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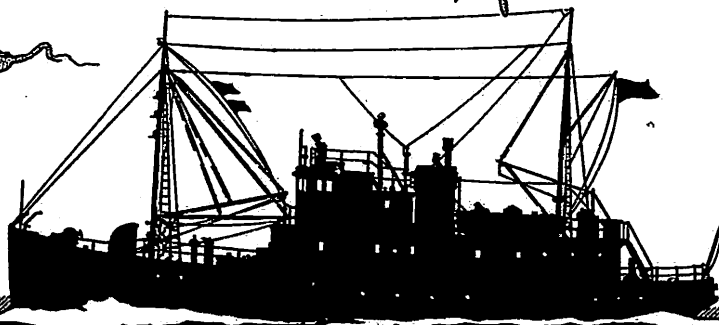
Technical Report No. 23

**EASTERN NORTH PACIFIC
OFFSHORE PHYSICAL AND CHEMICAL DATA**

April-June 1953

**Office of Naval Research
Contract N8onr-520/III
Project NR 083 012
Contract Nonr-477(01)
Project NR 083 072**

**Reference 54-7
February 1954**



SEATTLE 5, WASHINGTON

UNIVERSITY OF WASHINGTON DEPARTMENT OF OCEANOGRAPHY
(Formerly Oceanographic Laboratories)
Seattle, Washington

EASTERN NORTH PACIFIC
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April - June 1953

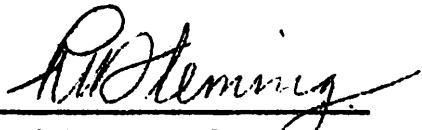
by

Robert G. Paquette, Eugene E. Collias,
and Cuthbert M. Love

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Richard H. Fleming
Executive Officer

INTRODUCTION

This report contains all of the offshore data from April through June, 1953 (Cruises 26 and 29) collected by University of Washington personnel aboard the Department of Oceanography research vessel BROWN BEAR. Station location charts are presented before the data for each cruise (see pages 1 and 10).

Technical Report No. 22 presents all the offshore data collected during 1952, and subsequent reports will contain data for stations inside the Strait of Juan de Fuca and Puget Sound.

Station Numbering System

All stations occupied by the BROWN BEAR are numbered consecutively, independent of their location.

Sampling Bottles

Water samples were taken with Nansen bottles and Fjarlie bottles (1).

Determination of Properties

Deep-sea reversing thermometers were used to determine temperature. Copenhagen standard sea water was used exclusively as the standard in the determination of salinity of the sea water. Dissolved oxygen was determined by the modified Winkler method described by Thompson and Robinson (2). Soluble phosphate, observed only on

Cruise 26, was determined by the method described by Thompson and Robinson (3), except that the color intensity was measured by an electric eye photometer (4) instead of using Nessler tubes. The phosphate data are reported conventionally to the second decimal place in micrograms per liter, although it is realized that the individual determinations may be in error by 5 to 10 per cent. The depths reported for sub-surface observations were calculated from measured wire angle, unprotected reversing thermometer readings, and curves of wire length minus thermometric depth versus wire length (L-Z), as described by LaFond (5).

Data

The time at which the messenger was dropped on the first cast is listed for the +8 time zone. Positions are given to the nearest minute. Depth in fathoms was obtained with the aid of a Navy NMC echo sounder. Weather is reported in the Navy bathythermograph weather code given in H. O. Publication No. 606-c, except in cases where the only weather phenomenon reported is the state of the sky. For the state of the sky the following symbols were used: b., clear sky; b.c., blue sky with detached clouds; c., sky mainly cloudy; and o., sky overcast. Wind direction is reported in degrees true; the wind velocity is given in knots. Air temperature is recorded in degrees Fahrenheit, with the dry bulb reading given first, followed by a virgule (/) and then the wet bulb reading. Type of clouds is reported in the bathythermograph weather code, the amount of clouds in tenths of the sky covered.

All data are actual observed values. The maximum depth of sampling was 2000 meters wherever the depth of the water permitted. Clearly questionable data have been excluded.

The presentation of these data in this form does not constitute publication. Subsequent, more rigorous analyses of these data may disclose errors which are not apparent at this time.

REFERENCES

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1939. Notes on the Determination of Dissolved Oxygen in Sea Water. Jour. Mar. Res., 2(1):1-8.
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- (4) Ford, William L.
1950. Seagoing Photoelectric Colorimeter. Anal. Chem.,
22:1431-1435.
- (5) LaFond, E. C.
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H. O. Publication No. 614, Washington, D. C.

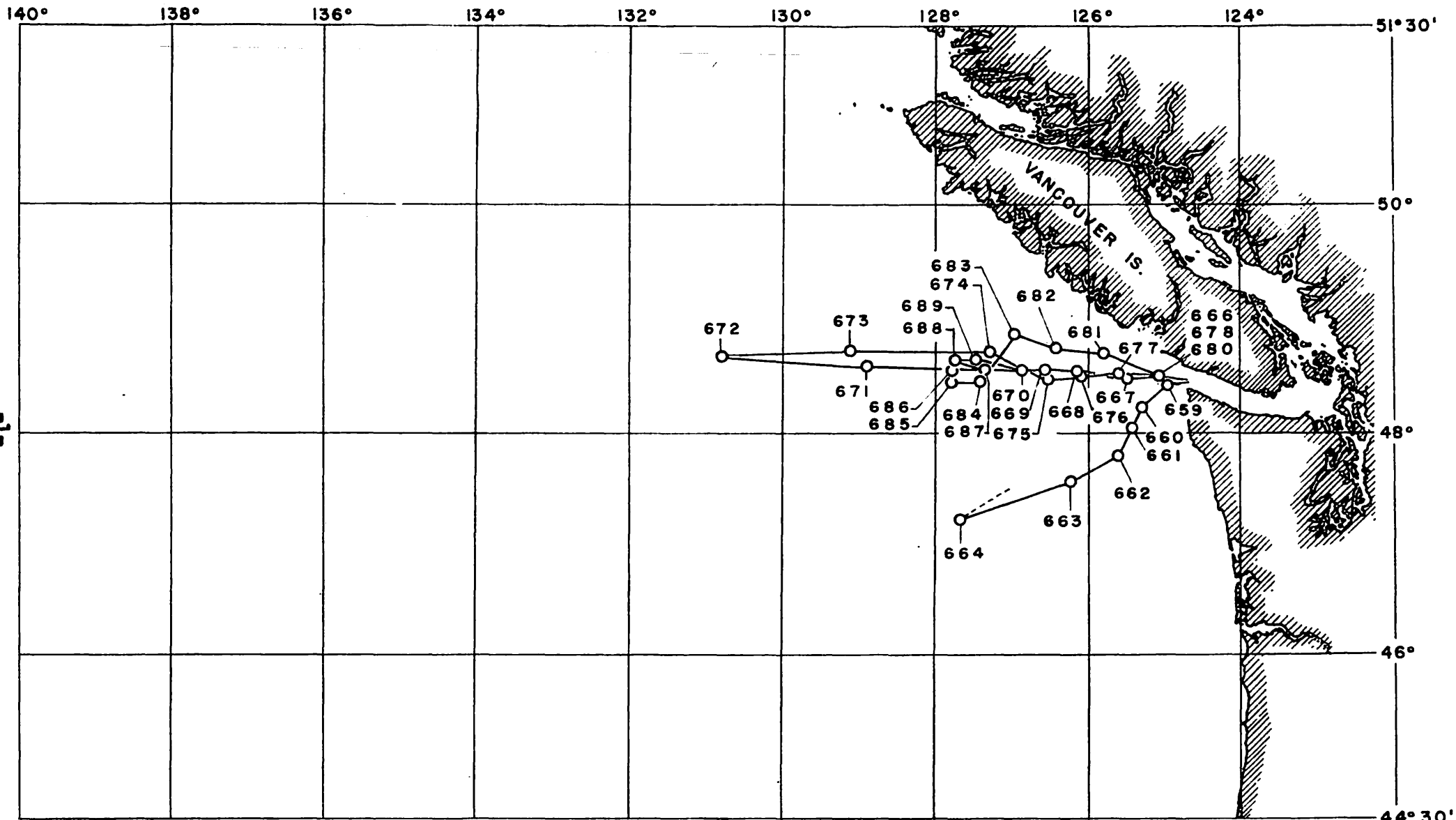
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Collias, Eugene E.	Research Associate
Eager, Lawrence C.	Laboratory Technician
Ethier, W. E.	First Officer
Hanson, Donald S.	Laboratory Assistant
Jackson, Hewitt R.	Draftsman
Lincoln, John H.	Research Associate
Love, Cuthbert M.	Research Associate
Princehouse, Franklin W.	Master

ASHORE

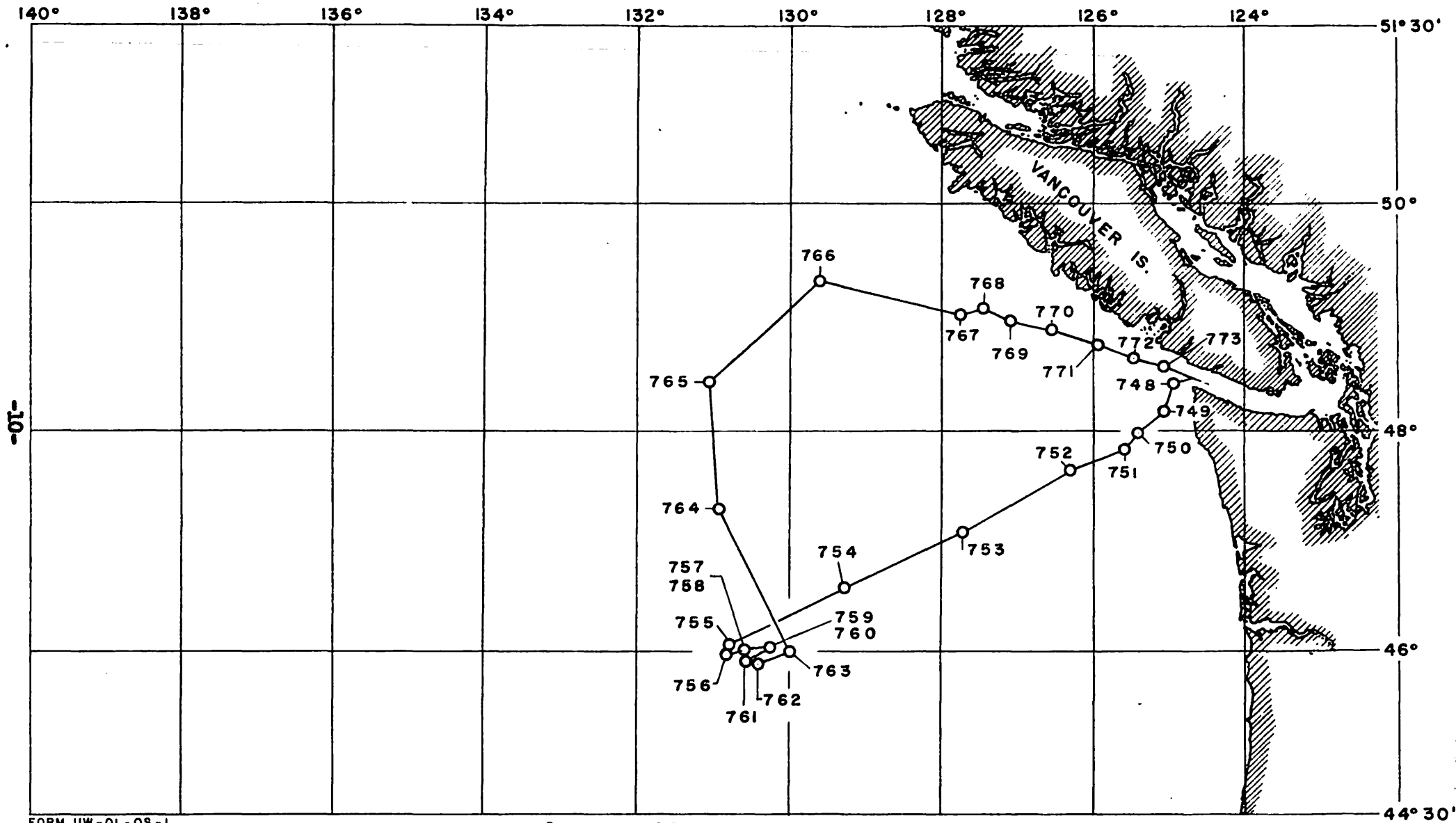
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Barnes, Dr. Clifford A.	Associate Professor of Oceanography
Duxbury, Alyn C.	Laboratory Helper
Fenton, Betty	Secretary
Jackson, Esther L.	Laboratory Technician
Joyner, Marion E.	Laboratory Technician
Paquette, Dr. Robert G.	Research Oceanographer
Toner, Roberta J.	Clerk



FORM UW-OL-05-1

Oceanographic station Location
 Brown Bear Cruise No. 26
 30 April - 11 May 1953

STA 689	48° 38' N	WEATHER	b.c.	
11 May 53	127° 23' W	WIND	135° 11	
0918 (+8)	DEPTH 1370 fm	51°/49° F		
		CLOUDS	2-1/10	
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)	PO ₄ (µg-at/L)
0	10.09	32.29	0.610	0.60
5	10.11	32.32	0.608	0.60
10	10.01	32.34	0.605	0.64
20	9.83	32.34	0.609	0.62
29	9.63	32.44	0.607	0.75
48	9.38	32.47	0.597	0.73
70	8.25	32.50	0.575	0.95
94	7.83	32.73	0.511	1.36
141	7.49	33.67	0.295	1.84
189	7.07	33.88	0.245	1.79
478	4.92	34.06	0.086	3.34
720	4.21	34.26	0.030	3.74
964	3.58	34.38	0.024	3.43
1210	2.99	34.46	0.042	3.58



FORM UW-OL-OS-1

Oceanographic Station Location
 Brown Bear Cruise No. 29
 4-15 June 1953

STA 764 47° 18' N WEATHER o. 11 June 53 130° 58' W WIND 160° 7 2051 (+8) DEPTH 1560 fm 52°/51° F CLOUDS 0,6-10/10			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	10.55	32.45	0.566
5	10.52	32.42	0.560
10	10.41	32.41	0.565
20	10.04	32.42	0.569
30	9.97	32.42	0.566
50	8.24	32.49	0.574
75	7.21	32.64	0.538
100	6.84	33.07	0.453
150	6.51	33.76	0.294
200	5.98	33.88	0.249
300	5.32	33.95	0.142
498	4.47	34.12	0.047
744	3.80	34.27	0.023
995	3.22	34.41	0.021
1494	2.35	34.52	0.065
1992	1.90	34.57	0.130
2482	1.69	34.61	0.177
2779	1.68	34.64	0.198

STA 766 49° 19' N WEATHER b.c. 13 June 53 129° 34' W WIND 220° 6 0015 (+8) DEPTH 1255 fm 52°/51° F CLOUDS -----			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	11.16	32.45	0.585
5	11.18	32.44	0.590
10	11.07	32.44	0.591
20	9.81	32.44	0.605
30	9.52	32.46	0.607
50	7.44	32.53	0.615
75	6.79	32.62	0.597
100	6.57	32.94	0.517
150	6.12	33.64	0.366
199	5.69	33.81	0.301
298	5.06	33.97	0.155
496	4.44	34.13	0.063
744	3.76	34.28	0.028
992	3.24	34.40	0.026
1490	2.38	34.52	0.065
1987	1.93	34.57	0.131
2186	1.84	34.60	0.149

STA 765 48° 27' N WEATHER o. 12 June 53 131° 01' W WIND 125° 6 1050 (+8) DEPTH 1550 fm 53°/51° F CLOUDS 0-10/10			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	10.64	32.45	0.574
5	10.62	32.42	0.577
10	10.48	32.47	0.582
20	10.06	32.47	0.585
30	9.94	32.47	0.585
50	8.38	32.51	0.602
75	7.31	32.56	0.594
100	7.00	32.90	0.501
150	6.62	33.65	0.358
197	6.07	33.86	0.297
296	5.18	33.90	0.202
495	4.38	34.08	0.070
734	3.92	34.30	0.024
984	3.34	34.42	0.026
1483	2.40	34.52	0.064
1975	1.93	34.60	0.126
1980	1.90	34.61	0.130
2470	1.70	34.64	0.179
2768	1.66	34.66	0.193

STA 767 49° 02' N WEATHER o. 14 June 53 127° 43' W WIND 225° 6 0227 (+8) DEPTH 1350 fm 54°/53° F CLOUDS 0-10/10			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	12.86	32.35	0.577
5	12.85	32.35	0.577
10	12.76	32.33	0.581
20	11.72	32.31	0.597
30	10.84	32.37	0.603
50	9.59	32.42	0.581
75	7.92	32.58	0.570
100	7.57	32.86	0.485
150	7.36	33.71	0.277
189	6.93	33.86	0.247
200	6.83	33.88	0.251
276	6.08	33.95	0.184
462	5.08	34.12	0.074
696	4.22	34.27	0.028
930	3.62	34.38	0.025
1400	2.58	34.51	0.054
1889	2.00	34.57	0.116
2289	1.80	34.65	0.158

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