

**DEPARTMENT OF
OCEANOGRAPHY
UNIVERSITY OF
WASHINGTON**

Technical Report No. 66

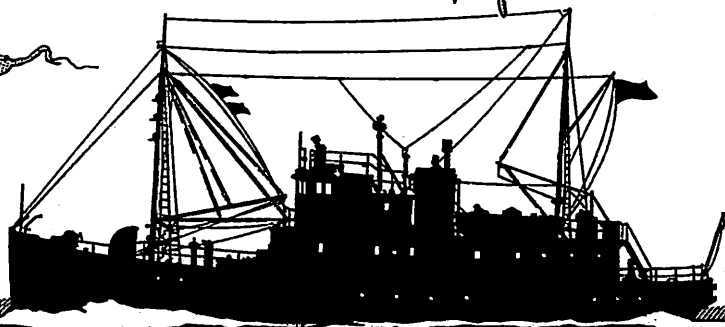
**PHYSICAL AND CHEMICAL DATA
FOR A PORTION OF THE NORTHEAST PACIFIC OCEAN
EXTENDING FROM THE COASTS OF WASHINGTON
AND BRITISH COLUMBIA WESTWARD TO 131°W,
APRIL 1956 — APRIL 1958**

by

C. M. Love

Office of Naval Research
Contract Nonr-477(01)
Project NR 083 072
Contract Nonr-477(10)
Project NR 083 012

Reference 60-18
October 1960



SEATTLE 5, WASHINGTON

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RICHARD H. FLEMING
Executive Officer

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INTRODUCTION

This report contains oceanographic data collected during eight offshore cruises of the R. V. Brown Bear made during the period April 1956 to April 1958. The cruises presented are numbers 139, 151, 158, 168, 175, 179, 188 and 193. Six of these (Cruises 151, 158, 168, 175, 179, 188) comprise a series of short offshore cruises designed to observe conditions off the coasts of Washington and Vancouver Island at various seasons of the year. The accompanying maps show that the tracks followed by most of these cruises were similar. Also, most of the cruises included a series of inshore stations which provided continuity of sampling from Puget Sound through Admiralty Inlet and the Strait of Juan de Fuca and out across the continental shelf to deep water offshore. Preliminary reports which describe the work carried out have been issued for most of these cruises (1, 2, 3, 4, 5).

Cruise 139 was an investigation of Cobb Seamount and environs. This undersea feature is located off the coast of Washington approximately 280 miles west of Willapa Bay (Figure 1). All of the oceanographic stations were taken in this immediate vicinity. Geological and biological sampling were also carried out. Two reports of these investigations have been issued (6, 7).

The chief purpose of Cruise 193 was thermistor bridge measurements by personnel from the Applied Physics Laboratory, University of Washington. Only two oceanographic stations were taken, both located approximately 50 miles west of Cape Flattery.

Types of Observations

Temperature, salinity, and dissolved oxygen were determined on all cruises. Dissolved inorganic phosphate was measured on all cruises except 193, but the data from Cruise 175 are considered unreliable and are not included in this report. Dissolved silicate was determined on Cruise 139 only. The water samples were collected with Nansen and Fjarlie bottles.

Determination of Properties

The depths of subsurface observations were calculated from measured wire angles; from readings of unprotected reversing thermometers; and from curves of wire length minus thermometric depth versus wire length, the difference method described by LaFond (8).

Salinity determinations were run partly by the Knudsen titration method and partly by salinometer. Copenhagen standard sea water was used as the standard in both types of determinations. The following shows which method was used for each cruise:

Titration

Cruise 139
 Cruise 151
 Cruise 158
 Cruise 168
 Cruise 188
 Cruise 193

Salinometer

Cruise 175
 Cruise 179

The University of Washington - Pacific Naval Laboratory salinometer used is a modification of the Wenner-Smith-Soule salinity bridge (9). All values reported are the means of duplicates. Such values have a reproducibility of ± 0.004 ‰ salinity at the 95 percent probability level and a probable accuracy of ± 0.01 ‰ salinity or better at the same level of probability.

Dissolved oxygen was obtained by the modified Winkler method described by Thompson and Robinson (10).

Phosphate was determined by the method of Robinson and Thompson (11), as modified by Wooster and Rakestraw (12), using a Beckman Model DU spectrophotometer. A constant temperature bath was used to bring all phosphate samples and standards to a uniform temperature of about 27°C. The use of this bath eliminated errors in the determination due to temperature fluctuation. Values have been corrected for salt error. The accuracy is estimated to be ± 10 percent.

Determinations of dissolved silicate on Cruise 139 were made by the method described by Chow and Robinson (13), and the absorption curve given in Figure 2 of that paper was used for the calibration. Paraffin-coated glass bottles were used to hold the sea-water samples; there may have been some leaching of silicate from the glass by the samples. Some obviously incorrect values have been excluded from the data.

The following were computed on the IBM Type 650 Magnetic Drum Data-Processing Machine in the Research Computer Laboratory of the University of Washington: the interpolated values of temperature, salinity, oxygen, and phosphate at standard oceanographic depths; the density of sea water at atmospheric pressure (σ_t); the specific volume anomaly ($10^5 \delta$); and the geopotential anomaly ($\Sigma \Delta D$). Programs developed at the Department of Oceanography were used. The IBM 650 computer uses a three-point interpolation based on Aitken's method of successive iterations as given by Milne (14). The equations used for computing σ_t were taken from LaFond (8), and the equations for $10^5 \delta$ and $\Sigma \Delta D$ are those used by the U. S. Navy Hydrographic Office in their computer program (15). The procedures described in H. O. Study 111 (16) were used for punching the data on IBM cards.

The nature of the interpolation made by the 650 computer occasionally permits of manifestly incorrect machine-interpolated values at certain standard depths. Three such cases were observed in these data. In these cases the machine values were replaced by hand-interpolated values; the hand-interpolated values are marked in the tables by #.

On several stations of Cruise 158 the observed phosphate values, while apparently correct, seem so erratic that it was felt that interpolated phosphate values at these stations would have little meaning, hence they have been left out.

Miscellaneous Comments

Scattered throughout the data are values, chiefly of oxygen and phosphate, which appear to be anomalous because they do not fit on a smooth curve of that property versus depth. These questionable values have all been checked to the extent that existing original data sheets, work sheets, etc. will allow, and cannot be proven incorrect. The compiler hesitated to discard these questionable values without more definite proof, so they have been included but are marked in the tables with an asterisk (*).

It will be noticed that on three stations of Cruise 139 the depth of the deepest sample is greater than the depth of water (sounding) listed in the heading data. The sounding was recorded when the ship arrived on station. It can be assumed that the ship drifted into deeper water during the station operations since the area around Cobb Seamount is one of steep bottom gradients and the station operations sometimes occupied several hours.

Previous Publications Containing Offshore Oceanographic Data

Physical and chemical data collected in the North Pacific Ocean and Gulf of Alaska by the Department of Oceanography since March 1952 have been presented in the following reports:

<u>Report No.</u>	<u>Reference No.</u>	<u>Contains Data Collected:</u>
Technical Report No. 22	54-6	March - September 1952
Technical Report No. 23	54-7	April - June 1953
Technical Report No. 34	54-20	July - September 1953
Technical Report No. 49	56-10	April 1954 - January 1955
Technical Report No. 55	57-27	June - July 1955, July - August 1956
Special Report No. 22	56-4	August - September 1955 (NORPAC Data)
Technical Report No. 56	57-28	May - July 1956, March - April 1957
Special Report No. 29	58-22	July - September 1957 (IGY Data)
Special Report No. 30	58-32	July - August 1958 (IGY Data)

Oceanographic data from the North Pacific Ocean, Gulf of Alaska, and Bering Sea collected aboard vessels of the United States Fish and Wildlife Service by representatives of the Department of Oceanography appear in the following:

Special Report No. 28	57-3	Summer and Fall, 1955
Special Report No. 31	59-13	Summer 1956

PersonnelAt Sea

Following is a list of personnel assigned to the seagoing scientific staff on one or more of the subject cruises. Unless otherwise indicated all personnel are from the Department of Oceanography.

<u>Name</u>	<u>Title or Organization</u>	<u>Cruise</u>
Allen, Norman K.	Laboratory Technician	151
Ayres, Lt. James E.	Student	175
Barnes, Dr. Clifford A.	Professor	175
Bergen, James D.	Student	175
Budinger, Thomas F.	Research Assistant	139
Cuzon du Rest, Rene P.	Senior Lab Technician	175
Dermody, John	Senior Oceanographer	175
Fabre, Michael D.	Engineering Aide	158
Foster, Carl F.	Student	175
Gregory, Robert T.	Senior Oceanographer	168, 193
Hanson, Donald S.	Laboratory Technician	151, 158
Hebard, Charles R.	U. S. Fish & Wildlife Service	188
Jackson, Hewitt R.	Senior Draftsman	139, 158, 168, 179, 188
Love, Cuthbert M.	Research Instructor	151, 158, 168, 179, 188
McAlister, W. Bruce	Teaching Assistant	175
McCrery, Peter A.	Illustrator	168, 193
McMillin, John G.	Laboratory Assistant	139, 158
Meredith, James L.	Machinist	151, 158
Morgan, Lt. Joseph R.	Student	175
Morse, Miss Betty-Ann	Senior Lab Technician	168, 175, 179, 188
Nayudu, Y. R.	Senior Lab Technician	151
Olcay, Lt. Necip	Research Assistant	175
Pratt, Richard M.	Senior Lab Technician	139
Riley, Ralph W.	Marine Chemist	139, 188
Roberts, Lathrop B.	Engineering Aide	158
Scripps, Samuel H.	Assistant Oceanographer	168, 179
Semon, Miss Darrelyn	Marine Aide	175
Steele, Robert W.	Laboratory Technician	158, 175, 179
Temin, Peter	Laboratory Helper	175
El Wardani, Dr. Sayed A.	Senior Oceanographer	168

Ashore

The following persons, as well as some of the sea-going personnel, were engaged ashore in the analysis and preparation of these data for publication:

Brundage, Walter L.	Marine Aide
Davey, Lt. Richard B.	Student
Doyle, Donald R.	Cartographer
Fletcher, Lt. Charles D.	Student
Helle, James R.	Senior Marine Aide

Henson, Fred D.	Senior Marine Technician
Huckins, Robert N.	Laboratory Technician
Martin, Thomas O.	Engineering Aide
McGary, Noel B.	Draftsman
McGraw, Miss Elizabeth A.	Engineering Aide
Ozturgut, Lt. Erdogan	Marine Aide
Sullivan, LCDR Russell H.	Student
Tomlinson, Miss Barbara	Laboratory Helper
Williams, Lt. Ross N.	Student
Widger, Miss Dorothea J.	Laboratory Helper
Wolf, Mrs. Anne D.	Senior Marine Technician

References

1. Love, Cuthbert M.
1956. Preliminary report Brown Bear cruise 151 to the area off the Strait of Juan de Fuca, 5-10 December 1956. University of Washington, Department of Oceanography, Ref. 56-31 (unpublished) 6 pp.
2. Love, Cuthbert M.
1957. Preliminary report Brown Bear cruise 158 off the coasts of Washington and Vancouver Island, 4-11 February 1957. University of Washington, Department of Oceanography, Ref. 57-13 (unpublished) 7 pp.
3. Love, Cuthbert M.
1957. Preliminary cruise reports, the offshore portions of Brown Bear cruise 163 off the coasts of Southeastern Alaska and British Columbia, 19-24 March and 31 March-6 April 1957, and Brown Bear cruise 168 off the coast of Washington, 13-17 May 1957. University of Washington, Department of Oceanography, Ref. 57-16 (unpublished) 9 pp.
4. Love, Cuthbert M.
1958. Preliminary report, Brown Bear cruise 179, off the coasts of Washington and Vancouver Island, 4-12 November 1957. University of Washington, Department of Oceanography, Ref. 58-4 (unpublished) 6 pp.
5. Love, Cuthbert M.
1958. Preliminary report Brown Bear cruise 188, off the coasts of Washington and Vancouver Island, 19-28 February 1958. University of Washington, Department of Oceanography, Ref. 58-16 (unpublished) 7 pp.
6. Budinger, Thomas F.
1957. Geology, biology and hydrography of Cobb Seamount. M.S. Thesis, University of Washington, Department of Oceanography, 94 pp.

7. Budinger, Thomas F. and Betty J. Enbysk
1960. Cobb Seamount, a deep-sea feature off the Washington coast. University of Washington, Department of Oceanography, Tech. Rept. No. 60. 83 pp.
8. LaFond, E. C.
1951. Processing oceanographic data. U. S. Navy Hydrographic Office Publication No. 614.
9. Paquette, Robert G.
1958. A modification of the Wenner-Smith-Soule salinity bridge for the determination of salinity in sea water. University of Washington, Department of Oceanography, Tech. Rept. No. 61. 57 pp.
10. Thompson, Thomas G. and Rex J. Robinson
1939. Notes on the determination of dissolved oxygen in sea water. Journal of Marine Research, Vol. 2, No. 1, pp. 1-8.
11. Robinson, Rex J. and Thomas G. Thompson
1948. The determination of phosphates in sea water. Journal of Marine Research, Vol. 7, No. 1, pp. 33-41.
12. Wooster, Warren S. and Norris W. Rakestraw
1951. The estimation of dissolved phosphate in sea water. Journal of Marine Research, Vol. 10, No. 1, pp. 91-100.
13. Chow, David Tung-Whei and Rex J. Robinson
1953. Forms of silicate available for colorimetric determination. Analytical Chemistry, Vol. 25, No. 4, pp. 646-648.
14. Milne, William Edmund
1949. Numerical calculus. Princeton University Press, pp. 69-72.
15. U. S. Hydrographic Office
1955. Oceanographic data processing by automatic methods. Division of Computation (Mimeographed, 31 Jan.). 11 pp.
16. U. S. Hydrographic Office
1956. Machine tabulation of oceanographic data. (Revised) Division of Oceanography, H. O. Study 111. 103 pp. plus 35 pp. info. and instruction.

EXPLANATION OF DATA TABLES

EXPLANATION OF DATA TABLES

The information in the data tables was transcribed directly from IBM cards using an IBM Type 407 accounting machine. A blank space in the tables or headings indicates that no observation was taken. The original data and the interpolated and computed values punched on the cards were recorded or coded in accordance with the procedures used by the U. S. Navy Hydrographic Office (16). Some changes were made in the card form but these do not affect the arrangement of the data in this report. Abbreviations and column headings are described below and, where necessary, the Hydrographic Office numerical codes have been reproduced to aid in interpreting the data.

Abbreviations and Headings Used in Data Tables

DATE	Greenwich month, day and year.
HR (Hour)	Greenwich mean time to the nearest hour of the messenger drop on the <u>shallow</u> cast. When the messenger drop occurred at exactly 30 minutes after the hour, the hour has been rounded to the nearest even hour.
LAT (Latitude)	Degrees and minutes.
LONG (Longitude)	Degrees and minutes.
SDG (Depth of water)	Depth of water in meters at station as determined by echo sounder. This depth was generally recorded immediately after the ship arrived on station. See comment on page 3.
BTMCODE (Bottom type)	See code, page 13.
WVEL (Wind velocity)	In meters per second.
DIR (Wind direction)	See code, page 10.
FC (Wind force)	Force of the wind according to the Beaufort Scale. See page 10.
BA (Barometric pressure)	To obtain the barometric pressure in millibars, add 900 if above 50; if below 50, add 1000.
DRY (Air temperature, dry bulb)	In degrees Celsius.
WET (Air temperature, wet bulb)	In degrees Celsius.
RELHU (Relative humidity)	Expressed in percent.
VIS (Visibility)	Range of visibility. See code, page 10.
WEA (Weather)	State of weather. See code, page 11.

CL (Cloud type) See code, page 12.

AMT (Cloud cover) Amount of cloud cover. See code, page 12.

SEA ___ DIR ___ (Sea state and direction) State of the sea, see code, page 12. Direction from which sea comes. See code, page 10.

SWL ___ DIR ___ (Swell amount and direction) Height and wave length of swell. See code, page 13. Direction from which swell comes. See code, page 10.

SECDI (Water transparency) No observations taken.

LD (Layer depth) Depth of the mixed surface layer in meters, as read from the bathythermograph trace. ISO indicates that the trace was isothermal over its entire length.

CAST Serial number of this cast at the station from which this sample was obtained.

DEPTH Depth in meters at which sample was obtained.

TEMP (Temperature) In degrees Celsius.

SAL (Salinity) In parts per thousand ($^{\circ}/_{\infty}$).

SIGMA-T (σ_t) Expression for the density of sea water at atmospheric pressure, having the indicated temperature and salinity. To convert tabulated values to density divide by 1000 and add 1; thus, a sigma-t value of 26.51 converts to a density of 1.02651.

OXY (Dissolved oxygen) Value in milliliters/liter (ml/l).

PHOS (Phosphate-phosphorus) Value in microgram atoms/liter ($\mu\text{g.at/l}$).

SIL (Silicate-silicon) Value in microgram atoms/liter ($\mu\text{g.at/l}$).

SP VOL ANOMALY (Specific volume anomaly, $10^5\delta$) The anomaly of specific volume of water at the indicated temperature, salinity, and pressure, compared to a standard water of 0°C temperature and 35 $^{\circ}/_{\infty}$ salinity at the same pressure. (The depth in meters is taken as numerically equal to the pressure in decibars.) Tabular values multiplied by 10^{-5} will give the anomaly in units of cubic centimeters per gram.

GEOPOT ANOMALY (Geopotential anomaly, $\Sigma\Delta D$) Geopotential anomaly in dynamic meters of the layer of water between the surface and the indicated depth. (The depth in meters is taken as numerically equal to the pressure in decibars.)

Indicates hand-interpolated values. See page 2.

* Indicates a questionable value. See page 3.

Codes Used for Reporting Observations

Taken from U. S. Navy Hydrographic Office Study 111
 "Machine Tabulation of Oceanographic Data"

Direction (Compass Direction from which Wind, Sea, or Swell is coming)

Code

00 Calm, or no value
 01 to 36 Each value represents 1/10 of the true direction in degrees,
 measured clockwise from the north, with 36 representing true
 north.

Beaufort Wind Scale

Code	Description	Velocity (knots)
0	Calm	Less than 1
1	Light Air	1 - 3
2	Light Breeze	4 - 6
3	Gentle Breeze	7 - 10
4	Moderate Breeze	11 - 16
5	Fresh Breeze	17 - 21
6	Strong Breeze	22 - 27
7	Moderate Gale	28 - 33
8	Fresh Gale	34 - 40
9	Strong Gale	41 - 47
10	Whole Gale	48 - 55
11	Storm	56 - 63
12	Hurricane	64 - 71
13	Hurricane	72 - 80
14	Hurricane	81 - 89
15	Hurricane	90 - 99
16	Hurricane	100 - 109
17	Hurricane	110 - 118

Visibility

Code	Objects not visible at	Description
0	50 yards	Dense fog
1	200 yards	Thick fog
2	400 yards	Fog
3	1000 yards	Moderate fog
4	1 nautical mile	Thin fog or mist
5	2 nautical miles	Visibility poor
6	5 nautical miles	Visibility moderate
7	10 nautical miles	Visibility good
8	30 nautical miles	Visibility very good
9	over 30	Visibility excellent

NUMERICAL WEATHER CODES—PRESENT WEATHER

00 Cloud development NOT observed or NOT observable during past hour.	01 Clouds generally dissolving or becoming less developed during past hour.	02 State of sky on the whole unchanged during past hour.	03 Clouds generally forming or developing during past hour.	04 Visibility reduced by smoke.	05 Haze.	06 Widespread dust in suspension in the air, NOT raised by wind, at time of observation.	07 Dust or sand raised by wind, at time of observation.	08 Well developed dust devil(s) within past hour.	09 Duststorm or sandstorm within sight of or at station during past hour.
10 Light fog.	11 Patches of shallow fog at station, NOT deeper than 6 feet on land.	12 More or less continuous shallow fog at station, NOT deeper than 6 feet on land.	13 Lightning visible, no thunder heard.	14 Precipitation within sight, but NOT reaching the ground.	15 Precipitation within sight, reaching the ground, but distant from station.	16 Precipitation within sight, reaching the ground, near to but NOT at station.	17 Thunder heard, but no precipitation at the station.	18 Squall(s) within sight during past hour.	19 Funnel cloud(s) within sight during past hour.
20 Drizzle (NOT freezing and NOT falling as showers) during past hour, but NOT at time of ob.	21 Rain (NOT freezing and NOT falling as showers) during past hour, but NOT at time of ob.	22 Snow (NOT falling as showers) during past hour, but NOT at time of observation.	23 Rain and snow (NOT falling as showers) during past hour, but NOT at time of observation.	24 Freezing drizzle or freezing rain (NOT falling as showers) during past hour, but NOT at time of observation.	25 Showers of rain during past hour, but NOT at time of observation.	26 Showers of snow, or of rain and snow, during past hour, but NOT at time of observation.	27 Showers of hail, or of hail and rain, during past hour, but NOT at time of observation.	28 Fog during past hour, but NOT at time of observation.	29 Thunderstorm (with or without precipitation) during past hour, but NOT at time of observation.
30 Slight or moderate duststorm or sandstorm has decreased during past hour.	31 Slight or moderate duststorm or sandstorm no appreciable change during past hour.	32 Slight or moderate duststorm or sandstorm has increased during past hour.	33 Severe duststorm or sandstorm, has decreased during past hour.	34 Severe duststorm or sandstorm, no appreciable change during past hour.	35 Severe duststorm or sandstorm, has increased during past hour.	36 Slight or moderate drifting snow, generally low.	37 Heavy drifting snow, generally low.	38 Slight or moderate drifting snow, generally high.	39 Heavy drifting snow, generally high.
40 Fog at distance at time of observation, but NOT at station during past hour.	41 Fog in patches.	42 Fog, sky discernible, has become thinner during past hour.	43 Fog, sky NOT discernible, has become thinner during past hour.	44 Fog, sky discernible, no appreciable change during past hour.	45 Fog, sky NOT discernible, no appreciable change during past hour.	46 Fog, sky discernible, has begun or become thicker during past hour.	47 Fog, sky NOT discernible, has begun or become thicker during past hour.	48 Fog, depositing time, sky discernible.	49 Fog, depositing time, sky not discernible.
50 Intermittent drizzle (NOT freezing) slight at time of observation.	51 Continuous drizzle (NOT freezing) slight at time of observation.	52 Intermittent drizzle (NOT freezing) moderate at time of ob.	53 Continuous drizzle (NOT freezing) moderate at time of ob.	54 Intermittent drizzle (NOT freezing), thick at time of observation.	55 Continuous drizzle (NOT freezing), thick at time of observation.	56 Slight freezing drizzle.	57 Moderate or thick freezing drizzle.	58 Drizzle and rain, slight.	59 Drizzle and rain, moderate or heavy.
60 Intermittent rain (NOT freezing), slight at time of observation.	61 Continuous rain (NOT freezing), slight at time of observation.	62 Intermittent rain (NOT freezing), moderate at time of ob.	63 Continuous rain (NOT freezing), moderate at time of observation.	64 Intermittent rain (NOT freezing), heavy at time of observation.	65 Continuous rain (NOT freezing), heavy at time of observation.	66 Slight freezing rain.	67 Moderate or heavy freezing rain.	68 Rain or drizzle and snow, slight.	69 Rain or drizzle and snow, moderate or heavy.
70 Intermittent fall of snowflakes, slight at time of observation.	71 Continuous fall of snowflakes, slight at time of observation.	72 Intermittent fall of snowflakes, moderate at time of observation.	73 Continuous fall of snowflakes, moderate at time of observation.	74 Intermittent fall of snowflakes, heavy at time of observation.	75 Continuous fall of snowflakes, heavy at time of observation.	76 Ice needles (with or without fog).	77 Granular snow (with or without fog).	78 Isolated starlike snow crystals (with or without fog).	79 Ice pellets (sleet, U. S. definition).
80 Slight rain shower(s).	81 Moderate or heavy rain shower(s).	82 Violent rain shower(s).	83 Slight shower(s) of rain and snow mixed.	84 Moderate or heavy shower(s) of rain and snow mixed.	85 Slight snow shower(s).	86 Moderate or heavy snow shower(s).	87 Slight shower(s) of soft or small hail with or without rain or rain and snow mixed.	88 Moderate or heavy shower(s) of soft or small hail with or without rain or rain and snow mixed.	89 Slight shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder.
90 Moderate or heavy shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder.	91 Slight rain at time of ob.; thunderstorm during past hour, but NOT at time of observation.	92 Moderate or heavy rain at time of ob.; thunderstorm during past hour, but NOT at time of observation.	93 Slight snow or rain and snow mixed or hail at time of observation.; thunderstorm during past hour, but not at time of observation.	94 Mod. or heavy snow, or rain and snow mixed or hail at time of ob.; thunderstorm during past hour, but NOT at time of observation.	95 Slight or mod. thunderstorm without hail, but with rain and/or snow at time of observation.	96 Slight or moderate thunderstorm, with hail at time of observation.	97 Heavy thunderstorm, without hail, but with rain and/or snow at time of observation.	98 Thunderstorm combined with duststorm or sandstorm at time of observation.	99 Heavy thunderstorm with hail at time of observation.

Cloud Type

Code

0	Stratus or fractostratus
1	Cirrus
2	Cirrostratus
3	Cirrocumulus
4	Alto cumulus
5	Altostratus
6	Stratocumulus
7	Nimbostratus
8	Cumulus or fractocumulus
9	Cumulonimbus

Cloud Amount

Code

0	No clouds
1	Less than 1/10, or 1/10
2	2/10 and 3/10
3	4/10
4	5/10
5	6/10
6	7/10 and 8/10
7	9/10 and 9/10 plus
8	10/10
9	Sky obscured

State of the Sea

Code	Description	Height
0	Calm	0
1	Smooth	Less than one foot
2	Slight	1 to 3 feet
3	Moderate	3 to 5 feet
4	Rough	5 to 8 feet
5	Very rough	8 to 12 feet
6	High	12 to 20 feet
7	Very high	20 to 40 feet
8	Precipitous	40 feet and over
9	Confused	

Swell Amount

Code	Description	Height in Feet	Length in feet
0	No swell	0	0
1	Low short	1 - 6	0 - 600
1	Low average	1 - 6	0 - 600
2	Long low	1 - 6	Above 600
3	Moderate short	6 - 12	0 - 300
4	Moderate average	6 - 12	300 - 600
5	Moderate long	6 - 12	Above 600
6	High short	Above 12	0 - 300
7	High average	Above 12	300 - 600
8	High long	Above 12	Above 600
9	Confused	-----	-----

Bottom Type

Code	
0	Not otherwise specified
1	Mud or ooze
2	Sand and mud
3	Sand
4	Sand with shells and/or gravel
5	Shells
6	Gravel
7	Rock
8	Coral
9	Stone

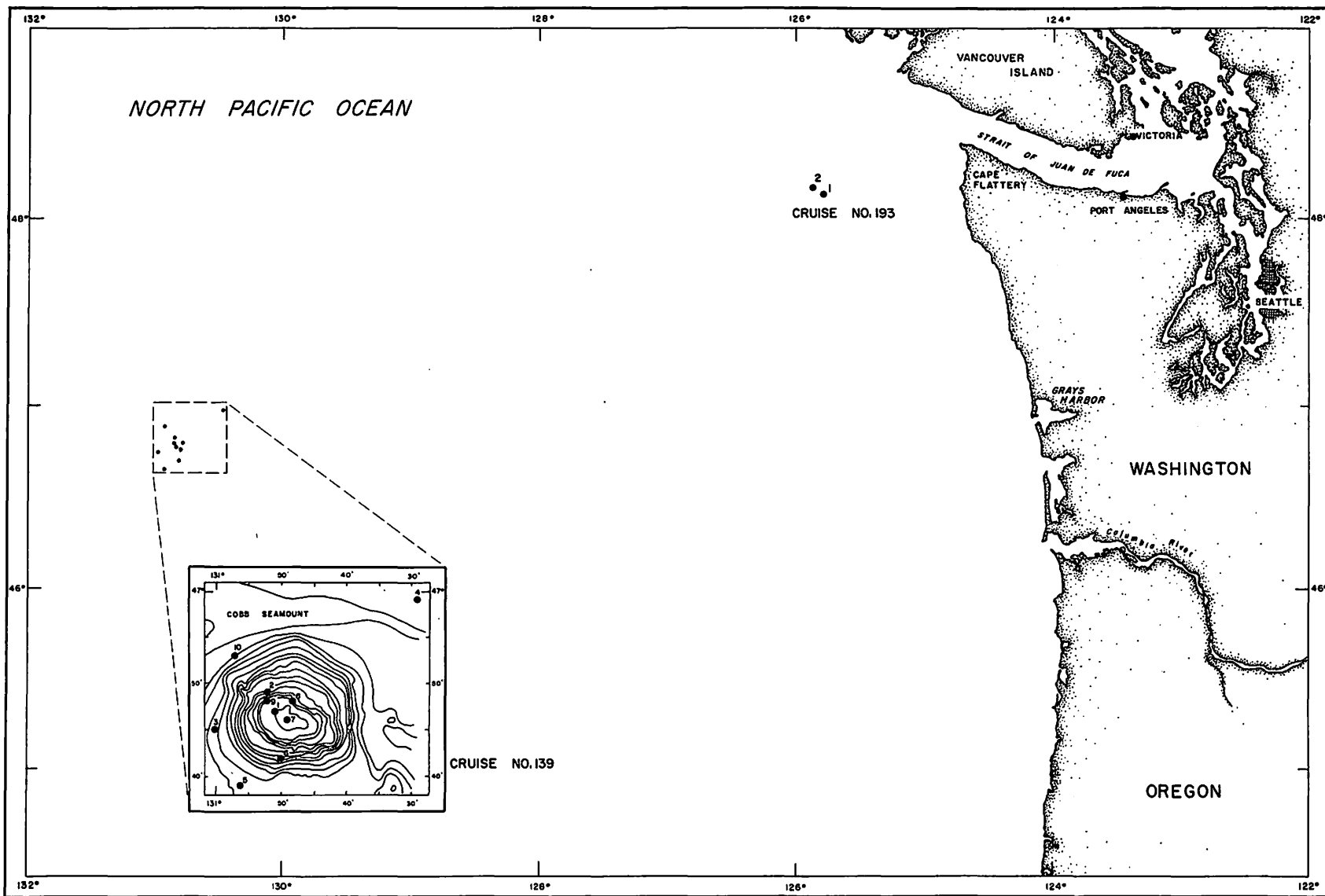


Fig. 1. Brown Bear Cruises Nos. 139 (6-11 April 1956) and 193 (16-17 April 1958)

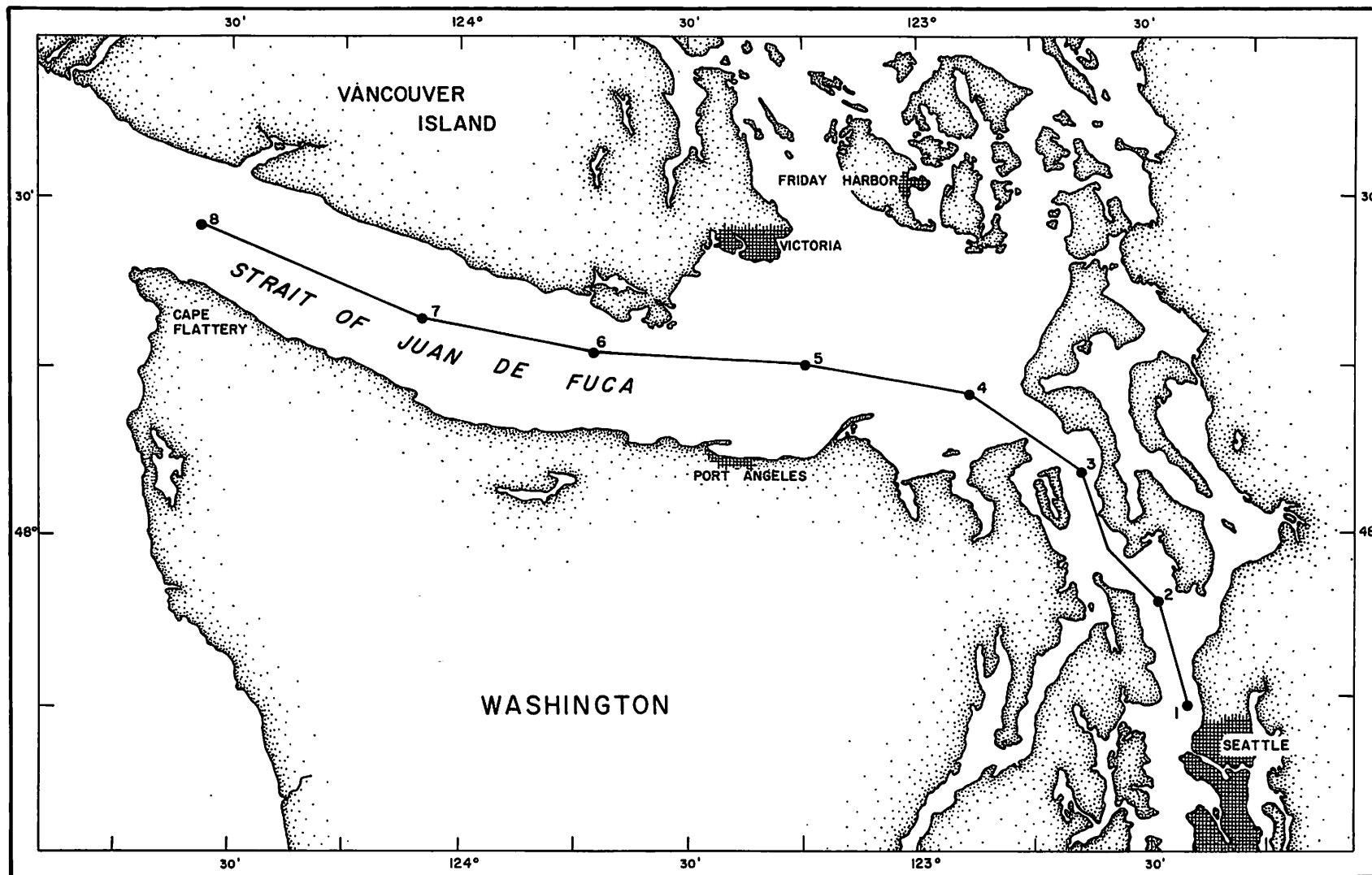


Fig. 2. Inshore stations for Brown Bear Cruises Nos. 151 (5-6 December 1956), 158 (4-5 February 1957), 179 (4-12 November 1957) and 188 (19-20 February 1958)

STATION 139-H01

OBSERVED VALUES

DATE 04/06/56 HR 23 LAT 46-47N LONG 130-51W SDG 238 BTMCODE
 WVCL DIR FC BA DRY . WET . RELHU VIS 8
 WEA 01 CL 0 AMT 0 SEA 2 DIR SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.	SIL.
1	0	6.74	32.75	25.71	6.85	1.23	27
1	9	6.70	32.75	25.71	6.91	1.17	22
1	19	6.69	32.75	25.71	6.80	1.15	26
1	30	6.69	32.74	25.70	6.92	0.96	20
1	50	6.70	32.74	25.70	6.79	1.02	19
1	76	6.57	32.75	25.73	6.72	1.29	25
1	102	6.40	32.78	25.77	6.61	1.36	23
1	204	6.14	33.87	26.66	3.95	2.15	56

STATION 139-H02

OBSERVED VALUES

DATE 04/07/56 HR 07 LAT 46-49N LONG 130-52W SDG BTMCODE
 WVCL DIR FC BA DRY . WET . RELHU VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.	SIL.
1	86	6.65	32.74	25.71	6.78		26
1	780	3.49	34.18	27.21	0.65	3.15	125
1	1124	2.90					

STATION 139-H01

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.74	32.75	25.71	229.6	0.000	6.85	1.23
10	6.70	32.75	25.71	229.2	0.023	6.89	1.17
20	6.69	32.75	25.71	229.3	0.046	6.82	1.13
30	6.69	32.74	25.70	230.1	0.069	6.92	0.96
50	6.70	32.74	25.70	230.5	0.115	6.79	1.02
75	6.58	32.75	25.73	228.6	0.172	6.72	1.28
100	6.41	32.77	25.76	225.3	0.229	6.63	1.35
150	6.20	33.10	26.05	198.7	0.335	5.80	1.63
200	6.14	33.80	26.61	146.3	0.421	4.12	2.10

STATION 139-H02

INTERPOLATED AND COMPUTED VALUES

NO INTERPOLATED VALUES

STATION 139-H03

OBSERVED VALUES

DATE	04/07/56	HR 14	LAT 46-45N	LONG 131-00W	SDG	BTMCODE			
WVEL	DIR	FC	BA	DRY	WET	RELHU			
WEA	CL	AMT	SEA	DIR	SWL	DIR	SECDI	VIS	LD
CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.	SIL.		
2	0	6.61	32.75	25.72	6.79	1.24			
2	10	6.60	32.75	25.72	6.73	1.31			
2	15	6.64	32.75	25.72	6.74	1.25	18		
2	23	6.64	32.75	25.72	6.75	1.29			
2	36	6.64	32.75	25.72	6.79	1.27	16		
1	45	6.61	32.75	25.72	6.69		22		
2	54	6.65	32.75	25.72	6.75	1.28			
2	72	6.66	32.75	25.72	6.78	1.43	18		
2	140	6.42	33.79	26.57	4.91	1.93			
2	232	5.54	33.87	26.74	3.93	2.18			
2	420	4.25	33.91	26.92	2.45	2.71			
1	727	3.64	34.22	27.22	0.65	3.22			
1	969	3.16	34.36	27.38	0.36	3.25			
1	1211		34.47		0.34	3.11	161		
1	1453	2.43	34.55	27.60	0.68	2.94			

STATION 139-H03

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.61	32.75	25.72	228.0	0.000	6.79	1.24
10	6.60	32.75	25.72	228.0	0.023	6.73	1.31
20	6.64	32.75	25.72	228.6	0.046	6.74	1.28
30	6.65	32.75	25.72	228.9	0.069	6.80	1.28
50	6.64	32.75	25.72	229.0	0.115	6.73	1.27
75	6.66	32.81	25.76	225.1	0.172	6.68	1.46
100	6.60	33.28	26.14	189.6	0.224	5.89	1.67
150	6.32	33.80	26.59	147.9	0.308	4.80	1.96
200	5.83	33.85	26.69	138.8	0.380	4.25	2.09
250	5.39	33.87	26.76	132.6	0.448	3.78	2.24
300	4.99	33.87	26.80	128.5	0.513	3.36	2.39
400	4.35	33.90	26.90	120.1	0.637	2.59	2.66
500	4.09	34.00	27.00	110.6	0.752	1.83	2.89
600	3.89	34.11	27.11	101.1	0.858	1.20	3.07
700	3.69	34.20	27.20	93.0	0.955	0.74	3.20
800	3.49	34.27	27.28	86.3	1.045	0.53	3.25
1000	3.10	34.38	27.40	75.3	1.207	0.34	3.23
1200	2.77	34.47	27.50	66.2	1.348	0.33	3.12

STATION 139-H04

OBSERVED VALUES

DATE 04/08/56 HR 10 LAT 46-59N LONG 130-29W SDG BTMCODE
 WVEL 06 DIR 21 FC 04 BA 24 DRY 6.7 WET 6.1 RELHU 92 VIS 7
 WEA 02 CL 0 AMT 0 SEA 1 DIR 21 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.	SIL.
2	0	6.60	32.74	25.72	6.82	1.20	19
2	9	6.61	32.74	25.71	6.78	1.24	
2	19	6.62	32.74	25.71	6.74	1.17	
2	29	6.60	32.74	25.72	6.78	1.17	
2	48	6.55	32.74	25.72	6.79	1.21	
2	72	6.56	32.74	25.72	6.69	1.20	
2	97	6.46	32.74	25.73	6.70	1.16	
2	194	6.47	33.83	26.59	3.73	2.13	45
2	293	5.28	33.88	26.78	2.91	2.50	64
2	490	4.22	34.06	27.04	0.91	3.16	104
3	500	4.15	34.09	27.07	0.81	2.69	110
3	751	3.64	34.28	27.27	0.39	3.06	
3	1004	3.11	34.39	27.41	0.31	3.40	150
3	1255	2.68	34.48	27.52	0.46	2.79	
3	1510	2.36	34.53	27.59	1.20	3.23	180
3	1764	2.12	34.58	27.65	1.10	2.93	
3	2026	1.94	34.60	27.68	1.41	2.69	
4	2368	1.83	34.63	27.71	1.74	2.97	188
1	2485	1.80	34.63	27.71	1.81	3.01	
4	2636	1.69	34.64	27.73	1.95	2.95	
1	2741	1.72	34.63	27.72	2.02	2.74	
1	2994	1.67	34.65	27.74			

STATION 139-H04

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.60	32.74	25.72	228.6	0.000	6.82	1.20
10	6.61	32.74	25.71	228.9	0.023	6.77	1.23
20	6.62	32.74	25.71	229.1	0.046	6.75	1.17
30	6.60	32.74	25.72	229.0	0.069	6.78	1.17
50	6.55	32.74	25.72	228.6	0.115	6.78	1.21
75	6.55	32.73	25.71	229.7	0.172	6.71	1.19
100	6.48	32.79	25.77	224.6	0.229	6.58	1.20
150	6.61	33.46	26.28	177.0	0.329	4.81	1.76
200	6.39	33.83	26.60	147.3	0.410	3.68	2.15
250	5.74	33.85	26.70	138.3	0.481	3.28	2.34
300	5.25	33.87	26.77	131.5	0.548	2.84	2.85
400	4.78	33.88	26.83	126.4	0.677	1.82	5.20
500	4.15	34.09	27.07	104.6	0.792	0.81	2.69
600	3.95	34.18	27.16	96.5	0.893	0.60	2.84
700	3.74	34.25	27.24	89.8	0.986	0.45	2.99
800	3.53	34.30	27.30	84.5	1.073	0.36	3.20
1000	3.12	34.39	27.41	74.7	1.232	0.31	3.40
1200	2.76	34.46	27.50	66.8	1.374	0.38	2.84
1500	2.37	34.53	27.59	58.8	1.562	1.19	3.23
2000	1.95	34.60	27.68	51.0	1.837	1.38	2.70
2500	1.78	34.63	27.71	48.5	2.086	1.83	3.02

STATION 139-H05

OBSERVED VALUES

DATE 04/09/56 HR 08 LAT 46-39N LONG 130-56W SDG 2195 BTMCODE
 WVCL 14 DIR 24 FC 07 BA 22 DRY 5.6 WET 5.6 RELHU 99 VIS
 WEA 20 CL 0 AMT 0 SEA 2 DIR 24 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.	SIL.
2	0	6.70	32.75	25.71	6.74	1.14	16
2	10	6.66	32.75	25.72	6.71	1.18	
2	20	6.70	32.75	25.71	6.72	0.91	
2	30	6.70	32.75	25.71	6.72	1.18	
2	50	6.71	32.75	25.71	6.76	1.16	
2	76	6.72	32.75	25.71	6.54		
2	93	6.68	33.75	26.50	6.59	0.89	
2	186	6.79	33.78	26.51	4.78	1.81	40
2	283	5.55	33.90	26.76	3.10	2.38	66
2	482		34.05		1.03	2.84	98
1	488	4.38	34.05	27.01	0.92	2.94	108
1	739	3.52	34.25	27.26	0.41	2.98	
1	996	3.18	34.37	27.39	0.40	2.90	151
1	1256	2.73	34.46	27.50	0.43	2.79	
1	1524	2.38	34.53	27.59	0.76	2.87	170
1	1796	2.10	34.56	27.63	1.15	2.82	182

STATION 139-H06

OBSERVED VALUES

DATE 04/10/56 HR 14 LAT 46-42N LONG 130-50W SDG BTMCODE
 WVCL 06 DIR 36 FC 04 BA 13 DRY 5.6 WET 4.4 RELHU 84 VIS 7
 WEA 01 CL 6 AMT 6 SEA 2 DIR 36 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.	SIL.
3	0	6.64	32.75	25.72	6.82	1.24	
3	10	6.66	32.74	25.71	6.82	1.20	
3	19	6.66	32.75	25.72	6.83	1.20	
3	29	6.67	32.75	25.71	6.79	1.17	
3	48	6.69	32.75	25.71	6.83	1.20	
3	71	6.68	32.75	25.71	6.82	1.21	
3	96	6.64	32.82	25.77	6.63	1.39	
3	200	6.42	33.81	26.58	4.61	1.94	
3	304	5.28	33.89	26.79	2.82	2.39	
2	486	4.20	34.04	27.02	1.16	2.87	
3	510	4.09	34.08	27.07	1.02	2.89	
2	616	3.67	34.14	27.16	0.45	3.10	
1	794	3.58	34.23	27.24			
1	980	3.30	34.36	27.37	0.32	3.34	

STATION 139-H05

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.70	32.75	25.71	229.1	0.000	6.74	1.14
10	6.66	32.75	25.72	228.7	0.023	6.71	1.18
20	6.70	32.75	25.71	229.4	0.046	6.72	0.91
30	6.70	32.75	25.71	229.5	0.069	6.72	1.18
50	6.71	32.75	25.71	229.9	0.115	6.76	1.16
75	6.72	32.72	25.68	232.6	0.173	6.54	0.95
100	6.73	33.75	26.49	156.2	0.222	6.45	0.97
150	6.90	33.76	26.48	158.4	0.301	5.46	1.50
200	6.58	33.80	26.55	151.9	0.379	4.51	1.91
250	5.92	33.86	26.68	139.8	0.452	3.62	2.21
300	5.43	33.91	26.78	130.7	0.520	2.86	2.44
400	4.82	33.99	26.92	118.6	0.645	1.68	2.72
500	4.31	34.06	27.03	108.6	0.759	0.92	2.90
600	3.93	34.15	27.14	98.5	0.863	0.65	2.95
700	3.62	34.22	27.23	90.7	0.958	0.46	2.98
800	3.45	34.28	27.29	85.2	1.046	0.40	2.96
1000	3.17	34.37	27.39	76.8	1.208	0.40	2.90
1200	2.82	34.44	27.48	69.0	1.354	0.40	2.80
1500	2.41	34.53	27.58	59.3	1.546	0.73	2.87

STATION 139-H06

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.64	32.75	25.72	228.4	0.000	6.82	1.24
10	6.66	32.74	25.71	229.5	0.023	6.82	1.20
20	6.66	32.75	25.72	228.9	0.046	6.82	1.20
30	6.67	32.75	25.71	229.1	0.069	6.79	1.17
50	6.69	32.75	25.71	229.6	0.115	6.84	1.19
75	6.67	32.76	25.72	229.0	0.172	6.80	1.24
100	6.65	32.87	25.81	220.8	0.228	6.55	1.41
150	6.64	33.45	26.27	178.1	0.328	5.55	1.69
200	6.42	33.81	26.58	149.1	0.410	4.61	1.94
250	5.83	33.85	26.69	139.4	0.482	3.67	2.17
300	5.32	33.89	26.78	130.9	0.550	2.88	2.38
400	4.66	33.98	26.93	117.6	0.674	1.87	2.65
500	4.13	34.06	27.05	106.6	0.786	1.09	2.88
600	3.71	34.13	27.15	97.6	0.888	0.52	3.07
700	3.65	34.18	27.19	94.0	0.984	0.17	3.21
800	3.57	34.23	27.24	90.2	1.076	0.03	3.30

STATION 139-H07

OBSERVED VALUES

DATE 04/10/56 HR 16 LAT 46-46N LONG 130-49W SDG BTMCODE
 WVCL 05 DIR 32 FC 03 BA 12 DRY . WET . RELHU VIS 8
 WEA 01 CL 6 AMT 4 SEA 2 DIR 32 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.	SIL.
2	0	6.60	32.75	25.72	6.80	1.10	14
2	10	6.59	32.75	25.72	6.83	1.30	16
2	20	6.63	32.75	25.72	6.80	1.17	16
2	30	6.64	32.75	25.72	6.84	1.16	16
2	50	6.65	32.75	25.72	6.85	1.25	14
2	75	6.54	32.76	25.74	6.74	1.22	17
2	100	6.48	33.09	26.01	6.09	1.44	25

STATION 139-H08

OBSERVED VALUES

DATE 04/11/56 HR 03 LAT 46-48N LONG 130-48W SDG 914 BTMCODE
 WVCL 04 DIR 35 FC 03 BA 08 DRY 6.7 WET 4.4 RELHU 70 VIS 8
 WEA 03 CL 6 AMT 6 SEA 2 DIR 35 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.	SIL.
1	0	6.80	32.75	25.70	6.81		
1	10	6.72	32.75	25.71	6.87	1.11	
1	21	6.66	32.74	25.71	6.84	1.20	
1	31	6.65	32.74	25.71	6.84	1.23	
1	53	6.66	32.74	25.71	6.81	1.23	
1	79	6.64	32.75	25.72	6.76	1.26	
1	107	6.24	32.75	25.77	6.69	1.30	
1	212	6.08	32.87	25.88	4.12	2.12	
1	318	5.10	33.90	26.81	2.72	2.54	
1	527	4.04	34.07	27.06	0.67	2.83	

STATION 139-H07

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.60	32.75	25.72	227.9	0.000	6.80	1.10
10	6.59	32.75	25.72	227.9	0.023	6.83	1.30
20	6.63	32.75	25.72	228.5	0.046	6.80	1.17
30	6.64	32.75	25.72	228.7	0.069	6.84	1.16
50	6.65	32.75	25.72	229.1	0.115	6.85	1.25
75	6.54	32.76	25.74	227.3	0.172	6.74	1.22
100	6.48	33.09	26.01	202.2	0.226	6.09	1.44

STATION 139-H08

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.80	32.75	25.70	230.4	0.000	6.81	
10	6.72	32.75	25.71	229.5	0.023	6.87	1.11
20	6.66	32.74	25.71	229.6	0.046	6.84	1.19
30	6.65	32.74	25.71	229.6	0.069	6.84	1.23
50	6.66	32.74	25.71	230.0	0.115	6.81	1.23
75	6.67	32.75	25.71	229.7	0.172	6.77	1.25
100	6.33	32.75	25.76	225.8	0.229	6.73	1.28
150	6.27	32.69	25.72	230.1	0.343	5.50	1.68
200	6.14	32.81	25.83	220.2	0.456	4.35	2.05
250	5.69	33.31	26.28	178.0	0.556	3.59	2.29
300	5.25	33.77	26.69	139.0	0.635	2.94	2.48
400	4.55	34.26	27.16	95.4	0.752	1.80	2.74
500	4.11	34.19	27.15	96.7	0.848	0.88	2.83

STATION 139-H09

OBSERVED VALUES

DATE 04/11/56 HR 04 LAT 46-48N LONG 130-52W SDG 841 BTMCODE
WVEL 04 DIR 35 FC 03 BA 09 DRY 6.1 WET 4.4 RELHU 77 VIS 8
WEA 02 CL 6 AMT 6 SEA 2 DIR 35 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.	SIL.
1	0	6.71	32.74	25.70	6.81	1.26	
1	9	6.70	32.75	25.71	6.82	1.28	
1	20	6.62	32.73	25.71	6.82	1.28	
1	30	6.61	32.73	25.71	6.81	1.27	
1	50	6.60	32.74	25.72	6.80	1.27	
1	76	6.61	32.75	25.72	6.80	1.29	
1	103	6.42	32.83	25.81	6.35	1.37	
1	207	6.46	33.82	26.58	4.74	1.86	
1	314	5.18	33.90	26.81	2.87	2.50	
1	528	4.04	34.09	27.08	0.66	2.75	

STATION 139-H09

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.71	32.74	25.70	230.0	0.000	6.81	1.26
10	6.69	32.75	25.71	229.1	0.023	6.82	1.28
20	6.62	32.73	25.71	229.9	0.046	6.82	1.28
30	6.61	32.73	25.71	229.9	0.069	6.81	1.27
50	6.60	32.74	25.72	229.3	0.115	6.80	1.27
75	6.61	32.75	25.72	228.9	0.172	6.81	1.29
100	6.44	32.82	25.80	221.9	0.228	6.40	1.36
150	6.59	33.39	26.23	181.9	0.329	5.65	1.58
200	6.50	33.78	26.55	152.4	0.413	4.85	1.82
250	5.89	33.85	26.68	140.2	0.486	3.93	2.16
300	5.32	33.89	26.78	130.9	0.554	3.09	2.44
400	4.49	33.97	26.94	116.4	0.678	1.74	2.77
500	4.08	34.06	27.05	106.0	0.789	0.83	2.80

STATION 139-H10

OBSERVED VALUES

DATE 04/11/56 HR 08 LAT 46-53N LONG 130-57W SDG 3072 BTMCODE
 WVCL 10 DIR 36 FC 05 BA 10 DRY 9.4 WET 3.9 RELHU 37 VIS 5
 WEA 03 CL AMT 8 SEA 4 DIR 36 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.	SIL.
2	0	6.59	32.74	25.72	6.93	1.27	
2	7	6.58	32.74	25.72	6.78	1.25	
2	15	6.64	32.74	25.71	6.82	1.29	
2	24	6.60	32.74	25.72	6.83	1.27	
2	41	6.55	32.74	25.72	6.93	1.26	
2	61	6.53	32.74	25.72	6.79	1.31	
2	83	6.52	32.74	25.73	6.87	1.26	
2	167	6.30	33.54	26.38	5.44	1.78	
2	257	5.75	33.87	26.71	3.71	2.29	
2	442	4.26	34.02	27.00	1.31	2.87	
3	442	4.30	34.00	26.98	1.47	2.69	
2	663	3.75	34.20	27.20	0.73	3.23	
2	890	3.30	34.35	27.36	0.32	3.00	
2	1117	2.92	34.43	27.46	0.38	2.95	
2	1345	2.56	34.50	27.55	0.56	2.98	
2	1578	2.28	34.52	27.59	0.83	2.97	
2	1820	2.06	34.57	27.64	1.18	3.00	
2	2070	1.89	34.60	27.68	1.56	2.77	
2	2328	1.84	34.61	27.69	1.71	3.00	
1	2560	1.74	34.62	27.71	1.95	2.55	
1	2824	1.68	34.63	27.72	2.18	2.94	

STATION 139-H10

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOBOT. ANOMALY	OXY.	PHOS.
0	6.59	32.74	25.72	228.5	0.000	6.93	1.27
10	6.61	32.74	25.71	228.9	0.023	6.80	1.27
20	6.62	32.74	25.71	229.1	0.046	6.82	1.28
30	6.58	32.74	25.72	228.7	0.069	6.89	1.26
50	6.54	32.74	25.72	228.5	0.115	6.84	1.29
75	6.53	32.73	25.72	229.4	0.172	6.86	1.27
100	6.50	32.94	25.89	213.7	0.227	6.59	1.37
150	6.37	33.42	26.28	176.9	0.325	5.74	1.68
200	6.11	33.68	26.52	154.9	0.408	4.76	1.99
250	5.80	33.85	26.69	139.0	0.481	3.83	2.26
300	5.32	33.90	26.79	130.1	0.548	3.03	2.41
400	4.53	33.98	26.94	116.1	0.671	1.78	2.68
500	4.13	34.06	27.05	106.6	0.782	1.19	2.96
600	3.89	34.15	27.14	98.1	0.884	0.89	3.17
700	3.67	34.23	27.23	90.5	0.978	0.63	3.18
800	3.47	34.30	27.30	83.9	1.065	0.43	3.07
1000	3.11	34.39	27.41	74.6	1.224	0.33	2.97
1200	2.78	34.46	27.50	67.0	1.366	0.44	2.97
1500	2.37	34.51	27.57	60.3	1.557	0.73	2.97
2000	1.93	34.59	27.67	51.4	1.836	1.48	2.79
2500	1.76	34.62	27.71	49.0	2.087	1.89	2.60

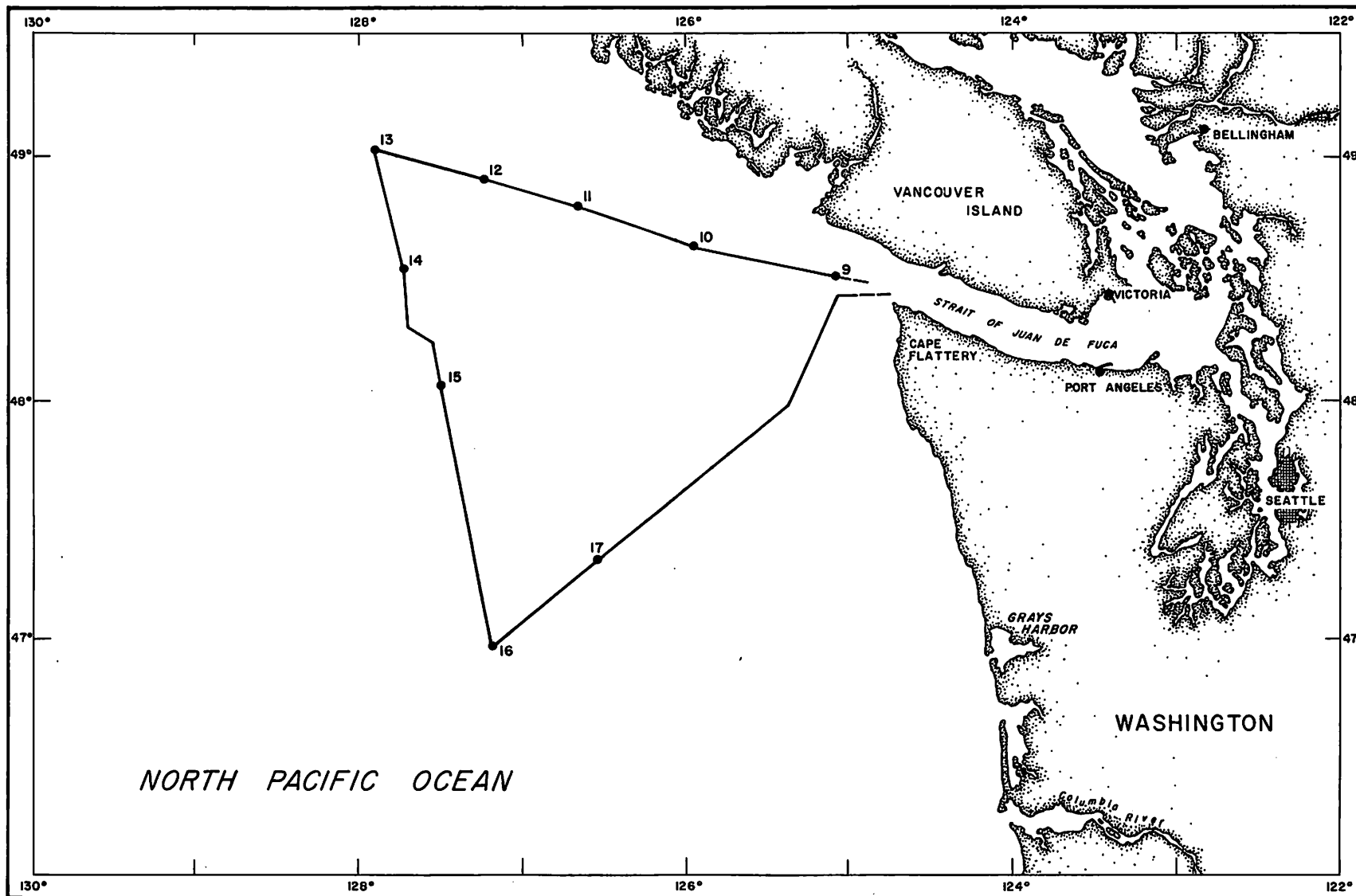


Fig. 3. Offshore stations for Brown Bear Cruise No. 151 (6-9 December 1956)

STATION 151-001

POINT JEFFERSON - PUGET SOUND

OBSERVED VALUES

DATE 12/05/56 HR 20 LAT 47-41N LONG 122-26W SDG 293 BTMCODE
 WVEL 12 DIR 01 FC 06 BA 12 DRY -2.2 WET . RELHU VIS 5
 WEA 70 CL 0 AMT 7 SEA 3 DIR 01 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	9.30	29.88	23.10	4.95	2.33
2	4	9.36	29.88	23.09	5.02	2.18
2	7	9.37	29.87	23.08	4.97	2.27
2	16	9.37	29.87	23.08	4.98	2.18
2	26	9.34	29.87	23.08	4.93	2.22
2	45	9.36	29.93	23.13	4.79	2.19
2	67	9.22	30.02	23.22	4.60	2.38
2	95	9.13	30.04	23.25	4.63	2.27
1	134	9.04	30.05	23.27	4.57	2.19
1	177	8.97	30.08	23.30	4.52	2.22
1	209	8.86	30.16	23.38	4.52	2.36
1	230	8.82	30.19	23.41	4.51	2.17

STATION 151-002

POINT NO POINT - PUGET SOUND

OBSERVED VALUES

DATE 12/05/56 HR 23 LAT 47-54N LONG 122-28W SDG 186 BTMCODE
 WVEL 16 DIR 32 FC 07 BA 12 DRY . WET . RELHU VIS 6
 WEA 01 CL 0 AMT 6 SEA 3 DIR 32 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	9.10	29.52	22.85	4.98	2.23
2	4	9.14	29.52	22.84	4.96	2.33
2	8	9.16	29.53	22.84	4.96	2.33
2	18	9.22	29.72	22.98	4.84	2.32
2	26	9.25	29.95	23.16	4.66	2.33
2	45	9.21	30.01	23.21	4.58	2.33
2	69	9.16	30.03	23.23	4.59	2.33
2	92	9.01	30.06	23.28	4.63	2.22
1	140	8.94	30.08	23.31	4.46	2.10
1	177	8.82	30.12	23.35	4.68	2.27

STATION 151-001

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.30	29.88	23.10	478.3	0.000	4.95	2.33
10	9.37	29.87	23.08	480.2	0.048	4.98	2.23
20	9.35	29.87	23.08	480.0	0.096	4.96	2.20
30	9.35	29.88	23.09	479.4	0.144	4.90	2.20
50	9.32	29.96	23.15	473.3	0.239	4.73	2.25
75	9.19	30.03	23.23	466.6	0.356	4.61	2.34
100	9.12	30.04	23.25	465.1	0.472	4.62	2.25
150	9.02	30.05	23.27	463.6	0.704	4.54	2.18
200	8.88	30.14	23.36	455.6	0.934	4.52	2.37

STATION 151-002

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.10	29.52	22.85	502.2	0.000	4.98	2.23
10	9.17	29.56	22.87	500.3	0.050	4.95	2.33
20	9.23	29.79	23.04	484.2	0.099	4.79	2.32
30	9.24	29.97	23.17	471.1	0.147	4.64	2.33
50	9.21	30.01	23.21	468.0	0.241	4.58	2.34
75	9.11	30.04	23.25	464.6	0.358	4.61	2.30
100	9.01	30.06	23.28	462.0	0.474	4.57	2.17
150	8.91	30.09	23.32	459.0	0.704	4.49	2.12

STATION 151-003

MARROWSTONE POINT - ADMIRALTY INLET

OBSERVED VALUES

DATE 12/06/56 HR 01 LAT 48-06N LONG 122-39W SDG 182 BTMCODE
 WVCL 10 DIR 33 FC 05 BA DRY -2.8 WET . RELHU VIS 6
 WEA 02 CL 0 AMT 6 SEA 2 DIR 33 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	8.10	30.59	23.83	4.66	2.18
1	5	8.12	30.61	23.84	4.68	2.23
1	9	8.09	30.71	23.92	4.59	2.24
1	18	8.09	30.74	23.94	4.61	2.70*
1	27	8.02	30.76	23.97	4.59	2.31
1	46	8.01	30.79	24.00	4.55	2.23
1	70	8.01	30.82	24.02	4.58	2.18
1	92	7.98	30.82	24.02	4.59	2.31
1	143	7.91	30.96	24.14	4.47	2.32

STATION 151-004

PROTECTION ISLAND ~ STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 12/06/56 HR 03 LAT 48-12N LONG 122-54W SDG 91 BTMCODE
 WVCL 00 DIR 33 FC 01 BA 14 DRY -3.9 WET . RELHU VIS 6
 WEA 02 CL AMT SEA 0 DIR 00 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	7.38	30.72	24.03	4.89	1.76
1	5	7.47	30.73	24.02	4.89	1.80
1	9	7.56	30.81	24.07	4.84	1.71
1	19	7.78	31.04	24.22	4.57	2.33
1	28	7.79	31.27	24.40	4.32	2.41
1	47	7.62	31.80	24.84	3.98	2.35
1	71	7.47	32.29	25.25	3.66	2.43

STATION 151-003

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.10	30.59	23.83	408.5	0.000	4.66	2.18
10	8.09	30.71	23.92	399.6	0.040	4.59	2.25
20	8.07	30.74	23.95	397.2	0.080	4.61	2.30
30	8.02	30.77	23.98	394.4	0.120	4.58	2.29
50	8.01	30.80	24.00	392.3	0.199	4.56	2.21
75	8.00	30.82	24.02	391.0	0.297	4.59	2.22
100	7.97	30.83	24.03	390.2	0.395	4.58	2.34

STATION 151-004

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.38	30.72	24.03	389.4	0.000	4.89	1.76
10	7.59	30.83	24.08	384.0	0.039	4.81	1.80
20	7.78	31.06	24.24	369.4	0.077	4.54	2.34
30	7.77	31.33	24.45	349.3	0.113	4.28	2.40
50	7.60	31.87	24.90	307.1	0.179	3.93	2.35

STATION 151-005

NW OF NEW DUNGENESS — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 12/06/56 HR 05 LAT 48-15N LONG 123-15W SDG 132 BTMCODE
 WVCL 03 DIR 32 FC 02 BA 16 DRY -3.9 WET . RELHU VIS 8
 WEA 02 CL AMT SEA 0 DIR 00 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	7.36	31.35	24.52	4.74	1.83
1	5	7.46	31.35	24.51	4.67	1.82
1	9	7.45	31.35	24.51	4.64	1.85
1	19	7.51	31.57	24.68	4.37	1.81
1	27	7.40	31.68	24.78	4.47	2.24
1	46	7.46	31.87	24.92	4.24	2.19
1	70	7.50	32.32	25.26	3.54	2.24
1	94	7.37	32.69	25.57	3.18	2.27
1	121	7.28	33.00	25.83	2.96	2.51

STATION 151-006

BEECHY HEAD — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 12/06/56 HR 08 LAT 48-16N LONG 123-43W SDG 185 BTMCODE
 WVCL 07 DIR 04 FC 04 BA 17 DRY -2.8 WET . RELHU VIS 8
 WEA 02 CL AMT SEA 0 DIR 00 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	7.12	31.67	24.81	4.86	2.01
1	4	7.14	31.67	24.80	4.87	2.19
1	6	7.16	31.67	24.80	4.82	1.90
1	15	7.18	31.68	24.81	4.77	0.08*
1	22	7.16	31.71	24.83	4.78	1.90
1	39	7.20	31.80	24.90	4.69	2.21
1	58	7.28	32.00	25.04	4.30	2.14
1	78	7.29	32.31	25.29	3.79	2.31
1	110	7.22	33.13	25.94	2.87	2.38
1	140	6.98	33.64	26.37	2.28	2.41

STATION 151-005

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.36	31.35	24.52	342.1	0.000	4.74	1.83
10	7.47	31.38	24.53	341.4	0.034	4.59	1.82
20	7.49	31.58	24.69	326.8	0.067	4.39	1.88
30	7.41	31.70	24.79	317.0	0.099	4.45	2.23
50	7.48	31.95	24.98	299.5	0.161	4.10	2.20
75	7.47	32.40	25.33	266.2	0.232	3.45	2.23
100	7.34	32.77	25.64	237.2	0.295	3.11	2.30

STATION 151-006

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.12	31.67	24.81	315.1	0.000	4.86	2.01
10	7.18	31.67	24.80	316.0	0.032	4.79	1.87
20	7.16	31.70	24.82	313.6	0.063	4.78	1.88
30	7.18	31.74	24.85	311.0	0.094	4.77	2.09
50	7.25	31.90	24.97	300.2	0.155	4.48	2.14
75	7.29	32.25	25.24	275.0	0.227	3.87	2.29
100	7.26	32.90	25.75	226.5	0.290	3.13	2.36

STATION 151-007

PILLAR POINT - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 12/06/56 HR 10 LAT 48-19N LONG 124-05W SDG 192 BTMCODE
 WVCL 08 DIR 11 FC 04 BA 17 DRY -2.8 WET . RELHU VIS 7
 WEA 02 CL AMT SEA 1 DIR 11 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	7.10	32.03	25.09	4.56	2.14
1	4	7.14	32.03	25.09	4.51	2.17
1	8	7.16	32.03	25.08	4.44	2.08
1	17	7.26	32.06	25.09	4.37	2.11
1	25	7.30	32.08	25.10	4.22	2.14
1	43	7.30	32.13	25.14	3.95	1.99
1	65	7.26	32.19	25.20	4.26	2.12
1	87	7.51	32.48	25.39	3.58	2.05
1	120	7.25	33.18	25.97	2.69	2.27
1	156	6.96	33.77	26.48	2.12	2.27

STATION 151-008

NEAH BAY - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 12/06/56 HR 14 LAT 48-27N LONG 124-34W SDG 243 BTMCODE
 WVCL 09 DIR 09 FC 05 BA 18 DRY -1.7 WET . RELHU VIS 7
 WEA 01 CL 8 AMT 2 SEA 2 DIR 09 SWL DIR SECDI LD 43

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	7.28	31.65	24.77	5.10	1.92
2	5	7.32	31.65	24.76	5.16	1.99
2	9	7.32	31.65	24.76	5.12	2.15
2	18	7.34	31.65	24.76	5.05	1.74
2	26	7.33	31.65	24.76	5.12	1.43
2	43	7.84	31.82	24.83	5.14	1.29
2	67	7.85	32.07	25.02	3.55	1.40
2	90	7.83	32.74	25.55	4.09	1.37
1	106	7.32	33.39	26.13	3.08	1.70*
1	124	7.21	33.60	26.31	2.58	1.48
1	142	7.18	33.66	26.36	2.42	1.42
1	160	7.10	33.72	26.42	2.17	1.57

STATION 151-007

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.10	32.03	25.09	287.9	0.000	4.56	2.14
10	7.19	32.04	25.09	288.5	0.029	4.43	2.09
20	7.28	32.07	25.10	287.5	0.058	4.31	2.13
30	7.30	32.09	25.11	286.4	0.087	4.10	2.08
50	7.26	32.12	25.14	283.9	0.144	4.16	2.05
75	7.42	32.30	25.26	272.9	0.214	3.94	2.07
100	7.41	32.77	25.63	238.1	0.278	3.19	2.16
150	7.01	33.68	26.40	165.8	0.379	2.19	2.29

STATION 151-008

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.28	31.65	24.77	318.6	0.000	5.10	1.92
10	7.32	31.65	24.76	319.3	0.032	5.10	2.10
20	7.32	31.65	24.76	319.4	0.064	5.07	1.65
30	7.49	31.69	24.77	318.7	0.096	5.21	1.38
50	7.85	31.85	24.85	311.9	0.159	4.45	1.34
75	7.94	32.27	25.16	282.2	0.233	4.00	1.38
100	7.47	33.20	25.96	207.0	0.294	3.40	1.43
150	7.15	33.69	26.39	166.9	0.387	2.32	1.46

STATION 151-009

SWIFTSURE BANK LIGHTSHIP

OBSERVED VALUES

DATE 12/06/56 HR 18 LAT 48-31N LONG 125-03W SDG 128 BTMCODE
 WVCL 09 DIR 08 FC 05 BA 20 DRY -0.6 WET . RELHU VIS 7
 WEA 02 CL 8 AMT 2 SEA 1 DIR 08 SWL DIR SECDI LD 31

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	8.22	31.79	24.75	6.44	1.02
1	9	8.24	31.79	24.74	6.43	1.38
1	19	8.26	31.79	24.74	6.41	1.13
1	28	8.53	31.95	24.83	6.38	1.25
1	46	8.60	32.24	25.04	6.16	1.33
1	70	7.64	32.97	25.75	4.01	1.82
1	94	7.20	33.53	26.26	2.61	2.06

STATION 151-010

OBSERVED VALUES

DATE 12/06/56 HR 22 LAT 48-39N LONG 125-56W SDG 73 BTMCODE
 WVCL 08 DIR 11 FC 04 BA 19 DRY 0.0 WET . RELHU VIS 8
 WEA 03 CL 6 AMT 7 SEA 2 DIR 11 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	7.60	32.11	25.09	5.61	1.58
1	9	7.62	32.10	25.08	5.69	1.63
1	19	7.67	32.14	25.10	5.60	1.59
1	27	7.80	32.21	25.14	5.08	1.79
1	46	7.98	32.49	25.33	3.99	1.82
1	56	7.88	32.69	25.50	3.84	1.85

STATION 151-009

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.22	31.79	24.75	320.7	0.000	6.44	1.02
10	8.23	31.78	24.74	321.8	0.032	6.43	1.34
20	8.30	31.81	24.75	320.7	0.064	6.41	1.15
30	8.57	31.97	24.84	312.7	0.096	6.41	1.25
50	8.40	32.37	25.17	280.9	0.155	5.75	1.43
75	7.51	33.10	25.88	214.6	0.217	3.66	1.89

STATION 151-010

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.60	32.11	25.09	288.5	0.000	5.61	1.58
10	7.62	32.10	25.08	289.6	0.029	5.71	1.61
20	7.69	32.15	25.11	287.0	0.058	5.53	1.62
30	7.86	32.25	25.16	282.0	0.086	4.84	1.79
50	7.96	32.57	25.40	259.8	0.140	3.89	1.83

STATION 151-011

OBSERVED VALUES

DATE 12/07/56 HR 04 LAT 48-48N LONG 126-39W SDG 550 BTMCODE
 WVEL DIR FC BA DRY 3.3 WET 2.8 RELHU 92 VIS 8
 WEA 03 CL 6 AMT 8 SEA 1 DIR SWL DIR SECDI LD 61

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	9.16	32.36	25.05	6.36	0.79
2	9	9.20	32.36	25.04	6.36	0.80
2	19	9.20	32.36	25.04	6.35	0.76
2	28	9.22	32.36	25.04	6.40	0.80
2	47	9.20	32.37	25.05	6.36	0.76
2	71	7.95	32.75	25.54	3.77*	1.43*
2	95	7.12	33.05	25.89	4.52	1.27
2	119	6.86	33.50	26.28	3.62	1.39
1	143	6.91	33.73	26.45	3.11	1.47
1	189	6.51	33.87	26.62	2.53	1.29
1	284	5.76	33.93	26.76	1.93	1.62
1	473	5.16	34.08	26.95	0.78	1.71

STATION 151-012

OBSERVED VALUES

DATE 12/07/56 HR 10 LAT 48-55N LONG 127-14W SDG 2085 BTMCODE
 WVEL 08 DIR 10 FC 04 BA 19 DRY 3.9 WET 2.8 RELHU 84 VIS 7
 WEA 00 CL 6 AMT 4 SEA 2 DIR 10 SWL DIR SECDI LD 61

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	8.56	32.38	25.16	6.42	1.05
2	9	8.59	32.38	25.15	6.46	0.97
2	19	8.58	32.38	25.16	6.42	1.03
2	28	8.60	32.38	25.15	6.45	1.03
2	46	8.57	32.38	25.16	6.42	1.11
2	70	6.66	32.81	25.76	6.08	1.33
2	94	6.29	32.94	25.91	5.90	1.27
2	141	6.52	33.46	26.29	4.42	1.57
1	178	6.38	33.79	26.57	3.60	1.75
2	187	6.40	33.83	26.60	3.24	1.71
1	265	5.80	33.92	26.75	1.98	1.91
1	443	4.78	34.05	26.97	0.91	2.23
1	667	4.24	34.23	27.17	0.15	1.72*
1	895	3.60	34.35	27.33	0.26	2.98
1	1361	2.66	34.46	27.51	0.57	2.86

STATION 151-011

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.16	32.36	25.05	291.9	0.000	6.36	0.79
10	9.20	32.36	25.04	292.6	0.029	6.36	0.79
20	9.20	32.36	25.04	292.8	0.058	6.36	0.77
30	9.26	32.35	25.03	294.6	0.087	6.41	0.79
50	9.02	32.42	25.12	286.2	0.145	6.24	0.80
75	7.77	32.79	25.60	241.2	0.211	5.28	1.10
100	7.04	33.16	25.99	204.2	0.267	4.30	1.30
150	6.85	33.76	26.48	157.7	0.357	3.01	1.43
200	6.41	33.88	26.64	143.8	0.432	2.46	1.34
250	5.99	33.91	26.71	136.9	0.502	2.14	1.52
300	5.66	33.94	26.78	131.2	0.569	1.83	1.66
400	5.25	34.02	26.89	121.5	0.695	1.22	1.76

STATION 151-012

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.56	32.38	25.16	281.6	0.000	6.42	1.05
10	8.59	32.38	25.15	282.2	0.028	6.45	0.98
20	8.58	32.38	25.16	282.2	0.056	6.42	1.03
30	8.66	32.37	25.14	284.3	0.084	6.46	1.04
50	8.14	32.47	25.29	269.8	0.139	6.35	1.17
75	6.56	32.83	25.79	222.4	0.201	6.07	1.31
100	6.34	33.01	25.96	206.5	0.255	5.69	1.32
150	6.50	33.55	26.37	168.9	0.349	4.18	1.61
200	6.26	33.84	26.63	144.9	0.427	3.06	1.77
250	5.90	33.90	26.72	136.6	0.497	2.20	1.88
300	5.56	33.94	26.79	130.0	0.564	1.74	1.97
400	4.98	34.02	26.92	118.3	0.688	1.13	2.15
500	4.65	34.10	27.02	109.5	0.802	0.63	2.37
600	4.41	34.18	27.11	101.7	0.908	0.29	2.59
700	4.14	34.25	27.20	94.3	1.006	0.16	2.76
800	3.85	34.31	27.27	87.4	1.097	0.21	2.89
1000	3.35	34.39	27.39	77.3	1.262	0.32	3.03
1200	2.93	34.44	27.47	70.2	1.409	0.45	3.00

STATION 151-013

OBSERVED VALUES

DATE 12/07/56 HR 17 LAT 49-02N LONG 127-53W SDG 2532 BTMCODE
 WVCL 10 DIR 10 FC 05 BA 21 DRY 4.4 WET 3.9 RELHU 93 VIS 8
 WEA 02 CL 6 AMT 4 SEA 2 DIR 10 SWL DIR SECDI LD 41

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
3	0	8.06	32.30	25.17	6.43	1.03
3	9	8.09	32.30	25.17	6.52	1.13
3	19	8.14	32.30	25.16	6.44	1.09
3	28	8.18	32.32	25.17	6.48	1.14
3	47	8.18	32.32	25.17	6.47	1.13
3	71	7.62	32.77	25.60	6.32	1.20
3	95	6.58	33.23	26.10	4.70	1.60
3	143	6.54	33.74	26.51	3.72	1.75
2	178	6.47	33.87	26.62	2.84	1.37
3	192	6.32	33.89	26.66	2.67	1.93
2	265	5.41	33.90	26.78	2.07	1.49
2	439	4.80	34.07	26.98	0.66	1.77
2	670	4.11	34.24	27.19	0.20	1.79
2	901	3.57	34.36	27.34	0.29	2.94
2	1360	2.60	34.49	27.54	0.62	2.84

STATION 151-014

OBSERVED VALUES

DATE 12/08/56 HR 00 LAT 48-33N LONG 127-43W SDG 2597 BTMCODE
 WVCL 04 DIR 22 FC 03 BA 21 DRY 6.7 WET 5.1 RELHU 78 VIS 8
 WEA 02 CL 0 AMT 7 SEA 2 DIR 22 SWL DIR SECDI LD 52

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	9.61	32.31	24.94	6.29	0.99
2	9	9.62	32.35	24.97	6.29	0.85
2	19	9.66	32.35	24.96	6.34	0.84
2	28	9.66	32.35	24.96	6.36	0.82
2	47	9.51	32.38	25.01	6.36	0.91
2	71	6.82	32.82	25.75	6.51	1.07
2	95	6.69	33.03	25.93	5.64	1.43
2	143	7.21	33.69	26.38	3.49	1.81
1	188	6.54	33.86	26.60	2.95	2.08
2	193	6.57	33.86	26.60		2.04
1	283	5.48	33.91	26.78	2.40	2.13
1	472	4.74	34.07	26.99	0.86	2.50
1	706	4.14	34.23	27.18	0.37	2.58
1	942	3.56	34.38	27.36	0.32	2.98
1	1412	2.58	34.51	27.55	0.65	2.91

STATION 151-013

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.06	32.30	25.17	280.5	0.000	6.43	1.03
10	8.10	32.30	25.16	281.2	0.028	6.51	1.12
20	8.15	32.30	25.16	282.1	0.056	6.45	1.10
30	8.20	32.31	25.16	282.2	0.084	6.48	1.14
50	8.14	32.38	25.22	276.4	0.140	6.53	1.12
75	7.40	32.86	25.70	231.0	0.203	6.00	1.28
100	6.58	33.30	26.16	187.8	0.255	4.60	1.63
150	6.53	33.77	26.54	152.8	0.340	3.53	1.73
200	6.18	33.88	26.67	140.9	0.413	2.63	1.61
250	5.56	33.89	26.75	133.2	0.482	2.20	1.51
300	5.28	33.94	26.83	126.7	0.547	1.71	1.56
400	4.93	34.03	26.94	116.9	0.669	0.90	1.73
500	4.60	34.12	27.04	107.4	0.781	0.49	1.67
600	4.30	34.19	27.13	99.7	0.885	0.28	1.66
700	4.04	34.26	27.22	92.4	0.981	0.21	1.98
800	3.80	34.31	27.28	86.8	1.071	0.24	2.54
1000	3.35	34.40	27.40	76.6	1.234	0.34	3.19
1200	2.92	34.46	27.48	68.6	1.379	0.48	3.24

STATION 151-014

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.61	32.31	24.94	302.4	0.000	6.29	0.99
10	9.63	32.35	24.97	299.9	0.030	6.30	0.85
20	9.66	32.35	24.96	300.6	0.060	6.34	0.84
30	9.73	32.34	24.94	302.6	0.090	6.35	0.83
50	9.03	32.45	25.14	284.1	0.149	6.43	0.92
75	6.78	32.85	25.78	223.6	0.212	6.37	1.14
100	6.80	33.12	25.99	204.1	0.265	5.34	1.48
150	7.11	33.72	26.42	164.2	0.357	3.40	1.86
200	6.42	33.86	26.62	145.4	0.434	2.90	2.06
250	5.81	33.89	26.72	136.2	0.504	2.61	2.10
300	5.40	33.93	26.80	128.8	0.570	2.22	2.17
400	4.99	34.01	26.91	119.1	0.694	1.33	2.39
500	4.67	34.09	27.01	110.5	0.809	0.78	2.49
600	4.41	34.16	27.10	103.2	0.916	0.54	2.50
700	4.15	34.23	27.18	95.9	1.016	0.38	2.57
800	3.90	34.30	27.26	88.7	1.108	0.33	2.77
1000	3.43	34.41	27.40	76.8	1.273	0.33	3.03
1200	2.99	34.48	27.49	67.9	1.418	0.43	3.08

STATION 151-015

OBSERVED VALUES

DATE 12/08/56 HR 09 LAT 48-04N LONG 127-30W SDG 2551 BTMCODE
 WVCL 13 DIR 19 FC 06 BA 21 DRY 8.9 WET 7.8 RELHU 87 VIS 3
 WEA 62 CL 0 AMT 8 SEA 3 DIR 19 SWL DIR SECDI LD 58

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	9.98	32.34	24.90	6.22	0.71
2	9	10.02	32.32	24.88	6.25	0.87
2	18	10.02	32.32	24.88	6.18	0.73
2	27	10.06	32.32	24.87	6.20	0.66
2	44	10.06	32.32	24.87	6.12	0.65
3	67	7.61	32.69	25.54	6.12	1.01
3	89	6.88	32.86	25.77	5.85	1.14
3	132	7.16	33.53	26.26	4.03	1.28
1	158	6.63	33.78	26.53	4.20	1.01*
3	181	6.59	33.81	26.56	4.17	1.30
1	238	5.84	33.87	26.70	3.04	1.23
1	396	5.08	34.04	26.93	0.86	1.51
1	596	4.48	34.18	27.11	0.29	1.56
1	798	3.91	34.22	27.20	0.32	2.21
1	1219	2.98	34.48	27.49	0.47	2.77

STATION 151-016

OBSERVED VALUES

DATE 12/09/56 HR 11 LAT 46-58N LONG 127-11W SDG 2661 BTMCODE
 WVCL 12 DIR 20 FC 06 BA 23 DRY 11.1 WET 11.1 RELHU 99 VIS 4
 WEA 55 CL AMT 8 SEA 4 DIR 20 SWL DIR SECDI LD 58

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	10.22	32.35	24.87	6.23	0.70
2	10	10.24	32.36	24.87	6.27	0.71
2	19	10.24	32.36	24.87	6.31	0.73
2	29	10.26	32.36	24.87	6.31	0.74
2	48	8.25	32.61	25.38	6.19	1.07
2	70	6.75	32.90	25.82	5.95	1.18
2	94	7.24	33.29	26.06	4.41	
2	141	7.53	33.78	26.41	2.59	1.81
1	176	7.34	33.87	26.50	2.39	1.95
2	190	7.19	33.92	26.56	2.04	2.07
1	262	6.52	33.96	26.69	1.80	1.93
1	432	5.49	34.07	26.90	0.97	2.13
1	642	4.50	34.18	27.10	0.43	2.30
1	852	3.92	34.33	27.28	0.31	2.80
1	1306	2.88	34.49	27.51	0.45	2.78

STATION 151-015

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.98	32.34	24.90	306.0	0.000	6.22	0.71
10	10.02	32.32	24.88	308.2	0.031	6.24	0.85
20	10.03	32.32	24.88	308.6	0.062	6.19	0.71
30	10.17	32.30	24.84	312.5	0.093	6.18	0.64
50	9.25	32.44	25.10	288.2	0.153	6.15	0.77
75	7.28	32.74	25.62	238.3	0.219	6.07	1.06
100	7.04	33.07	25.92	210.9	0.275	5.18	1.20
150	6.89	33.68	26.42	164.2	0.369	4.18	1.21
200	6.24	33.83	26.62	145.4	0.446	3.67	1.19
250	5.77	33.88	26.72	136.4	0.516	2.82	1.26
300	5.51	33.94	26.80	129.4	0.582	2.00	1.37
400	5.07	34.04	26.93	117.8	0.706	0.84	1.51
500	4.76	34.13	27.04	108.5	0.819	0.49	1.46
600	4.47	34.18	27.11	102.4	0.924	0.29	1.58
700	4.18	34.19	27.15	99.2	1.025	0.30	1.93
800	3.90	34.22	27.20	94.7	1.122	0.32	2.22
1000	3.42	34.31	27.32	84.0	1.301	0.38	2.61
1200	3.01	34.46	27.48	69.6	1.455	0.46	2.77

STATION 151-016

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	10.22	32.35	24.87	309.0	0.000	6.23	0.70
10	10.24	32.36	24.87	308.8	0.031	6.27	0.71
20	10.28	32.36	24.87	309.6	0.062	6.31	0.73
30	10.14	32.37	24.90	306.8	0.093	6.31	0.76
50	8.04	32.63	25.43	256.5	0.149	6.21	1.08
75	6.87	32.99	25.88	214.3	0.208	5.60	1.24
100	7.31	33.37	26.12	192.2	0.259	4.09	1.49
150	7.48	33.81	26.44	162.5	0.348	2.50	1.87
200	7.09	33.91	26.57	150.5	0.426	2.13	1.98
250	6.62	33.95	26.66	142.0	0.499	1.86	1.94
300	6.27	33.99	26.74	135.2	0.568	1.58	1.98
400	5.67	34.05	26.87	124.4	0.698	1.10	2.10
500	5.12	34.10	26.97	115.1	0.818	0.75	2.15
600	4.67	34.15	27.06	107.0	0.929	0.50	2.24
700	4.33	34.25	27.16	98.0	1.032	0.39	2.47
800	4.06	34.30	27.25	90.6	1.126	0.33	2.71
1000	3.55	34.41	27.38	78.1	1.295	0.30	2.96
1200	3.10	34.47	27.48	69.9	1.443	0.37	2.92

STATION 151-017

OBSERVED VALUES

DATE 12/09/56 HR 18 LAT 47-20N LONG 126-33W SDG 2496 BTMCODE
WVEL 16 DIR 21 FC 07 BA 17 DRY 11.1 WET 11.1 RELHU 99 VIS 6
WEA 62 CL 0 AMT 8 SEA 4 DIR 21 SWL DIR SECDI LD 46

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	9.12	32.34	25.04	6.46	0.88
2	9	9.14	32.34	25.04	6.44	0.89
2	17	9.13	32.32	25.02	6.40	0.87
2	26	9.15	32.32	25.02	6.41	0.98
2	44	8.70	32.43	25.18	6.22	0.96
2	65	7.07	32.95	25.82	5.29	1.13
2	87	7.02	33.19	26.01	4.82	1.15
2	133	7.19	33.69	26.38	3.07	1.75
2	169	6.94	33.84	26.54	2.36	1.93
1	182	6.83	33.89	26.59	2.44	1.54
1	275	6.00	33.96	26.75	1.89	1.63
1	461	5.14	34.09	26.96	0.64	1.91
1	694	4.21	34.23	27.17	0.25	1.90
1	928	3.62	34.36	27.34	0.30	2.86
1	1400	2.64	34.47	27.52	0.60	2.84

STATION 151-017

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOBOT. ANOMALY	OXY.	PHOS.
0	9.12	32.34	25.04	292.8	0.000	6.46	0.88
10	9.14	32.34	25.04	293.2	0.029	6.43	0.88
20	9.15	32.32	25.02	295.1	0.058	6.41	0.92
30	9.13	32.32	25.02	294.9	0.087	6.42	0.96
50	8.08	32.61	25.41	258.5	0.142	5.91	1.02
75	7.04	33.06	25.91	211.3	0.201	5.11	1.12
100	7.12	33.36	26.13	190.4	0.251	4.22	1.38
150	7.07	33.77	26.46	159.9	0.339	2.77	1.75
200	6.64	33.89	26.62	146.0	0.415	2.29	1.70
250	6.19	33.94	26.71	137.2	0.486	2.03	1.64
300	5.88	33.98	26.78	131.0	0.553	1.67	1.68
400	5.41	34.05	26.90	121.2	0.679	0.96	1.85
500	4.96	34.11	27.00	112.4	0.796	0.54	1.84
600	4.54	34.17	27.09	104.0	0.904	0.35	1.79
700	4.19	34.23	27.18	96.4	1.004	0.25	1.93
800	3.93	34.29	27.25	89.8	1.097	0.26	2.41
1000	3.45	34.39	27.38	78.5	1.265	0.33	3.03
1200	3.02	34.45	27.47	70.5	1.414	0.44	3.17

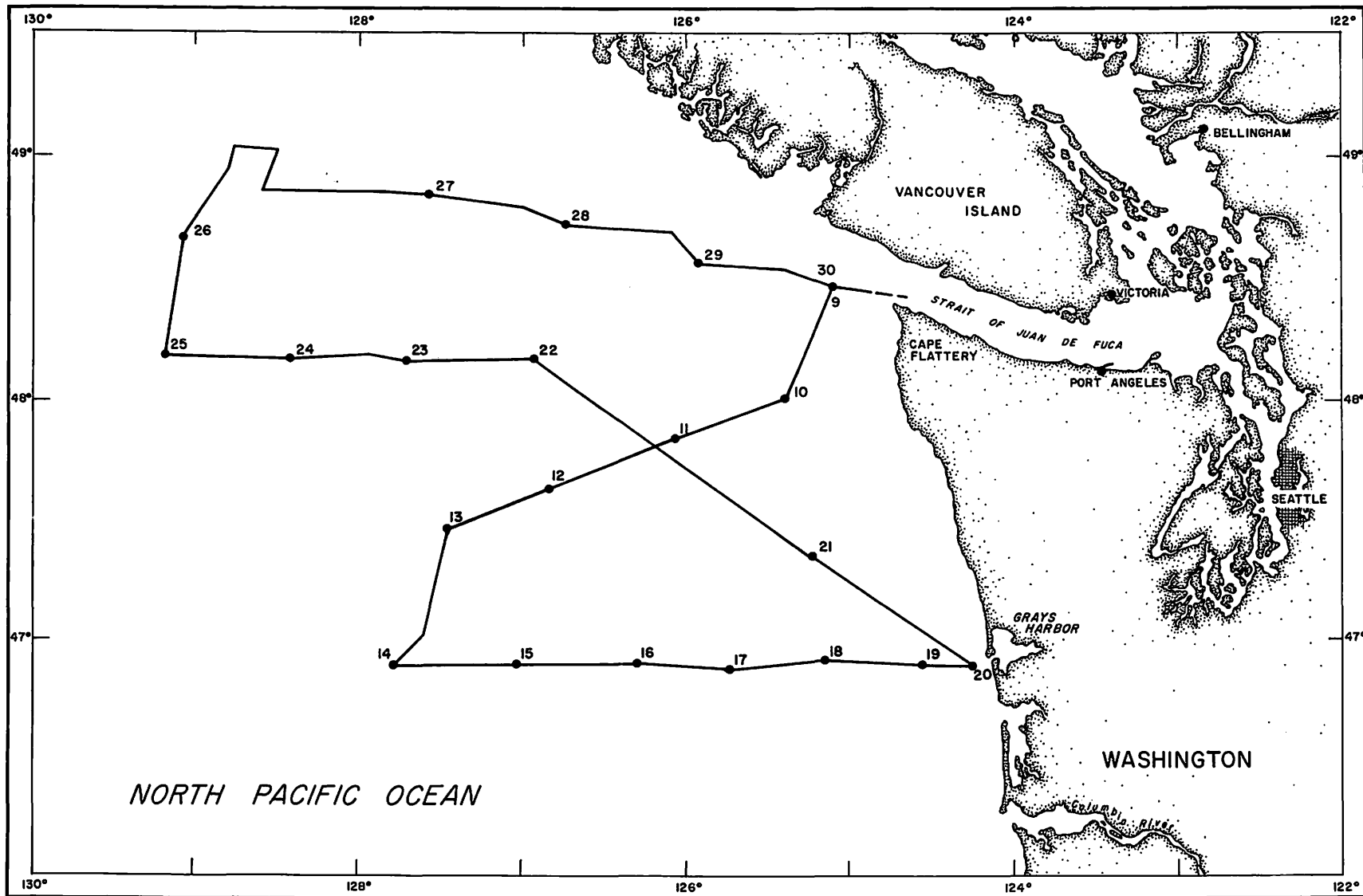


Fig. 4. Offshore stations for Brown Bear Cruise No. 158 (5-11 February 1957)

STATION 158-001

POINT JEFFERSON - PUGET SOUND

OBSERVED VALUES

DATE 02/04/57 HR 20 LAT 47-45N LONG 122-25W SDG 287 BTMCODE
 WVCL 08 DIR 20 FC 04 BA 81 DRY 6.7 WET 6.1 RELHU 92 VIS 7
 WEA 03 CL 0 AMT 8 SEA 1 DIR 20 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	6.92	29.53	23.15	6.06	3.52
2	5	6.94	29.52	23.14	6.03	2.17
2	8	6.93	29.53	23.15	5.97	2.13
2	17	6.95	29.53	23.15	5.96	1.94
2	26	6.96	29.53	23.15	5.96	2.54
2	44	7.00	29.70	23.28	5.79	2.68
2	67	7.01	29.78	23.34	5.71	2.45
2	89	6.90	29.85	23.41	5.70	2.43
2	135	6.86	29.85	23.41	5.44	2.68
1	181	6.68	30.01	23.56	5.69	2.70
2	182	6.64	29.97	23.55	5.69	1.72*
1	212	6.66	30.05	23.59	5.57	

STATION 158-002

POINT NO POINT - PUGET SOUND

OBSERVED VALUES

DATE 02/04/57 HR 22 LAT 47-54N LONG 122-27W SDG 201 BTMCODE
 WVCL 00 DIR 00 FC 00 BA 15 DRY 5.6 WET 5.0 RELHU 92 VIS 7
 WEA 02 CL 0 AMT 8 SEA 1 DIR SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	6.82	29.61	23.23	6.04	2.52
1	5	6.82	29.61	23.23	6.03	3.38
1	8	6.79	29.61	23.23	6.05	2.06
1	18	6.85	29.64	23.25	5.95	
1	26	6.87	29.69	23.29	5.84	2.18
1	44	6.90	29.74	23.32	5.81	2.67
1	67	6.84	29.79	23.37	5.85	2.17
1	91	6.77	29.84	23.42	5.72	2.65
1	136	6.65	30.06	23.60	5.76	2.94
1	173	6.57	30.25	23.76	5.68	3.69

STATION 158-001

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	6.92	29.53	23.15	472.8	0.000	6.06	3.52
10	6.94	29.53	23.15	473.1	0.047	5.97	2.02
20	6.95	29.52	23.14	474.1	0.094	5.97	2.18
30	6.97	29.58	23.19	469.9	0.141	5.91	2.60
50	7.01	29.72	23.29	460.1	0.234	5.76	2.60
75	6.96	29.81	23.37	453.0	0.348	5.71	2.43
100	6.90	29.84	23.40	450.2	0.461	5.59	2.51
150	6.77	29.90	23.46	444.6	0.685	5.57	
200	6.65	30.03	23.58	433.8	0.905	5.64	

STATION 158-002

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	6.82	29.61	23.23	465.6	0.000	6.04	2.52
10	6.81	29.61	23.23	465.5	0.047	6.03	2.06
20	6.86	29.65	23.26	463.2	0.093	5.92	2.10
30	6.88	29.70	23.29	459.8	0.139	5.83	2.36
50	6.88	29.75	23.33	456.3	0.231	5.84	2.45
75	6.82	29.80	23.38	452.0	0.345	5.79	2.36
100	6.74	29.88	23.45	445.3	0.457	5.74	2.65
150	6.62	30.13	23.66	425.6	0.675	5.74	3.17

STATION 158-003

MARROWSTONE POINT - ADMIRALTY INLET

OBSERVED VALUES

DATE 02/05/57 HR 00 LAT 48-05N LONG 122-39W SDG 164 BTMCODE
 WVEL 02 DIR 07 FC 02 BA 15 DRY 5.6 WET 5.0 RELHU 92 VIS 7
 WEA 02 CL 0 AMT 8 SEA 1 DIR 07 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	6.66	29.94	23.51	5.78	2.46
1	5	6.70	29.94	23.50	5.71	2.74
1	8	6.68	29.99	23.54	5.66	2.67
1	17	6.69	30.02	23.57	5.66	2.66
1	25	6.68	30.05	23.59	5.67	2.66
1	43	6.66	30.12	23.65	5.67	2.91
1	67	6.62	30.29	23.79	5.63	2.76
1	89	6.56	30.45	23.92	5.62	2.77
1	112	6.54	30.48	23.95	5.61	2.78
1	135	6.49	30.70	24.13	5.58	2.84

STATION 158-004

PROTECTION ISLAND - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 02/05/57 HR 02 LAT 48-12N LONG 122-52W SDG 91 BTMCODE
 WVEL 01 DIR 11 FC 01 BA 15 DRY 5.6 WET 4.4 RELHU 84 VIS 7
 WEA 50 CL 0 AMT 8 SEA 0 DIR 00 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	6.47	30.80	24.21	5.61	2.86
1	5	6.48	30.88	24.27	5.69	2.81
1	9	6.51	31.04	24.39	5.43	2.29
1	19	6.53	31.06	24.40	5.43	2.79
1	28	6.50	31.08	24.42	5.43	2.11
1	47	6.67	31.55	24.77	5.11	3.19
1	71	6.92	32.16	25.22	4.58	2.47

STATION 158-003

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.66	29.94	23.51	438.9	0.000	5.78	2.46
10	6.68	30.00	23.55	434.8	0.044	5.66	2.67
20	6.69	30.03	23.57	432.7	0.087	5.66	2.65
30	6.68	30.06	23.60	430.5	0.130	5.67	2.76
50	6.65	30.17	23.69	422.1	0.215	5.66	2.85
75	6.59	30.36	23.85	407.3	0.319	5.63	2.76
100	6.55	30.44	23.91	401.1	0.420	5.62	2.77

STATION 158-004

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.47	30.80	24.21	372.3	0.000	5.61	
10	6.51	31.04	24.39	354.8	0.036	5.43	
20	6.52	31.06	24.40	353.6	0.071	5.43	
30	6.52	31.13	24.46	348.4	0.106	5.40	
50	6.70	31.63	24.83	313.4	0.172	5.05	

STATION 158-005

NW OF NEW DUNGENESS — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 02/05/57 HR 04 LAT 48-15N LONG 123-14W SDG 146 BTMCODE
 WVCL DIR FC BA 15 DRY 5.0 WET 4.4 RELHU 91 VIS 7
 WEA 51 CL 0 AMT 8 SEA 0 DIR 00 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	6.14	31.00	24.40	5.81	2.70
1	5	6.18	31.02	24.41	5.89	2.60
1	9	6.21	31.06	24.44	5.69	2.60
1	19	6.28	31.20	24.54	5.58	2.59
1	28	6.38	31.55	24.81	5.40	2.62
1	47	6.62	31.79	24.97	4.93	2.51
1	71	6.69	31.84	25.00	4.92	2.97
1	95	6.68	31.91	25.05	4.85	2.53
1	122	7.00	32.54	25.51	4.28	4.70

STATION 158-006

BEECHY HEAD — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 02/05/57 HR 07 LAT 48-16N LONG 123-42W SDG 186 BTMCODE
 WVCL 08 DIR 04 FC 04 BA 15 DRY 3.3 WET 2.8 RELHU 92 VIS 7
 WEA 51 CL 0 AMT 8 SEA 1 DIR 04 SWL DIR SECDI LD

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	6.32	31.49	24.77	5.61	3.16
1	5	6.36	31.50	24.77	5.60	3.04
1	8	6.52	31.77	24.96	5.40	2.52
1	17	6.60	31.86	25.02	5.20	2.54
1	25	6.60	31.87	25.03	5.13	2.50
1	43	6.62	31.93	25.08	5.00	2.65
1	66	7.20	32.79	25.67	4.78	2.43
1	89	7.44	33.24	25.99	3.74	2.90
1	124	7.53	33.61	26.27	3.42	2.47
1	160	7.54	33.66	26.31	2.83	

STATION 158--005

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	6.14	31.00	24.40	353.4	0.000	5.81	
10	6.21	31.06	24.44	349.8	0.035	5.68	
20	6.29	31.25	24.58	336.6	0.069	5.56	
30	6.41	31.58	24.83	313.4	0.102	5.33	
50	6.63	31.80	24.97	299.9	0.163	4.93	
75	6.67	31.82	24.98	299.2	0.238	4.94	
100	6.71	31.98	25.10	288.0	0.311	4.78	

STATION 158-006

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	6.32	31.49	24.77	318.8	0.000	5.61	
10	6.55	31.80	24.98	298.4	0.031	5.34	
20	6.60	31.86	25.02	294.7	0.061	5.17	
30	6.57	31.83	25.00	296.7	0.091	5.10	
50	6.83	32.24	25.29	269.5	0.148	5.02	
75	7.31	32.99	25.82	220.1	0.209	4.29	
100	7.48	33.39	26.11	193.0	0.261	3.67	
150	7.55	33.68	26.32	173.1	0.353	3.02	

STATION 158-007

PILLAR POINT - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 02/05/57 HR 08 LAT 48-18N LONG 124-04W SDG 333 BTMCODE
 WVEL 08 DIR 09 FC 04 BA 15 DRY 3.9 WET 3.9 RELHU 99 VIS 6
 WEA 51 CL 0 AMT 8 SEA 1 DIR 09 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	6.26	31.72	24.96	5.69	
1	5	6.29	31.70	24.94	5.75	2.72
1	9	6.30	31.71	24.94	5.75	2.43
1	19	6.40	31.77	24.98	5.51	2.59
1	28	6.60	31.91	25.06	5.26	2.31
1	46	6.64	31.95	25.09	5.14	3.16
1	70	6.69	32.05	25.16	4.87	2.59
1	93	7.16	32.72	25.63	4.01	2.90
1	130	7.52	33.74	26.38	2.60	2.77
1	168	7.50	33.75	26.39	2.65	2.54

STATION 158-008

NEAH BAY - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 02/05/57 HR 11 LAT 48-27N LONG 124-32W SDG 433 BTMCODE
 WVEL 10 DIR 12 FC 05 BA 14 DRY 3.3 WET 3.3 RELHU 99 VIS 6
 WEA 51 CL 0 AMT 8 SEA 1 DIR 12 SWL 1 DIR 09 SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	6.02	31.65	24.93	5.90	2.95
1	5	6.04	31.65	24.93	6.05	2.07
1	9	6.05	31.65	24.93	6.13	2.36
1	18	6.31	31.82	25.03	5.62	2.27
1	26	6.47	31.92	25.09	5.31	2.40
1	43	6.66	32.09	25.20		2.20
1	65	7.14	32.85	25.73	3.94	2.50
1	88	7.42	33.22	25.98	3.64	2.69
1	110	7.46	33.40	26.12	3.45	2.50
1	133	7.51	33.54	26.22	3.08	2.45
1	155	7.52	33.65	26.31	2.90	2.50
1	178	7.38	33.75	26.40	2.84	2.15
1	200	7.25	33.81	26.47	2.34	2.68

STATION 158-007

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.26	31.72	24.96	300.9	0.000	5.69	
10	6.30	31.71	24.94	302.2	0.030	5.73	
20	6.43	31.79	24.99	297.8	0.060	5.48	
30	6.60	31.91	25.06	291.0	0.089	5.25	
50	6.62	31.92	25.07	290.8	0.147	5.14	
75	6.81	32.20	25.26	272.5	0.217	4.68	
100	7.26	32.99	25.82	219.8	0.279	3.63	
150	7.56	33.75	26.38	167.9	0.376	2.44	

STATION 158-008

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.02	31.65	24.93	303.3	0.000	5.90	
10	6.08	31.67	24.94	302.6	0.030	6.06	
20	6.35	31.85	25.05	292.4	0.060	5.54	
30	6.50	31.93	25.09	288.3	0.089	5.12	
50	6.84	32.37	25.39	259.9	0.144	4.34	
75	7.29	33.03	25.85	216.8	0.204	3.80	
100	7.44	33.32	26.06	197.6	0.256	3.56	
150	7.53	33.63	26.29	176.6	0.350	2.93	
200	7.25	33.81	26.47	160.1	0.434	2.34	

STATION 158-009

SWIFTSURE BANK LIGHTSHIP

OBSERVED VALUES

DATE 02/05/57 HR 15 LAT 48-30N LONG 125-05W SDG 150 BTMCODE
 WVCL 13 DIR 09 FC 06 BA 15 DRY 3.3 WET 2.8 RELHU 92 VIS 6
 WEA 51 CL 0 AMT 8 SEA 2 DIR 09 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	6.73	32.24	25.31	6.74	1.30
1	9	6.78	32.24	25.30	6.90	1.16
1	19	6.86	32.29	25.33	6.84	0.91
1	28	7.12	32.45	25.42	6.79	1.23
1	47	7.30	32.68	25.57	5.58	1.73
1	70	7.41	33.06	25.86	4.21	2.68
1	92	7.52	33.40	26.11	3.49	1.85
1	115	7.42	33.60	26.28	2.89	2.32

STATION 158-010

OBSERVED VALUES

DATE 02/05/57 HR 21 LAT 48-01N LONG 125-22W SDG 1112 BTMCODE
 WVCL 01 DIR 07 FC 01 BA 16 DRY 6.7 WET 6.7 RELHU 99 VIS 7
 WEA 01 CL 0 AMT 6 SEA 2 DIR 07 SWL 1 DIR 09 SECDI LD

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	6.98	32.32	25.34	6.72	1.63
2	9	6.99	32.32	25.33	6.75	1.21
2	19	6.97	32.32	25.34	6.72	1.16
2	28	7.16	32.39	25.37	6.65	1.29
2	47	7.55	32.88	25.70	5.50	1.45
2	71	7.70	33.39	26.08	4.14	1.65
2	94	7.65	33.61	26.26	3.43	1.65
2	118	7.52	33.74	26.38	3.11	2.18
2	142	7.42	33.82	26.45	2.83	2.34
2	165	7.24	33.85	26.50		2.65
1	182	7.26	33.86	26.51	2.54	2.97
1	274	6.34	33.94	26.69	1.95	3.11
1	456	5.38	34.05	26.90	0.88	2.11
1	547	5.06	34.10	26.98	0.77	3.38

STATION 158-009

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.73	32.24	25.31	267.6	0.000	6.74	
10	6.78	32.24	25.30	268.3	0.027	6.89	
20	6.89	32.31	25.34	264.6	0.054	6.85	
30	7.14	32.47	25.43	256.0	0.080	6.66	
50	7.31	32.73	25.61	239.1	0.130	5.37	
75	7.45	33.15	25.92	210.0	0.186	4.03	
100	7.51	33.49	26.18	185.9	0.235	3.26	

STATION 158-010

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.98	32.32	25.34	264.8	0.000	6.72	1.63
10	6.98	32.32	25.34	264.9	0.026	6.75	1.20
20	6.99	32.32	25.33	265.1	0.053	6.73	1.18
30	7.21	32.45	25.41	258.4	0.079	6.53	1.31
50	7.58	32.96	25.76	225.6	0.127	5.30	1.49
75	7.70	33.43	26.11	192.6	0.179	3.99	1.61
100	7.61	33.65	26.29	175.4	0.225	3.35	1.82
150	7.33	33.83	26.47	159.0	0.309	2.77	2.43
200	7.06	33.88	26.55	152.3	0.387	2.42	3.03
250	6.55	33.92	26.65	143.3	0.461	2.10	3.12
300	6.18	33.96	26.73	136.2	0.531	1.73	2.68
400	5.63	34.02	26.85	126.1	0.662	1.09	1.91
500	5.21	34.07	26.94	118.4	0.784	0.79	2.58

STATION 158-011

OBSERVED VALUES

DATE 02/06/57 HR 03 LAT 47-50N LONG 126-03W SDG 1756 BTMCODE
 WVEL 05 DIR 35 FC 03 BA 20 DRY 6.1 WET 5.0 RELHU 85 VIS 6
 WEA 03 CL 0 AMT 8 SEA 2 DIR 35 SWL DIR SECDI LD 37

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	7.10	32.50	25.46	6.84	1.18
2	9	7.18	32.50	25.45	6.82	1.69
2	19	7.14	32.57	25.51	6.71	1.24
2	28	7.16	32.57	25.51	6.73	1.32
2	47	7.06	32.58	25.53	6.55	1.25
2	71	7.62	33.15	25.90	4.70	1.43
2	94	7.56	33.54	26.21	3.49	1.88
2	118	7.63	33.76	26.38	2.16	2.08
2	142	7.58	33.78	26.40	2.05	2.25
2	165	7.50	33.82	26.44	2.24	1.93*
1	192	7.28	33.87	26.51	2.05	2.93*
1	279	6.54	33.93	26.66	2.05	2.25
1	457	5.08	34.09	26.97	0.84	2.61
1	688	4.34	34.22	27.15	0.71	2.70
1	918	3.60	34.34	27.32	0.68	3.31
1	1384	2.70	34.45	27.50	0.68	3.20

STATION 158-012

OBSERVED VALUES

DATE 02/06/57 HR 10 LAT 47-39N LONG 126-48W SDG 2578 BTMCODE
 WVEL 02 DIR 02 FC 02 BA 23 DRY 6.1 WET 4.4 RELHU 77 VIS 5
 WEA CL 0 AMT 8 SEA 2 DIR 02 SWL 1 DIR 04 SECDI LD 41

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	7.08	32.48	25.45	6.83	1.36
2	9	7.14	32.48	25.44	6.78	1.57
2	19	7.12	32.50	25.46	6.75	1.37
2	28	7.14	32.50	25.46	6.79	1.36
2	47	7.11	32.51	25.47	6.75	1.33
2	71	7.24	33.18	25.98	5.54	1.96
2	94	7.40	33.49	26.20	3.79	1.95
2	118	7.52	33.70	26.34	3.10	2.30
2	142	7.30	33.79	26.45	2.81	2.38
2	165	7.04	33.87	26.55	2.62	2.40
1	189	6.92	33.90	26.59	2.24	2.42
1	284	6.20	33.95	26.72	1.72	2.15*
1	473	5.15	34.08	26.95	1.18	3.06*
1	708	4.32	34.23	27.16	0.01	2.85
1	943	3.56	34.34	27.33	0.00	3.38
1	1416	2.56	34.47	27.52	1.16	3.33

STATION 158-011

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.10	32.50	25.46	252.8	0.000	6.84	1.18
10	7.17	32.51	25.46	253.1	0.025	6.80	1.62
20	7.14	32.57	25.51	248.4	0.050	6.72	1.25
30	7.13	32.55	25.50	249.9	0.075	6.76	1.30
50	7.16	32.66	25.58	242.4	0.124	6.29	1.26
75	7.60	33.23	25.96	206.1	0.180	4.49	1.53
100	7.59	33.61	26.26	178.1	0.228	3.04	1.93
150	7.56	33.79	26.41	165.1	0.314	2.15	2.26 #
200	7.21	33.87	26.52	155.1	0.394	2.07	2.25 #
250	6.78	33.91	26.61	147.1	0.470	2.09	2.24 #
300	6.33	33.95	26.70	138.9	0.542	1.86	2.31
400	5.46	34.04	26.88	122.5	0.673	1.12	2.52
500	4.94	34.11	27.00	112.2	0.790	0.81	2.59
600	4.62	34.17	27.08	104.9	0.899	0.75	2.60
700	4.30	34.23	27.16	97.7	1.000	0.71	2.74
800	3.96	34.28	27.24	90.9	1.094	0.69	3.05
1000	3.38	34.37	27.37	79.1	1.264	0.67	3.31 #
1200	2.96	34.43	27.46	71.3	1.414	0.67	3.26 #

STATION 158-012

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.08	32.48	25.45	254.1	0.000	6.83	1.36
10	7.14	32.48	25.44	255.0	0.025	6.77	1.54
20	7.12	32.50	25.46	253.4	0.050	6.76	1.37
30	7.13	32.48	25.44	255.1	0.075	6.82	1.33
50	7.12	32.61	25.54	245.6	0.125	6.63	1.44
75	7.27	33.24	26.02	200.9	0.181	5.16	1.93
100	7.46	33.55	26.24	180.8	0.229	3.58	2.06
150	7.19	33.82	26.49	157.8	0.314	2.76	2.39
200	6.83	33.91	26.61	147.0	0.390	2.17	
250	6.44	33.93	26.67	141.2	0.462	1.89	
300	6.10	33.96	26.74	135.2	0.531	1.69	2.43
400	5.52	34.03	26.87	124.0	0.661	1.43	2.47
500	5.05	34.10	26.98	114.2	0.780	0.99	
600	4.69	34.17	27.07	105.7	0.890	0.40	
700	4.35	34.23	27.16	98.2	0.992	0.03	
800	4.00	34.28	27.24	91.4	1.087	0.0M	3.10
1000	3.40	34.36	27.36	80.1	1.258	0.06	3.45
1200	2.93	34.43	27.46	70.9	1.409	0.43	3.54

STATION 158-013

OBSERVED VALUES

DATE 02/06/57 HR 16 LAT 47-29N LONG 127-27W SDG 2542 BTMCODE
 WVEL 05 DIR 01 FC 03 BA 23 DRY 5.0 WET 3.9 RELHU 84 VIS 8
 WEA 02 CL AMT 1 SEA DIR 01 SWL DIR SECDI LD 67

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	7.59	32.52	25.41	6.74	1.35
2	9	7.62	32.52	25.40	6.75	1.09
2	19	7.62	32.51	25.40	6.73	1.09
2	28	7.64	32.52	25.40	6.79	1.20
2	46	7.36	32.53	25.45	6.84	1.15
2	70	6.96	32.85	25.75	6.46	1.40
2	93	6.83	33.10	25.97	5.66	1.61
2	116	6.82	33.40	26.21	4.55	1.93
2	140	6.82	33.68	26.43	3.79	2.04
2	163	6.69	33.79	26.53	3.66	2.04
1	182	6.46	33.83	26.59	3.43	2.25
1	274	5.56	33.88	26.74	2.31	2.93
1	461	4.54	34.05	27.00	0.90	2.63
1	695	3.97	34.23	27.20	0.01	3.11
1	929	3.45	34.34	27.34	0.00	3.65
1	1402	2.60	34.47	27.52	0.68	3.56

STATION 158-014

OBSERVED VALUES

DATE 02/06/57 HR 22 LAT 46-53N LONG 127-44W SDG 2706 BTMCODE
 WVEL 02 DIR 35 FC 02 BA 21 DRY 6.1 WET 4.4 RELHU 77 VIS 9
 WEA 01 CL 4 AMT 1 SEA 1 DIR 35 SWL 1 DIR 35 SECDI LD 76

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	8.02	32.50	25.33	6.66	0.97
2	9	7.98	32.50	25.34	6.74	1.03
2	19	7.97	32.50	25.34	6.72	1.04
2	28	8.02	32.51	25.34	6.80	1.09
2	47	8.28	32.61	25.38	6.61	1.12
2	70	8.50	32.69	25.41	6.59	0.93
2	93	7.09	32.94	25.81	6.37	1.47
2	116	7.02	33.24	26.05	5.03	1.90
2	140	6.84	33.46	26.25	5.17	1.87
2	163	6.82	33.69	26.43	4.39	2.00
1	185	6.54	33.79	26.55	4.24	2.00
1	278	5.54	33.88	26.75	2.43	1.88
1	465	4.75	34.07	26.99	0.71	2.14
1	702	3.91	34.22	27.20	0.03	2.45
1	938	3.47	34.34	27.34	0.01	3.33
1	1410	2.55	34.48	27.53	0.72	3.34

STATION 158-013

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.59	32.52	25.41	257.8	0.000	6.74	1.35
10	7.62	32.52	25.40	258.3	0.026	6.74	1.08
20	7.63	32.51	25.40	259.3	0.052	6.74	1.11
30	7.61	32.51	25.40	259.2	0.078	6.81	1.18
50	7.27	32.59	25.51	249.0	0.129	6.81	1.19
75	6.92	32.90	25.80	221.7	0.188	6.31	1.44
100	6.83	33.19	26.04	199.2	0.241	5.28	1.73
150	6.78	33.74	26.48	158.3	0.330	3.75	2.01
200	6.26	33.84	26.63	144.9	0.406	3.19	2.43
250	5.77	33.86	26.70	137.9	0.477	2.58	2.81
300	5.39	33.91	26.79	130.2	0.544	2.08	2.85
400	4.82	34.00	26.93	117.9	0.668	1.29	2.66
500	4.44	34.08	27.03	108.6	0.781	0.69	2.71
600	4.20	34.17	27.13	100.1	0.885	0.27	2.91
700	3.96	34.23	27.20	93.8	0.982	0.01	3.13
800	3.73	34.28	27.26	88.3	1.073	0.0K	3.40
1000	3.31	34.37	27.38	78.3	1.240	0.04	3.74
1200	2.93	34.43	27.46	70.9	1.389	0.27	3.79

STATION 158-014

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.02	32.50	25.33	265.1	0.000	6.66	0.97
10	7.98	32.50	25.34	264.7	0.026	6.73	1.03
20	7.97	32.50	25.34	264.7	0.052	6.73	1.05
30	8.05	32.52	25.34	264.5	0.078	6.77	1.10
50	8.40	32.61	25.36	263.0	0.131	6.62	1.05
75	8.08	32.74	25.51	249.2	0.195	6.64	1.06
100	7.08	33.04	25.89	213.7	0.253	5.81	1.65
150	6.80	33.55	26.33	172.7	0.350	4.91	1.92
200	6.35	33.78	26.57	150.5	0.431	3.78	1.95
250	5.80	33.84	26.68	139.8	0.504	2.87	1.89
300	5.44	33.91	26.78	130.8	0.572	2.17	1.91
400	5.01	34.01	26.91	119.4	0.697	1.19	2.05
500	4.60	34.09	27.02	109.7	0.812	0.57	2.15
600	4.22	34.16	27.12	101.0	0.917	0.24	2.25
700	3.92	34.22	27.20	94.0	1.015	0.03	2.44
800	3.73	34.27	27.26	89.0	1.107	0.0J	2.89
1000	3.35	34.37	27.37	78.8	1.275	0.05	3.46
1200	2.97	34.43	27.46	71.4	1.425	0.28	3.62

STATION 158-015

OBSERVED VALUES

DATE 02/07/57 HR 04 LAT 46-53N LONG 127-02W SDG 2642 BTMCODE
 WVEL 01 DIR 14 FC 01 BA 19 DRY 5.6 WET 4.4 RELHU 84 VIS 8
 WEA 02 CL 4 AMT 1 SEA 0 DIR 00 SWL DIR SECDI LD 81

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	7.77	32.58	25.43	7.01	1.20
2	9	7.82	32.57	25.42	6.99	1.12
2	19	7.80	32.56	25.41	6.98	1.05
2	28	7.80	32.56	25.41	6.96	1.13
2	47	7.71	32.57	25.43	6.99	1.15
2	71	7.74	32.65	25.49	6.82	1.21
2	94	7.08	32.95	25.82	6.53	1.44
2	117	6.92	33.23	26.06	5.85	1.90
2	140	6.86	33.50	26.28	5.34	2.20
2	163	6.82	33.74	26.47	4.66	2.08
1	183	6.60	33.83	26.57	4.65	2.30
1	275	5.65	33.93	26.77	2.79	2.46
1	461	4.89	34.10	27.00	0.87	3.62
1	693	3.93	34.24	27.21	0.09	3.21
1	928	3.64	34.38	27.35	0.01	3.55
1	1401	2.71	34.52	27.55	0.80	3.44

STATION 158-016

OBSERVED VALUES

DATE 02/07/57 HR 10 LAT 46-53N LONG 126-18W SDG 2615 BTMCODE
 WVEL DIR FC BA 16 DRY 6.1 WET 4.4 RELHU 77 VIS 7
 WEA 02 CL 4 AMT 4 SEA 0 DIR 00 SWL 1 DIR 32 SECDI LD 70

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	7.12	32.46	25.43	7.00	
2	9	7.08	32.47	25.44	7.67	
2	19	7.07	32.47	25.44	6.99	
2	28	7.09	32.46	25.43	7.13	
2	47	7.22	32.60	25.52	6.53	
2	71	7.42	33.45	26.16	4.40	
2	94	7.24	33.65	26.34	3.60	
2	118	7.16	33.78	26.46	2.98	
2	142	6.98	33.88	26.56	2.67	
2	165	6.74	33.95	26.65	2.23	
1	190	6.49	33.95	26.68	2.40	
1	284	5.66	34.00	26.83	1.68	
1	471	4.94	34.14	27.02	0.69	
1	702	4.07	34.31	27.25	0.01	
1	936	3.50	34.41	27.39	0.00	
1	1413	2.56	34.54	27.58	0.92	

STATION 158-015

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.77	32.58	25.43	255.7	0.000	7.01	1.20
10	7.82	32.57	25.42	257.3	0.026	6.99	1.11
20	7.80	32.56	25.41	257.9	0.052	6.98	1.06
30	7.79	32.56	25.41	257.9	0.078	6.97	1.13
50	7.75	32.57	25.43	256.9	0.129	6.98	1.15
75	7.59	32.70	25.55	245.4	0.192	6.80	1.23
100	7.03	33.02	25.88	214.5	0.249	6.34	1.58
150	6.82	33.60	26.36	169.3	0.345	5.13	2.19
200	6.39	33.82	26.59	148.0	0.424	4.11	2.24
250	5.87	33.90	26.72	136.2	0.495	3.19	2.37
300	5.55	33.96	26.81	128.4	0.561	2.46	2.69
400	5.14	34.05	26.93	117.9	0.684	1.37	3.39
500	4.68	34.12	27.04	108.3	0.797	0.69	3.50
600	4.23	34.18	27.13	99.7	0.901	0.32	3.29
700	3.92	34.24	27.21	92.6	0.997	0.08	3.22
800	3.81	34.31	27.28	86.9	1.087	0.01	3.40
1000	3.53	34.41	27.39	77.9	1.252	0.05	3.60
1200	3.16	34.48	27.48	69.9	1.400	0.31	3.62

STATION 158-016

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.12	32.46	25.43	256.1	0.000	7.00	
10	7.08	32.47	25.44	254.9	0.026	7.56	
20	7.07	32.47	25.44	255.0	0.051	7.02	
30	7.10	32.45	25.42	257.0	0.077	7.11	
50	7.27	32.74	25.63	237.8	0.126	6.19	
75	7.38	33.49	26.20	183.8	0.179	4.25	
100	7.23	33.69	26.38	167.3	0.223	3.42	
150	6.90	33.90	26.59	148.0	0.302	2.58	
200	6.39	33.96	26.70	137.6	0.373	2.18	
250	5.92	33.98	26.78	130.8	0.440	1.88	
300	5.60	34.01	26.84	125.3	0.504	1.58	
400	5.21	34.09	26.95	115.8	0.625	1.02	
500	4.81	34.17	27.06	106.2	0.736	0.57	
600	4.42	34.24	27.16	97.4	0.838	0.23	
700	4.08	34.31	27.25	89.2	0.931	0.01	
800	3.82	34.35	27.31	84.1	1.018	0.0L	
1000	3.36	34.43	27.42	74.5	1.177	0.05	
1200	2.94	34.49	27.51	66.6	1.318	0.35	

STATION 158-017

OBSERVED VALUES

DATE 02/07/57 HR 15 LAT 46-52N LONG 125-44W SDG 1938 BTMCODE
 WVEL 04 DIR 07 FC 03 BA 12 DRY 5.0 WET 4.4 RELHU 91 VIS 7
 WEA 02 CL 6 AMT 8 SEA 0 DIR 00 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	7.06	32.41	25.40	7.04	1.35
2	9	7.10	32.43	25.41	7.04	1.39
2	18	7.10	32.42	25.40	6.92	1.37
2	27	7.12	32.42	25.40	6.98	1.38
2	45	7.13	32.68	25.60	6.14	1.65
2	67	7.06	33.35	26.13	4.30	2.21
2	89	7.12	33.60	26.32	3.72	2.38
2	117	7.04	33.75	26.45	3.45	2.46
2	140	6.88	33.86	26.56	3.14	2.41
2	163	6.62	33.91	26.63	2.62	2.65
1	179	6.50	33.94	26.67	2.49	2.60
1	270	5.82	33.98	26.79	1.69	2.64
1	456	4.98	34.13	27.01	0.78	2.78
1	687	4.04	34.29	27.24	0.01	2.79
1	921	3.52	34.39	27.37	0.00	3.72
1	1390	2.61	34.52	27.56	0.73	3.50

STATION 158-018

OBSERVED VALUES

DATE 02/07/57 HR 20 LAT 46-55N LONG 125-09W SDG 640 BTMCODE
 WVEL 09 DIR 11 FC 05 BA 10 DRY 5.0 WET 4.4 RELHU 91 VIS 8
 WEA 03 CL 4 AMT 8 SEA 1 DIR 11 SWL 1 DIR 09 SECDI LD 43

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	6.94	31.31	24.55	7.02	1.11
2	9	7.02	31.81	24.93	7.04	1.84
2	19	7.11	32.40	25.38	6.92	1.18
2	28	7.17	32.42	25.39	6.91	1.22
2	47	8.24	33.13	25.79	5.07	1.74
2	71	8.00	33.61	26.20	3.45	2.04
2	94	8.06	33.77	26.32	3.06	2.15
2	118	7.76	33.81	26.40	2.79	
2	141	7.71	33.90	26.47	2.50	2.43*
2	164	7.34	33.90	26.53	2.39	2.34
1	174	7.56	33.92	26.51	2.37	2.18
1	261	6.50	33.98	26.70	1.90	
1	436	5.33			0.93	2.45
1	523	4.83			0.69	3.35

STATION 158-017

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.06	32.41	25.40	259.1	0.000	7.04	1.35
10	7.10	32.43	25.41	258.2	0.026	7.02	1.39
20	7.11	32.41	25.39	260.0	0.052	6.96	1.36
30	7.13	32.45	25.42	257.4	0.078	6.88	1.41
50	7.10	32.87	25.75	225.9	0.126	5.61	1.81
75	7.09	33.45	26.21	182.9	0.177	4.05	2.28
100	7.10	33.66	26.37	167.8	0.221	3.63	2.43
150	6.77	33.88	26.59	147.8	0.300	2.93	2.49
200	6.32	33.94	26.70	138.2	0.371	2.27	2.62
250	5.95	33.97	26.77	132.0	0.439	1.84	2.63
300	5.68	34.01	26.83	126.3	0.504	1.53	2.67
400	5.23	34.09	26.95	116.0	0.625	1.03	2.75
500	4.77	34.17	27.07	105.7	0.736	0.58	2.71
600	4.34	34.24	27.17	96.5	0.837	0.21	2.68
700	4.01	34.30	27.25	89.1	0.930	0.00	2.86
800	3.78	34.34	27.31	84.4	1.017	0.0L	3.33
1000	3.35	34.42	27.41	75.1	1.176	0.05	3.88
1200	2.96	34.48	27.50	67.6	1.319	0.31	3.92

STATION 158-018

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.94	31.31	24.55	339.8	0.000	7.02	1.11
10	7.03	31.90	25.00	296.9	0.032	7.02	1.74
20	7.10	32.39	25.37	261.3	0.060	6.95	1.18
30	7.34	32.51	25.44	255.6	0.086	6.69	1.29
50	8.19	33.21	25.86	215.4	0.133	4.80	1.79
75	8.03	33.65	26.23	180.9	0.183	3.37	2.06#
100	7.96	33.77	26.34	171.4	0.227	3.00	2.16#
150	7.63	33.90	26.49	157.9	0.309	2.46	2.24#
200	7.10					2.21	2.27#
250	6.60					1.96	2.28#
300	6.22					1.63	2.29#
400	5.55					1.08	2.30#
500	4.96					0.74	3.07

STATION 158-019

OBSERVED VALUES

DATE 02/08/57 HR 01 LAT 46-54N LONG 124-31W SDG 91 BTMCODE
 WVCL 04 DIR 08 FC 03 BA 06 DRY 6.1 WET 5.0 RELHU 85 VIS 8
 WEA 02 CL 0 AMT 7 SEA 1 DIR 08 SWL DIR SECDI LD 6

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	6.16	30.21	23.78	7.27	1.16
1	9	6.66	30.77	24.16	7.16	1.27
1	19	7.68	31.83	24.86	7.02	1.13
1	28	7.73	32.07	25.04	6.70	1.20
1	47	7.80	32.52	25.38	6.82	1.29
1	71	8.06	33.28	25.94	3.84	2.27

STATION 158-020

OBSERVED VALUES

DATE 02/08/57 HR 04 LAT 46-53N LONG 124-13W SDG 22 BTMCODE
 WVCL DIR FC BA DRY 5.6 WET 4.4 RELHU 84 VIS 8
 WEA 02 CL 0 AMT 7 SEA 0 DIR 00 SWL DIR SECDI LD 6

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	5.19	28.02	22.16	7.53	1.09
1	5	5.28	28.18	22.28	7.58	0.97
1	9	5.55	28.96	22.87	7.40	1.02
1	18	7.94	32.14	25.06	6.27	1.34

STATION 158-019

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.16	30.21	23.78	412.9	0.000	7.27	1.16
10	6.81	30.91	24.25	368.2	0.039	7.16	1.25
20	7.69	31.86	24.88	308.6	0.073	6.97	1.14
30	7.73	32.11	25.07	290.6	0.103	6.82	1.18
50	7.82	32.60	25.44	255.6	0.158	6.64	1.36

STATION 158-020

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	5.19	28.02	22.16	567.6	0.000	7.53	1.09
10	5.69	29.22	23.05	482.2	0.052	7.32	1.04

STATION 158-021

OBSERVED VALUES

DATE 02/08/57 HR 10 LAT 47-20N LONG 125-12W SDG 1189 BTMCODE
 WVCL 03 DIR 12 FC 02 BA 08 DRY 6.1 WET 5.6 RELHU 93 VIS 6
 WEA 02 CL 6 AMT 8 SEA 0 DIR 00 SWL DIR SECDI LD 43

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	7.14	32.24	25.25	6.93	1.09
2	9	7.16	32.24	25.25	7.03	1.00
2	19	7.16	32.48	25.44	6.73	1.13
2	28	7.22	32.50	25.44	6.83	1.09
2	47	7.36	32.88	25.72	5.70	1.50
2	71	7.86	33.55	26.18	3.72	1.90
2	94	7.98	33.71	26.29	3.09	1.87
2	118	7.80	33.83	26.41	2.78	2.08
2	142	7.69	33.88	26.46	2.52	1.78
2	164	7.42	33.92	26.53	2.36	2.25
1	189	7.22	33.93	26.57	2.35	2.41
1	283	6.36	33.99	26.73	1.98	2.63
1	472	5.30	34.10	26.95	1.04	3.24
1	708	4.30	34.27	27.20	0.02	3.54
1	945	3.73	34.37	27.33	0.03	3.55

STATION 158-022

OBSERVED VALUES

DATE 02/08/57 HR 22 LAT 48-11N LONG 126-54W SDG 2560 BTMCODE
 WVCL 09 DIR 22 FC 05 BA 10 DRY 5.6 WET 5.2 RELHU 94 VIS 5
 WEA 63 CL 0 AMT 8 SEA 2 DIR 22 SWL 1 DIR 22 SECDI LD 58

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	6.56	32.52	25.55	7.03	1.06
2	9	6.58	32.52	25.55	7.09	1.11
2	19	6.58	32.52	25.55	7.00	1.16
2	28	6.60	32.52	25.54	7.11	0.88
2	46	6.60	32.55	25.57	6.92	1.09
2	70	6.97	33.30	26.11	4.74	1.52
2	92	7.26	33.63	26.33	3.35	1.90
2	117	7.18	33.81	26.48	2.79	1.86
2	140	6.98	33.87	26.55	2.77	1.63
2	163	6.86	33.90	26.59	2.48	1.75
1	185	6.75	33.94	26.64	2.30	2.29
1	248	6.16	33.96	26.73	2.18	2.36
1	422	5.09	34.10	26.97	1.06	2.45
1	642	4.30	34.23	27.16	0.07	2.77
1	864	3.78	34.36	27.32	0.01	3.45
1	1327	2.77	34.51	27.54	0.69	3.31

STATION 158-021

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.14	32.24	25.25	272.8	0.000	6.93	1.09
10	7.16	32.27	25.27	270.9	0.027	6.98	1.02
20	7.17	32.48	25.44	255.5	0.053	6.76	1.12
30	7.22	32.53	25.47	252.6	0.078	6.73	1.14
50	7.44	32.99	25.80	221.5	0.125	5.38	1.57
75	7.90	33.58	26.20	184.3	0.176	3.59	1.88
100	7.93	33.75	26.32	172.4	0.221	3.01	1.97
150	7.58	33.90	26.49	157.2	0.303	2.45	1.99
200	7.11	33.94	26.59	148.6	0.379	2.31	2.43
250	6.64	33.97	26.68	140.8	0.451	2.12	2.55
300	6.26	34.00	26.75	134.3	0.520	1.89	2.70
400	5.68	34.06	26.87	123.8	0.649	1.39	3.05
500	5.16	34.12	26.98	114.1	0.768	0.87	3.29
600	4.70	34.20	27.10	103.6	0.877	0.36	3.44
700	4.33	34.27	27.19	95.0	0.976	0.04	3.53
800	4.03	34.32	27.26	88.7	1.068	0.10	3.58

STATION 158-022

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.56	32.52	25.55	244.6	0.000	7.03	1.06
10	6.58	32.52	25.55	244.9	0.024	7.07	1.13
20	6.58	32.52	25.55	245.1	0.049	7.02	1.12
30	6.59	32.50	25.53	246.8	0.074	7.15	0.90
50	6.67	32.70	25.67	233.1	0.122	6.51	1.16
75	7.07	33.39	26.16	187.1	0.175	4.35	1.64
100	7.25	33.70	26.38	166.8	0.219	3.11	1.91
150	6.93	33.88	26.57	149.9	0.298	2.63	1.63
200	6.60	33.94	26.66	141.8	0.371	2.29	2.31
250	6.15	33.96	26.73	135.2	0.440	2.17	2.36
300	5.80	34.01	26.82	127.7	0.506	1.81	2.37
400	5.20	34.08	26.95	116.4	0.628	1.19	2.43
500	4.78	34.15	27.05	107.3	0.740	0.60	2.52
600	4.43	34.21	27.13	99.7	0.844	0.19	2.68
700	4.16	34.27	27.21	93.1	0.940	0.03	2.99
800	3.93	34.33	27.28	86.8	1.030	0.00	3.30
1000	3.47	34.42	27.40	76.5	1.193	0.10	3.63
1200	3.04	34.49	27.50	67.8	1.337	0.40	3.56

STATION 158-023

OBSERVED VALUES

DATE 02/09/57 HR 07 LAT 48-10N LONG 127-40W SDG 2600 BTMCODE
 WVCL 13 DIR 30 FC 06 BA 13 DRY 5.0 WET 4.6 RELHU 94 VIS 8
 WEA 03 CL 3 AMT 5 SEA 2 DIR 30 SWL 2 DIR 31 SECDI LD 46

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	6.48	32.58	25.61	7.20	1.29
2	10	6.53	32.58	25.60	6.89	1.27
2	19	6.52	32.58	25.60	6.78	1.25
2	28	6.54	32.58	25.60	6.90	1.35
2	47	7.26	33.42	26.16	3.89	1.90
2	71	7.35	33.83	26.47	2.39	2.31
2	94	7.22	33.88	26.53	1.92	1.81
2	119	6.98	33.93	26.60	1.90	2.36
1	137	6.95	33.92*	26.60		2.53
2	143	6.89	33.93	26.61	2.07	2.45
2	167	6.78	33.95	26.64		2.54
1	201	6.66	33.95	26.66		2.45
1	250	6.42	33.97	26.71	1.52	2.59
1	344	6.14	34.02	26.78	1.55	2.61*
1	665	4.44	34.22	27.14	0.03	3.42

STATION 158-024

OBSERVED VALUES

DATE 02/09/57 HR 15 LAT 48-10N LONG 128-26W SDG 2560 BTMCODE
 WVCL 13 DIR 27 FC 06 BA DRY 5.6 WET 4.4 RELHU 84 VIS 7
 WEA 02 CL 4 AMT 2 SEA 2 DIR 27 SWL 2 DIR 27 SECDI LD 58

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	6.55	32.52	25.55	6.94	1.37
2	10	6.59	32.52	25.54	6.94	1.43
2	20	6.52	32.52	25.55	6.89	1.48
2	30	6.60	32.52	25.54	6.87	1.38
2	50	6.59	32.52	25.54	6.82	1.34
2	75	6.66	32.97	25.89	5.92	1.62
2	100	6.88	33.32	26.13	4.67	1.79
2	146	6.78	33.82	26.54	3.92	2.20
1	279	5.38	33.94	26.81	2.70	2.26
1	467	4.90	34.14	27.03	0.67	3.70*
1	705	4.08	34.30	27.24	0.25	2.80
1	950	3.49	34.39	27.37	0.16	3.47
1	1445	2.56	34.52	27.56	1.23	4.13

STATION 158-023

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.48	32.58	25.61	239.1	0.000	7.20	1.29
10	6.53	32.58	25.60	239.8	0.024	6.89	1.27
20	6.51	32.57	25.59	240.5	0.048	6.84	1.26
30	6.64	32.69	25.67	233.2	0.072	6.51	1.42
50	7.28	33.49	26.21	182.1	0.114	3.65	2.00
75	7.33	33.84	26.48	157.1	0.156	2.28	
100	7.14	33.90	26.55	150.4	0.194	1.90	
150	6.86	33.94	26.62	144.5	0.268		
200	6.66	33.95	26.66	141.8	0.340	1.70	
250	6.42	33.97	26.71	137.9	0.410	1.52	
300	6.28	34.00	26.75	134.5	0.478	1.56	
400	5.93	34.05	26.83	127.6	0.609	1.47	
500	5.46	34.11	26.94	118.5	0.732	1.12	
600	4.88	34.18	27.06	107.3	0.845	0.54	

STATION 158-024

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.55	32.52	25.55	244.5	0.000	6.94	1.37
10	6.59	32.52	25.54	245.1	0.024	6.94	1.43
20	6.52	32.52	25.55	244.3	0.048	6.89	1.48
30	6.60	32.52	25.54	245.4	0.072	6.87	1.38
50	6.59	32.52	25.54	245.6	0.121	6.82	1.34
75	6.66	32.97	25.89	213.1	0.178	5.92	1.62
100	6.88	33.32	26.13	190.2	0.228	4.67	1.79
150	6.73	33.82	26.55	151.7	0.313	3.89	2.20
200	6.11	33.87	26.67	140.8	0.386	3.45	2.22
250	5.61	33.91	26.76	132.3	0.454	2.98	2.24
300	5.33	33.97	26.84	125.0	0.518	2.40	2.27
400	5.09	34.08	26.96	115.1	0.638	1.22	2.33
500	4.77	34.17	27.07	105.7	0.748	0.59	2.44
600	4.41	34.24	27.16	97.3	0.849	0.39	2.59
700	4.09	34.30	27.24	90.0	0.943	0.26	2.79
800	3.84	34.34	27.30	85.1	1.031	0.17	3.09
1000	3.38	34.41	27.40	76.2	1.192	0.19	3.58
1200	2.98	34.46	27.48	69.3	1.337	0.49	3.92

STATION 158-025

OBSERVED VALUES

DATE 02/09/57 HR 21 LAT 48-11N LONG 129-10W SDG 2560 BTMCODE
 WVCL 06 DIR 23 FC 04 BA 21 DRY 6.7 WET 5.6 RELHU 83 VIS 8
 WEA 02 CL 0 AMT 4 SEA 2 DIR 23 SWL 4 DIR 27 SECDI LD 73

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	7.36	32.61	25.51	6.91	1.32
2	10	7.40	32.59	25.49	6.94	1.18
2	19	7.40	32.59	25.49	6.83	1.15
2	29	7.41	32.60	25.50	6.98	1.25
2	48	7.39	32.61	25.51	6.87	1.22
2	72	7.24	32.67	25.58	6.69	1.36
2	96	6.42	33.13	26.05	5.61	1.71
2	122	6.70	33.55	26.34	4.45	1.98
2	145	6.72	33.74	26.49	3.90	2.18
2	168	6.54	33.85	26.60	3.64	2.04
1	172	6.59	33.84	26.58	3.81	2.22
1	259	5.61	33.93	26.78	2.52	2.54
1	432	4.82	34.05	26.96	1.06	2.59
1	654	4.25	34.26	27.19	0.13	2.81
1	882	3.58	34.33	27.32	0.00	3.59
1	1345	2.64	34.48	27.52	0.60	3.29

STATION 158-026

OBSERVED VALUES

DATE 02/10/57 HR 03 LAT 48-41N LONG 129-02W SDG 2624 BTMCODE
 WVCL 18 DIR 22 FC 08 BA 23 DRY 6.7 WET 5.6 RELHU 86 VIS 7
 WEA 51 CL 0 AMT 8 SEA 2 DIR 22 SWL DIR SECDI LD 104

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	6.92	32.60	25.56	6.93	1.26
2	9	6.94	32.59	25.55	6.92	1.31
2	18	6.94	32.60	25.56	6.89	1.27
2	27	6.96	32.59	25.55	6.94	1.36
2	46	6.94	32.60	25.56	6.82	1.34
2	69	6.94	32.60	25.56	6.96	1.40
2	92	7.02	32.66	25.60	6.89	1.36
2	115	6.60	33.07	25.98	5.91	1.39
2	139	6.72	33.46	26.27	4.75	2.16
1	148	6.72	33.58	26.36	4.02	2.11
2	163	6.66	33.76	26.51	4.05	2.47
1	220	6.20	33.90	26.68	2.99	2.27
1	369	5.16	34.06	26.93	1.47	2.70
1	574	4.30	34.15	27.10	0.17	2.88
1	791	3.74	34.29	27.27	0.03	3.74
1	1231	2.83	34.46	27.49	0.20	3.70

STATION 158-025

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.36	32.61	25.51	248.0	0.000	6.91	1.32
10	7.40	32.59	25.49	250.2	0.025	6.94	1.18
20	7.40	32.59	25.49	250.3	0.050	6.85	1.16
30	7.41	32.60	25.50	249.8	0.075	6.97	1.25
50	7.40	32.60	25.50	250.0	0.125	6.89	1.22
75	7.08	32.73	25.64	236.4	0.186	6.55	1.41
100	6.48	33.21	26.10	193.3	0.240	5.39	1.75
150	6.69	33.76	26.51	155.7	0.327	3.87	2.16
200	6.20	33.87	26.66	141.9	0.401	3.28	2.30
250	5.69	33.92	26.76	132.5	0.470	2.63	2.51
300	5.40	33.95	26.82	127.3	0.535	2.12	2.54
400	4.94	34.02	26.93	117.8	0.658	1.28	2.57
500	4.65	34.13	27.05	107.3	0.771	0.69	2.60
600	4.40	34.22	27.15	98.6	0.874	0.28	2.71
700	4.10	34.27	27.22	92.4	0.970	0.08	3.02
800	3.81	34.30	27.27	87.7	1.060	0.01	3.38
1000	3.29	34.37	27.38	78.1	1.226	0.04	3.75
1200	2.87	34.43	27.46	70.3	1.374	0.29	3.66

STATION 158-026

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.92	32.60	25.56	243.1	0.000	6.93	1.26
10	6.94	32.59	25.55	244.2	0.024	6.91	1.30
20	6.95	32.60	25.56	243.7	0.048	6.91	1.30
30	6.96	32.59	25.55	244.7	0.072	6.91	1.35
50	6.93	32.60	25.56	243.9	0.121	6.86	1.36
75	7.01	32.58	25.54	246.7	0.182	7.03	1.38
100	6.81	32.81	25.74	227.3	0.241	6.56	1.36#
150	6.71	33.60	26.38	167.8	0.340	4.26	2.25
200	6.35	33.84	26.61	146.0	0.418	3.29	2.26
250	5.96	33.94	26.74	134.3	0.488	2.65	2.38
300	5.60	34.00	26.83	126.0	0.553	2.11	2.53
400	5.01	34.07	26.96	114.9	0.673	1.20	2.69
500	4.57	34.11	27.04	107.8	0.784	0.51	2.74
600	4.23	34.17	27.12	100.4	0.888	0.15	3.01
700	3.97	34.24	27.21	93.1	0.985	0.07	3.45
800	3.72	34.29	27.27	87.4	1.075	0.03	3.76
1000	3.27	34.39	27.40	76.4	1.239	0.04	4.02
1200	2.88	34.45	27.48	68.9	1.384	0.17	3.78

STATION 158-027

OBSERVED VALUES

DATE 02/10/57 HR 18 LAT 48-52N LONG 127-31W SDG 2287 BTMCODE
 WVCL 10 DIR 24 FC 05 BA 06 DRY 5.0 WET 4.4 RELHU 91 VIS 6
 WEA 02 CL 0 AMT 8 SEA 4 DIR 24 SWL 5 DIR 27 SECDI LD 53

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	6.62	32.47	25.50	6.91	1.31
2	10	6.66	32.48	25.50	6.85	1.34
2	20	6.64	32.48	25.51	6.89	1.25
2	30	6.67	32.48	25.50	6.87	1.31
2	49	6.66	32.51	25.53	6.81	1.36
2	74	7.32	33.39	26.13	4.20	2.20
2	98	7.41	33.69	26.35	3.37	1.96
2	123	7.09	33.74	26.44	3.55	1.97
2	147	6.98	33.86	26.55	2.89	2.21
2	171	6.80	33.88	26.59	2.49	2.22
1	184	6.54	33.93	26.66	2.50	2.22
1	279	5.92	34.00	26.79	1.69	2.88
1	471	4.93	34.14	27.02	0.85	3.00
1	714	4.08	34.27	27.22	0.47	3.02
1	957	3.44	34.43	27.41	0.08	3.42
1	1448	2.52	34.49	27.54	0.78	3.52

STATION 158-028

OBSERVED VALUES

DATE 02/11/57 HR 00 LAT 48-46N LONG 126-34W SDG 1244 BTMCODE
 WVCL 14 DIR 23 FC 07 BA 07 DRY 4.4 WET 3.3 RELHU 84 VIS 8
 WEA 03 CL 0 AMT 7 SEA 2 DIR 23 SWL 3 DIR 18 SECDI LD 35

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	6.48	31.97	25.13	6.61	1.86
2	10	6.51	31.97	25.12	6.64	1.88
2	20	6.56	32.01	25.15	6.54	1.81
2	30		32.41		6.08	1.84
2	50	7.62	33.18	25.92	4.40	2.00
2	75	7.53	33.48	26.17	3.42	1.97
2	100	7.62	33.68	26.31	2.96	2.34
2	124	7.52	33.83	26.45	2.72	2.18
2	148	7.30	33.88	26.52	2.52	2.54
2	173	7.10	33.90	26.56	2.15	2.59
1	196	6.93	33.93	26.61	2.15	2.45
1	294	6.03	33.99	26.77	2.07	2.47
1	492	5.01	34.17	27.04	0.87	2.54
1	742	4.21	34.26	27.20	0.04	3.35
1	991	3.54	34.37	27.35	0.00	3.78

STATION 158-027

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.62	32.47	25.50	249.1	0.000	6.91	1.31
10	6.66	32.48	25.50	248.9	0.025	6.85	1.34
20	6.64	32.48	25.51	248.8	0.050	6.89	1.25
30	6.67	32.48	25.50	249.3	0.075	6.87	1.31
50	6.70	32.56	25.56	243.9	0.124	6.67	1.41
75	7.33	33.41	26.14	189.1	0.178	4.15	2.19
100	7.38	33.69	26.36	169.3	0.223	3.42	1.95
150	6.95	33.86	26.55	151.6	0.303	2.85	2.21
200	6.49	33.92	26.66	141.8	0.376	2.29	2.40
250	6.12	33.97	26.75	134.1	0.445	1.89	2.73
300	5.80	34.02	26.83	127.0	0.510	1.57	2.90
400	5.26	34.09	26.95	116.4	0.632	1.11	2.97
500	4.82	34.15	27.04	107.8	0.744	0.81	2.98
600	4.45	34.21	27.13	100.0	0.848	0.65	2.96
700	4.12	34.26	27.21	93.4	0.945	0.49	3.01
800	3.84	34.34	27.30	85.1	1.034	0.28	3.19
1000	3.34	34.45	27.44	72.8	1.192	0.06	3.47
1200	2.92	34.50	27.52	65.6	1.330	0.18	3.59

STATION 158-028

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.48	31.97	25.13	284.8	0.000	6.61	1.86
10	6.51	31.97	25.12	285.2	0.028	6.64	1.88
20	6.56	32.01	25.15	283.0	0.056	6.54	1.81
30		32.41				6.08	1.84
50	7.62	33.18	25.92	209.7	0.130	4.40	2.00
75	7.53	33.48	26.17	186.6	0.180	3.42	1.97
100	7.62	33.68	26.31	173.3	0.225	2.96	2.34
150	7.28	33.88	26.52	154.6	0.307	2.48	2.55
200	6.89	33.93	26.61	146.3	0.382	2.15	2.45
250	6.40	33.96	26.70	138.4	0.453	2.15	2.46
300	5.99	34.00	26.79	130.9	0.520	2.03	2.46
400	5.44	34.10	26.93	117.8	0.644	1.37	2.44
500	4.98	34.17	27.04	108.2	0.757	0.83	2.57
600	4.65	34.21	27.11	102.3	0.862	0.41	2.94
700	4.34	34.24	27.17	97.4	0.962	0.12	3.24
800	4.04	34.28	27.23	91.8	1.057	0.00M	3.48

STATION 158-029

OBSERVED VALUES

DATE 02/11/57 HR 06 LAT 48-39N LONG 125-55W SDG 91 BTMCODE
 WVEL 11 DIR 25 FC 06 BA 11 DRY 3.9 WET 3.3 RELHU 91 VIS 7
 WEA 02 CL 0 AMT 4 SEA 2 DIR 25 SWL DIR SECDI LD 50

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	6.68	32.12	25.22	6.78	1.32
1	10	6.72	32.12	25.21	6.69	1.40
1	20	6.80	32.47	25.48	6.60	1.31
1	30	6.82	32.48	25.48	6.71	1.38
1	49	7.10	32.67	25.59	5.91	1.50
1	74	7.36	32.97	25.79	4.63	1.73
1	84	7.38	32.97	25.79	4.63	1.77

STATION 158-030

SWIFTSURE BANK LIGHTSHIP

OBSERVED VALUES

DATE 02/11/57 HR 11 LAT 48-30N LONG 125-04W SDG 146 BTMCODE
 WVEL 12 DIR 28 FC 06 BA 16 DRY 6.1 WET 5.0 RELHU 85 VIS 6
 WEA 03 CL 0 AMT 6 SEA 1 DIR 28 SWL 2 DIR 27 SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	7.28	32.31	25.29	6.73	1.22
1	10	7.28	32.31	25.29	6.75	1.18
1	20	7.34	32.31	25.28	6.83	1.20
1	30	7.46	32.41	25.34	6.69	1.22
1	49	7.68	32.78	25.60	5.86	1.55
1	73	7.80	33.39	26.06	4.07	2.02
1	97	7.79	33.56	26.20	3.54	2.25
1	121	7.69	33.65	26.28	3.24	2.31
1	135	7.60	33.67	26.31	3.10	2.45

STATION 158-029

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA--T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	6.68	32.12	25.22	276.0	0.000	6.78	1.32
10	6.72	32.12	25.21	276.6	0.028	6.69	1.40
20	6.80	32.47	25.48	251.5	0.054	6.60	1.31
30	6.82	32.48	25.48	251.2	0.079	6.71	1.38
50	7.12	32.69	25.61	239.6	0.128	5.82	1.51
75	7.36	32.97	25.79	222.2	0.186	4.62	1.74

STATION 158-030

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	7.28	32.31	25.29	269.3	0.000	6.73	1.22
10	7.28	32.31	25.29	269.5	0.027	6.75	1.18
20	7.34	32.31	25.28	270.4	0.054	6.83	1.20
30	7.46	32.41	25.34	264.7	0.081	6.69	1.22
50	7.69	32.81	25.62	238.2	0.131	5.76	1.57
75	7.80	33.41	26.08	195.5	0.185	4.02	2.05
100	7.78	33.58	26.21	183.0	0.232	3.50	2.24

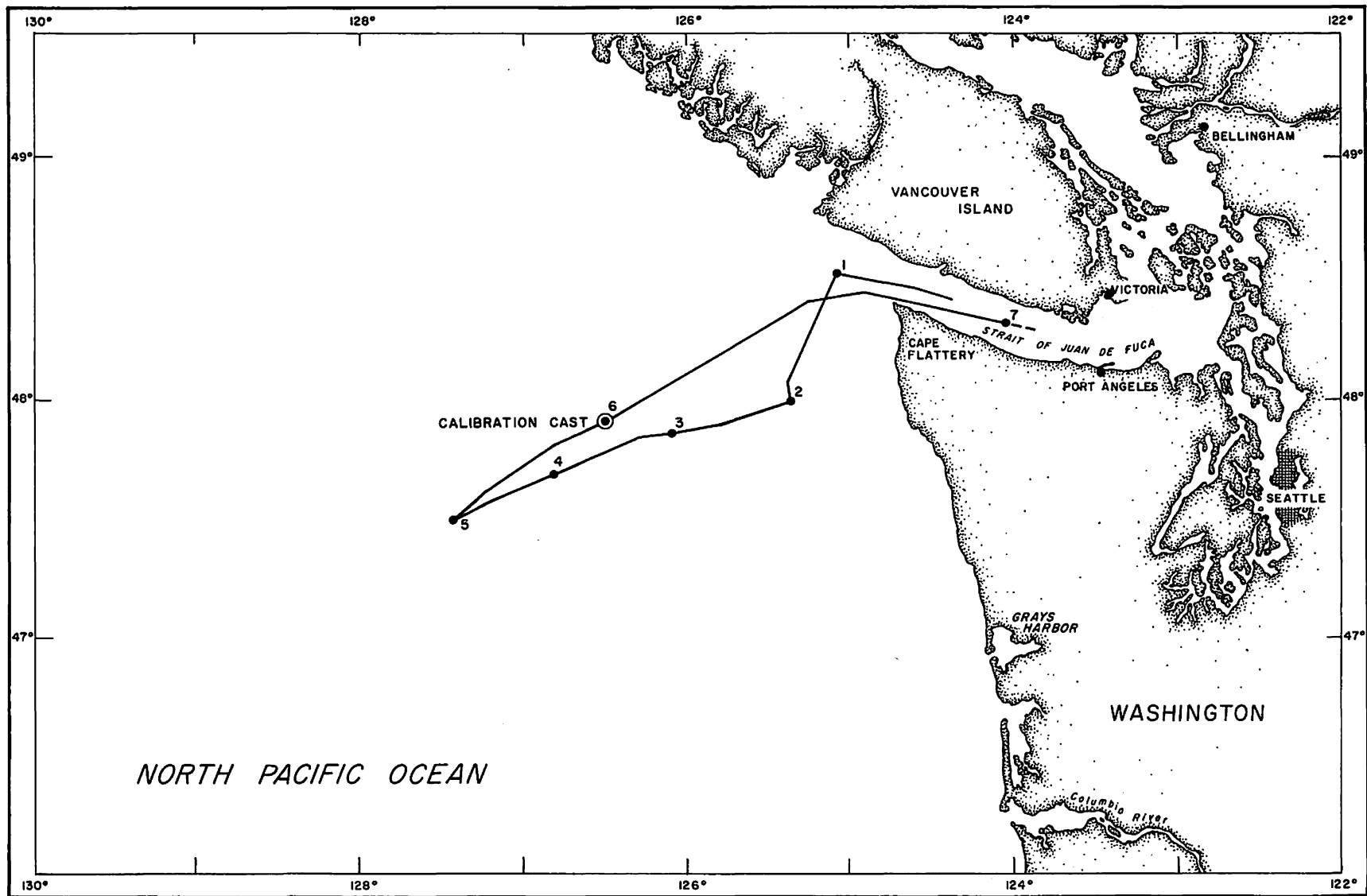


Fig. 5. Brown Bear Cruise No. 168 (14-16 May 1957)

STATION 168-001

SWIFTSURE BANK LIGHTSHIP

OBSERVED VALUES

DATE 05/14/57 HR 14 LAT 48-30N LONG 125-06W SDG 146 BTMCODE
 WVCL 01 DIR 27 FC 01 BA 17 DRY 14.4 WET 12.8 RELHU 84 VIS 8
 WEA 02 CL 1 AMT 2 SEA 2 DIR 27 SWL DIR SECDI LD 0

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	9.65	31.82	24.55	6.12	1.61
1	10	9.35	32.02	24.76	6.45	1.58
1	20	9.01	32.22	24.96	6.10	1.67
1	30	8.63	32.34	25.12	5.33	1.97
1	50	7.84	32.87	25.65	3.91	2.35
1	75	7.44	33.26	26.01	3.23	2.55
1	100	6.92	33.69	26.42	2.36	2.75
1	125	6.84	33.74	26.47	2.30	2.83

STATION 168-002

OBSERVED VALUES

DATE 05/14/57 HR 19 LAT 47-59N LONG 125-22W SDG 615 BTMCODE
 WVCL DIR FC BA DRY 16.4 WET 14.7 RELHU 83 VIS 8
 WEA 03 CL 8 AMT 5 SEA DIR SWL DIR SECDI LD 15

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
3	0	12.26	31.93	24.18	6.56	0.59
3	10	11.54	32.00	24.37	6.72	0.69
3	20	8.84	32.45	25.17	6.41	1.01
3	30	8.54	32.62	25.35		1.09
3	50	7.85	32.94	25.70	5.41	1.55
3	75	7.88			4.16	
3	100	7.76	33.69	26.30	3.18	2.08
3	125	7.61	33.78	26.39	2.78	2.22
3	150	7.39	33.89	26.51	2.60	2.57*
3	175	7.11	33.94	26.59	2.37	2.61*
2	198	6.96	33.96	26.63	2.05	2.53
2	295	6.18	34.02	26.78	1.62	2.76
2	493	5.44	34.09	26.92	0.99	3.08
2	592	4.92	34.14	27.02	0.64	3.33

STATION 168-001

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.65	31.82	24.55	339.4	0.000	6.12	1.61
10	9.35	32.02	24.76	320.1	0.033	6.45	1.58
20	9.01	32.22	24.96	300.4	0.064	6.10	1.67
30	8.63	32.34	25.12	286.1	0.093	5.33	1.97
50	7.84	32.87	25.65	235.8	0.145	3.91	2.35
75	7.44	33.26	26.01	201.7	0.200	3.23	2.55
100	6.92	33.69	26.42	163.2	0.246	2.36	2.75

STATION 168-002

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	12.26	31.93	24.18	374.6	0.000	6.56	0.59
10	11.54	32.00	24.37	357.0	0.037	6.72	0.69
20	8.84	32.45	25.17	280.8	0.069	6.41	1.01
30	8.54	32.62	25.35	264.0	0.096		1.09
50	7.85	32.94	25.70	230.8	0.145	5.41	1.55
75	7.88					4.16	
100	7.76	33.69	26.30	174.5	0.246	3.18	2.08
150	7.39	33.89	26.51	155.3	0.328	2.60	
200	6.94	33.96	26.63	144.8	0.403	2.04	2.54
250	6.51	33.99	26.71	137.6	0.474	1.81	2.66
300	6.17	34.02	26.78	131.7	0.541	1.61	2.77
400	5.84	34.05	26.84	126.5	0.670	1.30	2.90
500	5.41	34.09	26.93	119.4	0.793	0.97	3.10

STATION 168-003

OBSERVED VALUES

DATE 05/15/57 HR 03 LAT 47-51N LONG 126-06W SDG 1646 BTMCODE
 WVEL 04 DIR 29 FC 03 BA 20 DRY 12.1 WET 11.0 RELHU 88 VIS 8
 WEA 01 CL 8 AMT 2 SEA 1 DIR 29 SWL DIR SECDI LD 12

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
4	0	12.66	32.58	24.61	6.56	0.81
4	10	11.24	32.56	24.86	6.78	0.73
4	20	9.68	32.65	25.19	6.85	0.69
4	30	9.18	32.70	25.31	6.51	0.92
4	50	8.77	32.68	25.36	6.37	1.03
4	75	8.19	32.96	25.67	5.44	1.70
4	100	8.00	33.46	26.09	4.14	2.24*
4	125	7.71	33.63	26.26	3.66	2.17*
4	150	7.76*	33.80	26.39	2.92	2.53
4	175	7.49	33.91	26.51	2.51	2.69*
4	200	7.16	33.93	26.58	2.42	2.66*
2	299	6.16	34.00	26.76	1.89	2.83
2	499	5.03	34.13	27.00	0.88	3.16
3	746	4.29	34.28	27.21	0.30	3.60
3	995	3.60	34.42	27.39	0.47	3.60
3	1494	2.64	34.55	27.58	1.13	3.40

STATION 168-004

OBSERVED VALUES

DATE 05/15/57 HR 11 LAT 47-41N LONG 126-49W SDG 2414 BTMCODE
 WVEL 02 DIR 15 FC 02 BA 22 DRY 11.1 WET 11.1 RELHU 99 VIS 8
 WEA 02 CL 8 AMT 1 SEA 0 DIR SWL DIR SECDI LD 3

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	12.12	32.49	24.64	6.50	0.68
2	10	11.53	32.49	24.75	6.64	0.71
2	20	11.26	32.54	24.84	6.72	0.69
2	30	9.84	32.55	25.09	6.72	0.80
2	50	8.66	32.64	25.35	6.56	1.12
2	75	8.40	33.10	25.75	5.21	1.59
2	100	7.46	33.33	26.06	4.63	1.90
2	125	7.02	33.52	26.27	4.52	1.95
2	149	6.98	33.77	26.47	4.03	2.29
2	174	6.48	33.86	26.61	3.82	2.21
1	191	6.36	33.87	26.64	3.63	2.36
1	286	5.38	33.94	26.81	2.42	2.74
1	479	4.85	34.10	27.00	0.66	3.25
1	721	4.28	34.30	27.22	0.25	3.32
1	965	3.50	34.37	27.36	0.40	3.50
1	1446	2.60	34.48	27.53	0.54	3.50

STATION 168-003

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	12.66	32.58	24.61	334.0	0.000	6.56	0.81
10	11.24	32.56	24.86	310.6	0.032	6.78	0.73
20	9.68	32.65	25.19	278.7	0.061	6.85	0.69
30	9.18	32.70	25.31	267.5	0.088	6.51	0.92
50	8.77	32.68	25.36	263.2	0.141	6.37	1.03
75	8.19	32.96	25.67	234.4	0.203	5.44	1.70
100	8.00	33.46	26.09	195.0	0.257	4.14	
150		33.80				2.92	2.53
200	7.16	33.93	26.58	150.0	0.429	2.42	
250	6.62	33.97	26.68	140.5	0.502	2.15	
300	6.15	34.00	26.77	132.9	0.570	1.88	2.83
400	5.53	34.07	26.90	121.2	0.697	1.32	2.99
500	5.03	34.13	27.00	111.7	0.813	0.88	3.16
600	4.72	34.19	27.09	104.6	0.921	0.55	3.39
700	4.42	34.25	27.17	97.6	1.022	0.35	3.55
800	4.13	34.31	27.25	90.7	1.116	0.33	3.61
1000	3.59	34.42	27.39	77.8	1.284	0.47	3.60
1200	3.14	34.50	27.50	68.2	1.430	0.69	3.55

STATION 168-004

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	12.12	32.49	24.64	330.9	0.000	6.50	0.68
10	11.53	32.49	24.75	320.7	0.033	6.64	0.71
20	11.26	32.54	24.84	312.6	0.065	6.72	0.69
30	9.84	32.55	25.09	288.8	0.095	6.72	0.80
50	8.66	32.64	25.35	264.6	0.150	6.56	1.12
75	8.40	33.10	25.75	227.0	0.211	5.21	1.59
100	7.46	33.33	26.06	197.2	0.264	4.63	1.90
150	6.95	33.78	26.49	157.6	0.353	4.02	2.28
200	6.25	33.88	26.66	141.8	0.428	3.51	2.40
250	5.70	33.91	26.75	133.4	0.497	2.85	2.61
300	5.34	33.95	26.83	126.6	0.562	2.25	2.79
400	5.06	34.03	26.92	118.5	0.685	1.23	3.09
500	4.81	34.12	27.02	109.9	0.799	0.60	3.25
600	4.59	34.22	27.13	100.9	0.904	0.39	3.27
700	4.34	34.29	27.21	93.7	1.001	0.26	3.31
800	4.00	34.32	27.27	88.4	1.092	0.30	3.39
1000	3.41	34.38	27.37	78.7	1.259	0.42	3.52
1200	2.95	34.43	27.46	71.2	1.409	0.49	3.56

STATION 168-005

OBSERVED VALUES

DATE 05/15/57 HR 17 LAT 47-29N LONG 127-27W SDG 2609 BTMCODE
 WVEL 05 DIR 14 FC 03 BA 22 DRY 11.1 WET 10.6 RELHU 94 VIS 7
 WEA 03 CL 4 AMT 7 SEA 1 DIR 14 SWL DIR SECDI LD 14

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	10.72	32.51	24.91	6.70	0.97
2	10	10.65			6.64	0.77
2	20	10.32	32.51	24.98	6.82	0.97
2	30	9.42	32.51	25.13	6.87	0.97
2	50	7.56	32.51	25.41	7.06	1.21
2	75	7.04	32.55	25.51	6.26	1.44
2	100	6.93	33.38	26.18	4.65*	1.51
2	125	6.84	33.69	26.43	4.69*	1.96
2	150	6.78	33.78	26.51	4.76	2.00
2	175	6.42	33.85	26.61	4.39	2.08
1	199	6.03	33.87	26.68	3.81	2.34
1	298	5.20	33.93	26.83	2.12	2.84
1	497	4.46	34.12	27.06	0.65	3.26
1	746	3.98	34.29	27.25	0.26	3.50
1	993	3.41	34.39	27.38	0.28	3.40
1	1489	2.47	34.52	27.57	0.74	3.40

STATION 168-007

PILLAR POINT — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 05/16/57 HR 21 LAT 48-18N LONG 124-03W SDG 190 BTMCODE
 WVEL 05 DIR 27 FC 03 BA 17 DRY 12.2 WET 11.1 RELHU 88 VIS 7
 WEA 02 CL 8 AMT 1 SEA 1 DIR 27 SWL DIR SECDI LD 38

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	9.56	31.77	24.53	5.96	2.25
1	5	9.44	31.77	24.55	5.91	2.28
1	10	9.18	31.82	24.63	5.79	2.43
1	20	9.10	31.83	24.65	5.57	
1	30	9.10	31.84	24.65	5.43	2.30
1	49	8.24	32.13	25.01	4.44	2.45
1	73	7.61	32.82	25.64	3.56	2.56
1	97	7.26	33.29	26.06	3.07	2.66
1	136	6.96	33.68	26.41	2.55	2.98
1	175	6.82	33.77	26.50	2.32	3.02

STATION 168-005

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	10.72	32.51	24.91	305.3	0.000	6.70	0.97
10	10.65					6.64	0.77
20	10.32	32.51	24.98	299.2	0.060	6.82	0.97
30	9.42	32.51	25.13	285.2	0.089	6.87	0.97
50	7.56	32.51	25.41	258.8	0.143	7.06	1.21
75	7.04	32.55	25.51	249.3	0.207	6.26	1.44
100	6.93	33.38	26.18	186.4	0.261		1.51
150	6.78	33.78	26.51	155.3	0.346	4.76	2.00
200	6.02	33.87	26.68	139.6	0.420	3.79	2.35
250	5.56	33.90	26.76	132.4	0.488	2.86	2.62
300	5.19	33.93	26.83	126.4	0.553	2.10	2.85
400	4.78	34.03	26.95	115.2	0.674	1.24	3.08
500	4.45	34.12	27.06	105.7	0.784	0.64	3.26
600	4.27	34.20	27.14	98.6	0.886	0.44	3.40
700	4.08	34.26	27.21	92.9	0.982	0.30	3.48
800	3.85	34.31	27.27	87.4	1.072	0.25	3.47
1000	3.39	34.39	27.38	77.8	1.237	0.28	3.40
1200	2.98	34.46	27.48	69.3	1.384	0.40	3.37

STATION 168-007

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.56	31.77	24.53	341.7	0.000	5.96	2.25
10	9.18	31.82	24.63	332.4	0.034	5.79	2.43
20	9.10	31.83	24.65	330.7	0.067	5.57	
30	9.10	31.84	24.65	330.1	0.100	5.43	2.30
50	8.21	32.16	25.04	293.8	0.162	4.40	2.45
75	7.58	32.87	25.68	232.6	0.228	3.51	2.57
100	7.23	33.33	26.09	194.1	0.281	3.02	2.69
150	6.89	33.75	26.47	159.0	0.369	2.43	3.03

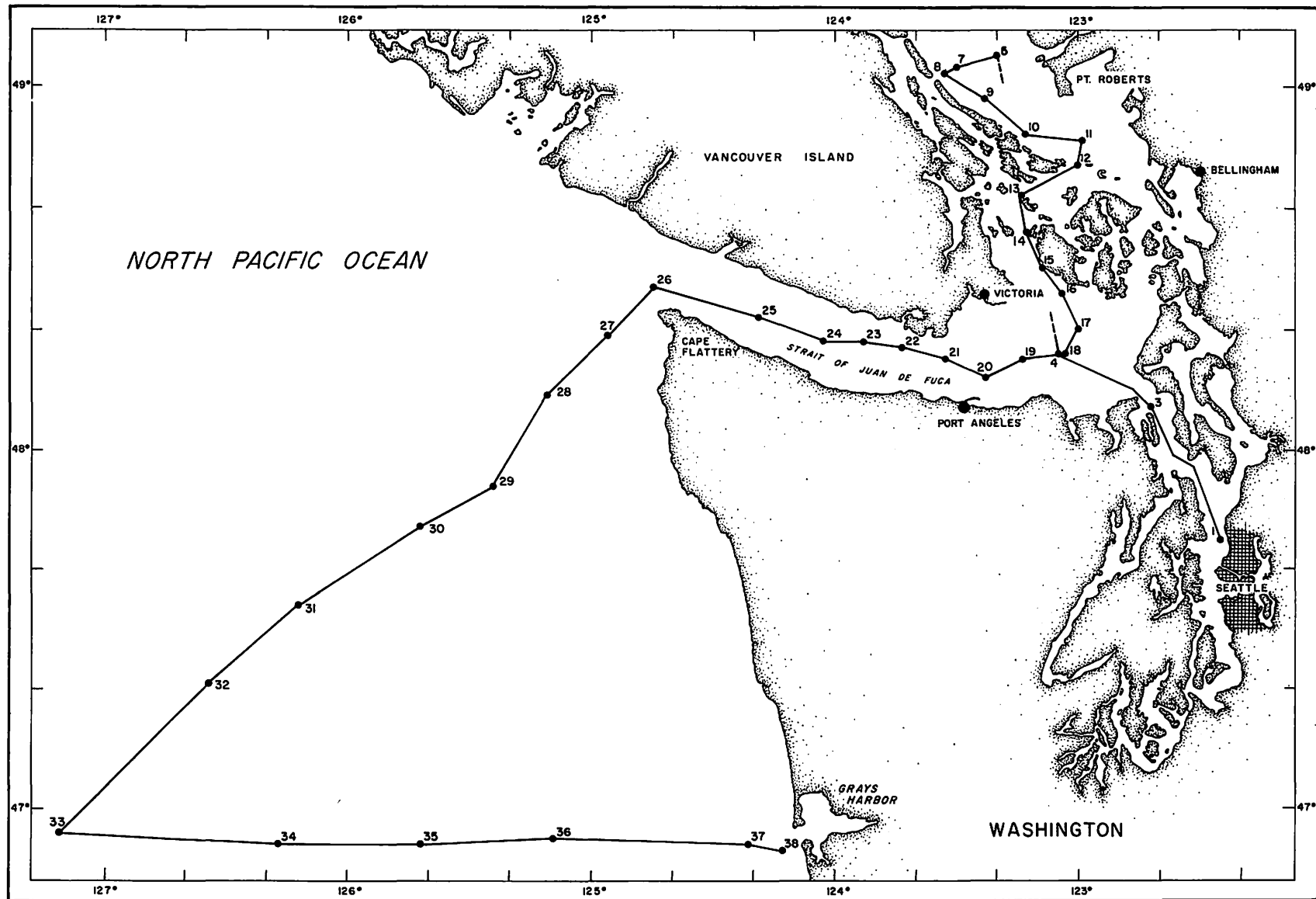


Fig. 6. Brown Bear Cruise No. 175 (8-13 July 1957)

STATION 175-001

POINT JEFFERSON - PUGET SOUND

OBSERVED VALUES

DATE 07/08/57 HR 23 LAT 47-45N LONG 122-25W SDG 284 BTMCODE
 WVCL 02 DIR 18 FC 02 BA 18 DRY 16.7 WET . RELHU VIS 9
 WEA 02 CL 5 AMT 9 SEA 0 DIR 00 SWL DIR SECDI LD 0

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	12.56	28.94	21.82	7.07
1	5	11.32	29.24	22.27	5.41
1	10	11.00	29.35	22.41	5.17
1	20	10.73	29.44	22.53	5.15
1	30	10.50	29.58	22.67	4.86
1	50	10.39	29.80	22.86	4.57
1	75	10.35	29.98	23.01	4.47
1	99	10.40	30.01	23.02	4.49
1	147	10.34	30.05	23.06	
1	196	10.42	30.12	23.10	
1	236	10.41	30.11	23.10	4.41
1	265	10.40	30.15	23.13	4.39

STATION 175-003

PORT TOWNSEND -- ADMIRALTY INLET

OBSERVED VALUES

DATE 07/09/57 HR 02 LAT 48-08N LONG 122-42W SDG 110 BTMCODE
 WVCL 05 DIR 30 FC 03 BA 19 DRY 12.2 WET 11.7 RELHU 94 VIS 5
 WEA 02 CL 5 AMT 9 SEA 0 DIR 00 SWL DIR SECDI LD

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	10.47	30.33	23.26	4.69
1	5	10.35	30.41	23.34	4.63
1	9	10.34	30.44	23.37	4.61
1	19	10.12	30.68	23.59	4.39
1	28	10.01	30.83	23.72	4.29
1	47	9.96	30.87	23.76	4.18
1	70	9.54	31.17	24.06	3.91
1	93	9.27	31.53	24.39	3.62

STATION 175-001

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	12.56	28.94	21.82	600.6	0.000	7.07
10	11.00	29.35	22.41	544.0	0.057	5.17
20	10.73	29.44	22.53	533.1	0.111	5.15
30	10.50	29.58	22.67	519.2	0.164	4.86
50	10.39	29.80	22.86	501.5	0.266	4.57
75	10.35	29.98	23.01	487.9	0.390	4.47
100	10.40	30.01	23.02	486.9	0.512	
150	10.35	30.06	23.07	483.2	0.755	4.46
200	10.42	30.12	23.10	480.7	0.996	
250	10.41	30.12	23.11	481.3	1.237	

STATION 175-003

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	10.47	30.33	23.26	462.7	0.000	4.69
10	10.31	30.47	23.39	449.9	0.046	4.58
20	10.10	30.70	23.61	429.8	0.090	4.38
30	10.02	30.83	23.72	419.0	0.132	4.28
50	9.90	30.91	23.80	411.6	0.215	4.15
75	9.47	31.24	24.13	380.9	0.314	3.85

STATION 175-004

NE OF NEW DUNGENESS — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 07/09/57 HR 05 LAT 48-16N LONG 123-05W SDG 161 BTMCODE
 WVCL 00 DIR 00 FC 00 BA 18 DRY 11.9 WET 11.1 RELHU 91 VIS 5
 WEA 02 CL 5 AMT 9 SEA 0 DIR 00 SWL DIR SECDI LD 40

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	10.58	30.39	23.29	5.11
1	5	10.30	30.56	23.47	4.64
1	10	10.14	30.69	23.59	4.39
1	19	9.86	30.89	23.79	4.18
1	29	9.74	31.13	24.00	4.10
1	48	9.15	31.65	24.50	3.62
1	72	8.68	32.02	24.86	3.30
1	96	8.20	32.57	25.36	2.86
1	124	7.96	32.82	25.59	2.69
1	153	7.54	33.24	25.98	2.37

STATION 175-005

FRASER RIVER LIGHTSHIP — STRAIT OF GEORGIA

OBSERVED VALUES

DATE 07/09/57 HR 16 LAT 49-05N LONG 123-20W SDG 123 BTMCODE
 WVCL 00 DIR 22 FC 01 BA 21 DRY 16.0 WET 13.6 RELHU 77 VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD 6

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
3	0	15.26	5.90	3.66	6.41
3	5	13.27	23.96	17.85	6.83
3	9	10.66	27.80	21.27	4.72
3	19	9.66	28.98	22.34	4.37
2	23	9.68	29.33	22.61	4.23
2	39	9.58	29.95	23.11	3.99
1	57	9.54	30.07	23.21	3.94
2	58	9.36	30.09	23.25	4.03
1	63	9.39	30.15	23.29	3.96
1	82	9.30	30.26	23.39	4.40*
1	98	8.92	30.42	23.57	3.98
1	113	8.31	30.46	23.69	4.17*

STATION 175-004

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.
0	10.58	30.39	23.29	460.0	0.000	5.11
10	10.14	30.69	23.59	430.9	0.045	4.39
20	9.85	30.91	23.81	410.3	0.087	4.18
30	9.70	31.16	24.03	389.6	0.127	4.07
50	9.11	31.67	24.52	343.2	0.200	3.60
75	8.61	32.11	24.94	303.6	0.281	3.23
100	8.18	32.60	25.39	261.4	0.352	2.84
150	7.59	33.19	25.93	210.1	0.470	2.41

STATION 175-005

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.
0	15.26	5.90	3.66	2371.0	0.000	6.41
10	10.55	27.94	21.39	641.4	0.151	4.68
20	9.72	29.06	22.39	545.7	0.210	4.33
30	9.63	29.63	22.85	502.2	0.262	4.11
50	9.52	30.00	23.16	473.3	0.360	4.01
75	9.38	30.21	23.34	456.0	0.476	
100	8.85	30.43	23.59	432.2	0.587	

STATION 175-007

NE OF PORLIER PASS - STRAIT OF GEORGIA

OBSERVED VALUES

DATE 07/09/57 HR 17 LAT 49-03N LONG 123-30W SDG 333 BTMCODE
 WVCL 03 DIR 10 FC 02 BA 21 DRY 16.0 WET 13.6 RELHU 77 VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
2	0	15.90	8.07	5.21	6.51
2	5	14.00	22.93	16.93	7.25
2	10	10.46	28.38	21.75	4.74
2	19	9.12	29.26	22.64	4.23
2	28	9.22	29.42	22.75	4.10
2	47	9.56	30.06	23.20	3.92
2	71	9.34	30.32	23.43	3.90
2	95	8.86	30.42	23.58	
3	117	9.08	30.54	23.64	3.83
3	142	7.77	30.59	23.87	4.03
1	179	7.72	30.68	23.95	3.89
1	207	7.80	30.73	23.98	3.65
1	242	7.88	30.82	24.04	3.58
1	300	8.14	30.89	24.06	3.30

STATION 175-008

NE OF PORLIER PASS - STRAIT OF GEORGIA

OBSERVED VALUES

DATE 07/09/57 HR 19 LAT 49-02N LONG 123-33W SDG 135 BTMCODE
 WVCL 04 DIR 12 FC 03 BA 21 DRY 16.0 WET 13.6 RELHU 77 VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD 0

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	14.48	21.21	15.52	6.55
1	5	11.54	26.70	20.27	5.57
1	10	10.60	27.98	21.41	5.00
1	20	9.79	28.62	22.04	4.49
1	30	9.42	29.58	22.84	4.17
1	49	9.28	29.87	23.09	2.99
1	74	8.32	30.25	23.53	4.18
1	99	7.95	30.45	23.74	4.17

STATION 175-007

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	15.90	8.07	5.21	2217.1	0.000	6.51
10	10.46	28.38	21.75	607.4	0.141	4.74
20	9.13	29.27	22.65	521.5	0.197	4.21
30	9.28	29.51	22.81	505.9	0.248	4.07
50	9.55	30.10	23.23	466.3	0.345	3.92
75	9.21	30.33	23.46	444.6	0.459	3.87
100	9.02	30.45	23.58	433.2	0.569	3.79
150	7.74	30.61	23.89	404.1	0.778	4.02
200	7.78	30.72	23.97	397.0	0.978	3.69
250	7.91	30.84	24.05	390.5	1.175	3.55
300	8.14	30.89	24.06	390.6	1.370	3.30

STATION 175-008

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	14.48	21.21	15.52	1207.3	0.000	6.55
10	10.60	27.98	21.41	639.3	0.092	5.00
20	9.79	28.62	22.04	579.5	0.153	4.49
30	9.42	29.58	22.84	502.8	0.207	4.17
50	9.23	29.89	23.11	477.2	0.305	3.06
75	8.29	30.26	23.54	436.7	0.419	4.20

STATION 175-009

W OF POINT ROBERTS - STRAIT OF GEORGIA

OBSERVED VALUES

DATE 07/09/57 HR 21 LAT 48-58N LONG 123-23W SDG 256 BTMCODE
 WVCL 05 DIR 12 FC 03 BA 21 DRY 16.6 WET 13.8 RELHU 73 VIS 9
 WEA 00 CL 3 AMT 3 SEA 1 DIR 12 SWL DIR SECDI LD 0

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	14.28	21.60	15.86	6.89
1	5	11.34	26.15	19.88	5.44
1	10	9.92	28.59	22.00	4.63
1	20	9.38	29.16	22.52	4.56
1	30	8.76	29.69	23.03	4.41
1	50	9.53	30.23	23.33	3.95
1	75	9.38	30.40	23.49	3.93
1	100	9.07	30.50	23.61	3.95
1	150	8.22	30.63	23.84	4.03
1	200	7.68	30.69	23.96	3.91
1	249	7.72	30.75	24.00	3.66

STATION 175-010

SW OF POINT ROBERTS - STRAIT OF GEORGIA

OBSERVED VALUES

DATE 07/09/57 HR 23 LAT 48-52N LONG 123-13W SDG 220 BTMCODE
 WVCL 03 DIR 11 FC 02 BA 22 DRY 16.7 WET 13.9 RELHU 73 VIS 9
 WEA 03 CL 2 AMT 5 SEA 1 DIR 11 SWL DIR SECDI LD 0

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	13.96			7.97
1	5	11.50	27.35	20.78	6.13
1	10	10.70	28.02	21.43	5.10
1	20	9.50	28.85	22.26	4.29
1	30	9.40	29.47	22.76	4.32
1	50	8.81	30.06	23.31	4.17
1	75	8.41	30.09	23.39	4.20
1	100	8.32	30.36	23.62	4.20
1	123	8.04	30.57	23.82	4.27
1	148	7.92	30.62	23.87	4.09
1	172	8.02	30.68	23.91	3.93
1	197	8.16	30.72	23.92	3.58

STATION 175-009

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.
0	14.28	21.60	15.86	1174.7	0.000	6.89
10	9.92	28.59	22.00	583.5	0.088	4.63
20	9.38	29.16	22.52	533.3	0.144	4.56
30	8.76	29.69	23.03	485.1	0.195	4.41
50	9.53	30.23	23.33	456.4	0.289	3.95
75	9.38	30.40	23.49	441.9	0.401	3.93
100	9.07	30.50	23.61	430.2	0.510	3.95
150	8.22	30.63	23.84	409.1	0.720	4.03
200	7.68	30.69	23.96	397.9	0.922	3.91

STATION 175-010

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.
0	13.96					7.97
10	10.70	28.02	21.43	637.8	-0.062	5.10
20	9.50	28.85	22.26	558.1	-0.002	4.29
30	9.40	29.47	22.76	510.6	0.051	4.32
50	8.81	30.06	23.31	458.5	0.148	4.17
75	8.41	30.09	23.39	451.0	0.262	4.20
100	8.32	30.36	23.62	429.9	0.372	4.20
150	7.93	30.63	23.88	405.1	0.581	4.08

STATION 175-011

ALDEN POINT - STRAIT OF GEORGIA

OBSERVED VALUES

DATE 07/10/57 HR 01 LAT 48-51N LONG 122-59W SDG 417 BTMCODE
 WVCL 00 DIR 00 FC 00 BA 21 DRY 15.8 WET 13.1 RELHU 74 VIS 9
 WEA 03 CL 4 AMT 5 SEA 1 DIR SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	10.41	29.18	22.38	4.83
1	5	10.16	29.36	22.56	4.67
1	10	10.12	29.44	22.63	4.56
1	20	10.12	29.51	22.68	4.54
1	30	9.99	29.68	22.83	4.41
1	50	9.92	29.76	22.91	4.33
1	75	9.52	30.19	23.30	4.11
1	100	9.45	30.39	23.47	3.93
1	140	9.34	30.57	23.63	3.85
1	180	9.28	30.66	23.71	3.80
1	220	9.14	30.83	23.86	3.72

STATION 175-012

EAST POINT - HARO STRAIT

OBSERVED VALUES

DATE 07/10/57 HR 02 LAT 48-47N LONG 123-00W SDG 338 BTMCODE
 WVCL 00 DIR 00 FC 00 BA 20 DRY 14.9 WET 12.8 RELHU 79 VIS 9
 WEA 03 CL 4 AMT 6 SEA 0 DIR 00 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	10.48	28.76	22.04	5.16
1	5	10.30	28.99	22.25	4.86
1	10	10.28	29.22	22.43	4.86
1	20	10.14	29.42	22.61	4.63
1	30	10.02	29.75	22.88	4.37
1	50	9.86	29.93	23.05	4.23
1	75	9.62	30.15	23.26	4.13
1	85	9.63	30.28	23.36	4.01
1	105	8.99	31.38	24.31	3.46
1	148	8.88	31.58	24.49	3.38

STATION 175-011

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	10.41	29.18	22.38	547.0	0.000	4.83
10	10.12	29.44	22.63	523.4	0.054	4.56
20	10.12	29.51	22.68	518.4	0.106	4.54
30	9.99	29.68	22.83	503.9	0.157	4.41
50	9.92	29.76	22.91	497.2	0.257	4.33
75	9.52	30.19	23.30	459.6	0.377	4.11
100	9.45	30.39	23.47	444.0	0.490	3.93
150	9.33	30.58	23.64	428.9	0.708	3.84
200	9.22	30.73	23.77	416.9	0.919	3.76

STATION 175-012

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	10.48	28.76	22.04	579.3	0.000	5.16
10	10.28	29.22	22.43	542.2	0.056	4.86
20	10.14	29.42	22.61	525.3	0.109	4.63
30	10.02	29.75	22.88	499.1	0.160	4.37
50	9.86	29.93	23.05	483.6	0.258	4.23
75	9.62	30.15	23.26	464.0	0.376	4.13
100	9.11	31.16	24.12	381.8	0.482	3.57

STATION 175-013

TURN POINT - HARO STRAIT

OBSERVED VALUES

DATE 07/10/57 HR 04 LAT 48-42N LONG 123-14W SDG 344 BTMCODE
 WVEL 00 DIR 00 FC 00 BA 19 DRY 13.1 WET 11.6 RELHU 84 VIS 9
 WEA 02 CL 5 AMT 6 SEA 0 DIR 00 SWL DIR SECDI LD 9

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
2	0	10.84	28.84	22.04	5.61
2	5	10.66	29.03	22.22	5.33
2	10	10.48	29.22	22.40	5.10
2	20	10.00	29.79	22.92	4.45
2	30	10.02	29.82	22.94	4.46
2	50	9.77	31.27	24.10	4.16
2	74	9.25	31.91	24.69	3.75
2	99	9.10	32.35	25.05	3.61
2	149	8.68	32.89	25.54	3.25
2	164	8.64	33.01	25.64	3.18
1	205	8.58	33.08	25.70	3.14
1	248	8.55	33.11	25.73	3.14
1	274	8.49	33.17	25.79	3.08

STATION 175-014

KELLETT BLUFF - HARO STRAIT

OBSERVED VALUES

DATE 07/10/57 HR 06 LAT 48-36N LONG 123-13W SDG 505 BTMCODE
 WVEL DIR FC BA 19 DRY 13.2 WET 11.2 RELHU 79 VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	10.00	29.93	23.03	4.45
1	5	9.80	30.38	23.41	4.35
1	10	9.79	30.50	23.50	4.28
1	20	9.75	30.61	23.59	4.27
1	30	9.62	30.70	23.68	4.11
1	50	9.37	30.93	23.90	3.93
1	75	9.20	31.19	24.13	3.80
1	99	9.21	31.24	24.17	3.70
1	149	8.80	31.76	24.64	3.36
1	199	8.54	32.09	24.93	3.16
1	238	8.45	32.25	25.07	3.04

STATION 175-013

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	10.84	28.84	22.04	579.1	0.000	5.61
10	10.48	29.22	22.40	545.3	0.056	5.10
20	10.00	29.79	22.92	495.7	0.108	4.45
30	10.02	29.82	22.94	494.0	0.157	4.46
50	9.77	31.27	24.10	382.9	0.245	4.16
75	9.24	31.93	24.70	326.3	0.334	3.74
100	9.09	32.36	25.06	292.5	0.411	3.60
150	8.68	32.90	25.55	247.2	0.546	3.24
200	8.59	33.07	25.69	234.1	0.666	3.14
250	8.55	33.11	25.73	231.4	0.782	3.14

STATION 175-014

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	10.00	29.93	23.03	485.0	0.000	4.45
10	9.79	30.50	23.50	439.6	0.046	4.28
20	9.75	30.61	23.59	431.0	0.090	4.27
30	9.62	30.70	23.68	422.5	0.133	4.11
50	9.37	30.93	23.90	402.0	0.215	3.93
75	9.20	31.19	24.13	380.6	0.313	3.80
100	9.20	31.25	24.18	376.5	0.408	3.69
150	8.79	31.77	24.65	332.6	0.585	3.36
200	8.54	32.10	24.94	305.2	0.744	3.16

STATION 175-015

LIME KILN POINT - HARO STRAIT

OBSERVED VALUES

DATE 07/10/57 HR 07 LAT 48-30N LONG 123-09W SDG 582 BTMCODE
 WVEL 02 DIR 16 FC 01 BA 18 DRY 11.1 WET 10.3 RELHU 90 VIS
 WEA CL AMT SEA DIR SWL DIR SEGDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	9.94	30.41	23.41	4.38
1	5	9.76	30.56	23.55	4.24
1	9	9.66	30.78	23.74	4.17
1	18	9.60	30.88	23.83	4.03
1	27	9.62	30.89	23.83	4.10
1	46	9.42	31.12	24.04	3.89
1	68	9.20	31.27	24.19	3.82
1	91	8.98	31.61	24.49	3.55
1	128	8.82	31.77	24.64	3.40
1	173	8.46	32.24	25.06	3.05
1	219	8.36	32.40	25.20	2.98

STATION 175-016

EAGLE POINT - HARO STRAIT

OBSERVED VALUES

DATE 07/10/57 HR 08 LAT 48-26N LONG 123-04W SDG 201 BTMCODE
 WVEL 00 DIR 00 FC 00 BA 18 DRY 11.2 WET 10.8 RELHU 95 VIS 9
 WEA 00 CL 1 AMT 3 SEA 0 DIR 00 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	9.81	30.45	23.46	4.45
1	5	9.75	30.63	23.61	4.29
1	10	9.69	30.74	23.70	4.16
1	20	9.59	30.88	23.83	4.10
1	30	9.50	31.03	23.96	3.84
1	50	9.33	31.20	24.12	3.70
1	75	8.98	31.52	24.42	3.47
1	100	8.52	32.20	25.02	3.08
1	125	8.25	32.46	25.27	2.84
1	147	8.10	32.65	25.44	2.70

STATION 175-015

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	9.94	30.41	23.41	448.5	0.000	4.38
10	9.65	30.80	23.76	415.2	0.043	4.14
20	9.61	30.88	23.83	408.9	0.084	4.05
30	9.59	30.93	23.87	405.0	0.125	4.06
50	9.38	31.13	24.06	387.3	0.204	3.89
75	9.12	31.39	24.30	364.5	0.298	3.72
100	8.95	31.63	24.51	344.6	0.387	3.52
150	8.61	32.04	24.89	310.0	0.551	3.19
200	8.37	32.37	25.18	282.8	0.699	2.97

STATION 175-016

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	9.81	30.45	23.46	443.5	0.000	4.45
10	9.69	30.74	23.70	420.3	0.043	4.16
20	9.59	30.88	23.83	408.6	0.084	4.10
30	9.50	31.03	23.96	396.2	0.124	3.84
50	9.33	31.20	24.12	381.4	0.202	3.70
75	8.98	31.52	24.42	352.8	0.294	3.47
100	8.52	32.20	25.02	296.0	0.375	3.08

STATION 175-017

HEIN BANK — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 07/10/57 HR 10 LAT 48-20N LONG 123-00W SDG 168 BTMCODE
 WVCL 00 DIR 00 FC 00 BA 18 DRY 11.0 WET 10.7 RELHU 97 VIS 9
 WEA 00 CL 1 AMT 3 SEA 1 DIR 00 SWL 1 DIR 28 SECDI LD 24

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	10.54	30.20	23.15	4.87
1	5	10.45	30.37	23.29	4.79
1	10	10.51	30.41	23.31	4.79
1	20	10.32	30.53	23.44	4.58
1	30	9.90	30.80	23.72	4.24
1	50	9.36	31.32	24.21	3.81
1	75	8.20	32.52	25.32	2.93
1	100	7.80	32.96	25.72	2.53
1	130	7.74	33.03	25.79	2.51
1	142	7.59	33.19	25.93	2.36

STATION 175-018

NE OF NEW DUNGENESS — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 07/10/57 HR 11 LAT 48-16N LONG 123-03W SDG 174 BTMCODE
 WVCL 02 DIR 25 FC 02 BA 17 DRY 10.8 WET 10.6 RELHU 98 VIS 9
 WEA 00 CL 1 AMT 3 SEA 1 DIR 25 SWL 1 DIR 28 SECDI LD 24

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	10.30	30.40	23.34	4.73
1	5	10.22	30.50	23.43	4.58
1	10	10.30	30.67	23.55	4.58
1	20	10.20	30.81	23.68	4.47
1	30	9.71	31.12	24.00	4.04
1	50	9.24	31.59	24.44	3.67
1	75	8.40	32.29	25.11	3.06
1	100	8.00	32.75	25.53	2.70
1	130	7.60	33.13	25.89	2.42
1	160	7.23	33.51	26.24	0.67

STATION 175-017

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	10.54	30.20	23.15	473.4	0.000	4.87
10	10.51	30.41	23.31	457.5	0.047	4.79
20	10.32	30.53	23.44	445.8	0.092	4.58
30	9.90	30.80	23.72	419.4	0.135	4.24
50	9.36	31.32	24.21	372.9	0.214	3.81
75	8.20	32.52	25.32	267.3	0.294	2.93
100	7.80	32.96	25.72	229.3	0.356	2.53

STATION 175-018

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	10.30	30.40	23.34	454.8	0.000	4.73
10	10.30	30.67	23.55	434.9	0.044	4.58
20	10.20	30.81	23.68	423.2	0.087	4.47
30	9.71	31.12	24.00	392.7	0.128	4.04
50	9.24	31.59	24.44	351.1	0.202	3.67
75	8.40	32.29	25.11	287.2	0.282	3.06
100	8.00	32.75	25.53	247.7	0.349	2.70
150	7.35	33.38	26.12	192.7	0.459	1.42

STATION 175-019

NW OF NEW DUNGENESS — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 07/10/57 HR 12 LAT 48-15N LONG 123-14W SDG 143 BTMCODE
 WVEL 02 DIR 25 FC 02 BA 17 DRY 11.0 WET 10.4 RELHU 93 VIS 9
 WEA 00 CL 1 AMT 3 SEA 1 DIR 25 SWL 1 DIR 28 SECDI LD 0

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	10.72	30.41	23.28	5.16
1	5	10.47	30.48	23.38	4.98
1	10	10.28	30.53	23.45	4.76
1	19	9.94	30.88	23.77	4.44
1	29	9.53	31.34	24.20	3.95
1	48	8.74	31.97	24.81	3.43
1	72	7.94	32.75	25.54	2.79
1	96	7.92	32.86	25.63	2.78
1	129	7.10	33.61	26.33	2.13

STATION 175-020

EDIZ HOOK — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 07/10/57 HR 13 LAT 48-12N LONG 123-23W SDG 128 BTMCODE
 WVEL 02 DIR 18 FC 01 BA 17 DRY 10.8 WET 10.4 RELHU 95 VIS 9
 WEA 00 CL 5 AMT 6 SEA 0 DIR 18 SWL DIR SECDI LD 0

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	10.40	30.86	23.68	4.95
1	5	10.22	30.98	23.81	4.79
1	10	9.87	31.28	24.10	4.33
1	19	8.96	31.87	24.70	3.57
1	29	8.92	31.94	24.76	3.47
1	48	8.30	32.52	25.31	3.00
1	72	7.46	33.27	26.02	2.40
1	96	7.16	33.62	26.33	2.13
1	121	7.04	33.73	26.44	2.05

STATION 175-019

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	10.72	30.41	23.28	460.7	0.000	5.16
10	10.28	30.53	23.45	445.0	0.045	4.76
20	9.90	30.93	23.82	409.6	0.088	4.38
30	9.48	31.37	24.23	370.7	0.127	3.92
50	8.64	32.06	24.90	307.3	0.195	3.35
75	7.96	32.74	25.53	247.5	0.264	2.81
100	7.87	32.91	25.67	234.0	0.324	2.74

STATION 175-020

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	10.40	30.86	23.68	422.3	0.000	4.95
10	9.87	31.28	24.10	383.0	0.040	4.33
20	8.96	31.87	24.70	325.7	0.075	3.56
30	8.89	31.97	24.79	317.3	0.107	3.45
50	8.21	32.60	25.38	261.1	0.165	2.94
75	7.41	33.33	26.07	196.1	0.222	2.36
100	7.13	33.65	26.36	168.9	0.268	2.10

STATION 175-021

RACE ROCKS — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 07/10/57 HR 15 LAT 48-15N LONG 123-33W SDG 174 BTMCODE
 WVEL 02 DIR 18 FC 01 BA 18 DRY 11.2 WET 10.6 RELHU 93 VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD 8

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	9.80	30.94	23.84	4.57
1	5	9.66	31.08	23.97	4.45
1	10	9.58	31.33	24.18	4.22
1	19	8.85	31.91	24.75	3.57
1	28	8.83	31.94	24.77	3.54
1	47	8.42	32.32	25.13	3.18
1	70	7.98	32.72	25.51	2.87
1	93	7.24	33.55	26.27	2.22
1	121	7.08	33.70	26.41	2.05
1	149	7.03	33.83	26.52	1.99

STATION 175-022

BEECHY HEAD — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 07/10/57 HR 16 LAT 48-17N LONG 123-44W SDG 177 BTMCODE
 WVEL 02 DIR 11 FC 01 BA 17 DRY 11.8 WET 11.0 RELHU 91 VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD 3

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	9.98	30.83	23.73	4.69
1	5	9.31	31.42	24.29	4.01
1	10	9.16	31.60	24.46	3.89
1	17	8.71	32.03	24.86	3.46
1	26	8.66	32.16	24.97	3.35
1	43	8.58	32.26	25.06	3.30
1	65	8.41	32.42	25.21	3.19
1	87	8.12	32.78	25.54	2.92
1	122	7.26	33.49	26.22	2.04
1	152	6.66	33.88	26.60	1.75

STATION 175-021

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	9.80	30.94	23.84	407.0	0.000	4.57
10	9.58	31.33	24.18	374.8	0.039	4.22
20	8.85	31.91	24.75	321.1	0.074	3.57
30	8.78	31.98	24.81	315.0	0.106	3.50
50	8.38	32.35	25.16	282.1	0.166	3.16
75	7.77	32.95	25.72	229.3	0.230	2.69
100	7.19	33.59	26.30	174.2	0.280	2.17

STATION 175-022

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	9.98	30.83	23.73	417.9	0.000	4.69
10	9.16	31.60	24.46	348.5	0.038	3.89
20	8.69	32.08	24.90	306.1	0.071	3.42
30	8.65	32.18	24.99	298.3	0.101	3.34
50	8.54	32.29	25.09	288.8	0.160	3.28
75	8.30	32.58	25.35	264.2	0.229	3.09
100	7.78	33.08	25.82	220.1	0.290	2.53
150	6.70	33.86	26.58	148.3	0.382	1.76

STATION 175-023

OTTER POINT - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 07/10/57 HR 17 LAT 48-18N LONG 123-53W SDG 176 BTMCODE
 WVCL 03 DIR 10 FC 02 BA 17 DRY 11.1 WET 10.4 RELHU 92 VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD 3

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	9.48	31.36	24.22	4.18
1	5	9.38	31.41	24.28	4.09
1	9	9.42	31.40	24.26	4.05
1	18	9.36	31.49	24.34	3.99
1	27	9.26	31.66	24.49	3.90
1	45	8.66	32.28	25.07	3.26
1	67	7.96	32.92	25.67	2.78
1	90	7.33	33.41	26.14	2.07
1	126	6.69	33.90	26.62	1.89
1	162	6.66	33.91	26.63	1.77

STATION 175-024

PILLAR POINT - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 07/10/57 HR 18 LAT 48-18N LONG 124-03W SDG 186 BTMCODE
 WVCL 07 DIR 10 FC 04 BA 16 DRY 11.3 WET 11.0 RELHU 97 VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD 0

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	9.56	31.60	24.39	4.32
1	5	9.54	31.60	24.40	4.38
1	10	9.47	31.62	24.42	4.12
1	20	9.16	31.87	24.67	3.77
1	29	8.74	32.26	25.04	3.34
1	49	8.62	32.45	25.20	3.19
1	74	8.00	32.90	25.65	2.77
1	98	7.20	33.54	26.26	1.99
1	137	6.65	33.91	26.63	1.74
1	177	6.61	33.91	26.63	1.66

STATION 175-023

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOBOT. ANOMALY	OXY.
0	9.48	31.36	24.22	370.9	0.000	4.18
10	9.42	31.41	24.27	366.5	0.037	4.04
20	9.35	31.52	24.37	357.4	0.073	3.98
30	9.16	31.77	24.59	336.2	0.108	3.78
50	8.49	32.44	25.22	277.0	0.169	3.17
75	7.72	33.11	25.85	216.7	0.231	2.48
100	7.09	33.59	26.32	172.8	0.280	2.01
150	6.60	33.96	26.68	139.6	0.358	1.80

STATION 175-024

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOBOT. ANOMALY	OXY.
0	9.56	31.60	24.39	354.3	0.000	4.32
10	9.47	31.62	24.42	351.6	0.035	4.12
20	9.16	31.87	24.67	328.6	0.069	3.77
30	8.74	32.27	25.05	292.9	0.100	3.34
50	8.60	32.46	25.21	277.1	0.157	3.18
75	7.96	32.93	25.68	233.4	0.221	2.73
100	7.16	33.57	26.29	175.3	0.272	1.97
150	6.58	33.95	26.67	140.1	0.351	1.69

STATION 175-025

KYDAKA POINT - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 07/10/57 HR 20 LAT 48-22N LONG 124-19W SDG 238 BTMCODE
 WVCL 04 DIR 12 FC 03 BA 15 DRY 11.7 WET 11.2 RELHU 94 VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD 6

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
2	0	10.34	31.26	24.00	5.00
2	4	10.27	31.26	24.01	4.86
2	8	9.49	31.50	24.33	4.14
2	17	9.16	31.76	24.58	3.94
2	25	8.92	32.04	24.84	3.42*
2	42	8.43	32.53	25.30	3.12
2	64	7.50	33.27	26.01	2.51
2	85	7.38	33.53	26.23	2.55
2	106	7.17	33.70	26.39	2.30
2	127	6.98	33.76	26.47	2.07
2	161	6.66	33.80	26.54	1.31
1	181	6.64	33.90	26.62	
2	218	6.64	33.92	26.64	1.85

STATION 175-026

CAPE FLATTERY - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 07/11/57 HR 00 LAT 48-27N LONG 124-45W SDG 280 BTMCODE
 WVCL 05 DIR 10 FC 03 BA 13 DRY 11.1 WET 11.1 RELHU 99 VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD 0

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	9.64	31.93	24.64	4.70
1	5	9.58	31.95	24.66	4.52
1	9	9.50	31.98	24.70	4.41
1	19	9.20	32.06	24.81	4.01
1	27	9.08	32.10	24.86	3.85
1	46	8.56	32.43	25.20	3.27
1	69	8.07	33.04	25.75	3.07
1	93	7.59	33.43	26.12	2.70
1	139	7.30	33.62	26.31	2.87*
1	185	6.84	33.89	26.59	2.11
1	231	6.66	33.94	26.65	1.99
1	252	6.56	33.95	26.67	1.80

STATION 175-025

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	10.34	31.26	24.00	391.7	0.000	5.00
10	9.41	31.55	24.38	355.9	0.037	4.13
20	9.07	31.87	24.68	327.3	0.071	3.72
30	8.80	32.18	24.97	300.4	0.102	3.35
50	8.00	32.85	25.61	239.5	0.156	2.82
75	7.45	33.42	26.13	190.0	0.210	2.57
100	7.23	33.66	26.35	169.5	0.255	2.37
150	6.72	33.77	26.51	155.3	0.336	
200	6.63	33.94	26.66	142.2	0.410	

STATION 175-026

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	9.64	31.93	24.64	331.1	0.000	4.70
10	9.46	31.99	24.71	324.0	0.033	4.36
20	9.19	32.06	24.81	314.9	0.065	3.99
30	8.99	32.14	24.91	306.2	0.096	3.73
50	8.47	32.55	25.30	268.5	0.153	3.25
75	7.93	33.16	25.86	215.9	0.214	2.97
100	7.56	33.45	26.14	189.6	0.265	2.64
150	7.16	33.70	26.40	166.3	0.354	2.28
200	6.79	33.91	26.61	146.5	0.432	2.12
250	6.57	33.95	26.67	141.3	0.504	1.82

STATION 175-027

OBSERVED VALUES

DATE 07/11/57 HR 21 LAT 48-19N LONG 124-56W SDG 617 BTMCODE
 WVCL 10 DIR 08 FC 05 BA 10 DRY 12.2 WET 12.2 RELHU 99 VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD 15

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	4	11.56	31.74	24.16	5.94
1	8	10.97	32.06	24.52	5.62
1	17	9.17	32.62	25.25	3.99
1	26	8.24	32.91	25.62	3.12
1	42	7.69	33.08	25.83	3.36
1	63	7.34	33.42	26.15	3.09
1	84	7.14	33.63	26.34	1.99
1	126	6.75	33.84	26.56	1.64
1	168	6.74	33.87	26.59	1.66
1	210	6.48	33.94	26.68	1.70
2	252	6.20	34.00	26.76	1.62
2	268	6.20	34.00	26.76	1.67

STATION 175-028

OBSERVED VALUES

DATE 07/11/57 HR 09 LAT 48-09N LONG 125-11W SDG 305 BTMCODE
 WVCL 10 DIR 10 FC 05 BA 10 DRY 12.8 WET 12.8 RELHU 99 VIS 5
 WEA 00 CL 6 AMT 9 SEA 4 DIR 10 SWL DIR SECDI LD 3

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	11.70	31.56	24.00	5.97
1	5	11.66	31.55	24.00	5.92
1	9	10.76	31.70	24.27	5.57
1	18	9.74	32.03	24.70	
1	28	9.22	32.27	24.97	3.94
1	46	8.17	32.97	25.68	3.05
1	69	7.46	33.43	26.14	2.41
1	92	6.92	33.81	26.51	1.86
1	115	6.89	33.89	26.58	1.92
1	138	6.76	33.90	26.61	1.88
1	184	6.60	33.93	26.65	1.87
1	230	6.11	33.97	26.75	1.68
1	276	5.89	34.03	26.82	1.42

STATION 175-027

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
10	10.49	32.21	24.72	323.9	0.055	5.19
20	8.81	32.73	25.39	259.6	0.084	3.62
30	8.08	32.95	25.68	232.9	0.109	3.22
50	7.54	33.22	25.97	205.7	0.153	3.35
75	7.23	33.55	26.27	177.3	0.201	2.39
100	6.95	33.73	26.45	160.6	0.243	1.81
150	6.77	33.85	26.57	150.0	0.321	1.65
200	6.54	33.92	26.65	142.5	0.394	1.70
250	6.20	34.00	26.76	132.9	0.463	1.62

STATION 175-028

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	11.70	31.56	24.00	392.1	0.000	5.97
10	10.62	31.74	24.33	360.8	0.038	5.47
20	9.64	32.07	24.75	321.0	0.072	4.54
30	9.08	32.36	25.06	291.2	0.103	3.82
50	8.03	33.06	25.77	224.3	0.155	2.93
75	7.27	33.56	26.27	177.1	0.205	2.21
100	6.92	33.85	26.55	151.2	0.246	1.89
150	6.75	33.91	26.62	145.3	0.320	1.89
200	6.40	33.94	26.69	139.2	0.391	1.81
250	5.98	33.99	26.78	130.8	0.459	1.58

STATION 175-029

OBSERVED VALUES

DATE 07/11/57 HR 12 LAT 47-54N LONG 125-24W SDG 823 BTMCODE
 WVCL 09 DIR 28 FC 05 BA 13 DRY 13.7 WET 13.2 RELHU 95 VIS 5
 WEA 00 CL 6 AMT 9 SEA 4 DIR 28 SWL DIR SECDI LD 12

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
2	0	14.73	31.91	23.67	6.07
2	7	14.67	31.92	23.69	6.09
2	15	14.66	31.92	23.70	6.09
2	22	14.34	32.01	23.83	6.24
2	37	10.10	32.54	25.04	7.10
2	55	8.42	32.60	25.35	6.78
2	73	7.56	32.79	25.62	5.97
1	80	7.63	33.24	25.97	
2	110	7.45	33.29	26.03	4.78
1	120	7.70	33.70	26.32	3.26
2	146	7.53	33.78	26.41	
1	211	6.78	33.82	26.54	2.07
1	400	5.75	34.05	26.86	2.02*
3	441	5.22	34.11	26.97	0.88
3	723	4.47	34.24	27.15	0.43

STATION 175-030

OBSERVED VALUES

DATE 07/11/57 HR 18 LAT 47-47N LONG 125-42W SDG 1230 BTMCODE
 WVCL 09 DIR 29 FC 05 BA 21 DRY 14.0 WET 12.3 RELHU 83 VIS 9
 WEA 01 CL 8 AMT 2 SEA 4 DIR 29 SWL DIR SECDI LD

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
2	0	14.91	31.95	23.67	6.05
2	10	14.84	31.99	23.71	6.09
2	20	11.48	32.52	24.78	7.31
2	30	9.76	32.58	25.13	7.54
2	50	8.56	32.64	25.36	6.61
2	75	7.42	32.96	25.78	5.73
3	99	7.56	33.39	26.10	4.18
3	149	7.62	33.70	26.33	3.16
3	198	7.16	33.92	26.57	2.37
3	297	6.19	34.00	26.76	1.89
1	495	5.10	33.88*	26.80	1.81
3	993	3.55	34.40	27.38	0.29

STATION 175-029

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	14.73	31.91	23.67	423.2	0.000	6.07
10	14.71	31.91	23.68	423.0	0.042	6.07
20	14.54	31.97	23.76	415.5	0.084	6.18
30	11.76	32.35	24.60	335.5	0.122	6.83
50	8.80	32.56	25.26	272.5	0.183	6.90
75	7.62	33.00	25.78	223.5	0.245	6.02
100	7.60	33.38	26.08	195.4	0.297	4.43
150	7.48	33.78	26.41	164.7	0.387	2.82
200	6.89	33.81	26.52	155.3	0.467	2.19
250	6.76	33.86	26.58	150.5	0.543	1.82
300	6.58	33.92	26.65	144.4	0.617	1.52
400	5.75	34.05	26.86	125.4	0.752	1.04
500	4.64	34.18	27.09	103.4	0.866	0.69
600	4.18	34.24	27.19	94.6	0.965	0.49
700	4.34	34.25	27.18	96.7	1.061	0.43

STATION 175-030

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	14.91	31.95	23.67	423.9	0.000	6.05
10	14.84	31.99	23.71	419.8	0.042	6.09
20	11.48	32.52	24.78	317.8	0.079	7.31
30	9.76	32.58	25.13	285.3	0.109	7.54
50	8.56	32.64	25.36	263.1	0.164	6.61
75	7.42	32.96	25.78	223.8	0.225	5.73
100	7.57	33.40	26.10	193.4	0.277	4.16
150	7.61	33.71	26.34	171.7	0.368	3.14
200	7.14	33.92	26.57	150.5	0.449	2.36
250	6.62	33.96	26.67	141.3	0.522	2.08
300	6.17	34.00	26.76	133.1	0.591	1.89
400	5.59	34.08	26.90	121.1	0.718	1.89
500	5.08	34.15	27.01	110.9	0.834	1.80
600	4.63	34.21	27.11	102.1	0.940	1.65
700	4.26	34.27	27.20	94.2	1.038	1.41
800	3.95	34.32	27.27	87.8	1.129	1.10

STATION 175-031

OBSERVED VALUES

DATE 07/12/57 HR 01 LAT 47-34N LONG 126-12W SDG 1829 BTMCODE
 WVEL DIR 02 FC 22 BA 09 DRY 23.1 WET 72.1 RELHU 36 VIS
 WEA 67 CL 0 AMT 3 SEA 2 DIR 65 SWL DIR 22 SECDI LD 8

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
2	0	16.39	31.38	22.90	6.03
2	9	16.09	31.36	22.96	6.09
2	17	15.89	31.50	23.11	6.16
2	26	11.61	32.50	24.74	6.85
2	43	9.08	32.62	25.27	6.94
2	65	7.97	32.75	25.54	6.10
2	86	7.63	33.22	25.95	4.93
2	130	7.96	33.73	26.30	3.15
2	174	7.24	33.88	26.53	2.87
1	188	7.36	33.94	26.56	2.45
1	280	6.44	34.00	26.73	1.86
1	475	5.28	34.13	26.98	0.81
1	719	4.26	34.26	27.19	0.39
1	964	3.70	34.39	27.35	0.25
1	1450	2.66	34.50	27.54	0.65

STATION 175-032

OBSERVED VALUES

DATE 07/12/57 HR 07 LAT 47-21N LONG 126-34W SDG 2473 BTMCODE
 WVEL 03 DIR 24 FC 02 BA 21 DRY 14.0 WET 12.3 RELHU 83 VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD 12

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
2	0	16.40	31.02	22.63	6.06
2	10	16.36	31.04	22.65	6.12
2	20	14.32	32.30	24.06	7.08
2	30	11.58	32.58	24.81	7.56
2	50	8.28	32.64	25.40	6.96
2	75	7.40	32.71	25.58	6.83
2	100	6.83	32.90	25.81	6.13
2	150	7.08	33.69	26.40	4.05
2	200	6.62	33.88	26.61	3.52
1	200	6.72	33.88	26.60	3.47
2	300	5.69	33.98	26.81	1.95
1	399	5.25	34.07	26.93	1.85
1	648	4.36	34.24	27.17	0.39
1	897	3.60	34.36	27.34	0.21
1	1395	2.74	34.52	27.55	0.71
1	1890	2.06	34.59	27.66	1.27

STATION 175-031

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	16.39	31.38	22.90	496.6	0.000	6.03
10	16.25	31.34	22.90	496.8	0.050	6.07
20	14.24	31.91	23.78	413.9	0.096	6.44
30	10.88	32.53	24.90	307.1	0.132	6.93
50	8.64	32.62	25.33	265.7	0.189	6.72
75	7.77	32.99	25.75	226.3	0.251	5.52
100	7.83	33.42	26.08	195.6	0.304	4.23
150	7.68	33.81	26.41	165.3	0.394	2.96
200	7.12	33.92	26.57	150.2	0.473	2.50
250	6.68	33.97	26.67	141.3	0.546	2.09
300	6.31	34.01	26.75	134.2	0.615	1.72
400	5.69	34.08	26.89	122.4	0.743	1.14
500	5.15	34.14	27.00	112.4	0.860	0.75
600	4.70	34.20	27.10	103.6	0.968	0.56
700	4.32	34.25	27.18	96.4	1.068	0.41
800	4.07	34.31	27.25	89.9	1.161	0.32
1000	3.62	34.40	27.37	79.7	1.331	0.25
1200	3.18	34.47	27.47	70.8	1.482	0.33

STATION 175-032

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	16.40	31.02	22.63	523.2	0.000	6.06
10	16.36	31.04	22.65	521.1	0.052	6.12
20	14.32	32.30	24.06	386.9	0.097	7.08
30	11.58	32.58	24.81	315.4	0.132	7.56
50	8.28	32.64	25.40	259.1	0.189	6.96
75	7.40	32.71	25.58	242.1	0.252	6.83
100	6.83	32.90	25.81	220.8	0.310	6.13
150	7.08	33.69	26.40	166.0	0.407	4.05
200	6.67	33.88	26.60	147.2	0.485	3.49
250	6.11	33.93	26.72	136.9	0.556	2.54
300	5.69	33.98	26.81	128.6	0.622	1.95
400	5.25	34.07	26.93	117.7	0.745	1.84
500	4.87	34.14	27.03	109.1	0.858	1.10
600	4.52	34.21	27.13	100.8	0.963	0.57
700	4.18	34.27	27.21	93.3	1.060	0.33
800	3.87	34.32	27.28	86.9	1.150	0.25
1000	3.41	34.40	27.39	77.3	1.314	0.31
1200	3.06	34.47	27.48	69.5	1.461	0.51
1500	2.58	34.54	27.58	60.5	1.656	0.82

STATION 175-033

OBSERVED VALUES

DATE 07/12/57 HR 13 LAT 46-56N LONG 127-11W SDG 2633 BTMCODE
 WVCL 00 DIR 00 FC 00 BA 19 DRY 14.4 WET 13.3 RELHU 89 VIS 9
 WEA 03 CL 6 AMT 3 SEA 1 DIR SWL DIR SECDI LD 15

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
2	0	15.99	31.15	22.82	6.16
2	10	15.98	31.16	22.83	6.18
2	19	15.15	31.89	23.57	6.61
2	28	13.38	32.41	24.34	7.24
2	47	9.90	32.61	25.13	7.30
2	70	7.48	32.65	25.53	7.03
2	94	7.11	32.71	25.62	6.76
2	141	6.92	33.44	26.22	4.85
2	188	6.76	33.83	26.55	4.01
1	264	5.48	33.91	26.78	2.96
2	288	5.78	33.93	26.76	2.51
1	442	4.88	34.10	27.00	0.82
1	666	4.10	34.24	27.19	0.31
1	894	3.46	34.36	27.35	0.25
1	1262	2.80	34.48	27.51	0.48
1	1726	2.12	34.56	27.63	1.22

STATION 175-034

OBSERVED VALUES

DATE 07/12/57 HR 20 LAT 46-54N LONG 126-17W SDG 2615 BTMCODE
 WVCL 02 DIR 02 FC 02 BA 16 DRY 17.2 WET 15.4 RELHU 83 VIS 9
 WEA 00 CL 6 AMT 5 SEA 1 DIR 02 SWL DIR SECDI LD 12

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
2	0	16.72	30.66	22.28	5.79
2	10	16.51	30.73	22.38	5.91
2	20	13.08	32.29	24.30	6.91
2	30	10.88	32.57	24.93	7.04
2	50	9.32	32.73	25.31	4.78
2	75	8.03	32.93	25.67	5.33
2	100	8.14	33.42	26.03	4.10
2	150	7.61	33.84	26.44	2.62
2	200	7.00	33.96	26.62	2.34
1	299	5.94	33.98	26.78	2.13
2	300	5.96	33.98	26.77	1.99
1	499	4.72	34.08	27.00	0.90
1	748	4.03	34.26	27.22	0.69
1	987	3.54	34.40	27.38	0.21
1	1492	2.57	34.52	27.56	0.72
1	1869	2.00	34.59	27.67	1.31

STATION 175-033

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	15.99	31.15	22.82	504.9	0.000	6.16
10	15.98	31.16	22.83	504.2	0.050	6.18
20	14.95	31.96	23.66	424.5	0.096	6.70
30	12.95	32.44	24.44	350.4	0.135	7.26
50	9.47	32.61	25.20	278.9	0.198	7.26
75	7.39	32.65	25.54	246.5	0.264	7.01
100	7.08	32.82	25.71	230.1	0.324	6.46
150	6.92	33.53	26.29	175.8	0.425	4.68
200	6.57	33.86	26.60	147.4	0.506	3.81
250	5.88	33.95	26.76	132.6	0.576	3.04
300	5.50	34.00	26.85	124.8	0.640	2.32
400	5.05	34.07	26.95	115.4	0.760	1.17
500	4.66	34.14	27.05	106.6	0.871	0.64
600	4.31	34.20	27.14	99.1	0.974	0.41
700	3.99	34.26	27.22	91.9	1.069	0.29
800	3.70	34.31	27.29	85.7	1.158	0.26
1000	3.26	34.40	27.40	75.6	1.319	0.28
1200	2.90	34.46	27.49	68.4	1.463	0.42
1500	2.43	34.53	27.58	59.5	1.655	0.80

STATION 175-034

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	16.72	30.66	22.28	556.4	0.000	5.79
10	16.51	30.73	22.38	547.0	0.055	5.91
20	13.08	32.29	24.30	363.6	0.101	6.91
30	10.88	32.57	24.93	304.1	0.134	7.04
50	9.32	32.73	25.31	267.7	0.191	4.78
75	8.03	32.93	25.67	234.4	0.254	5.33
100	8.14	33.42	26.03	199.9	0.308	4.10
150	7.61	33.84	26.44	162.1	0.399	2.62
200	7.00	33.96	26.62	145.6	0.476	2.34
250	6.44	33.97	26.70	138.2	0.547	2.23
300	5.95	33.98	26.78	131.8	0.615	2.06
400	5.26	34.03	26.90	120.8	0.741	1.37
500	4.72	34.08	27.00	111.8	0.857	0.90
600	4.42	34.16	27.10	103.3	0.965	0.85
700	4.15	34.23	27.18	95.9	1.065	0.75
800	3.92	34.29	27.25	89.7	1.158	0.55
1000	3.51	34.40	27.38	78.4	1.326	0.22
1200	3.10	34.45	27.46	71.4	1.476	0.39
1500	2.56	34.52	27.56	61.8	1.676	0.73

STATION 175-035

OBSERVED VALUES

DATE 07/13/57 HR 01 LAT 46-54N LONG 125-42W SDG 1939 BTMCODE
 WVCL 04 DIR 04 FC 03 BA 14 DRY 16.6 WET 14.5 RELHU 80 VIS 9
 WEA CL 5 AMT 4 SEA 1 DIR 04 SWL DIR SECDI LD 0

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
2	0	17.01	30.36	21.98	5.90
2	10	17.27	30.39	21.95	5.97
2	19	11.90	32.47	24.67	7.17
2	29	9.28	32.66	25.27	6.69
2	48	9.10	33.17	25.69	4.96
2	72	8.71	33.60	26.09	3.47
2	96	8.58	33.65	26.15	3.33
2	143	8.30	33.78	26.29	2.77
1	162	8.31	33.92	26.40	2.68
2	191	7.85	33.80	26.38	2.33
1	242	7.05	33.91	26.58	1.95
1	404	5.94	34.06	26.84	1.36
1	604	4.94	34.16	27.04	0.64
1	816	4.20	34.30	27.23	0.25
1	1284	2.98	34.47	27.49	0.43

STATION 175-036

OBSERVED VALUES

DATE 07/13/57 HR 07 LAT 46-55N LONG 125-09W SDG 1355 BTMCODE
 WVCL DIR FC BA 12 DRY 14.3 WET 13.3 RELHU 90 VIS 9
 WEA 01 CL 5 AMT 3 SEA 1 DIR SWL DIR SECDI LD 12

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	15.90	31.56	23.15	6.13
1	10	15.79	31.66	23.25	6.22
1	20	13.57	31.99	23.97	6.51
1	29	10.93	32.47	24.84	6.97
1	49	8.49	32.64	25.37	6.64
1	74	7.64	33.10	25.86	3.94
1	98	7.47	33.39	26.11	4.24
1	123	7.62	33.74	26.36	2.88
1	147	7.51	33.85	26.46	2.64
1	172	7.34	33.90	26.53	2.40
1	196	7.06	33.94	26.60	2.18
1	294	6.24	34.00	26.75	1.90
1	491	5.30	34.13	26.97	0.86
1	589	4.86	34.19	27.07	0.71

STATION 175-035

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	17.01	30.36	21.98	584.7	0.000	5.90
10	17.27	30.39	21.95	588.5	0.059	5.97
20	11.56	32.49	24.74	321.4	0.104	7.14
30	9.27	32.69	25.29	269.6	0.134	6.59
50	9.06	33.22	25.74	227.5	0.184	4.78
75	8.69	33.61	26.10	193.4	0.237	3.46
100	8.56	33.66	26.16	188.2	0.285	3.27
150	8.27	33.80	26.31	174.5	0.376	2.72
200	7.67	33.88	26.46	160.8	0.460	2.28
250	6.99	33.92	26.59	149.2	0.537	1.92
300	6.62	33.97	26.68	141.2	0.610	1.74
400	5.96	34.06	26.84	127.3	0.744	1.37
500	5.42	34.10	26.93	118.7	0.867	0.97
600	4.96	34.16	27.04	109.7	0.981	0.65
700	4.59	34.23	27.13	101.1	1.086	0.43
800	4.25	34.29	27.22	93.5	1.183	0.27
1000	3.65	34.39	27.36	80.8	1.357	0.15
1200	3.16	34.45	27.45	72.1	1.510	0.29

STATION 175-036

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	15.90	31.56	23.15	473.0	0.000	6.13
10	15.79	31.66	23.25	463.6	0.047	6.22
20	13.57	31.99	23.97	395.0	0.090	6.51
30	10.77	32.47	24.87	309.7	0.125	6.99
50	8.44	32.66	25.40	259.9	0.182	6.47
75	7.63	33.11	25.87	215.5	0.241	3.98
100	7.49	33.43	26.14	190.1	0.292	4.09
150	7.50	33.86	26.47	159.1	0.379	2.61
200	7.02	33.94	26.60	147.3	0.456	2.17
250	6.58	33.97	26.69	140.0	0.528	2.05
300	6.21	34.00	26.76	133.7	0.596	1.85
400	5.72	34.07	26.87	123.5	0.725	1.22
500	5.26	34.14	26.99	113.8	0.844	0.84

STATION 175-037

OBSERVED VALUES

DATE 07/13/57 HR 11 LAT 46-54N LONG 124-31W SDG 91 BTMCODE
 WVEL DIR FC BA 12 DRY 13.9 WET 13.8 RELHU 99 VIS 9
 WEA 00 CL 5 AMT 3 SEA 1 DIR SWL DIR SECDI LD 12

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	13.40	31.71	23.79	7.29
1	10	10.90	31.94	24.44	5.86
1	20	8.44	32.56	25.32	4.41
1	30	8.02	33.42	26.05	4.00
1	50	7.52	33.87	26.48	3.07
1	75	7.16	33.87	26.53	0.80

STATION 175-038

OBSERVED VALUES

DATE 07/13/57 HR 13 LAT 46-53N LONG 124-13W SDG 22 BTMCODE
 WVEL 03 DIR 11 FC 02 BA DRY . WET . RELHU VIS
 WEA CL AMT SEA DIR SWL DIR SECDI LD

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
1	0	15.52	27.11	19.83	7.00
1	5	14.08	28.88	21.48	6.93
1	10	13.26	31.00	23.27	6.35
1	19	10.46	31.39	24.08	5.05

STATION 175-037

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	13.40	31.71	23.79	411.8	0.000	7.29
10	10.90	31.94	24.44	350.6	0.038	5.86
20	8.44	32.56	25.32	266.8	0.069	4.41
30	8.02	33.42	26.05	197.1	0.092	4.00
50	7.52	33.87	26.48	157.0	0.127	3.07
75	7.16	33.87	26.53	152.5	0.166	0.80

STATION 175-038

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	15.52	27.11	19.83	791.5	0.000	7.00
10	13.26	31.00	23.27	461.6	0.063	6.35

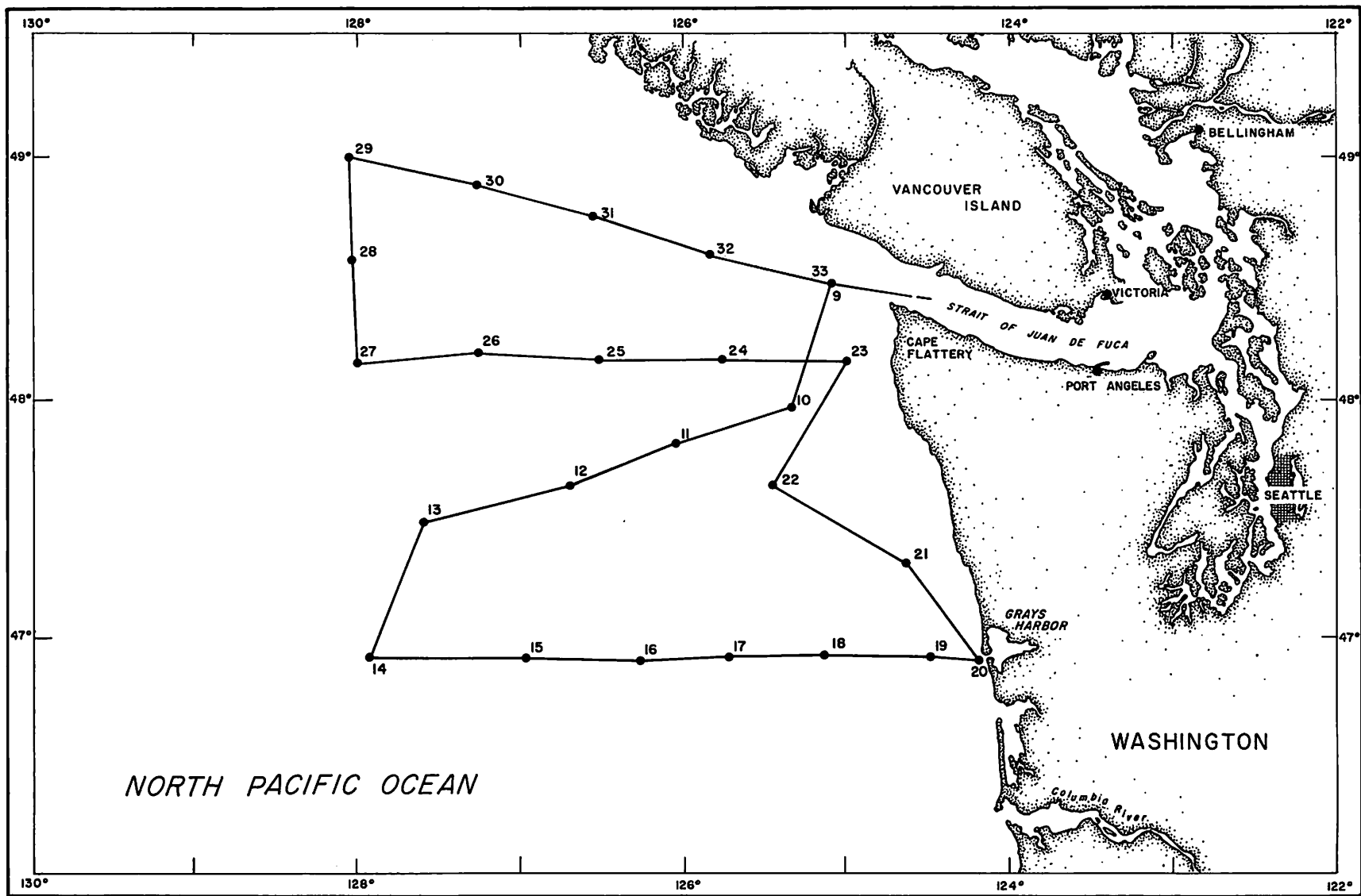


Fig. 7. Offshore stations for Brown Bear Cruise No. 179 (4-12 November 1957)

STATION 179-001

POINT JEFFERSON - PUGET SOUND

OBSERVED VALUES

DATE 11/04/57 HR 20 LAT 47-45N LONG 122-26W SDG 269 BTMCODE
 WVEL 02 DIR 32 FC 01 BA 23 DRY 8.6 WET 0 RELHU VIS 7
 WEA 02 CL 1 AMT 2 SEA 1 DIR 32 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.		OXY.	PHOS.
2	0	10.95	29.74	22.72	4.70	2.67
2	5	10.93	29.82	22.79	4.75	2.65
2	10	11.08	30.11	22.99	4.52	2.61
2	20	11.12	30.26	23.09	4.45	2.73
2	30	11.18	30.44	23.22	4.36	2.56
2	50	11.10	30.57	23.34	4.14	2.71
2	75	11.06	30.62	23.38	4.03	2.57
2	99	10.90	30.67	23.45	3.99	2.61
2	150	10.79	30.70	23.49	3.99	2.67
2	197	10.77	30.74	23.53	4.03	2.73
1	231	10.70	30.76	23.55	4.08	2.71
1	255	10.64	30.77	23.57	4.03	3.22*

STATION 179-002

POINT NO POINT - PUGET SOUND

OBSERVED VALUES

DATE 11/04/57 HR 23 LAT 47-54N LONG 122-30W SDG 199 BTMCODE
 WVEL 00 DIR 00 FC 00 BA 21 DRY 15.0 WET 13.9 RELHU 89 VIS 7
 WEA 02 CL 1 AMT 2 SEA 1 DIR SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	10.76	28.85	22.06	4.72	2.74
1	5	11.00	30.09	22.98	4.51	2.64
1	10	11.08	30.36	23.18	4.12	2.62
1	20	10.95	30.50	23.31	4.12	2.62
1	30	10.86	30.52	23.34	4.20	2.03
1	50	10.84	30.55	23.37	4.20	2.54
1	75	10.84	30.57	23.38	4.09	2.57
1	100	10.82	30.57	23.39	4.22	2.60
1	150	10.61	30.66	23.49	4.22	2.56
1	190	10.50	30.72	23.56	4.20	2.72

STATION 179-001

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	10.95	29.74	22.72	514.1	0.000	4.70	2.67
10	11.08	30.11	22.99	489.0	0.050	4.52	2.61
20	11.12	30.26	23.09	478.7	0.098	4.45	2.73
30	11.18	30.44	23.22	466.6	0.145	4.36	2.56
50	11.10	30.57	23.34	456.0	0.237	4.14	2.71
75	11.06	30.62	23.38	452.1	0.351	4.03	2.57
100	10.90	30.67	23.45	446.2	0.463	3.99	2.61
150	10.79	30.70	23.49	443.1	0.685	3.99	2.67
200	10.76	30.74	23.53	440.5	0.906	4.04	2.69
250	10.65	30.77	23.57	437.3	1.125	4.05	3.08

STATION 179-002

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	10.76	28.85	22.06	577.0	0.000	4.72	2.74
10	11.08	30.36	23.18	470.5	0.052	4.12	2.62
20	10.95	30.50	23.31	458.2	0.098	4.12	2.62
30	10.86	30.52	23.34	455.4	0.144	4.20	2.03
50	10.84	30.55	23.37	453.2	0.235	4.20	2.54
75	10.84	30.57	23.38	452.2	0.348	4.09	2.57
100	10.82	30.57	23.39	452.3	0.461	4.22	2.60
150	10.61	30.66	23.49	443.0	0.685	4.22	2.56

STATION 179-003

MALLOWSTONE POINT - ADMIRALTY INLET

OBSERVED VALUES

DATE 11/05/57 HR 01 LAT 48-06N LONG 122-39W SDG 183 BTMCODE
 WVCL 03 DIR 31 FC 02 BA 21 DRY 10.6 WET 10.3 RELHU 99 VIS 7
 WEA 02 CL 1 AMT 2 SEA 1 DIR 31 SWL DIR SECDI LD 150

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	10.28	30.76	23.62	4.46	2.72
1	5	10.20	30.85	23.71	4.37	2.67
1	10	10.14	30.92	23.77	4.26	2.54
1	20	10.09	30.97	23.82	4.21	2.65
1	30	10.10	30.98	23.83	4.18	2.64
1	50	10.08	31.01	23.85	4.29	2.69
1	74	9.93	31.12	23.96	4.27	2.64
1	99	9.82	31.26	24.09	4.14	2.64
1	123	9.77	31.28	24.11	4.19	2.70
1	148	9.80	31.31	24.13		2.80

STATION 179-004

PROTECTION ISLAND - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 11/05/57 HR 03 LAT 48-12N LONG 122-54W SDG 95 BTMCODE
 WVCL 00 DIR FC 00 BA 21 DRY 9.2 WET 8.9 RELHU 93 VIS 8
 WEA 01 CL AMT 0 SEA 0 DIR 00 SWL DIR SECDI LD 27

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	9.70	30.98	23.89	4.37	2.56
2	5	9.82	31.03	23.91	4.36	2.48
3	10	9.82	31.17	24.02	4.20	2.57
3	20	9.66	31.42	24.24	4.04	2.52
3	30	9.39	31.71	24.51	3.95	2.53
3	50	8.88	32.23	24.99	3.39	2.60
3	75	8.74	32.38	25.13	3.28	2.54

STATION 179-003

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	10.28	30.76	23.62	427.8	0.000	4.46	2.72
10	10.14	30.92	23.77	413.9	0.042	4.26	2.54
20	10.09	30.97	23.82	409.6	0.083	4.21	2.65
30	10.10	30.98	23.83	409.1	0.124	4.18	2.64
50	10.08	31.01	23.85	407.0	0.206	4.29	2.69
75	9.92	31.13	23.97	396.0	0.306	4.26	2.64
100	9.82	31.26	24.09	385.2	0.404	4.14#	2.64

STATION 179-004

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.70	30.98	23.89	402.5	0.000	4.37	2.56
10	9.82	31.17	24.02	390.4	0.040	4.20	2.57
20	9.66	31.42	24.24	369.5	0.078	4.04	2.52
30	9.39	31.71	24.51	344.1	0.114	3.95	2.53
50	8.88	32.23	24.99	298.2	0.178	3.39	2.60
75	8.74	32.38	25.13	285.4	0.251	3.28	2.54

STATION 179-005

NW OF NEW DUNGENESS - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 11/05/57 HR 05 LAT 48-14N LONG 123-14W SDG 141 BTMCODE
 WVCL 02 DIR 24 FC 02 BA 22 DRY 9.2 WET 8.9 RELHU 93 VIS 8
 WEA 02 CL AMT 0 SEA 0 DIR 00 SWL DIR SECDI LD 0

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	9.78	31.29	24.12	4.42	2.60
1	5	9.64	31.40	24.23	4.29	2.50
1	10	9.62	31.42	24.24	4.37	2.40
1	20	9.60	31.43	24.26	4.37	2.60
1	30	9.50	31.54	24.36	4.31	2.53
1	49	9.30	31.77	24.57	4.03	2.65
1	73	8.96	32.08	24.86	3.56	2.65
1	98	8.41	32.79	25.50	2.98	2.73
1	127	8.05	33.21	25.88	2.51	2.75

STATION 179-006

BEECHY HEAD - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 11/05/57 HR 07 LAT 48-16N LONG 123-41W SDG 185 BTMCODE
 WVCL 03 DIR 06 FC 02 BA 22 DRY 8.9 WET 8.6 RELHU 99 VIS 6
 WEA 02 CL AMT 0 SEA 0 DIR 00 SWL DIR SECDI LD 15

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	9.44	31.11	24.03	4.51	2.04
1	5	9.43	31.11	24.03	4.52	2.55
1	10	9.46	31.12	24.04	4.49	2.52
1	19	9.37	31.33	24.21	4.31	2.53
1	28	9.13	31.67	24.52	4.17	2.60
1	47	8.90	32.09	24.88	3.79	2.65
1	71	8.48	32.67	25.40	3.08	2.76
1	95	7.92	33.30	25.97	2.42	2.81
1	132	7.59	33.66	26.30	2.13	2.95
1	170	7.58	33.69	26.33	2.09	3.02

STATION 179-005

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.78	31.29	24.12	380.7	0.000	4.42	2.60
10	9.62	31.42	24.24	368.8	0.037	4.37	2.40
20	9.60	31.43	24.26	367.9	0.074	4.37	2.60
30	9.50	31.54	24.36	358.4	0.110	4.31	2.53
50	9.29	31.78	24.58	337.7	0.180	4.01	2.65
75	8.91	32.15	24.93	305.0	0.260	3.51	2.66
100	8.38	32.83	25.54	247.2	0.329	2.94	2.73

STATION 179-006

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.44	31.11	24.03	388.9	0.000	4.51	2.04
10	9.46	31.12	24.04	388.6	0.039	4.49	2.52
20	9.34	31.37	24.25	368.4	0.077	4.30	2.54
30	9.11	31.71	24.55	339.9	0.112	4.14	2.60
50	8.86	32.16	24.94	303.1	0.176	3.70	2.67
75	8.37	32.80	25.52	248.9	0.245	2.94	2.77
100	7.86	33.37	26.04	199.7	0.301	2.37	2.83
150	7.54	33.72	26.36	170.0	0.393	2.08	2.99

STATION 179-007

PILLAR POINT - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 11/05/57 HR 09 LAT 48-17N LONG 123-59W SDG 185 BTMCODE
 WVEL 04 DIR 12 FC 03 BA 22 DRY 8.3 WET 8.1 RELHU 99 VIS 7
 WEA 02 CL AMT SEA 1 DIR 12 SWL DIR SECDI LD 34

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	9.20	31.45	24.33	4.79	2.55
1	5	9.24	31.48	24.35	4.82	2.56
1	10	9.38	31.66	24.47	4.56	2.58
1	20	9.40	31.72	24.51	4.21	2.63
1	30	9.34	31.80	24.59	4.09	
1	50	8.92	32.27	25.02	3.48	2.80
1	75	8.52	32.74	25.45	2.99	2.77
1	100	7.96	33.36	26.01	2.51	2.78
1	140	7.49	33.74	26.38	2.05	3.05
1	180	7.50	33.76	26.39	2.05	3.04

STATION 179-008

NEAH BAY - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 11/05/57 HR 12 LAT 48-27N LONG 124-32W SDG 229 BTMCODE
 WVEL 04 DIR 09 FC 03 BA 22 DRY 8.3 WET 8.1 RELHU 99 VIS 6
 WEA 02 CL AMT SEA 1 DIR 09 SWL DIR SECDI LD 0

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	9.75	31.67	24.42	5.01	2.34
1	5	9.60	31.68	24.45	4.85	2.23
1	10	9.53	31.82	24.57	4.23	2.38
1	19	9.30	31.93	24.69	3.94	2.45
1	29	9.17	31.97	24.74	3.81	2.40
1	48	9.10	32.07	24.83	3.79	1.88*
1	72	8.32	32.92	25.62	2.82	2.27
1	96	7.97	33.44	26.08	2.70	2.28
1	120	7.64	33.64	26.28	2.42	2.07
1	144	7.48	33.78	26.41	2.03	2.93
1	168	7.22	33.85	26.50	2.25	2.98
1	192	7.16	33.85	26.51	2.28	2.48
1	216	7.12	33.86	26.53	2.33	2.40

STATION 179-007

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.20	31.45	24.33	360.1	0.000	4.79	2.55
10	9.38	31.66	24.47	347.3	0.035	4.56	2.58
20	9.40	31.72	24.51	343.3	0.070	4.21	2.63
30	9.34	31.80	24.59	336.7	0.104	4.09	
50	8.92	32.27	25.02	295.9	0.167	3.48	2.80
75	8.52	32.74	25.45	255.5	0.236	2.99	2.77
100	7.96	33.36	26.01	201.8	0.293	2.51	2.78
150	7.45	33.78	26.42	164.3	0.385	2.01	3.07

STATION 179-008

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.75	31.67	24.42	352.0	0.000	5.01	2.34
10	9.53	31.82	24.57	337.7	0.034	4.23	2.38
20	9.28	31.93	24.70	325.9	0.067	3.92	2.45
30	9.18	31.96	24.74	322.4	0.099	3.83	2.35
50	9.02	32.15	24.91	306.2	0.162	3.68	1.93
75	8.28	33.00	25.69	232.7	0.229	2.81	2.28
100	7.90	33.48	26.12	192.1	0.282	2.66	2.17
150	7.40	33.80	26.44	162.2	0.371	2.10	2.99
200	7.14	33.85	26.52	155.6	0.450	2.29	2.41

STATION 179-009

SWIFTSURE BANK LIGHTSHIP

OBSERVED VALUES

DATE 11/05/57 HR 16 LAT 48-29N LONG 125-07W SDG 154 BTMCODE
 WVCL 06 DIR 09 FC 04 BA 22 DRY 10.0 WET 9.4 RELHU 93 VIS 6
 WEA 03 CL 3 AMT 4 SEA 2 DIR 09 SWL DIR SECDI LD 21

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	10.64	31.46	24.11	5.72	1.68
1	10	10.58	31.57	24.20	5.56	1.77
1	20	10.64	31.73	24.32	5.50	1.61
1	30	10.08	31.95	24.58	4.45	2.07
1	50	9.35	32.07	24.79	3.77	2.52
1	75	8.76	32.45	25.18	3.30	2.70
1	100	8.19	33.21	25.86	3.18	2.47
1	124	7.53	33.68	26.33	2.11	2.66

STATION 179-010

OBSERVED VALUES

DATE 11/05/57 HR 23 LAT 47-58N LONG 125-21W SDG 616 BTMCODE
 WVCL 04 DIR 16 FC 03 BA 21 DRY 13.9 WET 12.5 RELHU 88 VIS 8
 WEA 01 CL 5 AMT 1 SEA 1 DIR 16 SWL 2 DIR 26 SECDI LD 21

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	12.92	32.08	24.17	6.10	0.79
2	10	12.92	32.08	24.17	6.05	0.81
2	20	12.74	32.16	24.27	5.80	0.63
2	30	11.44	32.37	24.67	5.10	1.63
2	50	8.20	32.85	25.58	4.07	1.76
2	74	8.00	33.17	25.86	2.77	2.24
2	99	7.78	33.58	26.21	2.68	2.62
2	124	7.62	33.73	26.35	2.42	2.66
2	148	7.42	33.82	26.45	2.09	2.80
2	173	7.31	33.89	26.52	2.30	2.85
1	196	7.10	33.91	26.57	1.72	2.84
1	294	6.25	34.00	26.75	0.78	3.03
1	489	5.09	34.13	27.00	0.60	3.28
1	581	4.60	34.20	27.11	0.31	3.52

STATION 179-009

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	10.64	31.46	24.11	381.7	0.000	5.72	1.68
10	10.58	31.57	24.20	372.8	0.038	5.56	1.77
20	10.64	31.73	24.32	362.1	0.075	5.50	1.61
30	10.08	31.95	24.58	337.0	0.110	4.45	2.07
50	9.35	32.07	24.79	317.1	0.175	3.77	2.52
75	8.76	32.45	25.18	280.5	0.250	3.30	2.70
100	8.19	33.21	25.86	216.3	0.312	3.18	2.47

STATION 179-010

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	12.92	32.08	24.17	375.6	0.000	6.10	0.79
10	12.92	32.08	24.17	375.8	0.038	6.05	0.81
20	12.74	32.16	24.27	366.9	0.075	5.80	0.63
30	11.44	32.37	24.67	328.4	0.110	5.10	1.63
50	8.20	32.85	25.58	242.3	0.167	4.07	1.76
75	7.99	33.19	25.88	214.5	0.224	2.77	2.26
100	7.77	33.59	26.22	182.1	0.274	2.67	2.62
150	7.42	33.83	26.46	160.2	0.360	2.14	2.81
200	7.06	33.91	26.57	150.1	0.438	1.67	2.85
250	6.61	33.96	26.67	141.1	0.511	1.13	2.95
300	6.21	34.00	26.76	133.7	0.580	0.78	3.03
400	5.60	34.07	26.89	122.0	0.708	0.76	3.12
500	5.03	34.14	27.01	111.0	0.825	0.57	3.30

STATION 179-011

OBSERVED VALUES

DATE 11/06/57 HR 06 LAT 47-49N LONG 126-04W SDG 1756 BTMCODE
 WVCL 04 DIR 16 FC 03 BA 20 DRY 12.2 WET 11.9 RELHU 94 VIS 7
 WEA 02 CL 5 AMT 1 SEA 2 DIR 16 SWL DIR SECDI LD 24

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
3	0	13.18	32.23	24.24	6.05	0.86
3	10	13.19	32.25	24.25	6.03	0.83
3	20	13.19	32.27	24.26	6.06	0.91
3	30	11.32	32.42	24.73	6.13	1.12
3	50	7.78	32.77	25.58	5.87	1.66
3	75	7.47	33.10	25.88	5.01	2.06
3	100	7.28	33.34	26.10	4.60	2.22
3	125	7.59	33.70	26.33	3.24	2.60
3	150	7.34	33.80	26.45	2.93	2.63
3	175	7.17	33.87	26.53	2.61	2.74
1	199	6.88	33.91	26.60	2.59	2.78
1	298	6.04	34.00	26.78	1.61	3.12
1	497	5.02	34.12	27.00	0.74	3.48
1	745	4.07	34.27	27.22	0.29	3.68
1	994	3.50	34.41	27.39	0.73	3.76
2	1491	2.50	34.52	27.57	0.86	3.36
2	1590	2.36	34.55	27.60		3.45

STATION 179-012

OBSERVED VALUES

DATE 11/06/57 HR 12 LAT 47-38N LONG 126-44W SDG 2377 BTMCODE
 WVCL 02 DIR 26 FC 02 BA 20 DRY 12.2 WET 11.1 RELHU 88 VIS 7
 WEA 02 CL 8 AMT 7 SEA 1 DIR 26 SWL 2 DIR SECDI LD 24

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	12.24	32.19	24.39	6.14	0.83
2	10	12.26	32.19	24.38	6.16	0.81
2	20	12.24	32.19	24.39	6.22	0.83
2	30	9.76	32.53	25.09	6.08	1.20
2	49	9.62	32.84	25.35	5.68	1.72
2	73	9.54	33.27	25.70	4.59	2.13
2	98	8.18	33.67	26.22	2.98	3.10
2	122	8.16	33.76	26.30	2.60	2.67
2	146	7.99	33.80	26.35	2.43	2.84
2	171	7.76	33.89	26.46	2.21	2.87
1	190	7.37	33.92	26.54	2.17	2.92
1	287	6.22	34.00	26.76	1.67	3.20
1	477	5.47	34.08	26.91	1.04	3.46
1	720	4.43	34.23	27.15	0.41	3.76
1	963	3.74	34.37	27.33	0.29	3.76
1	1745	2.14	34.57	27.64	1.18	3.59

STATION 179-011

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	13.18	32.23	24.24	369.4	0.000	6.05	0.86
10	13.19	32.25	24.25	368.4	0.037	6.03	0.83
20	13.19	32.27	24.26	367.2	0.074	6.06	0.91
30	11.32	32.42	24.73	322.7	0.108	6.13	1.12
50	7.78	32.77	25.58	242.4	0.165	5.87	1.66
75	7.47	33.10	25.88	214.0	0.222	5.01	2.06
100	7.28	33.34	26.10	194.0	0.273	4.60	2.22
150	7.34	33.80	26.45	161.3	0.362	2.93	2.63
200	6.87	33.91	26.60	147.6	0.439	2.58	2.78
250	6.42	33.96	26.70	138.7	0.511	2.04	2.97
300	6.03	34.00	26.78	131.4	0.579	1.60	3.12
400	5.49	34.06	26.89	121.4	0.705	1.11	3.33
500	5.01	34.12	27.00	112.3	0.822	0.73	3.48
600	4.58	34.18	27.09	103.7	0.930	0.45	3.58
700	4.21	34.24	27.18	95.9	1.030	0.31	3.65
800	3.94	34.31	27.27	88.4	1.122	0.41	3.71
1000	3.48	34.41	27.39	77.3	1.288	0.73#	3.75
1200	3.03	34.45	27.47	70.6	1.436	0.84#	3.42
1500	2.49	34.52	27.57	61.0	1.633		3.37

STATION 179-012

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	12.24	32.19	24.39	355.1	0.000	6.14	0.83
10	12.26	32.19	24.38	355.7	0.036	6.16	0.81
20	12.24	32.19	24.39	355.6	0.072	6.22	0.83
30	9.76	32.53	25.09	289.0	0.104	6.08	1.20
50	9.64	32.86	25.36	263.0	0.159	5.64	1.73
75	9.38	33.31	25.76	226.1	0.220	4.42	2.26
100	8.18	33.68	26.23	181.2	0.271	2.94	3.04
150	7.97	33.82	26.37	168.7	0.358	2.38	2.84
200	7.23	33.93	26.57	150.9	0.438	2.11	2.95
250	6.60	33.97	26.68	140.3	0.511	1.85	3.10
300	6.17	34.00	26.76	133.1	0.579	1.62	3.22
400	5.78	34.04	26.84	126.5	0.709	1.28	3.36
500	5.36	34.09	26.93	118.7	0.832	0.96	3.50
600	4.90	34.16	27.04	109.0	0.946	0.66	3.65
700	4.50	34.22	27.14	100.8	1.051	0.44	3.75
800	4.19	34.28	27.22	93.6	1.148	0.35	3.76
1000	3.64	34.39	27.36	80.7	1.322	0.29	3.76
1200	3.16	34.47	27.47	70.6	1.473	0.35	3.74
1500	2.54	34.55	27.59	59.3	1.668	0.69	3.67

STATION 179-013

OBSERVED VALUES

DATE 11/06/56 HR 19 LAT 47-29N LONG 127-36W SDG 2615 BTMCODE
 WVEL 03 DIR 16 FC 02 BA 21 DRY 14.2 WET 12.2 RELHU 77 VIS 8
 WEA 01 CL 5 AMT 6 SEA 1 DIR 16 SWL 1 DIR 27 SECDI LD 49

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	13.86	32.49	24.30	5.88	0.91
2	10	13.86	32.48	24.29	5.81	0.78
2	20	13.86	32.49	24.30	5.80	0.74
2	30	13.84	32.48	24.30	5.89	0.78
2	50	10.22	32.63	25.09	6.52	1.22
2	75	7.56	32.72	25.57	6.13	1.50
2	100	6.91	32.79	25.71	6.08	1.67
2	125	6.42	33.01	25.95	6.08	1.87
2	150	6.37	33.34	26.22	5.44	2.08
2	175	6.64	33.73	26.49	4.84	2.37
1	197	6.39	33.83	26.60	4.61	2.43
1	296	5.46	33.92	26.79	2.73	2.64
1	492	4.82	34.13	27.03	0.72	3.52
1	742	3.98	34.28	27.24	0.16	3.84
1	990	3.32	34.39	27.39	0.44	3.50
1	1487	2.42	34.52	27.57	0.78	3.51
1	1785	2.10	34.57	27.64	1.16	3.22

STATION 179-014

OBSERVED VALUES

DATE 11/07/57 HR 02 LAT 46-55N LONG 127-46W SDG 2743 BTMCODE
 WVEL 04 DIR 16 FC 03 BA 20 DRY 12.8 WET 11.4 RELHU 88 VIS 8
 WEA 03 CL 4 AMT 6 SEA 1 DIR 16 SWL 1 DIR SECDI LD 55

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	13.56	32.36	24.26	5.88	0.66
2	10	13.64	32.37	24.25	5.85	0.62
2	20	13.65	32.40	24.27	5.82	0.64
2	30	13.65	32.41	24.28	5.92	0.63
2	50	8.42	32.71	25.44	6.45	1.11
2	75	7.50	32.73	25.59	6.28	1.35
2	100	7.08	32.90	25.78	5.90	1.59
2	125	7.40	33.33	26.07	4.68	1.86
2	150	7.39	33.68	26.35	3.55	2.43
2	175	7.32	33.82	26.47	3.14	2.51
1	192	6.88	33.90	26.59	2.99	2.68
1	289	5.74	33.93	26.76	2.33	3.35
1	483	4.64	34.08	27.01	0.84	3.52
1	728	4.14	34.29	27.23	0.41	3.68
1	972	3.28	34.37	27.38	0.29	3.68
1	1462	2.46	34.49	27.55	0.66	3.51
1	1756	2.12	34.57	27.64	1.81	3.52

STATION 179-013

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	13.86	32.49	24.30	363.4	0.000	5.88	0.91
10	13.86	32.48	24.29	364.3	0.036	5.81	0.78
20	13.86	32.49	24.30	363.9	0.072	5.80	0.74
30	13.84	32.48	24.30	364.5	0.108	5.89	0.78
50	10.22	32.63	25.09	289.3	0.173	6.52	1.22
75	7.56	32.72	25.57	243.5	0.240	6.13	1.50
100	6.91	32.79	25.71	230.1	0.299	6.08	1.67
150	6.37	33.34	26.22	182.9	0.402	5.44	2.08
200	6.36	33.83	26.60	146.9	0.484	4.54	2.43
250	5.84	33.88	26.71	137.3	0.555	3.53	2.52
300	5.45	33.93	26.80	129.4	0.622	2.68	2.66
400	5.12	34.04	26.92	118.4	0.746	1.49	3.18
500	4.79	34.14	27.04	108.2	0.859	0.69	3.54
600	4.44	34.20	27.13	100.6	0.963	0.37	3.74
700	4.11	34.26	27.21	93.2	1.060	0.19	3.83
800	3.81	34.31	27.28	86.9	1.150	0.23	3.74
1000	3.30	34.39	27.39	76.7	1.314	0.44	3.51
1200	2.88	34.45	27.48	68.9	1.460	0.54	3.58
1500	2.40	34.52	27.58	59.9	1.653	0.79	3.50

STATION 179-014

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	13.56	32.36	24.26	367.1	0.000	5.88	0.66
10	13.64	32.37	24.25	368.2	0.037	5.85	0.62
20	13.65	32.40	24.27	366.4	0.074	5.82	0.64
30	13.65	32.41	24.28	365.9	0.111	5.92	0.63
50	8.42	32.71	25.44	255.9	0.173	6.45	1.11
75	7.50	32.73	25.59	242.0	0.235	6.28	1.35
100	7.08	32.90	25.78	224.1	0.293	5.90	1.59
150	7.39	33.68	26.35	170.9	0.392	3.55	2.43
200	6.77	33.90	26.61	147.0	0.471	2.94	2.75
250	6.15	33.91	26.69	138.9	0.542	2.60	3.13
300	5.66	33.94	26.78	131.2	0.610	2.22	3.36
400	5.03	34.01	26.91	119.6	0.735	1.35	3.45
500	4.62	34.10	27.03	109.1	0.849	0.80	3.54
600	4.45	34.20	27.12	100.7	0.954	0.60	3.62
700	4.22	34.27	27.20	93.8	1.051	0.44	3.67
800	3.85	34.31	27.27	87.4	1.142	0.35	3.69
1000	3.22	34.38	27.39	76.6	1.306	0.26	3.66
1200	2.86	34.42	27.46	70.9	1.453	0.22	3.57
1500	2.41	34.50	27.56	61.5	1.652	0.77	3.51

STATION 179-015

OBSERVED VALUES

DATE 11/07/57 HR 09 LAT 46-55N LONG 126-59W SDG 2633 BTMCODE
 WVEL 03 DIR 17 FC 02 BA 20 DRY 12.8 WET 11.4 RELHU 88 VIS 7
 WEA 03 CL 6 AMT 7 SEA 1 DIR 17 SWL 1 DIR 25 SECDI LD 40

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	13.97	32.40	24.21	5.81	0.75
2	10	13.98	32.40	24.21	5.87	0.73
2	20	14.02	32.40	24.20	5.90	0.80
2	30	14.00	32.41	24.21	5.89	1.06
2	50	8.57	32.66	25.38	6.56	1.29
2	75	7.30	32.75	25.63	6.25	1.53
2	100	7.08	33.13	25.96	5.32	1.83
2	125	7.30	33.54	26.25	4.20	2.10
2	150	7.10	33.69	26.40	3.85	2.21
2	175	6.89	33.80	26.51	3.76	2.31
1	198	6.76	33.84	26.56	3.79	2.43
1	296	5.92	33.96	26.76	2.25	2.94
1	493	4.92	34.12	27.01	0.74	3.26
1	737	3.94	34.32	27.27	0.35	3.58
1	984	3.34	34.42	27.41	0.35	3.66
1	1478	2.52	34.53	27.57	0.72	3.41
1	1774	2.12	34.57	27.64	1.19	3.35

STATION 179-016

OBSERVED VALUES

DATE 11/07/57 HR 15 LAT 46-54N LONG 126-18W SDG 2542 BTMCODE
 WVEL 06 DIR 16 FC 04 BA 20 DRY 12.5 WET 10.8 RELHU 76 VIS 7
 WEA 01 CL 6 AMT 6 SEA 1 DIR 16 SWL 1 DIR 20 SECDI LD 37

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	13.97	32.42	24.22	5.91	0.72
2	10	13.98	32.42	24.22	5.87	1.16
2	20	13.98	32.41	24.21	5.88	0.69
2	30	13.95	32.42	24.23	5.85	1.00
2	50	8.62	32.71	25.41	6.38	1.54
2	74	7.56	32.79	25.62	6.00	1.53
2	99	7.04	33.15	25.98	5.24	1.85
2	124	7.16	33.46	26.21	4.60	1.97
2	149	7.15	33.77	26.45	3.66	2.33
2	174	7.05	33.87	26.54	3.10	2.46
1	199	6.68	33.90	26.62	3.23	2.51
1	299	6.07	33.97	26.75	2.03	2.92
1	497	5.10	34.12	26.99	0.81	3.42
1	745	4.28	34.29	27.21	0.40	3.58
1	993	3.56	34.40	27.38	0.40	3.58
1	1487	2.57	34.52	27.56	0.73	3.42
1	1785	2.14	34.58	27.65	1.74	3.43

STATION 179-015

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	13.97	32.40	24.21	372.1	0.000	5.81	0.75
10	13.98	32.40	24.21	372.6	0.037	5.87	0.73
20	14.02	32.40	24.20	373.6	0.074	5.90	0.80
30	14.00	32.41	24.21	372.7	0.111	5.89	1.06
50	8.57	32.66	25.38	261.8	0.174	6.56	1.29
75	7.30	32.75	25.63	237.8	0.236	6.25	1.53
100	7.08	33.13	25.96	207.0	0.292	5.32	1.83
150	7.10	33.69	26.40	166.3	0.385	3.85	2.21
200	6.74	33.84	26.56	151.1	0.464	3.75	2.44
250	6.29	33.91	26.68	140.7	0.537	2.91	2.73
300	5.90	33.96	26.77	132.7	0.605	2.21	2.95
400	5.37	34.04	26.89	121.4	0.732	1.32	3.12
500	4.89	34.13	27.02	110.1	0.848	0.72	3.27
600	4.44	34.22	27.14	99.1	0.953	0.52	3.43
700	4.06	34.30	27.25	89.7	1.047	0.38	3.55
800	3.77	34.35	27.31	83.5	1.134	0.34	3.61
1000	3.31	34.42	27.42	74.6	1.292	0.35	3.65
1200	2.96	34.47	27.49	68.3	1.435	0.45	3.53
1500	2.49	34.53	27.58	60.2	1.628	0.75	3.40

STATION 179-016

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	13.97	32.42	24.22	370.7	0.000	5.91	0.72
10	13.98	32.42	24.22	371.1	0.037	5.87	1.16
20	13.98	32.41	24.21	372.1	0.074	5.88	0.69
30	13.95	32.42	24.23	371.0	0.111	5.85	1.00
50	8.62	32.71	25.41	258.8	0.174	6.38	1.54
75	7.53	32.81	25.64	236.4	0.236	5.97	1.55
100	7.05	33.16	25.99	204.3	0.291	5.22	1.85
150	7.15	33.78	26.46	160.2	0.382	3.62	2.34
200	6.67	33.90	26.62	145.7	0.458	3.22	2.51
250	6.36	33.94	26.69	139.4	0.529	2.57	2.73
300	6.06	33.97	26.75	134.0	0.597	2.02	2.92
400	5.54	34.05	26.88	122.8	0.725	1.31	3.22
500	5.09	34.12	26.99	113.2	0.843	0.80	3.42
600	4.75	34.20	27.09	104.2	0.952	0.59	3.51
700	4.42	34.26	27.18	96.8	1.053	0.44	3.56
800	4.11	34.32	27.26	89.7	1.146	0.39	3.58
1000	3.54	34.40	27.38	78.7	1.314	0.39	3.58
1200	3.10	34.45	27.46	71.4	1.464	0.33	3.49
1500	2.55	34.52	27.56	61.7	1.664	0.76	3.42

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STATION 179-017

OBSERVED VALUES

DATE 11/07/57 HR 21 LAT 46-55N LONG 125-44W SDG 1875 BTMCODE
 WVCL 06 DIR 11 FC 04 BA 21 DRY 13.1 WET 11.7 RELHU 82 VIS 8
 WEA 02 CL 5 AMT 2 SEA 2 DIR 11 SWL 1 DIR 12 SECDI LD 27

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
3	0	13.30	32.20	24.19	5.90	0.74
3	10	13.29	32.19	24.18	6.07	0.75
3	20	13.30	32.21	24.20	6.05	1.19
3	30	11.73	32.46	24.69	6.36	1.06
3	50	8.04	32.76	25.53	6.10	1.64
3	75	7.40	33.05	25.85	5.41	1.97
3	100	7.54	33.41	26.11	4.20	2.30
3	125	7.58	33.59	26.25	3.46	2.51
3	150	7.54	33.80	26.42	2.59	2.77
3	175	7.34	33.89	26.52	2.42	2.86
1	188	7.00	33.93	26.60	2.35	2.94
1	282	6.07	33.98	26.76	1.97	3.10
1	470	4.96	34.10	26.99	0.81	3.58
1	706	4.30	34.30	27.22	0.28	3.78
1	945	3.72	34.39	27.35	0.28	3.74
2	1432	2.69	34.51	27.54	0.66	3.70
2	1629	2.12	34.56	27.63	0.96	3.98

STATION 179-018

OBSERVED VALUES

DATE 11/08/57 HR 01 LAT 46-55N LONG 125-10W SDG 823 BTMCODE
 WVCL 03 DIR 09 FC 02 BA 21 DRY . WET . RELHU VIS 8
 WEA 01 CL 3 AMT 3 SEA 3 DIR 09 SWL DIR SECDI LD 29

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	13.34	32.23	24.20	6.00	0.73
2	10	13.45	32.27	24.21	6.06	0.72
2	20	13.51	32.31	24.23	6.06	0.72
2	30	13.11	32.34	24.33	6.07	0.77
2	50	7.84	32.73	25.54	6.25	1.41
2	75	7.48	32.98	25.79	5.52	1.83
2	100	7.61	33.33	26.04	4.46	2.17
2	125	7.75	33.58	26.22	3.48	2.29
2	150	7.61	33.76	26.38	2.84	2.69
2	175	7.43	33.87	26.49	2.43	2.85
1	197	7.33	33.91	26.54	2.33	2.78
1	298	6.28	34.03	26.77	1.47	3.10
1	492	5.01	34.14	27.01	0.72	3.50
1	592	4.55	34.18	27.10	0.56	3.58

STATION 179-017

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	13.30	32.20	24.19	373.9	0.000	5.90	0.74
10	13.29	32.19	24.18	374.7	0.037	6.07	0.75
20	13.30	32.21	24.20	373.7	0.074	6.05	1.19
30	11.73	32.46	24.69	326.8	0.109	6.36	1.06
50	8.04	32.76	25.53	246.8	0.166	6.10	1.64
75	7.40	33.05	25.85	216.8	0.224	5.41	1.97
100	7.54	33.41	26.11	192.3	0.275	4.20	2.30
150	7.54	33.80	26.42	164.1	0.364	2.59	2.77
200	6.87	33.94	26.62	145.3	0.441	2.31	2.96
250	6.36	33.96	26.71	137.9	0.512	2.11	3.04
300	5.94	33.99	26.78	131.0	0.579	1.83	3.16
400	5.31	34.05	26.91	120.0	0.704	1.17	3.43
500	4.87	34.13	27.02	109.8	0.819	0.71	3.62
600	4.59	34.22	27.13	100.9	0.924	0.45	3.72
700	4.32	34.30	27.22	92.7	1.021	0.29	3.78
800	4.07	34.34	27.28	87.7	1.111	0.27	3.76
1000	3.63	34.40	27.37	79.8	1.279	0.30	3.68
1200	3.25	34.45	27.45	73.1	1.432	0.41	3.59
1500	2.50	34.53	27.58	60.3	1.632	0.75	3.78

STATION 179-018

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	13.34	32.23	24.20	372.5	0.000	6.00	0.73
10	13.45	32.27	24.21	371.9	0.037	6.06	0.72
20	13.51	32.31	24.23	370.3	0.074	6.06	0.72
30	13.11	32.34	24.33	360.8	0.111	6.07	0.77
50	7.84	32.73	25.54	246.2	0.172	6.25	1.41
75	7.48	32.98	25.79	223.1	0.231	5.52	1.83
100	7.61	33.33	26.04	199.2	0.284	4.46	2.17
150	7.61	33.76	26.38	168.0	0.376	2.84	2.69
200	7.29	33.91	26.54	153.2	0.456	2.30	2.79
250	6.75	33.98	26.67	141.5	0.530	1.84	2.96
300	6.26	34.03	26.78	132.1	0.598	1.46	3.11
400	5.55	34.09	26.91	119.9	0.724	1.00	3.35
500	4.97	34.14	27.02	110.3	0.839	0.70	3.51

STATION 179-019

OBSERVED VALUES

DATE 11/08/57 HR 06 LAT 46-55N LONG 124-31W SDG 84 BTMCODE
 WVEL 09 DIR 09 FC 05 BA 21 DRY 10.0 WET 9.2 RELHU 93 VIS 7
 WEA 02 CL 3 AMT 6 SEA 2 DIR 09 SWL 1 DIR 04 SECDI LD 9

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	12.78	31.15	23.48	6.45	0.68
1	10	12.96	31.22	23.50	6.41	0.62
1	20	13.68	32.18	24.10	5.72	1.04
1	30	13.38	32.35	24.29	5.58	1.05
1	50	11.94	32.90	24.99	5.14	1.71
1	75	7.96	33.71	26.29	1.79	3.14

STATION 179-020

OBSERVED VALUES

DATE 11/08/57 HR 08 LAT 46-54N LONG 124-14W SDG 22 BTMCODE
 WVEL 07 DIR 10 FC 04 BA 21 DRY 8.9 WET 8.6 RELHU 93 VIS 7
 WEA 02 CL 3 AMT 6 SEA 2 DIR 10 SWL DIR SECDI LD 9

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	12.10	30.58	23.17	6.65	0.79
1	5	12.12			6.56	0.77
1	9	12.49	31.41	23.74	5.62	1.40
1	18	12.88	32.42	24.44	5.17	1.49

STATION 179-019

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	12.78	31.15	23.48	441.5	0.000	6.45	0.68
10	12.96	31.22	23.50	439.9	0.044	6.41	0.62
20	13.68	32.18	24.10	383.1	0.085	5.72	1.04
30	13.38	32.35	24.29	365.1	0.122	5.58	1.05
50	11.94	32.90	24.99	298.6	0.188	5.14	1.71
75	7.96	33.71	26.29	175.4	0.247	1.79	3.14

STATION 179-020

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	12.10	30.58	23.17	471.4	0.000	6.65	0.79
10	12.56	31.51	23.80	411.2	0.044	5.46	1.50

STATION 179-021

OBSERVED VALUES

DATE 11/08/57 HR 12 LAT 47-19N LONG 124-39W SDG 95 BTMCODE
 WVEL 08 DIR 13 FC 04 BA 22 DRY 9.4 WET 8.3 RELHU 86 VIS 7
 WEA 01 CL 3 AMT 2 SEA 2 DIR 13 SWL 2 DIR SECDI LD 9

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	12.88	31.54	23.76	6.15	0.64
1	10	12.98	31.62	23.80	6.16	0.62
1	19	13.26	32.01	24.05	6.09	0.69
1	29	13.14	32.26	24.27	5.85	0.83
1	49	9.09	32.96	25.53	4.60	1.88
1	73	7.99	33.34	25.99	3.96	2.22
1	82	8.01	33.49	26.11	2.98	2.57

STATION 179-022

OBSERVED VALUES

DATE 11/08/57 HR 17 LAT 47-38N LONG 125-28W SDG 1125 BTMCODE
 WVEL 06 DIR 13 FC 04 BA 22 DRY 11.9 WET 10.8 RELHU 87 VIS 7
 WEA 02 CL 5 AMT 2 SEA 2 DIR 13 SWL 1 DIR 14 SECDI LD 34

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	13.10	31.98	24.06	6.06	0.60
2	10	13.10	32.00	24.07	6.00	0.62
2	20	13.14	32.00	24.07	6.08	0.62
2	30	12.97	32.08	24.16	5.82	0.81
2	50	9.24	32.83	25.40	4.68	1.65
2	75	8.18	33.27	25.91	3.63	2.02
2	100	7.76	33.74	26.34	2.04	2.45
2	125	7.63	33.85	26.45	1.69	2.54
2	150	7.57	33.88	26.48	1.55	2.82
3	171	7.58	33.93	26.52	1.61	2.90
1	194	7.46	33.94	26.54	1.47	2.86
1	291	6.65	34.00	26.70	1.78	2.74
1	487	5.18	34.13	26.99	0.81	3.21
1	732	4.27	34.27	27.20	0.38	3.38
1	976	3.56	34.41	27.38	0.28	3.54

STATION 179-021

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	12.88	31.54	23.76	414.6	0.000	6.15	0.64
10	12.98	31.62	23.80	410.8	0.041	6.16	0.62
20	13.31	32.03	24.06	387.1	0.081	6.08	0.69
30	12.87	32.30	24.35	359.2	0.118	5.77	0.90
50	9.01	32.98	25.56	244.5	0.178	4.63	1.88
75	7.97	33.37	26.02	200.8	0.234	3.78	2.29

STATION 179-022

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	13.10	31.98	24.06	386.3	0.000	6.06	0.60
10	13.10	32.00	24.07	385.1	0.039	6.00	0.62
20	13.14	32.00	24.07	386.1	0.078	6.08	0.62
30	12.97	32.08	24.16	377.2	0.116	5.82	0.81
50	9.24	32.83	25.40	259.1	0.180	4.68	1.65
75	8.18	33.27	25.91	211.3	0.239	3.63	2.02
100	7.76	33.74	26.34	170.8	0.287	2.04	2.45
150	7.57	33.88	26.48	158.6	0.369	1.55	2.82
200	7.41	33.94	26.55	152.7	0.447	1.50	2.85
250	6.99	33.97	26.63	145.4	0.522	1.71	2.76
300	6.57	34.01	26.72	137.6	0.593	1.72	2.77
400	5.75	34.07	26.87	123.9	0.724	1.17	3.04
500	5.13	34.14	27.00	112.2	0.842	0.78	3.22
600	4.74	34.19	27.08	104.9	0.951	0.57	3.29
700	4.38	34.25	27.17	97.1	1.052	0.42	3.36
800	4.05	34.31	27.25	89.7	1.145	0.32	3.43

STATION 179-023

OBSERVED VALUES

DATE 11/09/57 HR 00 LAT 48-10N LONG 125-01W SDG 284 BTMCODE
 WVEL 00 DIR 00 FC 00 BA 22 DRY 11.7 WET 10.0 RELHU 81 VIS 7
 WEA 01 CL 5 AMT 3 SEA 2 DIR SWL 1 DIR SECDI LD 31

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	12.68	31.64	23.88	6.45	0.54
1	10	12.63	31.68	23.92	6.35	0.55
1	20	12.72	31.74	23.95	6.14	0.60
1	30	12.48	32.17	24.33	5.64	0.97
1	50	8.78	32.80	25.45	5.00	1.67
1	75	8.11	33.16	25.84	3.64	2.21
1	100	7.72	33.47	26.14	3.34	2.31
1	125	7.62	33.64	26.28	2.58	2.52
1	150	7.55	33.76	26.39	2.33	2.65
1	175	7.50	33.83	26.45	2.08	2.75
1	200	7.42	33.86	26.48	2.03	2.77
1	278	6.82	33.95	26.64	1.96	2.82

STATION 179-024

OBSERVED VALUES

DATE 11/09/57 HR 05 LAT 48-10N LONG 125-48W SDG 1033 BTMCODE
 WVEL 06 DIR 14 FC 04 BA 21 DRY 11.9 WET 11.7 RELHU 99 VIS 7
 WEA 03 CL 5 AMT 7 SEA 2 DIR 14 SWL DIR SECDI LD 31

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	12.92	32.18	24.25	5.99	0.60
2	10	12.92	32.19	24.26	6.12	0.69
2	20	12.88	32.22	24.29	6.06	0.71
2	30	12.44	32.26	24.40	6.06	0.78
2	50	8.25	32.75	25.49	5.88	1.47
2	75	7.80	33.22	25.93	4.11	2.04
2	100	7.70	33.53	26.19	2.82	2.26
2	125	7.65	33.74	26.36	2.50	2.51
2	150	7.46	33.80	26.43	2.20	2.79
2	175	7.52	33.82	26.44	1.95	2.80
1	193	7.39	33.87	26.50	2.13	2.88
1	290	6.28	33.98	26.73	1.77	2.99
1	486	5.40	34.09	26.93	1.03	3.36
1	733	4.25	34.27	27.20	0.45	3.52
1	880	3.82	34.34	27.30	0.40	3.64

STATION 179-023

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	12.68	31.64	23.88	403.6	0.000	6.45	0.54
10	12.63	31.68	23.92	400.0	0.040	6.35	0.55
20	12.72	31.74	23.95	397.4	0.080	6.14	0.60
30	12.48	32.17	24.33	361.6	0.118	5.64	0.97
50	8.78	32.80	25.45	254.4	0.180	5.00	1.67
75	8.11	33.16	25.84	218.4	0.239	3.64	2.21
100	7.72	33.47	26.14	190.3	0.290	3.34	2.31
150	7.55	33.76	26.39	167.2	0.379	2.33	2.65
200	7.42	33.86	26.48	158.7	0.460	2.03	2.77
250	7.10	33.92	26.58	150.7	0.537	1.97	2.80

STATION 179-024

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	12.92	32.18	24.25	368.3	0.000	5.99	0.60
10	12.92	32.19	24.26	367.8	0.037	6.12	0.69
20	12.88	32.22	24.29	365.1	0.074	6.06	0.71
30	12.44	32.26	24.40	354.2	0.110	6.06	0.78
50	8.25	32.75	25.49	250.5	0.170	5.88	1.47
75	7.80	33.22	25.93	209.6	0.228	4.11	2.04
100	7.78	33.69	26.30	174.8	0.276	2.72	2.31
150	7.46	33.80	26.43	163.0	0.360	2.20	2.79
200	7.29	33.88	26.52	155.5	0.440	2.10	2.89
250	6.68	33.94	26.65	143.5	0.515	1.92	2.94
300	6.24	33.98	26.74	135.5	0.585	1.73	3.01
400	5.79	34.04	26.84	126.6	0.716	1.32	3.22
500	5.32	34.10	26.95	117.5	0.838	0.98	3.37
600	4.80	34.18	27.07	106.3	0.950	0.68	3.43
700	4.37	34.25	27.17	97.0	1.052	0.49	3.50
800	4.03	34.31	27.26	89.5	1.145	0.40	3.57

STATION 179-025

OBSERVED VALUES

DATE 11/09/57 HR 10 LAT 48-10N LONG 126-33W SDG 2560 BTMCODE
 WVCL 09 DIR 18 FC 05 BA 19 DRY 12.5 WET 12.5 RELHU 99 VIS 5
 WEA 52 CL AMT 8 SEA 2 DIR 18 SWL DIR SECDI LD 31

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	12.72	32.29	24.37	6.00	0.70
2	10	12.70	32.29	24.38	6.07	0.58
2	20	12.70	32.28	24.37	6.04	0.65
2	30	12.56	32.23	24.36	6.06	0.74
2	50	8.32	32.69	25.44	6.33	1.27
2	75	6.88	32.73	25.67	6.22	1.63
2	100	7.10	33.09	25.92	5.33	1.67
2	125	7.00	33.44	26.21	4.55	2.02
2	150	7.09	33.73	26.43	3.65	2.31
2	175	6.96	33.85	26.54	3.34	2.60
1	195	6.77	33.89	26.60	3.05	2.36
1	291	5.82	33.95	26.77	2.06	2.79
1	491	4.97	34.09	26.98	0.83	3.16
1	732	4.26	34.25	27.18	0.40	3.38
1	980	3.62	34.38	27.35	0.40	3.44
1	1475	2.58	34.49	27.54	0.60	3.32
1	1773	2.16	34.54	27.61	1.19	3.27

STATION 179-026

OBSERVED VALUES

DATE 11/09/57 HR 17 LAT 48-35N LONG 128-01W SDG 2597 BTMCODE
 WVCL 11 DIR 16 FC 06 BA 14 DRY 12.8 WET 12.5 RELHU 99 VIS 6
 WEA 62 CL 5 AMT 7 SEA 2 DIR 16 SWL 1 DIR 16 SECDI LD 23

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
3	0	13.28	32.39	24.34	5.91	0.66
3	10	13.28	32.39	24.34	5.92	0.64
3	19	12.96	32.38	24.40	5.98	0.72
3	29	11.74	32.47	24.70	6.22	0.85
3	48	7.46	32.65	25.53	6.47	0.78
3	72	7.02	32.70	25.63	6.26	1.43
3	96	6.70	32.91	25.84	6.00	1.59
3	119	6.93	33.25	26.07	5.04	1.83
3	143	6.83	33.57	26.34	4.38	2.20
3	167	6.85	33.77	26.49	4.04	2.23
1	181	6.84	33.79	26.51	3.83	2.11
1	271	5.98	33.93	26.73	2.35	2.80
1	448	4.90	34.09	26.99	0.90	3.21
1	677	4.22	34.22	27.17	0.47	3.44
1	908	3.61	34.34	27.32	0.40	3.60
2	1297	2.99	34.45	27.47	0.52	3.44
2	1559	2.44	34.51	27.57	0.81	3.44

STATION 179-025

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	12.72	32.29	24.37	356.5	0.000	6.00	0.70
10	12.70	32.29	24.38	356.3	0.036	6.07	0.58
20	12.70	32.28	24.37	357.3	0.072	6.04	0.65
30	12.56	32.23	24.36	358.6	0.108	6.06	0.74
50	8.32	32.69	25.44	255.9	0.169	6.33	1.27
75	6.88	32.73	25.67	233.9	0.230	6.22	1.63
100	7.10	33.09	25.92	210.2	0.286	5.33	1.67
150	7.09	33.73	26.43	163.2	0.379	3.65	2.31
200	6.71	33.89	26.61	147.0	0.457	2.99	2.39
250	6.18	33.92	26.70	138.6	0.528	2.45	2.63
300	5.78	33.96	26.78	131.2	0.595	1.99	2.81
400	5.33	34.03	26.89	121.7	0.721	1.29	3.01
500	4.94	34.10	26.99	112.9	0.838	0.81	3.17
600	4.64	34.17	27.08	105.1	0.947	0.58	3.28
700	4.35	34.23	27.16	98.2	1.049	0.43	3.36
800	4.08	34.29	27.24	91.5	1.144	0.39	3.40
1000	3.57	34.39	27.37	79.8	1.315	0.39	3.43
1200	3.10	34.43	27.44	72.9	1.468	0.37	3.38
1500	2.54	34.49	27.54	63.7	1.673	0.64	3.32

STATION 179-026

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	13.28	32.39	24.34	359.6	0.000	5.91	0.66
10	13.28	32.39	24.34	359.8	0.036	5.92	0.64
20	12.87	32.39	24.42	352.4	0.072	6.01	0.74
30	11.43	32.48	24.76	320.1	0.106	6.24	0.83
50	7.42	32.65	25.53	246.5	0.163	6.45	0.85
75	6.95	32.72	25.65	235.5	0.223	6.27	1.44
100	6.76	32.97	25.88	214.7	0.279	5.81	1.62
150	6.84	33.65	26.40	165.8	0.374	4.28	2.24
200	6.64	33.82	26.56	151.2	0.453	3.48	2.28
250	6.16	33.90	26.69	139.8	0.526	2.65	2.67
300	5.77	33.96	26.78	131.1	0.594	2.05	2.88
400	5.15	34.05	26.93	118.0	0.719	1.20	3.12
500	4.74	34.12	27.03	109.1	0.833	0.77	3.27
600	4.44	34.18	27.11	102.1	0.939	0.57	3.37
700	4.15	34.23	27.18	95.9	1.038	0.46	3.46
800	3.87	34.29	27.26	89.1	1.131	0.42	3.55
1000	3.48	34.37	27.36	80.3	1.300	0.39	3.54
1200	3.17	34.42	27.43	74.4	1.455	0.46	3.46
1500	2.57	34.50	27.55	63.3	1.662	0.73	3.43

STATION 179-027

OBSERVED VALUES

DATE 11/10/57 HR 00 LAT 48-10N LONG 128-00W SDG 2560 BTMCODE
 WVEL 10 DIR 16 FC 05 BA 07 DRY 12.5 WET 12.5 RELHU 99 VIS 6
 WEA 62 CL 6 AMT 8 SEA 2 DIR 16 SWL 4 DIR SECDI LD 34

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	13.07	32.32	24.33	6.08	0.72
2	10	13.04	32.32	24.33	5.92	0.72
2	20	12.68	32.29	24.38	5.96	0.68
2	30	12.50	32.25	24.38	6.06	0.78
2	50	7.96	32.64	25.45	6.28	1.55
2	75	6.72	32.74	25.70	6.22	1.47
2	100	7.12	33.31	26.09	4.55	1.95
2	128	7.08	33.67	26.38	3.79	2.15
2	150	6.86	33.81	26.52	3.30	2.51
2	175	6.65	33.87	26.60	3.16	2.35
1	199	6.61	33.89	26.62	2.73	2.55
1	298	5.54	33.93	26.79	2.04	2.87
1	495	4.57	34.08	27.02	0.81	3.52
1	742	4.08	34.25	27.20	0.24	3.52
1	988	3.36	34.37	27.37	0.35	3.64
1	1480	2.57	34.50	27.55	0.66	3.32
1	1775	2.12	34.55	27.62	1.14	3.35

STATION 179-028

OBSERVED VALUES

DATE 11/10/57 HR 06 LAT 48-35N LONG 128-01W SDG 2468 BTMCODE
 WVEL 12 DIR 14 FC 06 BA 05 DRY 12.5 WET 12.5 RELHU 99 VIS 4
 WEA 60 CL 6 AMT 8 SEA 3 DIR 14 SWL DIR SECDI LD 27

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
3	0	12.08	32.18	24.41	6.08	1.04
3	10	12.08	32.19	24.42	6.07	0.72
3	20	12.08	32.19	24.42	6.09	0.77
3	30	11.22	32.29	24.65	5.79	1.06
3	49	7.51	32.83	25.66	5.56	1.50
3	74	7.42	33.21	25.97	4.60	1.81
3	99	7.40	33.45	26.17	4.07	2.03
3	123	7.23	33.66	26.35	3.71	2.73
3	148	6.94	33.78	26.49	3.56	2.23
1	149	7.00	33.80	26.50	3.20	2.35
3	172	6.84	33.84	26.55	3.23	2.37
1	226	6.34	33.93	26.69	2.35	2.61
2	364	5.34	34.02	26.88	1.34	3.04
2	554	4.56	34.13	27.06	0.49	3.29
2	760	4.00	34.27	27.23	0.31	3.44
2	1208	2.93	34.43	27.46	0.36	3.36
2	1484	2.54	34.51	27.56	0.66	3.28

STATION 179-027

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	13.07	32.32	24.33	360.8	0.000	6.08	0.72
10	13.04	32.32	24.33	360.4	0.036	5.92	0.72
20	12.68	32.29	24.38	356.2	0.072	5.96	0.68
30	12.50	32.25	24.38	356.1	0.108	6.06	0.78
50	7.96	32.64	25.45	254.6	0.169	6.28	1.55
75	6.72	32.74	25.70	231.1	0.230	6.22	1.47
100	7.12	33.31	26.09	194.1	0.283	4.55	1.95
150	6.86	33.81	26.52	154.2	0.370	3.30	2.51
200	6.60	33.89	26.62	145.5	0.445	2.72	2.55
250	6.01	33.91	26.71	137.2	0.516	2.37	2.71
300	5.53	33.93	26.79	130.4	0.583	2.02	2.88
400	4.97	34.01	26.92	118.9	0.708	1.32	3.28
500	4.56	34.08	27.02	109.9	0.822	0.79	3.52
600	4.39	34.16	27.10	103.0	0.928	0.48	3.51
700	4.18	34.22	27.17	97.0	1.028	0.29	3.51
800	3.89	34.28	27.25	90.1	1.122	0.26	3.57
1000	3.34	34.37	27.37	78.7	1.291	0.35	3.63
1200	3.01	34.43	27.45	71.8	1.442	0.41	3.45
1500	2.54	34.50	27.55	63.0	1.644	0.69	3.32

STATION 179-028

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	12.08	32.18	24.41	353.0	0.000	6.08	1.04
10	12.08	32.19	24.42	352.5	0.035	6.07	0.72
20	12.08	32.19	24.42	352.7	0.070	6.09	0.77
30	11.22	32.29	24.65	330.6	0.104	5.79	1.06
50	7.50	32.85	25.68	232.7	0.160	5.51	1.51
75	7.42	33.22	25.98	204.4	0.215	4.58	1.81
100	7.39	33.46	26.17	186.5	0.264	4.05	2.08
150	6.96	33.79	26.49	157.0	0.350	3.37	2.30
200	6.57	33.89	26.62	145.1	0.426	2.74	2.50
250	6.14	33.95	26.73	135.8	0.496	2.15	2.70
300	5.76	33.98	26.80	129.5	0.562	1.77	2.87
400	5.17	34.04	26.92	119.0	0.686	1.13	3.10
500	4.76	34.10	27.01	110.8	0.801	0.66	3.23
600	4.43	34.16	27.10	103.4	0.908	0.44	3.33
700	4.16	34.23	27.18	96.0	1.008	0.35	3.41
800	3.88	34.29	27.26	89.2	1.101	0.29	3.44
1000	3.36	34.36	27.36	79.6	1.270	0.27	3.40
1200	2.94	34.43	27.46	71.0	1.421	0.35	3.36

STATION 179-029

OBSERVED VALUES

DATE 11/10/57 HR 13 LAT 49-00N LONG 128-02W SDG 2381 BTMCODE
 WVEL 12 DIR 15 FC 06 BA 99 DRY 12.2 WET 12.2 RELHU 99 VIS 4
 WEA 63 CL 6 AMT 8 SEA 3 DIR 15 SWL 4 DIR 09 SECDI LD 40

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	12.49	32.18	24.33	6.06	0.76
2	10	12.48	32.19	24.34	6.00	0.65
2	20	12.48	32.19	24.34	5.96	0.70
2	30	12.40	32.19	24.36	6.04	0.70
2	49	7.58	32.80	25.63	5.26	1.60
2	74	7.40	33.17	25.95	4.67	1.81
2	98	7.40	33.50	26.20	3.88	2.09
2	123	7.22	33.71	26.39	3.38	2.19
2	148	6.98	33.81	26.51	3.24	2.48
2	172	6.76	33.87	26.58	2.76	2.43
1	193	6.54	33.87	26.61	3.26	2.41
1	283	5.84	33.96	26.77	1.87	2.79
1	468	4.98	34.11	26.99	0.74	3.32
1	701	4.10	34.23	27.19	0.38	3.44
1	936	3.46	34.35	27.35	0.38	3.40
1	1409	2.52	34.49	27.54	0.50	3.28
1	1692	2.18	34.54	27.61	0.97	3.44

STATION 179-030

OBSERVED VALUES

DATE 11/10/57 HR 21 LAT 48-53N LONG 127-17W SDG 2012 BTMCODE
 WVEL 13 DIR 13 FC 06 BA 01 DRY 12.2 WET 11.9 RELHU 94 VIS 7
 WEA 03 CL 6 AMT 7 SEA 3 DIR 13 SWL 4 DIR 12 SECDI LD 31

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	12.30	32.18	24.37	6.00	0.73
2	10	12.28	32.19	24.38	6.14	0.69
2	20	12.28	32.20	24.39	6.08	0.67
2	30	12.26	32.20	24.39	6.05	0.41
2	50	7.46	32.70	25.57	6.25	1.64
2	75	7.40	33.08	25.87	5.17	1.63
2	100	7.27	33.32	26.08	4.57	1.79
2	125	7.16	33.60	26.32	3.96	2.01
2	150	7.12	33.75	26.44	3.58	2.35
1	165	7.06	33.78	26.47	3.48	2.35
2	175	6.95	33.81	26.51	3.39	2.37
1	246	6.38	33.96	26.70	2.27	2.80
1	411	5.74	34.06	26.86		3.04
1	620	4.66	34.13	27.05	0.59	3.36
1	833	3.94	34.31	27.27	0.40	3.48
1	1302	2.74	34.45	27.49	0.48	3.32
1	1590	2.29	34.52	27.59	0.97	3.44

STATION 179-029

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	12.49	32.18	24.33	360.4	0.000	6.06	0.76
10	12.48	32.19	24.34	359.7	0.036	6.00	0.65
20	12.48	32.19	24.34	359.9	0.072	5.96	0.70
30	12.40	32.19	24.36	358.7	0.108	6.04	0.70
50	7.57	32.82	25.65	235.9	0.167	5.24	1.61
75	7.40	33.19	25.96	206.4	0.222	4.63	1.83
100	7.39	33.52	26.22	182.1	0.271	3.83	2.09
150	6.96	33.82	26.52	154.7	0.355	3.16	2.47
200	6.48	33.88	26.63	144.7	0.430	3.13	2.44
250	6.08	33.93	26.72	136.6	0.500	2.32	2.66
300	5.75	33.98	26.80	129.3	0.566	1.73	2.85
400	5.28	34.06	26.92	118.8	0.690	1.07	3.17
500	4.84	34.13	27.03	109.5	0.804	0.67	3.35
600	4.45	34.18	27.11	102.2	0.910	0.49	3.41
700	4.10	34.23	27.19	95.4	1.009	0.38	3.44
800	3.82	34.28	27.25	89.3	1.101	0.38	3.42
1000	3.31	34.37	27.38	78.3	1.269	0.35	3.36
1200	2.88	34.44	27.47	69.6	1.417	0.34	3.27
1500	2.39	34.51	27.57	60.5	1.612	0.62	3.31

STATION 179-030

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	12.30	32.18	24.37	356.9	0.000	6.00	0.73
10	12.28	32.19	24.38	356.1	0.036	6.14	0.69
20	12.28	32.20	24.39	355.6	0.072	6.08	0.67
30	12.26	32.20	24.39	355.4	0.108	6.05	0.41
50	7.46	32.70	25.57	243.3	0.168	6.25	1.64
75	7.40	33.08	25.87	214.6	0.225	5.17	1.63
100	7.27	33.32	26.08	195.3	0.276	4.57	1.79
150	7.12	33.75	26.44	162.1	0.365	3.58	2.35
200	6.73	33.87	26.59	148.7	0.443	2.97	2.54
250	6.37	33.96	26.71	138.0	0.515	2.24	2.81
300	6.19	34.00	26.76	133.4	0.583	1.92	2.88
400	5.79	34.05	26.85	125.9	0.713	1.37	3.02
500	5.23	34.08	26.94	117.9	0.835	0.94	3.20
600	4.75	34.12	27.03	110.2	0.949	0.64	3.34
700	4.38	34.21	27.14	100.1	1.054	0.50	3.42
800	4.04	34.29	27.24	91.1	1.150	0.42	3.47
1000	3.45	34.36	27.35	80.7	1.322	0.33	3.37
1200	2.95	34.42	27.45	71.9	1.475	0.39	3.32
1500	2.41	34.50	27.56	61.5	1.675	0.78	3.38

STATION 179-031

OBSERVED VALUES

DATE 11/11/57 HR 04 LAT 48-45N LONG 126-35W SDG 677 BTMCODE
 WVCL 00 DIR 00 FC 00 BA 07 DRY 11.1 WET 10.8 RELHU 94 VIS 6
 WEA 03 CL 6 AMT 6 SEA 2 DIR SWL 5 DIR 17 SECDI LD 29

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	12.24	32.23	24.42	5.92	0.93
2	10	12.24	32.23	24.42	5.92	0.93
2	20	12.24	32.23	24.42	5.91	1.25
2	30	10.46	32.54	24.98	4.80	1.78
2	50	8.88	32.83	25.46	4.47	2.05
2	75	8.18	33.15	25.82	3.25	2.48
2	100	7.72	33.44	26.11	2.83	2.45
2	125	7.52	33.63	26.29	2.37	2.65
2	150	6.99	33.70	26.42	3.94	2.49
2	175	6.86	33.80	26.51	3.77	2.49
1	195	6.76	33.86	26.58	3.26	2.59
1	292	6.14	34.02	26.78	1.60	3.03
1	487	5.00	34.11	26.99	0.76	3.38

STATION 179-032

OBSERVED VALUES

DATE 11/11/57 HR 08 LAT 48-36N LONG 125-51W SDG 73 BTMCODE
 WVCL 10 DIR 32 FC 05 BA 12 DRY 10.6 WET 10.6 RELHU 99 VIS 5
 WEA 52 CL AMT 8 SEA 2 DIR 32 SWL 5 DIR 17 SECDI LD 24

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	11.09	32.12	24.12	5.48	1.29
1	10	11.06	32.09	24.52	5.50	1.28
1	20	11.04	32.10	24.54	5.48	1.32
1	30	9.29	32.02	24.76	3.94	2.29
1	50	9.36	32.41	25.06	3.66	2.26
1	60	9.36	32.45	25.09	3.66	2.29

STATION 179-031

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	12.24	32.23	24.42	352.2	0.000	5.92	0.93
10	12.24	32.23	24.42	352.4	0.035	5.92	0.93
20	12.24	32.23	24.42	352.6	0.070	5.91	1.25
30	10.46	32.54	24.98	299.4	0.103	4.80	1.78
50	8.88	32.83	25.46	253.7	0.158	4.47	2.05
75	8.18	33.15	25.82	220.2	0.217	3.25	2.48
100	7.72	33.44	26.11	192.5	0.269	2.83	2.45
150	6.99	33.70	26.42	164.1	0.358	3.94	2.49
200	6.73	33.87	26.59	148.7	0.436	3.15	2.62
250	6.40	33.96	26.70	138.4	0.508	2.22	2.86
300	6.09	34.03	26.80	129.9	0.575	1.50	3.06
400	5.49	34.11	26.93	117.7	0.699	0.72	3.31

STATION 179-032

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	11.09	32.12	24.54	340.3	0.000	5.48	1.29
10	11.06	32.09	24.52	342.2	0.034	5.50	1.28
20	11.04	32.10	24.54	341.4	0.068	5.48	1.32
30	9.29	32.02	24.76	319.6	0.101	3.94	2.29
50	9.36	32.41	25.06	292.1	0.162	3.66	2.26

STATION 179-033

SWIFTSURE BANK LIGHTSHIP

OBSERVED VALUES

DATE 11/11/57 HR 13 LAT 48-30N LONG 125-05W SDG 141 BTMCODE
WVEL 02 DIR 01 FC 01 BA 15 DRY 11.1 WET 11.1 RELHU 99 VIS 7
WEA 02 CL AMT 8 SEA 2 DIR 01 SWL 2 DIR SECDI LD 14

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	11.71	32.12	24.43	5.85	1.16
1	10	11.64	32.14	24.46	5.81	1.45
1	20	9.54	32.45	25.06	4.09	2.03
1	30	8.84	32.75	25.40	3.83	2.15
1	50	8.06	33.25	25.91	3.10	2.49
1	75	7.78	33.46	26.12	2.74	2.53
1	100	7.48	33.64	26.30	2.28	2.78
1	125	7.16	33.78	26.46	2.06	2.90

STATION 179-033

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	11.71	32.12	24.43	350.9	0.000	5.85	1.16
10	11.64	32.14	24.46	348.4	0.035	5.81	1.45
20	9.54	32.45	25.06	291.3	0.067	4.09	2.03
30	8.84	32.75	25.40	258.7	0.094	3.83	2.15
50	8.06	33.25	25.91	210.6	0.141	3.10	2.49
75	7.78	33.46	26.12	191.5	0.191	2.74	2.53
100	7.48	33.64	26.30	174.4	0.237	2.28	2.78

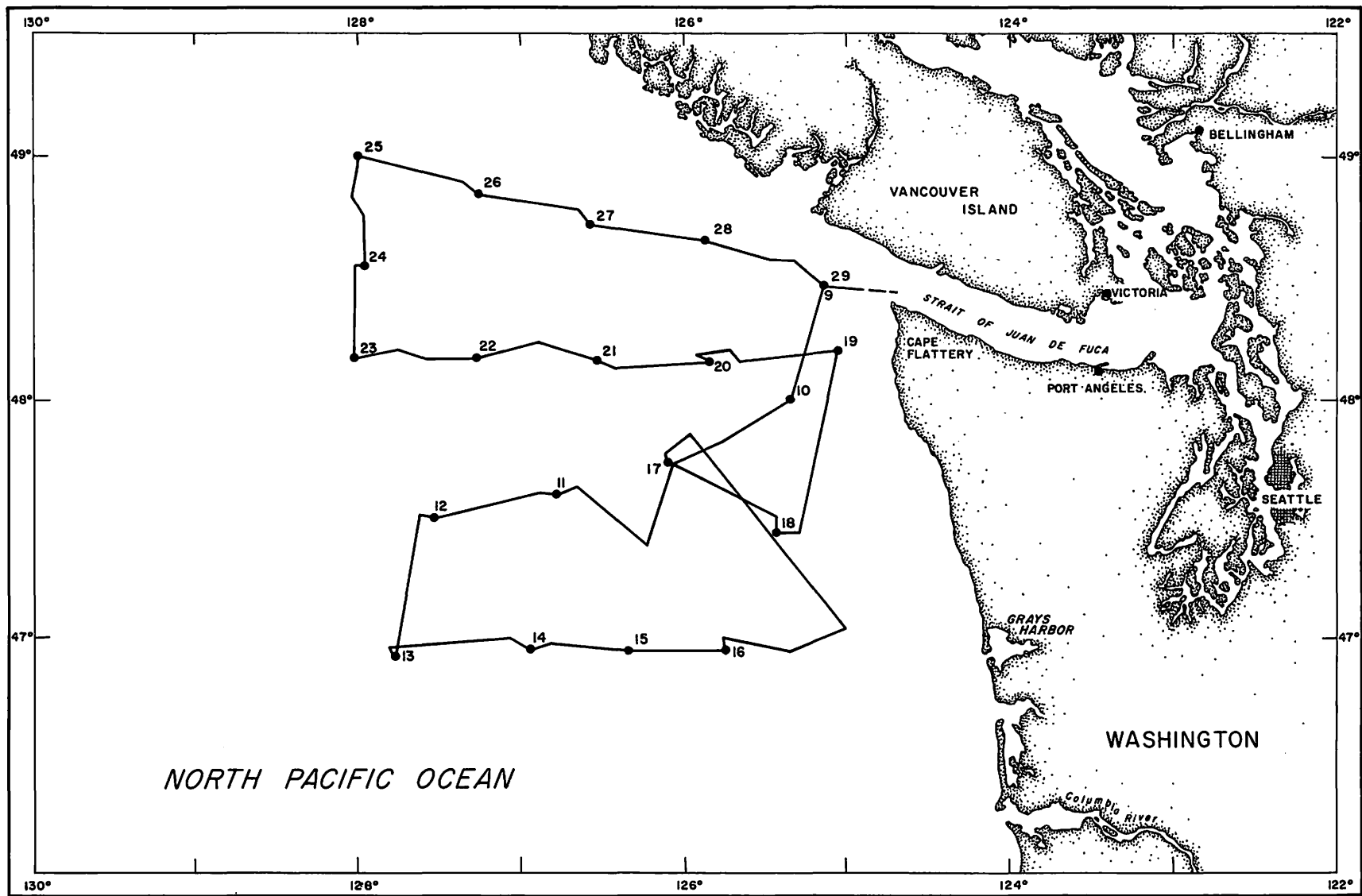


Fig. 8. Offshore stations for Brown Bear Cruise No. 188 (20-28 February 1958)

STATION 188-001

POINT JEFFERSON - PUGET SOUND

OBSERVED VALUES

DATE 02/19/58 HR 21 LAT 47-44N LONG 122-25W SDG 283 BTMCODE
 WVCL 00 DIR 00 FC 00 BA 07 DRY 11.1 WET 10.8 RELHU 97 VIS 8
 WEA 01 CL 6 AMT 7 SEA 1 DIR SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	8.82	28.15	21.82	5.71	2.33
2	5	8.79	28.31	21.95	5.73	2.37
2	10	8.75	28.68	22.24	5.68	2.38
2	20	8.70	29.35	22.77	5.48	2.44
2	30	8.69	29.42	22.83	5.47	2.33
2	49	8.63	29.49	22.89	5.22	2.25
2	74	8.60	29.53	22.93	5.31	2.21
2	99	8.60	29.55	22.94	5.31	2.38
2	148	8.64	29.76	23.10	5.08	2.41
2	197	8.71	29.81	23.13	5.03	2.39
1	238	8.73	29.81	23.13	5.02	2.44
1	267	8.71	29.83	23.14	5.00	2.47

STATION 188-002

POINT NO POINT - PUGET SOUND

OBSERVED VALUES

DATE 02/19/58 HR 23 LAT 47-54N LONG 122-28W SDG 201 BTMCODE
 WVCL 03 DIR 30 FC 02 BA 08 DRY . WET . RELHU VIS 8
 WEA 01 CL 6 AMT 5 SEA 1 DIR 30 SWL 1 DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	8.76	28.55	22.14	5.67	2.36
1	5	8.70	28.68	22.25	5.58	2.32
1	10	8.70	28.68	22.25	5.60	2.36
1	20	8.67	28.87	22.40	5.52	2.31
1	29	8.59	29.38	22.81	5.41	2.23
1	48	8.52	29.46	22.88	5.49	2.13
1	73	8.51	29.50	22.92	5.47	2.10
1	98	8.60	29.60	22.98	5.30	2.26
1	147	8.74	29.68	23.02	5.08	2.36
1	186	8.76	29.72	23.05	4.88	2.39

STATION 188-001

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.82	28.15	21.82	600.4	0.000	5.71	2.33
10	8.75	28.68	22.24	560.0	0.058	5.68	2.38
20	8.70	29.35	22.77	509.5	0.111	5.48	2.44
30	8.69	29.42	22.83	504.2	0.162	5.47	2.33
50	8.63	29.49	22.89	498.4	0.262	5.23	2.24
75	8.60	29.53	22.93	495.3	0.386	5.31	2.22
100	8.60	29.56	22.95	493.4	0.510	5.30	2.38
150	8.64	29.76	23.10	479.7	0.753	5.08	2.41
200	8.71	29.81	23.13	477.6	0.992	5.03	2.39
250	8.73	29.82	23.13	477.8	1.231	5.01	2.45

STATION 188-002

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.76	28.55	22.14	569.7	0.000	5.67	2.36
10	8.70	28.68	22.25	559.3	0.056	5.60	2.36
20	8.67	28.87	22.40	544.8	0.111	5.52	2.31
30	8.58	29.39	22.82	504.9	0.163	5.42	2.22
50	8.52	29.46	22.88	499.1	0.263	5.49	2.12
75	8.52	29.51	22.92	495.7	0.387	5.45	2.12
100	8.61	29.60	22.98	490.6	0.510	5.29	2.27
150	8.74	29.68	23.02	487.1	0.754	5.07	2.36

STATION 188-003

MALLOWSTONE POINT - ADMIRALTY INLET

OBSERVED VALUES

DATE 02/20/58 HR 01 LAT 48-05N LONG 122-39W SDG 182 BTMCODE
 WVCL 00 DIR 00 FC 00 BA 09 DRY 9.2 WET 8.9 RELHU 96 VIS 7
 WEA 01 CL 6 AMT 3 SEA 1 DIR SWL 1 DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	8.52	29.90	23.23	5.60	1.96
1	5	8.50	29.94	23.26	5.63	1.94
1	10	8.51	29.96	23.28	5.64	1.95
1	20	8.50	29.97	23.28	5.61	2.01
1	30	8.52	29.97	23.28	5.60	2.09
1	50	8.52	30.00	23.31	5.67	1.97
1	74	8.53	30.04	23.34	5.60	2.03
1	99	8.52	30.04	23.34	5.66	2.08
1	123	8.54	30.14	23.41	5.60	2.04
1	148	8.52	30.18	23.45	5.60	2.05

STATION 188-004

PROTECTION ISLAND - STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 02/20/58 HR 03 LAT 48-12N LONG 122-54W SDG 91 BTMCODE
 WVCL 00 DIR 00 FC 00 BA 10 DRY 8.3 WET 8.1 RELHU 97 VIS 7
 WEA 01 CL 5 AMT 2 SEA 0 DIR 00 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	8.50	30.20	23.46	5.66	2.11
1	5	8.48	30.33	23.57	5.60	2.12
1	10	8.47	30.46	23.67	5.58	1.99
1	20	8.54	30.70	23.85	5.57	1.96
1	30	8.62	30.97	24.05	5.54	1.86
1	50	8.67	31.11	24.15	5.50	1.80
1	75	8.76	31.31	24.29	5.48	1.76

STATION 188-003

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.52	29.90	23.23	465.7	0.000	5.60	1.96
10	8.51	29.96	23.28	461.2	0.046	5.64	1.95
20	8.50	29.97	23.28	460.5	0.092	5.61	2.01
30	8.52	29.97	23.28	460.9	0.138	5.60	2.09
50	8.52	30.00	23.31	458.9	0.230	5.67	1.97
75	8.53	30.04	23.34	456.4	0.344	5.60	2.03
100	8.52	30.05	23.34	455.8	0.458	5.66	2.08

STATION 188-004

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.50	30.20	23.46	443.1	0.000	5.66	2.11
10	8.47	30.46	23.67	423.4	0.043	5.58	1.99
20	8.54	30.70	23.85	406.6	0.085	5.57	1.96
30	8.62	30.97	24.05	387.8	0.125	5.54	1.86
50	8.67	31.11	24.15	378.4	0.202	5.50	1.80
75	8.76	31.31	24.29	365.2	0.295	5.48	1.76

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STATION 188-005

NW OF NEW DUNGENESS — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 02/20/58 HR 05 LAT 48-14N LONG 123-14W SDG 139 BTMCODE
WVEL 01 DIR 22 FC 01 BA 10 DRY 8.3 WET 8.1 RELHU 97 VIS 7
WEA 02 CL 5 AMT 2 SEA 0 DIR 00 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	8.43	30.46	23.68	5.73	1.97
1	5	8.52	30.55	23.73	5.68	1.97
1	10	8.61	30.64	23.79	5.69	1.92
1	20	8.56	30.66	23.81	5.66	1.93
1	30	8.52	30.73	23.88	5.67	1.96
1	49	8.60	31.01	24.08	5.48	1.82
1	74	8.75	31.27	24.26	5.42	1.86
1	99	8.96	31.60	24.49	5.40	1.79
1	129	8.98	31.71	24.57	5.34	1.78

STATION 188-006

BEECHY HEAD — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 02/20/58 HR 07 LAT 48-16N LONG 123-41W SDG 183 BTMCODE
WVEL 02 DIR 30 FC 02 BA 12 DRY 8.9 WET 8.6 RELHU 96 VIS 7
WEA 03 CL 5 AMT 4 SEA 0 DIR SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	8.65	30.99	24.06	5.56	1.78
1	5	8.64	31.00	24.07	5.57	1.77
1	10	8.64	31.00	24.07	5.59	1.81
1	20	8.62	31.08	24.13	5.60	1.73
1	30	8.76	31.26	24.25	5.48	1.74
1	50	8.80	31.31	24.29	5.47	1.69
1	74	9.03	31.62	24.49	5.41	1.62
1	99	9.26	31.91	24.68	5.42	1.50
1	138	9.36	32.18	24.88	5.32	1.41
1	177	9.46	32.57	25.17	5.01	1.47

STATION 188-005

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.43	30.46	23.68	422.7	0.000	5.73	1.97
10	8.61	30.64	23.79	412.0	0.042	5.69	1.92
20	8.56	30.66	23.81	409.9	0.083	5.66	1.93
30	8.52	30.73	23.88	404.3	0.124	5.67	1.96
50	8.60	31.02	24.09	384.1	0.203	5.48	1.82
75	8.76	31.29	24.28	366.7	0.297	5.42	1.86
100	8.96	31.61	24.50	346.2	0.386	5.40	1.79

STATION 188-006

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.65	30.99	24.06	386.3	0.000	5.56	1.78
10	8.64	31.00	24.07	385.6	0.039	5.59	1.81
20	8.62	31.08	24.13	379.5	0.077	5.60	1.73
30	8.76	31.26	24.25	368.2	0.114	5.48	1.74
50	8.80	31.31	24.29	365.4	0.187	5.47	1.69
75	9.04	31.63	24.50	345.5	0.276	5.41	1.61
100	9.26	31.92	24.69	327.7	0.360	5.42	1.50
150	9.39	32.29	24.96	303.1	0.518	5.25	1.41

STATION 188-007

PILLAR POINT — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 02/20/58 HR 08 LAT 48-18N LONG 124-03W SDG 192 BTMCODE
 WVEL 05 DIR 30 FC 03 BA 13 DRY 8.9 WET 8.3 RELHU 93 VIS 7
 WEA 02 CL 5 AMT 4 SEA 1 DIR 30 SWL DIR SECDI LD 88

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	8.76	30.73	23.84	6.08	1.68
1	5	8.74	30.73	23.84	6.05	1.70
1	10	8.60	30.82	23.93	5.92	1.71
1	20	8.54	30.95	24.04	5.82	1.74
1	30	8.60	31.02	24.09	5.68	1.75
1	50	8.61	31.18	24.21	5.50	1.72
1	74	8.56	31.31	24.32	5.34	1.76
1	99	8.98	31.73	24.59	5.34	1.82
1	138	9.55	32.43	25.04	5.29	1.74
1	178	9.31	32.79	25.36	4.66	1.69

STATION 188-008

NEAH BAY — STRAIT OF JUAN DE FUCA

OBSERVED VALUES

DATE 02/20/58 HR 13 LAT 48-27N LONG 124-31W SDG 237 BTMCODE
 WVEL 04 DIR 20 FC 03 BA 14 DRY 10.0 WET 9.4 RELHU 93 VIS 6
 WEA 50 CL 5 AMT 8 SEA 1 DIR 20 SWL 1 DIR 27 SECDI LD 12

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	10.31	28.66	21.99		0.90
1	5	10.20	29.00	22.27		1.08
1	10	10.02	29.74	22.87		1.14
1	20	9.70	30.10	23.20		1.27
1	30	9.29	30.28	23.41		1.13
1	50	8.82	31.11	24.13		1.61
1	75	9.13	31.69	24.53		1.52
1	100	9.46	32.29	24.95		1.42
1	125	9.44	32.61	25.20		1.43
1	150	9.65	32.88	25.38		1.50
1	175	9.30	33.08	25.59		1.69
1	200	8.96	33.28	25.80		1.71
1	225		33.28			1.84

STATION 188-007

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.76	30.73	23.84	407.2	0.000	6.08	1.68
10	8.60	30.82	23.93	398.4	0.040	5.92	1.71
20	8.54	30.95	24.04	388.0	0.079	5.82	1.74
30	8.60	31.02	24.09	383.8	0.118	5.68	1.75
50	8.61	31.18	24.21	372.3	0.194	5.50	1.72
75	8.58	31.33	24.33	361.1	0.286	5.34	1.76
100	9.00	31.75	24.60	336.4	0.373	5.35	1.82
150	9.57	32.58	25.16	284.5	0.528	5.16	1.72

STATION 188-008

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	10.31	28.66	21.99	584.1	0.000		0.90
10	10.02	29.74	22.87	499.6	0.054		1.14
20	9.70	30.10	23.20	468.1	0.102		1.27
30	9.29	30.28	23.41	448.8	0.148		1.13
50	8.82	31.11	24.13	380.6	0.231		1.61
75	9.13	31.69	24.53	342.4	0.321		1.52
100	9.46	32.29	24.95	303.3	0.402		1.42
150	9.65	32.88	25.38	263.6	0.544		1.50
200		33.28					1.71

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STATION 188-009

SWIFTSURE BANK LIGHTSHIP

OBSERVED VALUES

DATE 02/20/58 HR 18 LAT 48-28N LONG 125-08W SDG 153 BTMCODE
 WVCL 10 DIR 14 FC 05 BA 15 DRY 9.7 WET 9.4 RELHU 96 VIS 7
 WEA 60 CL 6 AMT 8 SEA 3 DIR 14 SWL 4 DIR 14 SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	10.23	32.52	25.00	6.04	0.93
1	10	10.21	32.52	25.00	6.00	0.96
1	20	10.21	32.51	25.00	5.98	0.94
1	30	10.22	32.56	25.03	5.96	0.93
1	50	10.20	32.61	25.08	5.91	0.90
1	74	10.16	32.63	25.10	5.89	0.90
1	99	10.12	32.72	25.17	5.73	0.99
1	129	9.87	32.86	25.33	5.34	1.39

STATION 188-010

OBSERVED VALUES

DATE 02/21/58 HR 01 LAT 48-00N LONG 125-22W SDG 630 BTMCODE
 WVCL 15 DIR 16 FC 07 BA 13 DRY . WET . RELHU VIS 6
 WEA 02 CL 6 AMT 8 SEA 4 DIR 16 SWL 4 DIR SECDI LD 88

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	10.58	32.72	25.10	6.12	0.96
2	10	10.57	32.71	25.09	6.05	0.85
2	19	10.56	32.72	25.10	6.05	0.80
2	28	10.56	32.72	25.10	6.06	0.74
2	48	10.58	32.72	25.10	6.06	0.77
2	72	10.57	32.74	25.11	5.94	0.77
2	96	10.27	32.87	25.27	5.59	0.96
2	120	9.76	33.19	25.60	4.67	1.32
2	144	8.68	33.37	25.91	4.16	1.60
1	152	8.38	33.40	25.98	4.17	1.71
2	168	7.78	33.45	26.11	4.14	1.86
1	236	7.69	33.86	26.45	2.62	2.10
1	414	5.88	34.03	26.82	1.27	2.46
1	508	5.15			2.27*	1.90*

STATION 188-009

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	10.23	32.52	25.00	296.6	0.000	6.04	0.93
10	10.21	32.52	25.00	296.5	0.030	6.00	0.96
20	10.21	32.51	25.00	297.4	0.060	5.98	0.94
30	10.22	32.56	25.03	294.1	0.090	5.96	0.93
50	10.20	32.61	25.08	290.4	0.148	5.91	0.90
75	10.16	32.63	25.10	288.8	0.220	5.89	0.90
100	10.12	32.72	25.17	282.0	0.291	5.72	1.00

STATION 188-010

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	10.58	32.72	25.10	287.5	0.000	6.12	0.96
10	10.57	32.71	25.09	288.3	0.029	6.05	0.85
20	10.56	32.72	25.10	287.6	0.058	6.05	0.79
30	10.56	32.72	25.10	287.8	0.087	6.06	0.74
50	10.59	32.72	25.09	288.7	0.145	6.06	0.76
75	10.54	32.75	25.13	286.1	0.217	5.93	0.78
100	10.22	32.93	25.32	268.1	0.286	5.41	1.03
150	8.45	33.39	25.96	207.5	0.405	4.17	1.68
200	7.78	33.67	26.28	177.9	0.501	3.36	1.98
250	7.53						
300	6.97						
400	6.00						
500	5.21						

STATION 188-011

OBSERVED VALUES

DATE 02/22/58 HR 00 LAT 47-36N LONG 126-48W SDG 2450 BTMCODE
 WVEL 10 DIR 19 FC 05 BA 10 DRY 10.0 WET 10.0 RELHU 99 VIS 6
 WEA 02 CL 7 AMT 8 SEA 3 DIR 19 SWL 6 DIR 18 SECDI LD 76

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
3	0	9.02	31.96	24.76	6.37*	0.81
3	10	9.00	31.94	24.75	4.37*	0.75
3	20	9.00	31.97	24.77	2.70*	0.77
3	30	8.98	32.00	24.80	4.16*	0.76
3	50	8.98	32.01	24.81	4.21*	0.83
3	75	8.61	32.10	24.93	6.20*	0.99
3	100	7.22	32.65	25.56	3.25*	1.24
3	125	7.14	32.98	25.83	1.79*	1.65
3	150	6.98	33.26	26.07	1.79*	1.82
3	175	6.92	33.40	26.19	1.76*	1.85
1	192	6.78	33.61	26.38	3.64	2.04
1	291	5.80			2.22	2.15
1	491	4.92	33.73	26.70	0.65	2.37
1	738	4.06	33.85	26.89	0.06	2.90
2	983	3.45	34.16	27.20	0.24	3.16
2	1484	2.47	34.45	27.51	0.74	3.38
2	1784	2.09	34.55	27.63	1.10	2.96

STATION 188-012

OBSERVED VALUES

DATE 02/22/58 HR 08 LAT 47-31N LONG 127-34W SDG 2615 BTMCODE
 WVEL 05 DIR 18 FC 02 BA 14 DRY 8.9 WET 8.9 RELHU 99 VIS 6
 WEA 01 CL AMT 2 SEA 3 DIR 18 SWL DIR SECDI LD 66

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	9.10	32.40	25.09	6.12	0.81
2	10	9.09	32.40	25.09	6.29	0.75
2	20	9.08	32.37	25.07	6.26	0.77
2	30	9.07	32.38	25.08	6.23	0.76
2	50	9.09	32.40	25.09	6.28	0.83
2	75	7.75	32.64	25.48	5.95	0.99
2	100	7.19	32.98	25.83	5.29	1.24
2	120	7.22	33.37	26.13	4.76	1.65
2	142	7.09	33.62	26.34	4.21	1.82
1	164	7.31	33.72	26.39	3.57	2.04
2	173	6.98	33.78	26.48	2.31*	1.85
1	239	6.34	33.87	26.64	3.28	2.15
1	386	5.11	33.95	26.85	2.27	2.37
1	580	4.35	34.16	27.10	0.65	2.90
1	806	3.84	34.27	27.24	0.26	3.16
1	1214	2.91	34.45	27.48	0.24	3.38
1	1490	2.49	34.51	27.56	0.55	2.96

STATION 188-011

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.02	31.96	24.76	319.5	0.000		0.81
10	9.00	31.94	24.75	320.9	0.032		0.75
20	9.00	31.97	24.77	318.8	0.064		0.77
30	8.98	32.00	24.80	316.4	0.096		0.76
50	8.98	32.01	24.81	316.0	0.159		0.83
75	8.61	32.10	24.93	304.3	0.237		0.99
100	7.22	32.65	25.56	244.6	0.306		1.24
150	6.98	33.26	26.07	196.7	0.416		1.82
200	6.69	33.61	26.39	167.5	0.507	3.51	2.05
250	6.16	33.63	26.47	159.9	0.589	2.76	2.10
300	5.76	33.65	26.54	154.1	0.667	2.13	2.16
400	5.30	33.69	26.63	146.6	0.817	1.24	2.25
500	4.88	33.73	26.70	139.7	0.960	0.61	2.39
600	4.51	33.76	26.77	134.1	1.097	0.29	2.64
700	4.18	33.82	26.85	126.7	1.227	0.10	2.84
800	3.90	33.94	26.98	115.4	1.348	0.10	2.98
1000	3.41	34.17	27.21	94.3	1.558	0.25	3.19
1200	2.97	34.30	27.35	81.0	1.733	0.44	3.40
1500	2.45	34.46	27.52	64.9	1.952	0.76	3.37

STATION 188-012

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.10	32.40	25.09	288.0	0.000	6.12	0.81
10	9.09	32.40	25.09	288.0	0.029	6.29	0.75
20	9.08	32.37	25.07	290.3	0.058	6.26	0.77
30	9.07	32.38	25.08	289.6	0.087	6.23	0.76
50	9.09	32.40	25.09	288.7	0.145	6.28	0.83
75	7.75	32.64	25.48	252.1	0.213	5.95	0.99
100	7.19	32.98	25.83	219.6	0.272	5.29	1.24
150	7.12	33.66	26.37	168.8	0.369	3.98	1.86
200	6.76	33.81	26.54	153.6	0.450	3.46	2.04
250	6.23	33.87	26.65	142.9	0.524	3.21	2.16
300	5.76	33.89	26.73	136.2	0.594	2.88	2.22
400	5.05	33.97	26.88	122.8	0.723	2.11	2.42
500	4.63	34.09	27.02	110.0	0.839	1.17	2.72
600	4.30	34.17	27.12	101.2	0.945	0.60	2.93
700	4.08	34.22	27.18	95.9	1.044	0.41	3.05
800	3.85	34.27	27.24	90.4	1.137	0.27	3.15
1000	3.35	34.37	27.37	78.8	1.306	0.18	3.39
1200	2.94	34.45	27.47	69.6	1.454	0.23	3.39

STATION 188-013

OBSERVED VALUES

DATE 02/22/58 HR 18 LAT 46-55N LONG 127-46W SDG 2670 BTMCODE 1
 WVCL 03 DIR 14 FC 02 BA 15 DRY 9.4 WET 9.4 RELHU 99 VIS 3
 WEA 42 CL AMT SEA 2 DIR 14 SWL 6 DIR 24 SECDI LD 58

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	9.10	32.40	25.09	6.36	0.90
2	10	9.09	32.42	25.11	6.38	0.84
2	20	9.07	32.44	25.13	6.29	0.97
2	30	9.04	32.41	25.11	6.38	0.88
2	50	9.02	32.41	25.11	6.27	0.84
2	75	8.30	32.51	25.30	6.12	0.91
2	100	6.44	32.91	25.87	5.80	1.23
2	125	6.44	33.22	26.11	5.51	1.56
2	144	6.70			5.05	
2	175	7.02	33.78	26.48	3.86	1.96
1	195	6.70	33.86	26.58	3.81	1.94
1	295	5.95	33.94	26.74	2.23	2.39
1	488	4.62	34.07	27.00	0.91	2.68
1	738	3.90	34.24	27.21	0.32	2.89
1	985	3.45	34.43	27.41	0.26	3.05
1	1480	2.51	34.62	27.65	0.54	2.83
1	1768	2.13	34.54	27.61	1.03	2.89

STATION 188-014

OBSERVED VALUES

DATE 02/23/58 HR 04 LAT 46-57N LONG 126-57W SDG 2650 BTMCODE 1
 WVCL 03 DIR 19 FC 02 BA 14 DRY 9.4 WET 9.4 RELHU 99 VIS 6
 WEA 02 CL 6 AMT 6 SEA 2 DIR 19 SWL 6 DIR 20 SECDI LD 64

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
3	0	9.50	32.44	25.06	6.40	0.70
3	10	9.48	32.45	25.07	6.34	0.76
3	20	9.46	32.46	25.08	6.27	0.68
3	30	9.44	32.47	25.09	6.20	0.65
3	50	9.15	32.63	25.26	5.82	0.75
3	75	7.82	33.24	25.94	4.78	1.49
3	100	7.83	33.51	26.15	4.02	1.52
3	125	7.56	33.68	26.32	3.74	1.82
3	150	7.65	33.80	26.40	2.90	1.98
1	155	7.56	33.88	26.48	2.87	2.07
3	175	7.61	33.86	26.46	2.65	2.09
1	234	7.05	33.98	26.63	2.00	2.36
1	377	5.99	34.10	26.86	0.97	2.66
1	568	4.75	34.13	27.04	0.49	2.84
2	747	3.91	34.19	27.17	0.41	2.88
2	1153	3.18	34.44	27.44	0.27	2.92
2	1431	2.73	34.47	27.51	0.52	2.97

STATION 188-013

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	9.10	32.40	25.09	288.0	0.000	6.36	0.90
10	9.09	32.42	25.11	286.6	0.029	6.38	0.84
20	9.07	32.44	25.13	284.9	0.058	6.29	0.97
30	9.04	32.41	25.11	286.9	0.087	6.38	0.88
50	9.02	32.41	25.11	286.9	0.144	6.27	0.84
75	8.30	32.51	25.30	269.4	0.214	6.12	0.91
100	6.44	32.91	25.87	215.2	0.275	5.80	1.23
150	6.74	33.52	26.31	174.2	0.372	4.85	1.74
200	6.73	33.84	26.56	150.9	0.453	3.58	2.02
250	6.31	33.89	26.66	142.5	0.526	2.81	2.23
300	5.91	33.94	26.75	134.3	0.595	2.19	2.40
400	5.14	34.01	26.90	120.9	0.723	1.42	2.56
500	4.58	34.08	27.02	110.2	0.839	0.87	2.69
600	4.26	34.14	27.10	103.0	0.946	0.58	2.78
700	3.99	34.21	27.18	95.6	1.045	0.38	2.86
800	3.79	34.29	27.27	88.2	1.137	0.29	2.95
1000	3.42	34.44	27.42	74.4	1.300	0.26	3.04
1200	3.00	34.56	27.56	62.1	1.437	0.29	2.90
1500	2.48	34.62	27.65	53.5	1.610	0.57	2.83

STATION 188-014

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	9.50	32.44	25.06	291.1	0.000	6.40	0.70
10	9.48	32.45	25.07	290.2	0.029	6.34	0.76
20	9.46	32.46	25.08	289.3	0.058	6.27	0.68
30	9.44	32.47	25.09	288.5	0.087	6.20	0.65
50	9.15	32.63	25.26	272.6	0.143	5.82	0.75
75	7.82	33.24	25.94	208.4	0.203	4.78	1.49
100	7.83	33.51	26.15	188.9	0.253	4.02	1.52
150	7.65	33.80	26.40	165.6	0.342	2.90	1.98
200	7.31	33.93	26.55	152.0	0.421	2.35	2.23
250	6.93	34.00	26.66	142.4	0.495	1.86	2.40
300	6.55	34.05	26.75	134.4	0.564	1.45	2.52
400	5.82	34.10	26.89	122.5	0.692	0.89	2.69
500	5.15	34.12	26.98	113.9	0.810	0.61	2.79
600	4.58	34.14	27.06	106.7	0.920	0.47	2.85
700	4.10	34.17	27.14	99.8	1.023	0.43	2.87
800	3.81	34.24	27.22	92.1	1.119	0.36	2.88
1000	3.44	34.37	27.36	79.8	1.291	0.25	2.90
1200	3.10	34.45	27.46	71.4	1.442	0.29	2.93

STATION 188-015

OBSERVED VALUES

DATE 02/23/58 HR 12 LAT 46-56N LONG 126-20W SDG 2560 BTMCODE 1
 WVCL 08 DIR 16 FC 04 BA 14 DRY 8.3 WET 8.3 RELHU 99 VIS 4
 WEA 41 CL AMT SEA 2 DIR 16 SWL DIR SECDI LD 70

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
3	0	9.45	32.47	25.09	6.31	0.95
3	10	9.45	32.47	25.09	6.31	1.09
3	20	9.46	32.41	25.04	6.35	0.84
3	30	9.46	32.48	25.10	6.28	0.83
3	50	9.53	32.50	25.10	6.22	0.87
3	75	9.97	32.79	25.25	5.75	0.98
3	100	8.61	33.30	25.87	4.57	1.54
3	125	8.12	33.48	26.08	4.04	2.04
3	150	7.55	33.57	26.24	4.10	2.00
3	175	7.64	33.78	26.39	3.35	2.11
1	200	7.21	33.95	26.58	2.31	2.42
1	300	6.46	34.00	26.73	1.58	2.67
1	494	5.30	34.11	26.96	0.64	3.00
2	700	4.32	34.14	27.09	0.29	3.21
2	920	3.63	34.36	27.34	0.24	3.30
2	1420	2.66	34.51	27.55	0.56	3.28
2	1710	2.27	34.54	27.60	0.88	3.15

STATION 188-016

OBSERVED VALUES

DATE 02/23/58 HR 19 LAT 46-57N LONG 125-45W SDG 1884 BTMCODE
 WVCL 12 DIR 15 FC 06 BA 12 DRY 10.0 WET 10.0 RELHU 99 VIS 6
 WEA 60 CL 0 AMT 8 SEA 3 DIR 15 SWL 1 DIR 14 SECDI LD 73

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
3	0	9.88	32.52	25.06	4.80	1.04
3	10	9.89	32.52	25.06	5.89	0.97
3	20	9.88	32.47	25.02	6.24	0.92
3	30	9.87	32.50	25.05	6.20	0.88
3	50	9.89	32.61	25.13	6.06	0.89
3	75	9.88	32.65	25.16	5.92	0.90
3	100	9.17	33.31	25.79	4.39	1.51
4	115	8.68	33.51	26.02	3.82	1.76
4	146	8.44	33.66	26.18	3.16	1.97
4	167	8.15	33.80	26.33	2.77	2.05
2	175	8.10	33.86	26.39	2.72	2.04
2	212	7.50	33.93	26.53	2.22	2.25
2	340	6.49	33.98	26.71	1.53	2.38
2	460	5.50	34.09	26.92	0.97	2.58
2	576	4.73	34.18	27.08	0.48	2.94
2	852	3.96	34.34	27.29	0.24	2.98
2	1080	3.45	34.43	27.41	0.27	3.05

STATION 188-015

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.45	32.47	25.09	288.1	0.000	6.31	0.95
10	9.45	32.47	25.09	288.3	0.029	6.31	1.09
20	9.46	32.41	25.04	293.1	0.058	6.35	0.84
30	9.46	32.48	25.10	288.0	0.087	6.28	0.83
50	9.53	32.50	25.10	288.0	0.145	6.22	0.87
75	9.97	32.79	25.25	273.9	0.215	5.75	0.98
100	8.61	33.30	25.87	215.7	0.276	4.57	1.54
150	7.55	33.57	26.24	181.3	0.375	4.10	2.00
200	7.21	33.95	26.58	149.2	0.458	2.31	2.42
250	6.82	33.97	26.65	143.2	0.531	1.92	2.55
300	6.46	34.00	26.73	136.9	0.601	1.58	2.67
400	5.83	34.07	26.86	124.9	0.732	1.02	2.86
500	5.27	34.11	26.96	116.1	0.853	0.63	3.01
600	4.76	34.10	27.01	111.8	0.967	0.42	3.12
700	4.32	34.14	27.09	104.6	1.075	0.29	3.21
800	3.99	34.25	27.21	93.5	1.174	0.25	3.26
1000	3.45	34.39	27.38	78.5	1.346	0.27	3.31
1200	3.04	34.46	27.47	70.0	1.494	0.38	3.32
1500	2.54	34.52	27.56	61.5	1.691	0.64	3.25

STATION 188-016

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.88	32.52	25.06	291.0	0.000	4.80	1.04
10	9.89	32.52	25.06	291.4	0.029	5.89	0.97
20	9.88	32.47	25.02	295.1	0.058	6.24	0.92
30	9.87	32.50	25.05	292.9	0.087	6.20	0.88
50	9.89	32.61	25.13	285.5	0.145	6.06	0.89
75	9.88	32.65	25.16	282.8	0.216	5.92	0.90
100	9.17	33.31	25.79	223.4	0.279	4.39	1.51
150	8.37	33.68	26.20	184.8	0.381	3.06	2.00
200	7.68	33.91	26.49	158.7	0.467	2.37	2.19
250	7.21	33.94	26.58	150.7	0.544	2.01	2.28
300	6.81	33.96	26.65	144.5	0.618	1.74	2.33
400	5.97	34.04	26.82	128.9	0.755	1.24	2.46
500	5.20	34.12	26.98	114.5	0.877	0.77	2.73
600	4.66	34.20	27.10	103.2	0.986	0.45	2.94
700	4.36	34.26	27.18	96.1	1.086	0.33	2.95
800	4.09	34.31	27.25	90.2	1.179	0.26	2.97
1000	3.58	34.42	27.39	77.7	1.347	0.18	3.05
1200	3.03	34.38	27.41	75.8	1.500	0.00	3.06
1500	2.58	34.47	27.52	65.7	1.712	0.36	2.97

STATION 188-017

OBSERVED VALUES

DATE 02/24/58 HR 16 LAT 47-44N LONG 126-05W SDG 1646 BTMCODE
 WVCL 09 DIR 18 FC 05 BA 90 DRY 9.4 WET 9.4 RELHU 99 VIS 5
 WEA 02 CL 0 AMT 8 SEA 3 DIR 18 SWL 6 DIR 20 SECDI LD 76

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	9.56	32.36	24.99	6.19	0.79
2	10	9.58	32.43	25.04	6.20	0.74
2	20	9.66	32.50	25.08	6.18	0.74
2	30	9.67	32.50	25.08	6.19	0.74
2	50	9.76	32.50	25.06	6.13	0.72
2	75	10.04	32.57	25.07	6.04	0.74
2	100	9.58	33.15	25.60	4.86	1.22
2	123	7.97	33.35	26.01	4.50	1.67
2	148	7.90	33.69	26.28	3.45	1.95
2	172	7.53	33.77	26.40	3.19	2.00
1	198	7.38	33.87	26.50	2.65	2.14
1	298	6.30	33.96	26.71	1.81	2.42
1	497	5.24	34.11	26.96	0.73	2.77
1	746	4.06	34.22	27.18	0.20	2.84
1	996	3.55	34.42	27.39	0.31	3.13
1	1494	2.59	34.47	27.52	0.34	2.97
1	1594	2.52	34.54	27.58	0.73	2.94

STATION 188-018

OBSERVED VALUES

DATE 02/25/58 HR 00 LAT 47-26N LONG 125-27W SDG 1280 BTMCODE
 WVCL 05 DIR 14 FC 03 BA 90 DRY 9.4 WET 9.4 RELHU 99 VIS 5
 WEA 41 CL 0 AMT 8 SEA 3 DIR 14 SWL 7 DIR 22 SECDI LD 81

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
4	0	10.66	32.68	25.05	6.03	0.77
4	10	10.66	32.70	25.07	6.06	0.78
4	20	10.66	32.70	25.07	6.06	0.85
4	30	10.66	32.74	25.10	6.03	0.75
4	50	10.69	32.75	25.10	5.94	0.76
4	75	10.67	32.75	25.10	5.88	0.79
4	100	10.34	32.97	25.33	5.24	1.15
4	111	9.46	33.42	25.83	3.85	1.69
4	142	8.99	33.57	26.02	3.16	1.95
1	148	9.07	33.58	26.02	3.26	1.90
4	172	8.88	33.62	26.08	3.06	1.98
1	222	8.71	33.69	26.16	2.72	2.13
3	360	8.08	33.84	26.37	2.28	2.18
3	494	6.34	34.05	26.78	1.30	2.61
3	554	5.64	34.07	26.88	0.93	2.71
3	574	5.07	34.13	27.00	0.57	2.88

STATION 188-017

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.56	32.36	24.99	297.9	0.000	6.19	0.79
10	10.68	32.65	25.02	294.5	0.030	5.98	0.74
20	10.64	32.65	25.03	294.1	0.059	6.04	0.74
30	10.59	32.66	25.05	292.7	0.088	6.04	0.71
50	10.62	32.68	25.06	292.1	0.146	6.00	0.75
75	10.61	32.68	25.06	292.4	0.219	6.01	0.70
100	10.60	32.68	25.06	292.8	0.292	6.08	0.73
150	9.44	33.16	25.63	239.6	0.425	4.69	1.39
200	8.63	33.43	25.97	208.1	0.537	3.81	1.69
250	7.96	33.71	26.29	178.3	0.634	3.05	1.98

STATION 188-018

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	10.66	32.68	25.05	291.8	0.000	6.03	0.77
10	10.66	32.70	25.07	290.5	0.029	6.06	0.78
20	10.66	32.70	25.07	290.7	0.058	6.06	0.85
30	10.66	32.74	25.10	287.9	0.087	6.03	0.75
50	10.69	32.75	25.10	288.1	0.145	5.94	0.76
75	10.67	32.75	25.10	288.3	0.217	5.88	0.79
100	10.34	32.97	25.33	267.1	0.286	5.24	1.15
150	9.00	33.59	26.04	200.9	0.403	3.18	1.93
200	8.79	33.66	26.12	193.5	0.502	2.86	2.07
250	8.68	33.71	26.18	189.0	0.598	2.68	2.11
300	8.50	33.77	26.25	182.7	0.691	2.54	2.11
400	7.54	33.93	26.52	158.4	0.862	1.97	2.34
500	6.34	34.04	26.77	135.0	1.009	1.31	2.59

STATION 188-019

OBSERVED VALUES

DATE 02/25/58 HR 06 LAT 48-11N LONG 125-02W SDG 271 BTMCODE
 WVCL 07 DIR 10 FC 04 BA 80 DRY 10.3 WET 10.3 RELHU 99 VIS 7
 WEA 02 CL 5 AMT 8 SEA 2 DIR 10 SWL DIR SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	10.69	32.60	24.98	6.06	0.76
2	10	10.68	32.65	25.02	5.98	0.74
2	20	10.64	32.65	25.03	6.04	0.74
2	29	10.59	32.66	25.05	6.04	0.71
2	49	10.62	32.68	25.06	6.00	0.75
2	73	10.61	32.68	25.06	6.00	0.70
2	98	10.57	32.69	25.08	6.05	0.74
2	122	10.53	32.72	25.11	5.96	0.82
2	146	9.53	33.11	25.58	4.82	1.34
2	171	9.03	33.33	25.83	4.18	1.58
1	190	8.77	33.39	25.92	3.94	1.65
1	258	7.85	33.77	26.35	2.92	2.04

STATION 188-020

OBSERVED VALUES

DATE 02/25/58 HR 18 LAT 48-09N LONG 125-50W SDG 1024 BTMCODE
 WVCL 13 DIR 28 FC 06 BA 91 DRY 6.7 WET 6.7 RELHU 99 VIS
 WEA 64 CL 0 AMT 8 SEA 4 DIR 28 SWL 6 DIR 26 SECDI LD 82

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	10.24	32.55	25.02	6.18	0.68
2	10	10.23	32.57	25.04	6.13	0.77
2	19	10.25	32.58	25.04	6.14	0.71
2	29	10.18	32.54	25.02	6.17	0.71
2	48	10.28	32.57	25.03	6.15	0.71
2	72	10.40	32.70	25.11	5.91	0.76
2	96	10.06	33.03	25.43	5.21	1.07
2	120	9.21	33.31	25.78	4.36	1.55
2	144	8.29	33.42	26.01	4.24	1.76
2	168	8.03	33.62	26.21	3.76	1.80
1	171	8.07			3.66	1.80
1	258	7.29			2.13	2.19
1	437	5.86			1.23	2.69
1	663	4.40			0.54	2.85
1	800	3.99			0.29	2.99

STATION 188-019

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOBOT. ANOMALY	OXY.	PHOS.
0	10.69	32.60	24.98	298.2	0.000	6.06	0.76
10	10.68	32.65	25.02	294.5	0.030	5.98	0.74
20	10.64	32.65	25.03	294.1	0.059	6.04	0.74
30	10.59	32.66	25.05	292.7	0.088	6.04	0.71
50	10.62	32.68	25.06	292.1	0.146	6.00	0.75
75	10.61	32.68	25.06	292.4	0.219	6.01	0.70
100	10.60	32.68	25.06	292.8	0.292	6.08	0.73
150	9.44	33.16	25.63	239.6	0.425	4.69	1.39
200	8.63	33.43	25.97	208.1	0.537	3.81	1.69
250	7.96	33.71	26.29	178.3	0.634	3.05	1.98

STATION 188-020

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOBOT. ANOMALY	OXY.	PHOS.
0	10.24	32.55	25.02	294.5	0.000	6.18	0.68
10	10.23	32.57	25.04	293.1	0.029	6.13	0.77
20	10.24	32.57	25.04	293.4	0.058	6.14	0.71
30	10.19	32.54	25.02	295.1	0.087	6.17	0.71
50	10.31	32.57	25.03	295.2	0.146	6.15	0.70
75	10.39	32.74	25.14	284.4	0.218	5.83	0.79
100	9.92	33.09	25.50	251.4	0.285	5.02	1.17
150	8.23					4.12	1.77
200	7.79					3.09	1.94
250	7.36					2.24	2.16
300	6.93					1.89	2.34
400	6.14					1.39	2.61
500	5.35					1.00	2.73
600	4.71					0.70	2.80
700	4.25					0.46	2.88
800	3.99					0.29	2.99

STATION 188-021

OBSERVED VALUES

DATE 02/26/58 HR 03 LAT 48-10N LONG 126-32W SDG 2463 BTMCODE
 WVCL 13 DIR 28 FC 06 BA 02 DRY 8.3 WET 7.2 RELHU 86 VIS 7
 WEA 01 CL 8 AMT 3 SEA 4 DIR 28 SWL 6 DIR 24 SECDI LD 58

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
3	0	9.87	32.49	25.04	6.15	0.76
3	10	9.83	32.49	25.04	6.20	0.81
3	20	9.85	32.55	25.09	6.18	0.79
4	30	9.84	32.52	25.07	6.20	0.78
4	50	9.99	32.62	25.12	6.14	0.82
4	74	9.75	32.85	25.34	5.26	1.15
4	99	8.03	33.27	25.93	4.80	1.54
4	124	7.87	33.52	26.15	4.14	1.83
4	149	7.89	33.71	26.30	3.25	2.05
1	173	7.74	33.81	26.40	2.96	2.13
1	195	7.40	33.86	26.49	2.78	2.16
1	293	6.59	34.05	26.75	1.67	2.66
1	489	5.12	34.11	26.98	0.59	2.91
1	735	4.21	34.24	27.18	0.21	3.12
1	978	3.56	34.41	27.38	0.25	3.20
1	1477	2.61	34.52	27.56	0.66	3.02
2	1775	2.19	34.55	27.62	1.03	2.95

STATION 188-022

OBSERVED VALUES

DATE 02/26/58 HR 16 LAT 48-10N LONG 127-17W SDG 2560 BTMCODE
 WVCL 15 DIR 26 FC 07 BA 12 DRY 6.7 WET 5.8 RELHU 88 VIS 7
 WEA 01 CL 8 AMT 3 SEA 3 DIR 26 SWL 3 DIR 25 SECDI LD 64

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
3	0	8.82	32.34	25.09	6.29	0.72
3	10	8.82	32.37	25.11	6.32	0.71
3	20	8.82	32.35	25.10	6.29	0.75
3	30	8.82	32.36	25.10	6.25	0.70
3	50	8.84	32.34	25.08	6.31	0.72
3	75	7.61	33.05	25.82	5.12	1.32
3	100	7.37	33.40	26.13	4.36	1.64
3	125	7.37	33.59	26.28	3.81	1.88
3	150	7.32	33.85	26.49	2.91	2.12
3	175	7.22	33.87	26.52	2.41	2.23
1	194	7.03	33.93	26.59	2.33	2.25
2	291	6.03	33.97	26.76	1.78	2.50
1	482	5.02	34.11	26.99	0.77	2.81
1	723	4.22	34.29	27.22	0.21	2.95
1	968	3.59	34.40	27.37	0.24	3.13
1	1465	2.52	34.40	27.47	0.39	3.00
2	1763	2.11	34.59	27.66	1.08	2.90

STATION 188-021

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.87	32.49	25.04	293.1	0.000	6.15	0.76
10	9.83	32.49	25.04	292.7	0.029	6.20	0.81
20	9.85	32.55	25.09	288.7	0.058	6.18	0.79
30	9.84	32.52	25.07	291.0	0.087	6.20	0.78
50	9.99	32.62	25.12	286.3	0.145	6.14	0.82
75	9.65	32.87	25.37	262.9	0.214	5.25	1.17
100	8.02	33.28	25.94	208.6	0.273	4.78	1.55
150	7.89	33.72	26.31	174.9	0.369	3.24	2.05
200	7.36	33.87	26.50	157.2	0.452	2.71	2.19
250	6.94	33.98	26.65	144.0	0.527	2.11	2.47
300	6.53	34.05	26.76	134.1	0.597	1.62	2.67
400	5.71	34.08	26.88	122.6	0.725	0.99	2.81
500	5.07	34.11	26.98	113.7	0.843	0.56	2.92
600	4.68	34.16	27.07	106.4	0.953	0.37	3.02
700	4.32	34.22	27.15	98.6	1.056	0.24	3.10
800	4.02	34.29	27.24	90.9	1.151	0.21	3.15
1000	3.51	34.42	27.40	76.9	1.319	0.26	3.19
1200	3.10	34.47	27.48	69.9	1.466	0.40	3.11
1500	2.57	34.52	27.56	61.9	1.664	0.69	3.01

STATION 188-022

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.82	32.34	25.09	288.3	0.000	6.29	0.72
10	8.82	32.37	25.11	286.3	0.029	6.32	0.71
20	8.82	32.35	25.10	287.9	0.058	6.29	0.75
30	8.82	32.36	25.10	287.3	0.087	6.25	0.70
50	8.84	32.34	25.08	289.5	0.145	6.31	0.72
75	7.61	33.05	25.82	219.7	0.209	5.12	1.32
100	7.37	33.40	26.13	190.7	0.260	4.36	1.64
150	7.32	33.85	26.49	157.3	0.347	2.91	2.12
200	6.96	33.93	26.60	147.3	0.423	2.30	2.27
250	6.41	33.95	26.69	139.3	0.495	2.01	2.40
300	5.97	33.98	26.77	132.1	0.563	1.72	2.52
400	5.41	34.05	26.90	121.2	0.690	1.14	2.70
500	4.95	34.13	27.01	110.8	0.806	0.71	2.82
600	4.61	34.21	27.12	101.8	0.912	0.42	2.87
700	4.29	34.28	27.21	93.8	1.010	0.24	2.93
800	4.01	34.33	27.27	87.8	1.101	0.22	3.02
1000	3.51	34.39	27.37	79.1	1.268	0.21	3.12
1200	3.03	34.35	27.39	78.0	1.425	0.15	3.08
1500	2.46	34.41	27.48	68.7	1.645	0.45	2.99

STATION 188-023

OBSERVED VALUES

DATE 02/26/58 HR 23 LAT 48-11N LONG 128-00W SDG 2401 BTMCODE 1
 WVEL 10 DIR 26 FC 05 BA 18 DRY 8.3 WET 6.7 RELHU 80 VIS 7
 WEA 01 CL 8 AMT 3 SEA 2 DIR 26 SWL 6 DIR 28 SECDI LD 64

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	9.02	32.45	25.14	6.40	0.82
2	10	9.00	32.42	25.12	6.41	0.79
2	20	9.01	32.45	25.14	6.36	0.83
2	30	8.98	32.41	25.12	6.31	0.79
2	50	8.98	32.45	25.15	6.29	0.82
2	75	7.27	33.00	25.83	5.40	1.35
2	100	7.20	33.22	26.01	4.76	1.57
2	124	7.78	33.74	26.34	3.04	2.03
2	149	7.60	33.79	26.40	2.86	2.08
2	173	7.48	33.79	26.42	2.48	2.17
1	188	7.44	33.88	26.50	2.17	2.26
1	281	6.51	33.96	26.69	1.67	2.49
1	466	5.21	34.16	27.01	0.80	2.88
1	693	4.22	34.20	27.15	0.27	2.95
1	928	3.73	34.38	27.34	0.25	3.11
1	1411	2.81	34.51	27.53	0.48	2.96
1	1708	2.31	34.56	27.62	0.96	2.94

STATION 188-024

OBSERVED VALUES

DATE 02/27/58 HR 05 LAT 48-34N LONG 127-57W SDG 2523 BTMCODE
 WVEL 03 DIR 26 FC 02 BA 21 DRY 7.8 WET 6.4 RELHU 82 VIS 7
 WEA 01 CL 8 AMT 3 SEA 2 DIR 26 SWL 3 DIR 23 SECDI LD 55

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	8.89	32.40	25.12	6.28	0.82
2	10	8.88	32.41	25.13	6.26	0.80
3	20	8.90	32.39	25.11	6.28	0.84
3	30	8.89	32.42	25.14	6.27	0.80
3	50	8.92	32.43	25.14	6.28	0.78
3	75	8.61	32.89	25.55	5.19	1.19
3	100	8.09	33.50	26.10	3.57	1.79
3	124	7.92	33.73	26.31	2.62	2.18
3	149	7.74	33.84	26.42	2.17	2.32
1	166	7.67	33.87	26.46	1.93	2.41
3	174	7.60	33.78*	26.40	1.75	2.46
1	245	7.18	33.90	26.55	1.88	2.35
1	396	5.97	34.03	26.81	1.34	2.65
1	590	4.77	34.18	27.07	0.52	2.83
1	813	4.07	34.31	27.25	0.29	3.12
1	1261	3.92	34.47	27.39	0.41	2.98
1	1530	2.43	34.49	27.55	0.67	2.99

STATION 188-023

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.02	32.45	25.14	283.1	0.000	6.40	0.82
10	9.00	32.42	25.12	285.2	0.028	6.41	0.79
20	9.01	32.45	25.14	283.3	0.056	6.36	0.83
30	8.98	32.41	25.12	286.0	0.084	6.31	0.79
50	8.98	32.45	25.15	283.4	0.141	6.29	0.82
75	7.27	33.00	25.83	218.8	0.204	5.40	1.35
100	7.20	33.22	26.01	201.8	0.257	4.76	1.57
150	7.60	33.79	26.40	165.7	0.349	2.84	2.08
200	7.26	33.86	26.51	156.5	0.430	2.19	2.28
250	6.78	33.92	26.62	146.4	0.506	1.86	2.41
300	6.36	33.99	26.73	136.3	0.577	1.56	2.54
400	5.62	34.11	26.92	119.3	0.705	1.07	2.78
500	5.03	34.16	27.03	109.5	0.819	0.69	2.89
600	4.56	34.17	27.09	104.2	0.926	0.43	2.91
700	4.20	34.21	27.16	98.0	1.027	0.27	2.96
800	3.99	34.29	27.24	90.5	1.121	0.25	3.04
1000	3.58	34.40	27.37	79.2	1.291	0.24	3.08
1200	3.20	34.46	27.46	71.8	1.442	0.30	3.01
1500	2.65	34.53	27.56	62.1	1.643	0.60	2.95

STATION 188-024

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.89	32.40	25.12	284.9	0.000	6.28	0.82
10	8.88	32.41	25.13	284.2	0.028	6.26	0.80
20	8.90	32.39	25.11	286.1	0.057	6.28	0.84
30	8.89	32.42	25.14	283.9	0.086	6.27	0.80
50	8.92	32.43	25.14	284.0	0.143	6.28	0.78
75	8.61	32.89	25.55	245.7	0.209	5.19	1.19
100	8.09	33.50	26.10	193.3	0.264	3.57	1.79
150	7.74	33.84	26.42	163.9	0.353	2.16	2.32
200	7.46	33.88	26.49	157.8	0.433	1.83	2.40
250	7.14	33.90	26.55	152.7	0.511	1.86	2.36
300	6.71	33.95	26.65	143.9	0.585	1.69	2.48
400	5.94	34.03	26.82	129.3	0.722	1.32	2.65
500	5.26	34.11	26.96	116.0	0.845	0.83	2.74
600	4.73	34.19	27.09	104.7	0.955	0.51	2.85
700	4.37	34.25	27.17	97.0	1.056	0.38	3.00
800	4.10	34.30	27.24	91.0	1.150	0.30	3.11
1000	4.36	34.40	27.29	88.6	1.330	0.29	3.04
1200	4.11	34.46	27.37	82.9	1.501	0.37	2.99
1500	2.65	34.49	27.53	65.0	1.723	0.63	2.99

STATION 188-025

OBSERVED VALUES

DATE 02/27/58 HR 12 LAT 49-01N LONG 127-58W SDG 2468 BTMCODE
 WVCL 02 DIR 27 FC 01 BA 24 DRY 6.7 WET 5.6 RELHU 86 VIS 7
 WEA 01 CL AMT 2 SEA 2 DIR 27 SWL 3 DIR 27 SECDI LD 61

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	8.32	32.36	25.18	6.31	0.92
2	10	8.32	32.34	25.16	6.34	0.91
2	20	8.33	32.34	25.16	6.33	0.90
2	30	8.33	32.36	25.18	6.33	0.96
2	50	8.36	32.32	25.14	6.34	0.91
2	75	7.56	32.57	25.45	6.03	1.12
2	100	6.60	33.15	26.04	5.23	1.43
2	123	6.72	33.49	26.29	4.35	1.80
2	146	6.75	33.66	26.42	3.83	1.91
2	169	6.79	33.86	26.57		2.01
1	194	6.40	33.93	26.68	2.50	2.30
1	292	5.39	33.98	26.84	1.88	2.50
1	487	4.85	34.09	26.99	0.75	2.81
1	732	4.06	34.27	27.22	0.15	2.97
1	978	3.41	34.36	27.36	0.25	3.09
1	1470	2.48	34.49	27.55	0.54	2.95
1	1766	2.10	34.58	27.65	1.01	2.92

STATION 188-026

OBSERVED VALUES

DATE 02/27/58 HR 19 LAT 48-52N LONG 127-16W SDG 2057 BTMCODE
 WVCL 02 DIR 32 FC 01 BA 26 DRY 7.8 WET 6.7 RELHU 86 VIS 8
 WEA 01 CL 8 AMT 1 SEA 1 DIR 32 SWL 6 DIR 26 SECDI LD 64

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	9.14	32.39	25.08	6.23	0.73
2	10	9.11	32.34	25.04	6.20	0.70
2	20	9.11	32.36	25.06	6.22	0.70
2	30	9.10	32.38	25.08	6.15	0.67
2	50	9.17	32.38	25.06	6.16	0.67
2	75	8.81	32.57	25.27	5.85	0.80
2	100	8.02	33.22	25.90	4.84	1.30*
2	123	8.20	33.49	26.08	3.73	1.05*
2	146	8.03	33.69	26.26	2.87	1.95
2	170	7.75	33.78	26.37	2.55	2.09
1	194	7.47	33.93	26.53	2.33	2.15
1	292	6.85	34.04	26.70	1.72	2.39
1	490	5.27	34.04	26.91	0.85	2.81
1	736	3.98	34.25	27.21	0.28	2.73
1	982	3.51	34.38	27.36	0.25	3.03
1	1476	2.55	34.34	27.42	0.18	2.94
1	1773	2.17	34.52	27.60	1.02	2.87

STATION 188-025

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	8.32	32.36	25.18	279.7	0.000	6.31	0.92
10	8.32	32.34	25.16	281.3	0.028	6.34	0.91
20	8.33	32.34	25.16	281.6	0.056	6.33	0.90
30	8.33	32.36	25.18	280.3	0.084	6.33	0.96
50	8.36	32.32	25.14	284.0	0.140	6.34	0.91
75	7.56	32.57	25.45	254.7	0.207	6.03	1.12
100	6.60	33.15	26.04	199.3	0.264	5.23	1.43
150	6.78	33.70	26.45	161.3	0.354	3.69	1.92
200	6.32	33.93	26.69	138.9	0.429	2.46	2.31
250	5.76	33.96	26.78	130.4	0.496	2.14	2.42
300	5.37	33.98	26.85	124.8	0.560	1.82	2.52
400	5.10	34.04	26.93	118.2	0.681	1.18	2.69
500	4.80	34.10	27.01	111.2	0.796	0.70	2.82
600	4.47	34.18	27.11	102.4	0.903	0.39	2.89
700	4.16	34.25	27.20	94.6	1.001	0.19	2.95
800	3.87	34.30	27.26	88.4	1.092	0.17	3.02
1000	3.36	34.37	27.37	78.9	1.259	0.25	3.08
1200	2.94	34.42	27.45	71.8	1.410	0.30	3.01
1500	2.44	34.50	27.56	61.8	1.610	0.58	2.95

STATION 188-026

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.14	32.39	25.08	289.4	0.000	6.23	0.73
10	9.11	32.34	25.04	292.8	0.029	6.20	0.70
20	9.11	32.36	25.06	291.5	0.058	6.22	0.70
30	9.10	32.38	25.08	290.0	0.087	6.15	0.67
50	9.17	32.38	25.06	291.4	0.145	6.16	0.67
75	8.81	32.57	25.27	272.4	0.215	5.85	0.80
100	8.02	33.22	25.90	213.1	0.276	4.84	
150	7.98	33.70	26.28	177.7	0.374	2.81	1.98
200	7.44	33.94	26.54	153.1	0.457	2.29	2.17
250	7.13	34.00	26.63	145.1	0.532	1.97	2.29
300	6.78	34.04	26.71	138.2	0.603	1.68	2.42
400	5.93	34.02	26.81	129.9	0.737	1.20	2.67
500	5.20	34.05	26.92	119.7	0.862	0.82	2.80
600	4.59	34.14	27.06	106.8	0.975	0.53	2.73
700	4.12	34.22	27.18	96.3	1.077	0.33	2.72
800	3.86	34.29	27.26	89.0	1.170	0.27	2.83
1000	3.47	34.37	27.36	80.2	1.339	0.22	3.03
1200	3.04	34.31	27.35	81.0	1.500	0.22	2.99
1500	2.51	34.35	27.43	73.7	1.732	0.22	2.93

STATION 188-027

OBSERVED VALUES

DATE 02/28/58 HR 01 LAT 48-44N LONG 126-34W SDG 602 BTMCODE
 WVCL 02 DIR 29 FC 01 BA 28 DRY 8.3 WET 7.2 RELHU 86 VIS 8
 WEA 02 CL 8 AMT 1 SEA 1 DIR 29 SWL 6 DIR 26 SECDI LD 58

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
2	0	9.60	32.43	25.03	6.20	0.73
2	10	9.39	32.39	25.04	6.28	0.73
2	20	9.43	32.41	25.05	6.26	0.71
2	30	9.39	32.41	25.05	6.23	0.74
2	50	9.48	32.41	25.04	6.23	0.76
2	75	9.78	32.86	25.34	5.52	1.00
2	100	8.51	33.21	25.81	4.67	1.47
2	123	7.71	33.30	26.00	4.66	1.64
2	147	7.13	33.46	26.21	4.49	1.77
2	173	7.38	33.64	26.32	3.75	1.91
1	196	7.32	33.70	26.37	3.33	2.02
1	295	6.90	34.02	26.68	1.69	2.46
1	494	5.38	33.95*	26.82	1.01	2.81

STATION 188-028

OBSERVED VALUES

DATE 02/28/58 HR 04 LAT 48-39N LONG 125-51W SDG 71 BTMCODE
 WVCL 05 DIR 32 FC 03 BA 29 DRY 7.8 WET 6.7 RELHU 86 VIS 8
 WEA 02 CL 8 AMT 1 SEA 1 DIR 32 SWL 3 DIR 27 SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	10.18	29.23	22.45	6.46	0.72
1	10	10.10	32.03	24.64	6.19	0.85
1	20	10.04	32.36	24.91	6.14	0.85
1	30	10.09	32.47	24.99	5.97	0.88
1	50	10.16	32.56	25.04	5.95	0.90
1	60	10.29	32.59	25.05	5.99	0.84

STATION 188-027

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	9.60	32.43	25.03	293.4	0.000	6.20	0.73
10	9.39	32.39	25.04	293.3	0.029	6.28	0.73
20	9.43	32.41	25.05	292.6	0.058	6.26	0.71
30	9.39	32.41	25.05	292.2	0.087	6.23	0.74
50	9.48	32.41	25.04	293.9	0.146	6.23	0.76
75	9.78	32.86	25.34	265.7	0.216	5.52	1.00
100	8.51	33.21	25.81	220.9	0.277	4.67	1.47
150	7.18	33.49	26.23	182.2	0.378	4.39	1.79
200	7.31					3.25	2.04
250	7.12					2.33	2.28
300	6.87					1.63	2.48
400	6.21					0.90	2.73

STATION 188-028

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.	PHOS.
0	10.18	29.23	22.45	539.8	0.000	6.46	0.72
10	10.10	32.03	24.64	331.0	0.044	6.19	0.85
20	10.04	32.36	24.91	305.8	0.076	6.14	0.85
30	10.09	32.47	24.99	298.6	0.106	5.97	0.88
50	10.16	32.56	25.04	293.5	0.165	5.95	0.90

STATION 188-029

SWIFTSURE BANK LIGHTSHIP

OBSERVED VALUES

DATE 02/28/58 HR 09 LAT 48-28N LONG 125-07W SDG 162 BTMCODE
 WVCL 00 DIR 00 FC 00 BA 30 DRY 7.8 WET 6.7 RELHU 86 VIS 8
 WEA 02 CL AMT SEA 1 DIR SWL 3 DIR 27 SECDI LD ISO

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.	PHOS.
1	0	10.03	28.04	21.55	6.45	0.78
1	10	10.63	32.59	24.99	6.07	0.83
1	20	10.58	32.74	25.11	6.00	0.84
1	30	10.56	32.79	25.15	6.04	0.81
1	50	10.56	32.86	25.21	6.06	0.83
1	75		32.85			0.81
1	100	10.41	32.85	25.23	6.00	0.83
1	130	10.16	32.99	25.38	5.68	1.00

STATION 188-029

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEPOT. ANOMALY	OXY.	PHOS.
0	10.03	28.04	21.55	626.0	0.000	6.45	0.78
10	10.63	32.59	24.99	298.1	0.046	6.07	0.83
20	10.58	32.74	25.11	286.4	0.075	6.00	0.84
30	10.56	32.79	25.15	282.6	0.103	6.04	0.81
50	10.56	32.86	25.21	277.8	0.159	6.06	0.83
75	10.53	32.85	25.21	278.6	0.229	6.10	0.81
100	10.41	32.85	25.23	277.1	0.298	6.00	0.83

Cruise 193

See Figure 1, page 14 for station locations.

STATION 193-001

OBSERVED VALUES

DATE 04/16/58 HR 21 LAT 48-09N LONG 125-48W SDG 1097 BTMCODE
 WVCL 06 DIR 16 FC 04 BA DRY . WET . RELHU VIS
 WEA 02 CL 6 AMT 7 SEA 3 DIR 16 SWL 2 DIR 28 SECDI LD

CAST	DEPTH	TEMP.	SAL.	SIGMA-T	OXY.
3	0	9.55	32.56	25.14	6.47
3	10	9.32	32.39	25.05	6.46
3	19	9.34	32.33	25.00	6.50
3	28	9.30	32.36	25.03	6.51
3	48	9.26	32.37	25.04	6.51
3	72	8.95	32.38	25.10	6.33
3	97	7.28	32.99	25.82	5.32
3	121	7.31	33.25	26.02	4.65
3	145	7.78	33.68	26.29	3.21
3	169	7.50	33.79	26.42	2.82
3	192	7.21	33.86	26.51	2.51
1	195	7.19	33.83	26.49	2.68
1	245	6.74	33.89	26.60	2.06
1	293	6.37	33.96	26.71	1.84
1	391	5.32	33.98	26.85	1.60
1	487	4.91	34.04	26.95	0.96
1	581	4.50	34.16	27.09	0.55
1	676		34.21		0.32
1	776	3.84	34.31	27.28	0.29
1	974	3.35	34.40	27.40	0.53

STATION 193-001

INTERPOLATED AND COMPUTED VALUES

DEPTH	TEMP.	SAL.	SIGMA-T	SP.VOL. ANOMALY	GEOPOT. ANOMALY	OXY.
0	9.55	32.56	25.14	283.0	0.000	6.47
10	9.32	32.39	25.05	292.2	0.029	6.46
20	9.33	32.33	25.00	297.0	0.058	6.50
30	9.30	32.36	25.03	294.5	0.088	6.52
50	9.28	32.35	25.02	295.3	0.147	6.52
75	8.66	32.47	25.21	277.6	0.219	6.19
100	7.26	33.01	25.84	218.3	0.281	5.28
150	7.72	33.71	26.32	173.3	0.379	3.11
200	7.14	33.84	26.51	156.4	0.461	2.52
250	6.71	33.90	26.61	146.9	0.537	2.03
300	6.27	33.96	26.72	137.4	0.608	1.84
400	5.28	33.98	26.86	124.8	0.739	1.53
500	4.85	34.06	26.97	114.8	0.859	0.89
600	4.43	34.17	27.10	102.7	0.968	0.49
700	4.08	34.24	27.20	94.4	1.067	0.30
800	3.77	34.33	27.30	85.0	1.157	0.30

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1	88	8.88	32.85	25.48	5.35
1	99	8.05	32.88	25.63	5.47
1	112	8.20	33.33	25.96	4.39
1	118	8.24	33.43	26.03	4.42

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