197, 3,048 m. Weather: cloudy Sea: moderate Wind: 320°, force 1

Depth (m)	T (°C)	S (‰)	(mg.cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000 1200 1500 2500 3000	17.55 17.56 17.50 17.42 17.25 16.82 15.90 12.45 11.05 10.26 9.63 7.71 6.46 6.05 5.52 4.89 4.19 3.62 2.95 2.12 1.65	33.82 33.73 33.90 33.95 33.78 33.78 33.91 34.33 34.43 34.49 34.56 34.56 34.56 34.56 34.62 34.62 34.73 34.71	24.50 24.57 24.62 24.67 24.60 24.85 26.63 26.48 26.63 26.94 27.24 27.33 27.39 27.50 27.61 27.60 27.79	342.8 351.7 338.4 333.8 329.9 336.9 313.8 236.2 181.1 161.3 148.1 119.5 112.2 92.7 84.8 78.6 75.0 69.7 59.9 41.3 43.1	.0000 .0349 .0695 .1032 .1699 .2538 .3356 .474 .579 .665 .743 .878 .995 1.098 1.188 1.270 1.426 1.572 1.769 2.041 2.268 2.483	5.07 5.25 5.19 5.20 5.12 5.25 4.30 2.00 1.23 -77 47 43 -30 -33 -34 -54 -70 1.93 -72 -60	.42 .54 .36 .36 .38 .39 .43 .92 2.01 2.53 2.53 2.85 3.09 3.14 3.20 3.21 3.17 3.21 2.67

STATION 130.70 (Interpolated Values at Standard Depths)

HORIZON: 25°11'N 116°05'W March 21, 1951 2023 GCT Wire angle: 4° Sounding: 1,840 fms. Depth of observation: 1,163 m. Weather: cloudy Sea: slight Wind: calm

0	17.99	33.95	24.49	345.9	.0000	5.13	_
10	17.57	33.77	24.46	349.1	.0349	5.14	-
20	17.45	33.79	24.50	345.2	.0697	5.23	-
30	17.39	33.81	24.53	342.7	.1043	5.27	_
50	17.30	33.82	24.56	340.5	.1729	5.19	_
75	16.82	33.78	24.64	333.2	. 2576	5.20	_
100	14.52	33.71	25.10	290.2	. 3360	5.22	_
150	11.87	34.02	25.88	217.2	.464	2.52	_
200	9.23	34.04	26.35	172.2	.562	1.35	_
250	9.36	34.40	26.61	148.8	. 643	.88	_
300	9.50	34.60	26.74	137.3	.715	.71	_
400	8.18	34.45	26.84	129.6	. 849	.33	
500	7.37	34.60	27.07	108.2	.969	.27	
600	6.56	34.54	27.14	102.6	1.075	.30	_
700	5.89	34.54	27.23	94.8	1.175	.30	_
800	5.27	34.55	27.31	87.2	1.267	.31	
1000	4.13	34.55	27.44	75.0	1.431	.62	
		7.077	-1.	1).0	ナ・ナンエ	•02	-

STATION 130.80 (Interpolated Values at Standard Depths)

HORIZON: 24°49'N 116°46.5'W March 22, 1951 0130 GCT Wire angle: 5° Sounding: 2,030 fms. Depth of observation: 1,193 m. Weather: cloudy Sea: slight Wind: 290°, force 1

Depth (m)	T (°C)	S (‰)	σ <sub>t</sub> (mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (μg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	18.19 17.63 17.39 17.05 16.12 15.00 12.58 11.52 10.81 10.34 9.94 8.42 7.13 6.39 5.87 5.37 4.14	33.95 33.78 33.77 33.76 33.69 33.92 34.64 34.67 34.51 34.51 34.55 34.55 34.55	24.44 24.45 24.50 24.57 24.57 25.66 26.55 26.66 26.72 26.87 27.04 27.24 27.30 27.44	350.0 349.7 345.3 338.6 323.7 297.8 236.4 183.1 154.2 145.1 139.4 126.6 111.3 102.5 93.8 88.6 74.5	.0000 .0351 .0700 .1043 .1709 .2490 .3162 .422 .507 .582 .654 .788 .908 1.016 1.115 1.207 1.372	5.33 5.26 5.30 5.40 5.53 1.48 .57 .38 .33 .28 .33 .57	

#### STATION 133.40 (Interpolated Values at Standard Depths)

HORIZON: 25°37.5°N 113°43'W March 20, 1951 0747 GCT Wire angle: 15° Sounding: 1,250 fms. Depth of observation: 1,143 m. Weather: clear Sea: moderate Wind: 320°, force 2-3

0 16.80 10 16.75 20 16.50 30 15.93 50 15.53 75 12.73 100 11.00 150 12.00 200 10.80 250 10.26 300 9.80 400 8.72 500 7.57 600 6.63 700 5.90 800 5.28 1000 4.40	33.73 33.69 33.82 33.82 33.81 34.48 34.62 34.68 34.68 34.68 34.69 34.69 34.69 34.69	24.61 24.59 24.75 24.88 24.97 25.39 25.87 26.68 26.77 26.68 27.06 27.09 27.31 27.48	334.2 336.4 321.6 309.6 301.5 261.7 216.4 186.1 155.5 142.9 134.8 120.9 109.7 107.2 97.2 87.3 71.6	.0000 .0337 .0667 .0984 .1598 .2306 .2907 .392 .478 .553 .623 .752 .868 .978 1.081 1.174 1.335	5 40 5 45 5 47 5 47 5 47 5 47 5 47 5 47 5 47	. 42 . 38 . 39 . 41 . 46 . 75 1. 34 2. 39 2. 46 2. 62 2. 75 2. 92 3. 06 3. 08 3. 13
--	--	--	--	--	--	---

STATION 133.50 (Interpolated Values at Standard Depths)

HORIZON: 25°14.5'N 114°25'W March 20, 1951 0151 GCT Wire angle: 7° Sounding: 1,550 fms. Depth of observation: 1,170 m. Weather: clear Sea: moderate Wind: calm

Depth (m)	T (°C)	S (‰)	(mg.cm <sup>3</sup> )	1058	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	18.07 17.51 17.48 17.45 17.10 15.54 14.30 11.16 11.08 10.79 10.10 8.48 7.34 6.38 5.68 5.68 5.68	33.77 33.75 33.85 33.85 33.77 33.80 34.01 34.46 34.68 34.70 34.59 34.57 34.57	24.33 24.45 24.54 24.54 24.57 24.88 25.22 26.00 26.36 26.58 26.72 26.98 27.07 27.16 27.28 27.38 27.43	360.4 349.3 341.6 341.3 339.6 310.5 279.1 205.5 172.2 152.0 139.9 115.8 108.4 100.2 89.8 80.4 76.4	.0000 .0356 .0703 .1046 .1730 .2547 .3289 .451 .546 .628 .701 .830 .943 1.048 1.144 1.230 1.389	5.26 5.25 5.22 5.22 5.26 5.37 2.85 1.13 .26 .29 .33 .47	.41 .35 .34 .34 .39 .59 1.70 2.33 2.52 2.65 2.92 3.04 3.09 3.12

### STATION 133.60 (Interpolated Values at Standard Depths)

HORIZON: 24°52.5'N 115°03.5'W March 19, 1951 1939 GCT Wire angle: 15° Sounding: 1,900 fms. Depth of observation: 1,117 m. Weather: clear Sea: rough Wind: 020°, force 2

0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800	17.60 17.34 16.05 15.95 15.86 14.90 12.70 12.28 11.50 10.77 10.11 8.75 7.25 4.31	33.68 33.55 33.55 33.55 33.57 34.59 34.59 34.59 34.59 34.59 34.59 34.59	24.42 24.44 24.67 24.75 25.01 25.36 26.11 26.38 26.52 26.63 26.63 27.01 27.14 27.23 27.30 27.42	352.3 350.5 331.8 329.1 322.5 297.8 264.7 194.9 170.7 158.3 148.2 132.4 113.7 101.8 94.0 87.7 77.2	.0000 .0353 .0695 .1027 .1682 .2462 .3169 .433 .525 .608 .685 .826 .950 1.059 1.158 1.250 1.416	5.20 5.22 5.22 5.22 5.25 5.25 5.25 5.25	.40 .37 .43 .40 .56 1.14 2.32 2.66 2.82 2.99 3.15 3.20 3.20
---	---	--	--	--	---	--	---

STATION 137.35 (Interpolated Values at Standard Depths)

HORIZON: 25°10.5'N 113°04'W March 18, 1951 2254 GCT Wire angle: 12° Sounding: 800 fms. Depth of observation: 1,151 m. Weather: partly cloudy Sea: moderate Wind: 340°, force 2

Depth (m)	T (°C)	S (‰)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	17.60 17.05 16.46 15.94 14.87 13.08 12.21 12.18 11.36 10.40 8.85 7.62 6.55 5.89 5.38 4.27	33.84 33.77 33.88 33.93 33.93 34.70 34.70 34.69 34.66 34.64 34.64 34.62 34.57	24.50 24.58 24.80 24.96 25.41 25.85 26.49 26.58 26.55 26.82 27.20 27.30 27.35 27.44	344.4 337.3 316.4 301.7 282.0 259.5 218.8 173.4 159.6 152.3 146.5 131.8 115.5 95.2 87.3 83.5 75.3	.0000 .0342 .0670 .0981 .1567 .2248 .2850 .384 .468 .546 .621 .762 .886 .993 1.085 1.171 1.332	5.49 5.55 5.19 5.25 5.26 5.26 5.30 4.57 5.57	57 • 49 • 54 • 61 • 20 • 80 • 2. 49 • 2. 76 • 2. 85 • 2. 91 • 3. 13 • 3. 14

# STATION 137.40 (Interpolated Values at Standard Depths)

HORIZON: 24°58.5'N 113°24.5'W March 19, 1951 0247 GCT Wire angle: 10° Sounding: 1,650 fms. Depth of observation: 1,173 m. Weather: partly cloudy Sea: rough Wind: 320°, force 3

0 17.53 33.86 24.53 10 17.15 33.98 24.72 20 16.92 33.93 24.73 30 16.73 33.88 24.74 50 15.35 33.79 24.98 75 13.08 33.73 25.41 100 11.63 33.86 25.79 150 11.02 34.35 26.29 200 10.48 34.49 26.49 250 10.02 34.53 26.60 300 9.58 34.54 26.68 400 8.41 34.52 26.86 500 7.48 34.54 27.01 600 6.58 34.58 27.17 700 5.88 34.50 27.20 800 5.27 34.48 27.25 1000 4.28 34.60 27.46	341.6 .0000 324.2 .0334 323.0 .0659 322.7 .0983 300.0 .1609 259.5 .2312 223.7 .2920 178.1 .393 159.5 .478 149.9 .556 142.9 .630 128.1 .766 114.1 .889 100.0 .997 97.5 1.096 92.3 1.192 73.1 1.359	5.38 5.32 5.38 5.30 4.52 5.38 5.39 1.39 1.39 1.39 1.39 1.30 1.30 1.30 1.30 1.30 1.30 1.30 1.30	.50 .46 .57 .96 .59 .59 .66 .22 .22 .22 .23 .30 .30 .30 .30 .30 .30 .30 .30 .30 .3
--	---	--	--

STATION 137.50 (Interpolated Values at Standard Depths)

HORIZON: 24°41'N 114°01.5'W March 19, 1951 0830 GCT Wire angle: 5° Sounding: 2,150 fms. Depth of observation: 1,028 m. Weather: clear Sea: moderate Wind: 320°, force 3

Depth (m)	T (°C)	C (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	17.15 17.15 16.70 16.14 16.08 14.50 12.40 11.60 11.02 10.48 9.92 8.34 7.19 6.19 5.46 4.94 4.15	33.80 33.78 33.74 33.80 33.84 34.68 34.68 34.68 34.70 34.47 34.47 34.45 34.68	24.58 24.56 24.64 24.77 24.83 25.63 26.13 26.49 26.64 26.75 27.00 27.12 27.21 27.37 27.48	337.0 338.9 332.7 320.2 314.8 281.0 239.3 193.5 160.1 146.7 137.0 128.3 115.0 104.2 95.3 80.8 70.9	.0000 .0339 .0676 .1004 .1642 .2391 .3046 .413 .502 .580 .651 .785 .908 1.018 1.119 1.208 1.361	5.23 5.40 5.40 5.39 5.40 4.70 3.13 1.42 .25 .27 .26 .27 .33 .52	.40 .45 .41 .41 .68 1.50 2.46 2.66 2.93 3.04 3.12 3.18 3.24 3.17

### STATION 137.60 (Interpolated Values at Standard Depths)

HORIZON: 24°21'N 114°39.5'W March 19, 1951 1410 GCT Wire angle: 5° Sounding: 1,900 fms. Depth of observation: 1,192 m. Weather: partly cloudy Sea: moderate Wind: 320°, force 1

#### STATION 140.35 (Interpolated Values at Standard Depths)

HORIZON: 24°33.5'N 112°42.5'W March 15, 1951 0055 GCT Wire angle: 2° Sounding: 230 fms. Depth of observation: 398 m. Weather: partly cloudy Sea: slight Wind: 220°, force 1

Depth (m)	T (°C)	S (%)	(mg.cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400	16.74 15.70 15.05 14.51 13.05 12.74 12.60 11.85 11.10 10.66 9.93 (8.79)	33.84 33.73 33.85 33.86 34.10 34.50 34.85 34.72 34.69 34.81 (34.79)	24.71 24.86 25.10 25.22 25.52 25.77 26.10 26.52 26.56 26.62 26.84 (27.01)	324.9 310.5 288.5 277.1 248.7 226.0 194.6 155.9 153.3 148.9 128.6 (113.6)	.0000 .0319 .0620 .0904 .1432 .2029 .2558 .344 .422 .498 .568 (.690)	5.44 5.57 5.50 4.55 3.53 2.27 .85 .46 .31 .27 .27 (.20)	•57 •54 •59 •94 •1.29 •1.77 2.31 2.54 2.65 2.72 2.79 (2.93)

### STATION 140.40 (Interpolated Values at Standard Depths)

HORIZON: 24°27'N 113°08'W March 14, 1951 1805, 1945 GCT Wire angles: 0°, 30° Sounding: 1,750 fms. Depths of observation: 486, 2,710 m. Weather: cloudy Sea: slight Wind: 210°, force 1

0 10 20 30 50 75 100 150 250 300 400	18.17 17.89 17.84 17.65 17.05 13.50 12.13 11.61 11.27 10.65 9.87 8.51	(33.97) 33.98 34.06 34.06 33.94 33.58 34.43 34.65 34.70 34.70 34.55	(24.46) 24.54 24.61 24.66 24.71 25.21 25.67 26.24 26.48 26.62 26.76 26.86	(348.1) 341.2 334.7 330.5 326.0 278.6 235.7 182.7 161.4 148.2 136.1 127.3	(.0000) .0346 .0685 .1019 .1679 .2439 .3086 .414 .501 .579 .650	3.73 3.02 2.74 2.80 3.02 2.62 2.08 1.00 .38 .27 .21	.60 .55 .49 .46 .45 .76 .49 .2.34 .2.59 .2.70 .2.80 .3.05
500 600 700 800 1000 1200 1500 2000 2500	7.50 6.78 6.01 5.36 4.39 3.70 3.02 2.13	34.61 34.59 34.54 34.50 34.56 34.62 34.73 34.79	27.06 27.15 27.21 27.26 27.39 27.49 27.60 27.77 27.85	109.4 102.0 96.5 92.1 79.5 70.7 60.4 43.9 37.0	.902 1.009 1.109 1.205 1.378 1.530 1.729 1.994 2.200	.17 .24 .24 .25 .45 .63 1.02 1.83 2.27	3.16 3.16 3.16 3.15 3.10 2.96 2.77 2.65

STATION 140.50 (Interpolated Values at Standard Depths)

HORIZON: 24°12.5'N 113°32'W March 14, 1951 1155 GCT Wire angle: 3° Sounding: 1,900 fms. Depth of observation: 1,169 m. Weather: partly cloudy Sea: moderate Wind: 220°, force 1

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	1058	ΔD (dyn.m.)	<sup>0</sup> 2 (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 1400 500 600 700 800 1000	18.30 17.85 17.75 17.67 17.23 13.85 12.08 10.82 10.74 10.41 9.88 8.59 7.42 6.52 5.78 5.15 4.29	34.09 34.11 34.08 34.05 33.82 34.55 34.56 34.56 34.56 34.56 34.56 34.56 34.56 34.56	24.52 24.65 24.66 24.67 24.67 25.68 25.68 26.46 26.58 26.46 26.83 27.19 27.25 27.46	342.4 331.0 329.6 329.4 322.2 280.3 234.7 177.7 162.6 153.0 143.4 130.7 114.7 97.8 92.8 86.4 73.3	.0000 .0338 .0670 .1000 .1655 .2413 .3061 .410 .496 .575 .650 .788 .912 1.019 1.115 1.206 1.367	5.12 5.10 5.07 5.07 5.12 5.10 3.57 1.78 .70 .37 .23 .18 .22 .23 .26	• 35 • 34 • 36 • 37 • 37 • 54 • 1.09 2.08 2.50 2.67 2.78 2.88 2.99 3.10 3.13 3.13

# STATION 140.60 (Interpolated Values at Standard Depths)

HORIZON: 23°49.5'N 114°13.5'W March 14, 1951 0558 GCT Wire angle: 9° Sounding: 1,950 fms. Depth of observation: 1,175 m. Weather: partly cloudy Sea: moderate Wind: 270°, force 1

STATION 140.70 (Interpolated Values at Standard Depths)

HORIZON: 23°29'N 114°34'W March 14, 1951 0006 GCT Wire angle: 11° Sounding: 2,000 fms. Depth of observation: 1,158 m. Weather: overcast Sea: rough Wind: 290°, force 1

Depth (m)	T (°C)	S (%)	σ <sub>t</sub> (mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	18.31 17.98 17.95 17.93 17.62 12.60 11.02 10.37 9.84 9.33 8.36 7.48 6.34 5.71 5.21 4.33	34.04 33.98 34.69 34.07 34.07 34.77 34.78 34.79 34.51 34.51 34.51 34.53 34.70	24.48 24.52 25.06 25.07 24.61 24.67 25.54 26.62 26.62 26.91 26.92 27.14 27.22 27.30 27.54	346.2 343.3 291.6 291.3 335.5 330.3 248.1 185.5 147.4 130.0 121.2 122.0 100.1 101.9 94.8 88.0 66.4	.0000 .0346 .0665 .0957 .1587 .2424 .3152 .424 .508 .578 .641 .764 .876 .978 1.077 1.169 1.325	5.18 5.07 5.04 5.06 5.22 5.10 3.80 1.75 .98 .69 .49 .23 .19 .20 .24	.41 .37 .36 .35 .36 .38 1.10 2.08 2.58 2.67 2.83 3.01 3.14 3.09 3.16

STATION 140.80 (Interpolated Values at Standard Depths)

HORIZON: 23°10'N 115°30.5'W March 13, 1951 1545, 1724 GCT Wire angles: 11°, 20° Sounding: 2,050 fms. Depths of observation: 1,174, 2,925 m. Weather: partly cloudy Sea: rough Wind: 340°, force 3

0 10 20 30 50 75 100 150 200	18.01 18.03 18.15 18.49 18.66 18.80 14.60 12.61 11.42	33.95 34.05 34.12 34.20 34.25 33.60 33.80 34.02	24.49 24.48 24.53 24.50 24.52 24.52 25.00 25.56 25.96	345.6 345.6 345.6 345.6 345.2 299.8 247.2	.0000 .0347 .0693 .1039 .1733 .2600 .3411 .479	5.04 5.05 4.99 4.93 5.07 5.17 4.49	• 35 • 35 • 34 • 33 • 34 • 27 • 52 1.12	
250	10.35	34.16	26.26	182.7	607	3.37	1.50	
300	9.43	34.32	26 5)		.693	2.30	1.85	
		74.02	26.54	156.9	-779	1.50	2.16	
400	8.38	34.48	26.83	130.3	. 923	.50	2.69	
500	7.42	34.52	27.00	114.7	1.047	•25	2.91	
600	6.48	34.52	27.13	103.0	1.157	.27	2.95	
700	5.77	34.52	27.22	94.7	1.256	.27	3.11	
300	5.15	34.53	27.31	87.1	1.348	.29	3.16	
1000	4.28	34.61	27.47	72.4	1.510	.48	3.08	
T200	3.73	34.68	27.58	62.2	1.646	.63	3.09	•
1500	3.02	34.78	27.73	48.6	1.814	1.00	2.97	
2000	2.18	34.67	27.72	49.2	2.052	1.89	2.74	
2500	1.83	34.71	27.77	44.1	2.300	2.25	2.59	
							,	

STATION 143.35 (Interpolated Values at Standard Depths)

HORIZON: 23°56.5'N 112°14.5'W March 16, 1951 1818 G&T Wire angle: 10° Sounding: 450 fms. Depth of observation: 687 m. Weather: partly cloudy Sea: moderate Wind: 320°, force 2

Depth (m)	T (°C)	S (‰)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600	18.69 18.45 18.00 17.30 16.25 13.26 12.25 11.19 10.40 10.37 10.07 8.80 7.57 6.73	34.18 34.11 33.98 33.99 34.00 33.80 34.26 34.47 34.53 34.74 34.69 34.70 34.50 34.45	24.49 24.50 24.51 24.69 24.94 25.43 25.99 26.35 26.54 26.71 26.72 26.94 26.97 27.04	345.2 345.0 344.2 327.4 304.0 257.6 205.6 172.2 155.4 140.3 140.1 120.7 118.5 111.7	.0000 .0347 .0693 .1030 .1664 .2370 .2953 .390 .473 .547 .618 .749 .870	4.95 5.13 5.10 5.11 5.19 3.65 1.90 1.03 .65 .29 .22 .20	.42 .42 .43 .45 .51 1.26 1.97 2.39 2.70 2.77 2.77 3.02 3.17

#### STATION 143.40 (Interpolated Values at Standard Depths)

HCRIZON: 23°47.5' N 112°38'W March 16, 1951 1424 GOT Wire angle: 0° Sounding: 1,650 Depth of Observation: 1,197 m. Weather: cloudy Sea: moderate Wind: 360°, force 1.

0 10 20 30 50	18.59 18.34 18.04 17.90 16.40	34.18 33.75 34.10 34.11 33.99	24.51 24.25 24.59 24.63 24.90	342.8 368.3 336.5 332.7 307.9	.0000 .0357 .0711 .1047	5.22 5.15 5.15 5.20 5.30	.41 .38 .55 .57
75	13.04	33.77	25.45	255.9	.2399	4.00	1.04
100	12.58	34.25	25.91	212.8	.2989	2.17	1.85
150	12.03	34.57	26.27	179.9	.398	.98	2.36
200	11.28	34.63	26.46	163.0	. 484	.47	2.58
250	10.59	34.72	26.65	145.5	.562	.30	2.69
300	10.00	34.79	26.81	131.4	.631	.25	2.77
400	8.63	34.58	26.87	126.9	.762	25	2.90
500	7.33	34.67	27.13	102.5	.877	.24	3.09
600	6.50	34.54	27.15	101.9	.980	.22	3.13
700	5.83	34.54	27.23	94.1	1.079	.27	3.17
800	5.25	34.54	27.30	87.7	1.1717	.32	3.18
1000				66.3			
1000	4.32	34.700	27.53	00.3	1.327	•39	3.16

STATION 143.50 (Interpolated Values at Standard Depths)

HORIZON: 23°31'N 113°18'W March 16, 1951 0817 GCT Wire angle: 15° Sounding: 1,120 fms. Depth of observation: 1.153 m. Weather: partly cloudy Sea: slight Wind: 290°, force 1

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	(ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	19.20 18.68 18.57 18.47 18.10 14.30 12.17 12.27 11.65 10.97 10.25 8.50 7.40 6.32 5.69 5.18 4.37	34.24 34.05 34.16 34.16 34.08 33.89 33.81 34.56 34.64 34.67 34.57 34.51 34.51 34.52 34.57	24.41 24.40 24.51 24.53 24.56 25.29 25.65 26.22 26.40 26.54 26.67 26.88 27.02 27.15 27.23 27.30 27.43	353.2 354.7 344.0 342.4 340.2 271.8 237.0 185.1 169.0 156.5 144.6 125.6 113.0 101.6 94.4 88.2 76.5	.0000 .0355 .0706 .1051 .1737 .2506 .3146 .421 .510 .592 .668 .804 .924 1.033 1.132 1.224 1.390	5.22 5.24 5.23 5.25 5.27 4.00 2.74 1.14 .56 .36 .25 .36 .25 .36 .58	.42 .35 .37 .41 .50 .87 1.16 2.29 2.46 2.59 2.70 2.82 2.94 3.05 3.11 3.13 3.10

STATION 147.25 (Interpolated Values at Standard Depths)

HORIZON: 23°46.5'N lll°22'W March 15, 1951 1631 GCT Wire angle: 2° Sounding: 215 fms. Depth of observation: 224 m. Weather: partly cloudy Sea: slight Wind: 360°, force 1

0 10 20 30 50 75 100	17.27 16.20 13.70 13.65 12.88 12.92 12.44	34.11 33.95 33.80 33.80 33.97 34.42 34.61	24.79 24.92 25.34 25.35 25.64 25.98 26.22	317.2 305.3 264.8 264.1 237.3 205.7 183.7	.0000 .0313 .0599 .0864 .1368 .1925	5.03 5.30 5.25 5.05 3.10 1.07	.58 .63 .70 .80 1.24 2.22 2.41
150	11.75	34.87 34.73	26.56	152.8	.326	.29	2.41 2.57 2.65

STATION 147.40 (Interpolated Values at Standard Depths)

HORIZON: 23°19'N 112°23'W March 16, 1951 0200 GCT Wire angle: 17° Sounding: 1,700 fms. Depth of observation: 1,159 m. Weather: partly cloudy Sea: slight Wind: 340°, force 1

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub>	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	19.23 18.97 18.15 17.76 17.15 14.61 13.64 12.35 11.58 10.92 10.25 8.87 7.56 6.36 5.68 5.14 4.32	34.11 34.07 34.15 34.16 34.14 33.96 34.73 34.70 34.60 34.58 34.58 34.58 34.58	24.30 24.34 24.60 24.71 24.84 25.27 25.83 26.59 26.61 26.69 26.88 27.05 27.16 27.28 27.36 27.43	363.5 360.2 335.6 325.6 313.8 273.0 220.6 173.9 150.2 149.7 142.4 125.5 110.9 100.6 89.2 81.9 76.5	.0000 .0363 .0713 .1045 .1687 .2425 .3046 .404 .485 .561 .609 .744 .864 .970 1.066 1.152 1.313	5.17 5.25 5.29 5.31 3.35 1.41 .51 .25 .21 .20 .19 .17 .23 .27	.42 .43 .49 .46 1.05 2.16 2.52 2.61 2.69 2.76 2.88 3.03 3.11 3.13 3.08

### STATION 150.25 (Interpolated Values at Standard Depths)

HORIZON: 23°13.5'N 110°59'W March 11, 1951 0906 Wire angle: 25° Sounding: 610 fms. Depth of observation: 652 m. Weather: thunderstorm with dust Sea: rough Wind: 340°, force 3

1							
0	19.45	34.72	24.72	324.0	.0000	3.72	.64
10	19.43	34.72	24.73	324.1	.0325	3.13	.67
20	19.34	34.72	24.73	322.4	.0650	3.05	.67
30	18.65	34.71	24.91	306.6	.0966		.59
50	15.50	34.68	25.63	238.2	.1513	2.95	
75	14.43	34.68	25.87	216.5	.2085	1.70	1.67
100	14.14	34.74	25.98	206.8	.2617	.49	2.42
150	12.33	34.92	26.48	159.8		.24	2.57
200	11.45	34.76	26.53	156.5	.354	.16	2.63
250	10.77	34.75	26.64	146.3	.434	.18	2.72
300	10.09	34.67	26.70	142.0	.510	.15	2.84
400	8.77	34.77			.582	.14	2.88
500	7.70	34.63	27.00	114.8	.712	.15	2.83
600	6.80	34.58	27.05	110.8	.826	.18	2.89
000	0.00	34.70	27.14	103.0	.934	.15	2.99

STATION 150.30 (Interpolated Values at Standard Depths)

HORIZON: 23°03.5'N 111°15.5'W March 11, 1951 1307, 1329 GCT Wire angle: 42°, 45° Sounding: 1,240 fms. Depth of observation: 8m., 811 m. Weather: partly cloudy Sea: rough Wind: 340°, force 4

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	△D (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>14</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300	18.89 18.88 18.40 17.70 16.39 15.25 13.70 12.45 11.67 11.08 10.41	34.49 34.43 34.30 34.24 34.24 34.48 34.61 34.75 34.75 34.73 34.73	24.68 24.63 24.66 24.78 25.09 25.54 25.97 26.33 26.47 26.57 26.72	327.6 332.1 330.2 318.6 289.5 248.1 207.8 174.5 162.1 153.4 139.8	.0000 .0331 .0664 .0989 .1601 .2276 .2850 .381 .466 .545	4.95 5.02 5.12 5.00 4.13 2.50 .99 .31 .22 .18	.48 .49 .47 .49 .95 1.73 2.24 2.14 2.58 2.62 2.67
400 500 600 700 800	8.87 7.67 6.45 5.68 5.10	34.75 34.72 34.69 34.67 34.69	26.97 27.13 27.27 27.35 27.44	117.8 103.5 90.0 82.5 74.6	.749 .861 .958 1.045	.17 .16 .17 .19	2.87 3.00 3.06 3.08 3.08

#### STATION 150.40 (Interpolated Values at Standard Depths)

HORIZON: 22°39'N 112°02'W March 11, 1951 2015, 2207 GCT Wire angle: 15°, 2° Sounding: 1,650 fms. Depth of observation: 1,058 m., 2,399 m. Weather: clear Sea: very rough Wind: 320°, force 5

0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1200	19.70 19.68 19.57 19.30 16.25 13.76 12.87 12.05 11.35 10.72 9.95 8.88 7.52 6.78 6.24 5.39 4.40	34.56 34.55 34.55 34.56 34.28 34.69 34.69 34.69 34.58 34.58 34.58 34.58 34.58 34.58	24.52 24.51 24.55 24.63 25.05 25.70 26.21 26.45 26.51 26.61 26.74 26.83 27.19 27.12 27.18 27.18 27.32 27.49 27.54 27.60	342.4 343.7 340.4 333.4 293.7 232.5 184.2 162.7 157.8 149.9 138.1 130.8 97.6 104.3 99.6 86.6 71.0 65.8 60.9	.0000 .0344 .0688 .1026 .1656 .2318 .2842 .371 .452 .530 .602 .738 .853 .955 1.058 1.152 1.311	5.05 4.90 5.07 5.20 3.80 1.82 .90 .23 .17 .15 .16 .12 .13 .14 .16 .19 .35	.48 .49 .50 .51 1.11 1.87 2.28 2.61 2.62 2.64 2.74 2.96 3.00 3.01 3.09 3.14 3.08 2.99	
2000	2.18	34.69	27.73	47.7	1.918	1.85	2.84	

STATION 150.50 (Interpolated Values at Standard Depths)

HORIZON: 22°21'N 112°35'W March 12, 1951 0426 GCT Wire angle: 35° Sounding: 1,800 fms. Depth of observation: 967 m. Weather: clear Sea: very rough Wind: 320°, force 5

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	18.67 18.65 18.61 18.57 18.34 15.30 12.40 12.81 12.00 11.03 10.18 8.76 7.44 6.86 5.99 5.20 (4.40)	34.14 34.06 34.29 34.25 34.20 33.66 33.79 34.68 34.82 34.76 34.66 34.66 34.66 34.63 (34.60)	24.47 24.41 24.60 24.58 24.60 24.89 25.59 26.20 26.46 26.65 26.76 26.97 27.11 27.21 27.31 27.38 (27.45)	347.5 353.4 336.1 338.2 337.1 309.2 243.1 186.5 163.3 145.7 136.5 117.6 104.8 95.9 87.3 80.5 (74.6)	.0000 .0352 .0698 .1037 .1715 .2528 .3222 .430 .518 .596 .667 .795 .908 1.009 1.101 1.186 (1.343)	5.02 5.08 5.15 5.13 5.12 5.00 4.00 .34 .25 .21 .17 .15 .21 .19 .20 .22 (.40)	.44 .38 .38 .36 .38 .56 1.44 2.45 2.55 2.63 2.77 2.93 2.98 3.03

### STATION 150.60 (Interpolated Values at Standard Depths)

HORIZON: 22°04'N 113°18'W March 12, 1951 1030 GCT Wire angle: 15° Sounding: 2,000 fms. Depth of observation: 1,239 m. Weather: clear Sea: very rough Wind: 270°, force 4

	0	18.95	34.13	24.39	355.2	.0000	4.70	.41	
	10	18.95	34.05	24.33	361.3	.0360	5.15	.37	
	20	18.95	34.15	24.40	354.5	.0719	4.97	.36	
	30	18.93	34.16	24.42	353.4		4.61		
		18.67				.1074		.35	
	50		34.12	24.45	350.6	.1782	4.10	.34	
	75	14.75	33.62	24.98	300.6	.2601	3.35	.46	
	100	13.55	34.23	25.70	232.6	.3271	1.95	1.60	
	150	11.80	34.43	26.20	186.1	.433	1.02	2.33	
	200	11.00	34.75	26.60	149.2	.517	.65	2.63	
	250	10.48	34.73	26.68					
	300	9.96	34.13		143.0	.591	•39	2.71	
			34.68	26.73	138.8	.662	.20	2.75	
	400	8.60	34.57	26.86	127.2	.796	.23	2.80	
	500	7.42	34.56	27.04	111.7	.916	.20	2.94	
	600	6.53	34.52	27.13	103.0	1.024	.18	3.15	
	700	5.81	34.51	27.21	96.1	1.125			
	800	5.23	34.51	27.28			.27	3.16	
7	L000		34.51		89.6	1.219	.38	3.13	
7	1000	4.33	34.62	27.47	72.3	1.382	.40	3.14	

STATION 150.70 (Interpolated Values at Standard Depths)

HORIZON: 21°37'N 113°50.5'W March 12, 1951 1632 GCT Wire angle: 22° Sounding: 1,960 fms. Depth of observation: 1,092 m. Weather: partly cloudy Sea: moderate Wind: 340°, force 3

Depth (m)	T (°C)	S	(, /-, 3)	1058	ΔD	02	PO <sub>14</sub> -P
(m)  0 10 20 30 50 75 100 150 200 250 300 400 500	(°c)  19.00 18.96 18.98 18.88 15.45 13.16 12.28 11.49 10.75 9.93 8.12 7.12	34.11 34.12 34.22 34.21 34.08 33.92 33.72 34.52 34.65 34.60 34.53 34.51	(mg/zm <sup>3</sup> )  24.36 24.38 24.45 24.44 24.37 25.06 25.39 26.18 26.57 26.67 26.91 27.04	357.8 356.4 350.2 351.3 358.8 293.2 262.3 188.4 160.7 153.5 144.3 122.8 111.1	(dyn.m.)  .0000 .0359 .0713 .1065 .1779 .2599 .3298 .443 .531 .610 .685 .820 .938	2 (ml/L) 5.05 5.05 5.05 5.05 5.05 5.05 5.05 3.63 8.4 .28 .38 .24	.34 .35 .35 .35 .35 .62 1.03 2.28 2.64 2.69 2.77 2.97 3.07
600 700 800 1000	6.43 5.61 5.03 4.29	34.50 34.47 34.49 34.52	27.12 27.20 27.29 27.40	103.8 96.3 88.5 79.1	1.046 1.147 1.240 1.410	.26 .31 .36 .55	3.09 3.10 3.12 3.16

# STATION 150.80 (Interpolated Values at Standard Deoths)

HORIZON: 21°21'N 114°26'W March 13, 1951 0007, 0148 GCT Wire angle: 12°, 15° Sounding: 1,950 fms. Depth of observation: 1,127 m., 2,977 m. Weather: partly cloudy Sea: rough Wind: 320°, force 2

					***************************************			
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	20.23 19.89 19.86 19.86 19.83 17.10 14.25 11.78 10.25 9.48 8.91 7.98 7.00 6.31 5.70 5.21 4.44	34.29 34.25 34.25 34.25 34.25 34.26 34.26 34.35 34.47 34.45 34.46 34.50 34.52	24.18 24.25 24.25 24.25 24.27 24.71 25.20 25.93 26.35 26.55 26.70 26.88 27.08 27.08 27.28 27.38	375.1 368.3 369.5 370.5 368.4 326.5 280.1 212.1 172.6 154.3 141.1 125.0 113.9 107.4 98.3 90.2 80.9	.0000 .0373 .0744 .1115 .1858 .2731 .3494 .473 .570 .653 .727 .861 .982 1.093 1.197 1.292 1.465	5.35 5.10 5.07 5.05 4.90 5.29 4.07 2.80 1.88 1.10 .57 .29 .38 .15 .29 .35 .48	.36 .37 .36 .38 .39 .38 1.12 1.98 2.49 2.63 2.88 2.95 3.10 3.15 3.16 3.20	
1500 2000 2500	2.97 2.17 1.80	34.54 34.56 34.67 34.70	27.48 27.56 27.72 27.77	71.5 64.2 49.2 44.1	1.619 1.826 2.114 2.351	.74 1.11 1.86	3.16 3.02 2.78	-
					2.371	-2:32	2.56	

#### STATION 153.20 (Interpolated Values at Standard Depths)

HORIZON 22°47.5'N 110°22'W March 11, 1951 0145, 0205 GCT Wire angle: 20°, 19° Sounding: 325 fms. Depth of observation: 0,: 425 m. Weather: overcast Sea: rough Wind: 290°, force 5

Depth (m)	T (°C)	S (‰)	(mg/cm <sup>3</sup> )	10 8	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400	21.62 21.62 21.55 21.50 20.69 13.75 12.87 12.35 11.68 11.06 10.48 8.90	34.90 34.88 34.95 34.99 34.52 34.45 34.87 34.79 34.79 34.80 34.66	24.27 24.26 24.33 24.36 25.59 25.89 26.01 26.44 26.51 26.62 26.73 26.89	366.3 368.2 361.8 358.6 337.6 214.7 203.2 163.8 158.6 148.5 148.9 125.1	.0000 .0369 .0735 .1097 .1797 .2491 .3016 .394 .475 .553 .627 .766	5.02 4.90 4.92 4.90 4.06 2.30 .80 .27 .16 .18 .17	.57 .60 .62 .66 1.40 2.34 2.39 2.52 2.68 2.76 2.88 2.97

### STATION 153.30 (Interpolated Values at Standard Depths)

HORIZON: 22°33.5'N 110°59.5'W March 10, 1951 1948 GCT Wire angle: 20° Sounding: 1,600 fms. Depth of observation: 1,071 m. Weather: overcast Sea: rough Wind: 330°, force 4

STATION 153.40 (Interpolated Values at Standard Depths)

HORIZON: 22°10.5'N 111°36'W March 10, 1951 1339 GCT Wire angle: 22° Sounding: 1,640 m. Depth of observation: 951 m. Weather: heavy thunderstorm Sea: rough Wind: 290°, force 4

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	O <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
10 1 20 1 30 1 50 1 150 1 200 1 250 1 300 1 400	9.35 9.35 9.37 9.17 8.87 4.95 3.52 2.43 1.42 0.67 0.01 8.83 7.44	34.45 34.29 34.33 34.33 34.24 34.65 34.77 34.80 34.71 34.64 34.55 34.53 34.53 34.53 34.53 34.54)	24.53 24.41 24.45 24.49 25.26 25.88 26.35 26.56 26.63 26.74 26.88 27.02	341.5 353.7 350.2 347.0 346.9 274.8 215.9 172.7 153.1 147.6 138.2 125.6 112.9	.0000 .0349 .0702 .1052 .1750 .2531 .3149 .413 .495 .570 .642 .775 .896	4.02 4.10 3.75 3.20 2.97 2.70 .32 .31 .30 .25 .15	.44 .43 .42 .41 .42 1.44 2.63 2.63 2.81 2.80 2.80 2.87 3.01

### STATION 153.50 (Interpolated Values at Standard Depths)

HORIZON: 21°49'N 112°13'W March 10, 1951 0700 GCT Wire angle: 10° Sounding: 1,640 fms. Depth of observation: 1,174 m. Weather: cloudy Sea: rough Wind: 340°, force 1

0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800	19.70 19.67 19.62 19.47 14.95 13.55 11.53 11.05 10.43 9.82 8.65 7.39 6.43 5.75	34.43 34.43 34.43 34.41 34.17 34.41 34.56 34.66 34.66 34.65 34.60 34.53 34.67	24.43 24.35 24.43 24.47 25.36 25.84 26.36 26.52 26.63 26.73 26.88 27.02 27.15 27.35	351.7 359.3 350.5 350.4 348.9 264.5 219.4 171.7 156.9 147.2 138.9 125.7 113.4 101.6	.0000 .0356 .0713 .1065 .1768 .2539 .3148 .413 .496 .572 .645 .778 .899	1.45 1.45 1.43 1.42 1.28 1.05 .50 .31 .15 .09 .08 .15 .10	.43 .43 .42 .41 .40 1.42 2.31 2.52 2.64 2.74 2.88 3.05 3.05 3.03	
700 800 1000	5.75 5.21 4.20	34.67 34.69 34.70					The second secon	

#### STATION 157.10 (Interpolated Values at Standard Dephts)

HORIZON: 22°33'N 109°23'W March 8, 1951 1940 GCT Wire angle: 5° Sounding: 1,380 fms. Depth of observation: 1,188 m. Weather: cloudy Sea: moderate Wind: calm

Depth (m)	T (°C)	S (‰)	σ <sub>t</sub> (mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	21.81 21.08 20.36 19.75 17.65 14.90 14.01 12.55 11.57 10.91 10.39 8.83 7.76 6.78 5.94 5.25 4.51	35.08 35.07 35.25 35.25 35.14 34.83 34.81 34.85 34.73 34.71 34.50 34.55 34.52 34.54 34.54	24.36 24.55 24.88 25.04 25.49 25.88 26.06 26.39 26.52 26.60 26.68 26.85 26.98 27.09 27.20 27.30 27.39	358.2 340.5 309.1 294.1 252:1 215.2 209.3 169.0 157.1 150.4 143.8 128.5 117.4 107.2 97.1 87.7 80.2	.0000 .0351 .0677 .0980 .1529 .2116 .2650 .360 .442 .520 .594 .731 .855 .968 1.071 1.165 1.334	4.90 4.95 5.10 5.12 3.60 2.54 .55 .38 .22 .15 .15 .15 .15 .19 .20	.65 .73 .90 1.12 1.78 2.38 2.47 2.54 2.63 2.72 2.83 3.00 3.11 3.23 3.26 3.27 (3.38)

### STATION 157.20 (Interpolated Values at Standard Depths)

HORIZON: 22°13'N 110°00'W March 9, 1951 0210 GCT Wire angle: 35° Sounding: 1,570 fms. Depth of observation: 1,000 m. Weather: partly cloudy Sea: moderate Wind: 250°, force 3

. 0	21.40	34.79	24.25	368.8	.0000	2.85	.56
10	21.24	34.79	24.29	364.9	.0368	3.07	.59
20	21.20	34.92	24.40	354.7	.0730	3.10	.61
30	21.08	34.89	24.41	354.3	.1085	3.12	.60
50	20.32	34.60	24.39	356.4	.1800	3.25	.57
75	16.40	34.43	25.24	276.7	.2596	3.32	1.68
100	13.86	34.59	25.92	212.3	.3211	.59	2.40
150	12.70	34.76	26.29	178.5	.419	.39	2.63
200	12.25	34.81	26.41	167.6	.507	.25	2.76
250	11.25	34.78	26.58	152.7	.587		
300	10.39	34.72	26.69		.501	.21	2.81
400	9.10	34.67	26.87	143.1	.662	.18	2.83
500	7.65	34.54		127.6	.798	.18	2.91
600		34.94 34.55	26.99	116.7	.921	.15	3.03
700	6.73	34.55	27.12	104.2	1.033	.14	3.10
800	6.01	34.55	27.22	95.8	1.134	.13	3.16
	5.52	34.53	27.26	92.0	1.229	.12	3.18
1000	4.63	34.56	27.39	80.4	1.403	.14	3.25

STATION 157.30 (Interpolated Values at Standard Depths)

HORIZON: 21°53'N 110°35'W March 9, 1951 0920 GCT Wire angle: 3° Sounding: 1,550 fms. Depth of observation: 920 m. Weather: clear Sea: rough Wind: 270°, force 4

Depth (m)	T (°C)	S (%)	(mg/cm <sup>3</sup> )	10 <sup>5</sup> 8	ΔD (dyn.m.)	0 <sub>2</sub> (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 10 20 30 50 75 100 150 200 250 300 400 500 600 700 800 1000	22.38 22.36 22.20 20.55 19.98 18.76 15.85 12.32 11.09 10.63 10.34 9.03 7.63 6.67 5.94 5.41 4.57	34.81 34.80 34.80 35.09 35.11 34.53 34.57 34.68 34.69 34.69 34.58 34.58 34.58 34.58 34.58	23.98 23.99 24.03 24.49 24.86 25.19 25.44 26.21 26.53 26.62 26.67 26.84 27.02 27.12 27.21 27.34 27.45	393.8 393.2 389.7 347.1 312.5 281.3 258.1 185.4 156.0 148.4 156.0 149.3 113.5 104.1 96.3 84.7 75.2	.0000 .0395 .0728 .1158 .1821 .2567 .3246 .436 .522 .599 .673 .811 .934 1.044 1.145 1.236 1.398	1.82 1.82 2.08 2.10 1.70 1.55 .80 .29 .12 .10 .10 .13 .14 .15 .16 .16	.47 .46 .53 .69 1.07 1.84 2.32 2.45 2.59 2.71 2.77 2.91 3.04 3.17 3.20 3.20

# STATION 157.40 (Interpolated Values at Standard Depths)

HORIZON: 21°31.5'N 111°11'W March 9, 1951 1508 GCT Wire angle: 22° Sounding: 1,650 fms. Depth of observation: 920 m. Weather: cloudy Sea: moderate Wind: 270°, force 2

0 10 20 30 50 75 100 150 200 250 300 400 500 600 700	22.16 22.15 21.85 21.65 21.48 15.90 13.19 12.00 10.83 10.27 9.78 8.78 7.40 6.51 5.83	34.70 34.59 34.83 34.94 34.27 34.61 34.62 34.62 34.62 34.63 34.63 34.63	23.97 23.96 24.15 24.27 24.34 25.23 25.78 26.54 26.63 26.71 26.88 27.08 27.28	395.6 396.3 378.5 367.6 361.8 277.5 225.6 176.5 155.2 147.4 140.6 126.3 107.8 95.4 89.7	.0000 .0398 .0786 .1161 .1894 .2698 .3330 .434 .518 .594 .666 .801 .919	4.82 4.85 4.85 4.83 4.68 3.10 1.80 .62 .34 .25 .17 .13	.50 .48 .42 .43 .59 1.32 1.90 2.43 2.60 2.65 2.71 2.86 3.02	
800	5.25	34.56	27.32	86.3	1.115	.20	3.01	
1000	(4.38)	(34.53)	(27.40)	(79.4)	(1.371)	.23	3.03	
		,- ,-,	1-1.10/	(17.4)	(1.011)	-	-	

STATION 157.50 (Interpolated Values at Standard Depths)

HORIZON: 21°14'N 111°50'W March 9, 1951 2143, 2302 GCT Wire angle: 25°, 13° Sounding: 1,600 fms. Depth of observation: 89 m., 1,169 m. Weather: cloudy Sea: rough Wind: 290°, force 3

Depth T (°C	S (%)	(mg/cm <sup>3</sup> )	1058	ΔD (dyn.m.	O <sub>2</sub> ) (ml/L)	PO <sub>4</sub> -P (µg at/L)
0 20.9 10 20.6 20 20.6 30 20.5 50 20.4 75 15.9 100 13.5 150 12.4 200 11.7 250 11.0 300 10.2 400 8.7 500 7.5 600 6.4 700 5.6 800 5.1 1000 4.3	34.59 34.61 34.61 34.59 34.16 34.62 34.62 34.65 34.65 34.62 34.60 34.51 34.50 34.50 34.57	24.18 24.29 24.32 24.34 24.36 25.13 25.89 26.23 26.43 26.52 26.63 26.86 26.98 27.12 27.22 27.29 27.39	374.9 364.6 362.3 360.8 358.7 286.6 214.8 183.5 165.7 158.5 148.5 127.9 117.1 104.6 95.2 88.9 80.0	.0000 .0371 .0736 .1099 .1822 .2633 .3264 .427 .515 .596 .674 .813 .936 1.048 1.149 1.242 1.413	5.10 5.08 5.03 5.01 4.95 4.74 .96 .48 .27 .21 .20 .18 .15 .20 .20 .22 .40	.40 .42 .43 .40 1.06 2.19 2.50 2.67 2.76 2.82 2.87 3.01 3.08 3.13 3.15 3.15

#### MLR DATA 1

Dr. John N. Adkins Off. of Naval Research Room T3-2519 Navy Department Washington, D. C.

Lt. Col. Hazen H.Bedke 18th Weather Sq. Det. 18/29 APO 57, c/o PM, N.Y.

Dr. Rolf L. Bolin Hopkins Marine Station Pacific Grove, Calif.

Dr. W. M. Cameron Inst. of Oceanography Univ. of Br. Columbia Vancouver, B. C.

Herrn. Prof. Dr. A. Defant Institut für Geophysik der Universität Innsbruck Schöpfstrasse 41 Innsbruck, AUSTRIA 3

Hancock Library of Biology and Oceano. Allan Hancock Foundation Univ. of Scuthern Calif. Los Angeles 7, Calif.

Mr. Harvey Hastain Brawley California

Mr. E. C. LaFond Code 550 U.S. Navy Electronics Laboratory San Diego 52, Calif.

Mr. Donald L. McKernan Director of Research Fish Commission of Oregon Route 1, Box 31A Clackamas, Oregon

#### DISTRIBUTION LIST

Dr. E. H. Ahlstrom
U.S.Fish and Wildlife Service
c/o Scripps Institution of
Oceanography
La Jolla, California

Mr. J. R. Biven Coast Fishing Company P. O. Box 877 Wilmington, California

British Joint Services (Navy Staff) 1910 K Street N.W. Washington, D. C.

Dr. F. N. Clark 4
Dept. of Fish and Game
California State Fisheries
Laboratory
Terminal Island, Calif.

Mr. Joseph G. Ellson U.S.Fish and Wildlife Service 2725 Montlake Boulevard Seattle 2, Washington

General Warren T. Hannum Director of Natural Resources State Building 1 Sacramento 14, California

Dr. Robert W. Hiatt University of Hawaii Honolulu, T. H.

Mr. E. L. Macaulay Executive Officer California Fish and Game Comm. Ferry Building San Francisco 11, California

Mr. J. C. Marr U.S.Fish and Wildlife Service 450-B Jordan Hall Stanford, California Mr. W. Wade Ambrose Westgate-Sun Harbor Co. 1995 Bay Front San Diego 13, Calif.

Dr. L. R. Blinks Hopkins Marine Station Pacific Grove, Calif.

Mr. J.G.Burnette, Chm. Marine Research Comm. P. O. Box 807 Los Altos, California

Mr. R. S. Croker
Calif. Dept. of Fish
and Game
Ferry Building
San Francisco 11, Calif.

Mr. John T. Gharrett Pacific Marine Fisheries Commission 340 State Office Bldg. 1400 S.W. Fifth Avenue Portland 1, Oregon

Dr. John L. Hart Pacific Bioligical Lab. Nanaimo, Br. Columbia CANADA

Prof. Harold Kirby Univ. of California Dept. of Zoology Berkeley 4, California

Dr. J. L. McHugh Virginia Fisheries Laboratory Gloucester Point, Va.

Mr. John V. Morris French Sardine Company 582 Tuna Street Terminal Island, Calif.

#### MLR DATA 2

Dr. R C. Miller
Calif. Academy of
Science
Golden Gate Park
San Francisco 18, Calif.

Dr. D. W. Pritchard Chesapeake Bay Institute The Johns Hopkins Univ. 1315 St. Paul Street Baltimore 2, Maryland

Dr. Gordon A. Riley Bingham Oceanographic Foundation Yale University New Haven, Connecticut

Library
University of Calif.
Scripps Institution
of Oceanography
La Jolla, California

Miss Margaret Storey Librarian, Natural History Museum Stanford, California

Dr. Harold Thompson Chief, Div. Fisheries Commonwealth Scientific and Indust. Res. Org. P. O. Box 21 Cronulla, NSW, AUSTRALIA

U. S. Hydrographic Off. Navv Department Washington 25, D. C.

Attn: Mr. John Lyman 2

Library University of Wash. Oceanographic Lab. Friday Harbor, Wash.

Dr. Lionel A. Walford Chief, Branch of Fishery Biology U.S.Fish and Wildlife Service Washington 25, D. C. Dr. Yngve H. Olsen Journal of Marine Research Yale University New Haven, Connecticut

Dr. Roger Revelle University of California Scripps Institution of Oceanography La Jolla, California

Mr. Don T. Saxby California Packing Corp. 101 California Street San Francisco 19, California

Mr. O. E. Sette
Pacific Oceanic Fishery
Investigations
P. O. Box 3830
Honolulu, T. H.

Dr. Harald U. Sverdrup Norwegian Polar Institute Observatoriegt 1 Oslo, NORWAY

Dr. John P. Tully Pacific Biological Station Nanaimo, British Columbia CANADA

University of California
The General Library
Berkeley 4, California

Attn: Gifts and Exchange Lept.

Library University of Washington Oceanographic Laboratories Seattle 5, Washington

Dr. Boyd W. Walker University of California Department of Zoology Los Angeles 24, California Library
Pacific Oceanic
Fishery Investigations
P. O. Box 3830
Honolulu, T. H.

Dr. Willis H. Rich 2120 Santa Cruz Avenue Menlo Park, California

Dr. M. B. Schaefer Inter-American Tropical Tuna Commission c/o Scripps Instituion La Jolla, California

President R. G. Sproul Univ. of California Berkeley 4, California

Dept. of Oceanography
A. and M. College of
Texas
College Station, Texas

Library 2 U.S. Navy Electronics Laboratory San Diego 52, Galif.

Director
The University of Miami
Marine Laboratory
Coral Gables, Florida

Director Univ. of Washington School of Fisheries Seattle 4, Washington

Director
Woods Hole Oceanographic
Institution
Woods Hole, Massachusetts