

# OCEANOGRAPHICAL STATION LIST

VOLUME 74

TEMPERATURE AND SALINITY OBSERVATIONS FROM  
AUSTRALIAN TUNA FISHING VESSELS IN 1965

DIVISION OF FISHERIES AND OCEANOGRAPHY  
COMMONWEALTH SCIENTIFIC AND INDUSTRIAL  
RESEARCH ORGANIZATION, AUSTRALIA 1968

OCEANOGRAPHICAL STATION LIST

VOLUME 74

TEMPERATURE AND SALINITY OBSERVATIONS  
FROM AUSTRALIAN TUNA FISHING VESSELS IN 1965

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

AUSTRALIA

MELBOURNE, 1968

## CONTENTS

|                             | Page |
|-----------------------------|------|
| I. INTRODUCTION             | 3    |
| II. METHODS                 | 3    |
| REFERENCES                  | 4    |
| III. ACKNOWLEDGEMENTS       | 4    |
| IV. DATA                    | 4    |
| Temperatures and Salinities | 7    |

When citing this station list, abbreviate as follows:  
CSIRO Aust. Oceanogr. Stn List 74.

# OCEANOGRAPHICAL STATION LIST

## VOLUME 74

### TEMPERATURE AND SALINITY OBSERVATIONS FROM AUSTRALIAN TUNA FISHING VESSELS IN 1965

#### I. INTRODUCTION

In 1961, a programme for the systematic measurement of sea-water temperatures from fishing vessels was begun by CSIRO (CSIRO Aust. 1961; Vaux 1961). The data presented in this volume are the result of such measurements made from fishing vessels during the course of their normal fishing operations on the South Australian and eastern Australian tuna fishing grounds during 1965.

#### II. METHODS

**Temperature.**—Fishermen were issued with surface thermometers and instructions for their use (Vaux 1961). Thermometers were graduated in whole degrees over the range 30–120 degF with an accuracy of  $\pm 0.5$  degF. Temperatures were taken in degF and converted to degC (nearest tenth) before listing. Temperatures listed in this volume are considered accurate to about  $\pm 0.5$  degC although on some vessels a higher accuracy was probably achieved. On some vessels, temperatures were also taken by a continuous-recording thermograph.

**Salinity.**—Water samples for subsequent salinity analysis were taken by several vessels. The samples were analysed at either Cronulla or Port Lincoln using a chlorinity-temperature meter of the conductivity type (Hamon 1956) and converting from chlorinity to salinity by the relation -

$$\text{Salinity} = 0.03 + 1.805 \times \text{Chlorinity}$$

Salinities are considered accurate to about  $\pm 0.05\%$ .

**Accuracy of Positions.**—For reporting the position of sampling, fishermen used a grid reference system (Kesteven and Williams 1962) consisting of rectangles of approximately 6 x 5 nautical miles (actually 6 x 6 minutes of latitude and longitude). A fisherman's position wrong by one grid rectangle could be in error, therefore, by up to 6 miles. South Australian positions may be in error by twice this amount as vessels operate for longer periods out of sight of land. Errors greater than this are considered to be infrequent. Grid references were converted to latitude and longitude by computer before listing.

## REFERENCES

- CSIRO AUST. (1961).—Tuna search programme. Southern Pelagic Project Special Report No.1 (Mimeogr.) (CSIRO : Cronulla.)
- HAMON, B.V. (1956).—A portable temperature-chlorinity bridge for estuarine investigations and seawater analysis. J. scient. Instrum. 33, 329-33.
- KESTEVEN, G.L., and WILLIAMS, G.R. (1962).—Fishermen and scientists work together. Aust. Fish. Leaflet No.8.
- U.S. NAVY HYDROGRAPHIC OFFICE (1955).—Instruction manual for oceanographic observations. Publ. No.607.
- VAUX, D. (1961).—Measurement of seawater temperatures by fishermen. Aust. Fish. Leaflet No.6.

## III. ACKNOWLEDGEMENTS

Thanks are due to the skippers, owners, and crews of the vessels from which the observations listed in this volume were made.

## IV. DATA

The data were subjected to various quality control checks before listing by C.D.C. 3600 Computer. Speeds between successive positions were calculated, and finding of impossible values led to the amendment or rejection of the suspect data.

A.D. Crooks wrote the computer programmes, and D. Vaux had the overall responsibility for the collection, processing, and compilation of the observations.

## EXPLANATION OF HEADINGS

## VESSEL

A code number is given for each vessel:

|    |                         |    |                      |
|----|-------------------------|----|----------------------|
| T2 | <u>Degei</u>            | W2 | <u>Eden Star</u>     |
| T3 | <u>Huon</u>             | W4 | <u>Inlay</u>         |
| T4 | <u>Robyn Julie</u>      | X2 | <u>Richard Allen</u> |
| T6 | <u>Two Freddies</u>     | Y2 | <u>Gipsy</u>         |
| T8 | <u>Catriona B</u>       | Y4 | <u>Halcyon</u>       |
| T9 | <u>Cape Byron</u>       | Y5 | <u>Saga</u>          |
| U3 | <u>Rosebud</u>          | Y6 | <u>Fearnot</u>       |
| U4 | <u>Southern Bluefin</u> | Y7 | <u>Caroline Star</u> |

## CRUISE

## STATION NUMBER

Generally assigned only when a member of CSIRO staff accompanied the cruise

|                    |  |
|--------------------|--|
| TIME               | In eastern Australian waters times are given in Eastern Australian Standard Time, GMT +10 hr, Code K; in South Australian waters times are given in Central Australian Standard Time, GMT +9½ hr, Code J |
| LATITUDE LONGITUDE | Given in degrees and minutes   |
| TEMP.              | Sea surface temperatures recorded in °C  |
| SALINITY           | Given in parts per thousand  |
| SAMPLING METHOD    | <p>1 Surface temperature and salinity were taken from sea-water sampled in a plastic bucket</p> <p>G Surface temperature by thermograph</p>  |

A blank indicates no data available

DATA

TEMPERATURES AND SALINITIES

VESSEL CRUISE STATION YR. MTH, DAY TIME WIND DN, AMT, DN, ART, SEA SWELL HEA, VIS, BAROM, SAMPLING METHOD

| VESSEL | CRUISE NUMBER | STATION | YR. | MTH | DAY | TIME | LATITUDE    | LONGITUDE | TEMP. | SALINITY | SEA SWELL | HEA, VIS, | BAROM, | SAMPLING METHOD |
|--------|---------------|---------|-----|-----|-----|------|-------------|-----------|-------|----------|-----------|-----------|--------|-----------------|
| T2     | 84            | 37      | 65  | 1   | 8   | 0600 | 37 3 S 150  | 3 E 16.3  |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 0700 | 37 5 S 150  | 9 E 17.1  |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 0800 | 36 45 S 150 | 21 E 18.2 |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 0831 | 45 S 150    | 21 E 20.1 |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 0900 | 51 S 150    | 27 E 19.8 |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 1000 | 51 S 150    | 27 E 20.3 |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 1014 | 51 S 150    | 27 E 20.2 |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 1109 | 45 S 150    | 27 E 19.4 |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 1150 | 45 S 150    | 21 E 20.6 |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 1200 | 45 S 150    | 21 E 19.2 |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 1300 | 51 S 150    | 27 E 19.5 |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 1330 | 57 S 150    | 33 E 18.9 |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 1347 | 57 S 150    | 33 E 18.9 |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 1400 | 57 S 150    | 27 E 18.9 |       |          |           |           |        | 1               |
| T2     | 84            | 36      | 65  | 1   | 8   | 1500 | 57 S 150    | 27 E 18.9 |       |          |           |           |        | 1               |
| T2     | 84            | 37      | 65  | 1   | 8   | 1600 | 3 S 150     | 9 E 18.3  |       |          |           |           |        | 1               |
| T2     | 87            | 37      | 65  | 1   | 8   | 0800 | 3 S 150     | 3 E 17.7  |       |          |           |           |        | 1               |
| T2     | 87            | 36      | 65  | 1   | 8   | 0930 | 57 S 150    | 15 E 18.7 |       |          |           |           |        | 1               |
| T2     | 87            | 36      | 65  | 1   | 8   | 1000 | 57 S 150    | 21 E 19.7 |       |          |           |           |        | 1               |
| T2     | 87            | 36      | 65  | 1   | 8   | 1029 | 57 S 150    | 27 E 19.6 |       |          |           |           |        | 1               |
| T2     | 87            | 36      | 65  | 1   | 8   | 1110 | 57 S 150    | 27 E 19.7 |       |          |           |           |        | 1               |
| T2     | 87            | 36      | 65  | 1   | 8   | 1200 | 57 S 150    | 45 E 19.5 |       |          |           |           |        | 1               |
| T2     | 87            | 34      | 65  | 1   | 8   | 0500 | 45 S 136    | 3 E 18.8  |       |          |           |           |        | 1               |
| T2     | 87            | 34      | 65  | 2   | 8   | 0600 | 57 S 136    | 3 E 20.6  |       |          |           |           |        | 1               |
| T2     | 87            | 35      | 65  | 2   | 8   | 0700 | 3 S 135     | 3 E 18.4  |       |          |           |           |        | 1               |
| T2     | 87            | 35      | 65  | 2   | 8   | 0800 | 3 S 135     | 57 E 17.3 |       |          |           |           |        | 1               |
| T2     | 87            | 35      | 65  | 2   | 8   | 0900 | 9 S 135     | 45 E 17.4 |       |          |           |           |        | 1               |
| T2     | 87            | 35      | 65  | 2   | 8   | 1000 | 15 S 135    | 39 E 17.8 | 55.44 |          |           |           |        | 1               |
| T2     | 87            | 35      | 65  | 2   | 8   | 1100 | 21 S 135    | 27 E 17.4 |       |          |           |           |        | 1               |
| T2     | 87            | 35      | 65  | 2   | 8   | 1200 | 27 S 135    | 21 E 17.7 |       |          |           |           |        | 1               |
| T2     | 87            | 35      | 65  | 2   | 8   | 1300 | 33 S 135    | 15 E 18.4 | 55.44 |          |           |           |        | 1               |
| T2     | 87            | 35      | 65  | 2   | 8   | 1400 | 35 S 135    | 3 E 18.7  |       |          |           |           |        | 1               |
| T2     | 87            | 35      | 65  | 2   | 8   | 1447 | 45 S 135    | 3 E 18.0  |       |          |           |           |        | 1               |
| T2     | 87            | 35      | 65  | 2   | 8   | 1500 | 39 S 135    | 9 E 18.6  |       |          |           |           |        | 1               |
| T2     | 87            | 35      | 65  | 2   | 8   | 1600 | 33 S 135    | 9 E 18.6  | 55.48 |          |           |           |        | 1               |
| T2     | 87            | 35      | 65  | 2   | 8   | 1700 | 35 S 134    | 57 E 18.1 |       |          |           |           |        | 1               |
| T2     | 87            | 35      | 65  | 2   | 8   | 1721 | 27 S 134    | 51 E 18.6 |       |          |           |           |        | 1               |



VESSEL CHUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SWELL SEA SWELL WEA. VIS. BAROM. SAMPLING  
 NUMBER DN. AMT. DN. AMT. UN. AMT. DN. AMT. DN. AMT. UN. AMT. MTR. METROU

|    |   |    |   |    |      |    |    |   |     |    |   |      |       |   |
|----|---|----|---|----|------|----|----|---|-----|----|---|------|-------|---|
| T2 | 3 | 65 | 2 | 8  | 1800 | 35 | 27 | S | 134 | 45 | E | 18.8 | 35.64 | 1 |
| T2 | 3 | 65 | 2 | 8  | 1825 | 35 | 27 | S | 134 | 39 | E | 18.8 |       | 1 |
| T2 | 3 | 65 | 2 | 8  | 1850 | 35 | 27 | S | 134 | 39 | E | 18.7 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 0800 | 35 | 9  | S | 134 | 9  | E | 18.4 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 0900 | 35 | 9  | S | 133 | 57 | E | 18.7 | 35.59 | 1 |
| T2 | 3 | 65 | 2 | 9  | 1000 | 35 | 9  | S | 133 | 45 | E | 18.9 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1026 | 35 | 3  | S | 133 | 45 | E | 18.9 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1056 | 35 | 3  | S | 133 | 45 | E | 18.9 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1100 | 35 | 3  | S | 133 | 51 | E | 18.9 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1110 | 35 | 3  | S | 133 | 51 | E | 19.2 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1120 | 35 | 9  | S | 133 | 45 | E | 19.6 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1150 | 35 | 9  | S | 133 | 45 | E | 19.4 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1140 | 35 | 9  | S | 133 | 45 | E | 19.0 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1150 | 35 | 9  | S | 133 | 45 | E | 18.4 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1200 | 35 | 9  | S | 133 | 45 | E | 18.9 | 35.59 | 1 |
| T2 | 3 | 65 | 2 | 9  | 1210 | 35 | 3  | S | 133 | 39 | E | 19.1 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1240 | 34 | 57 | S | 133 | 33 | E | 19.0 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1300 | 34 | 57 | S | 133 | 33 | E | 19.0 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1400 | 34 | 51 | S | 133 | 27 | E | 19.2 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1500 | 34 | 51 | S | 133 | 21 | E | 19.3 | 35.68 | 1 |
| T2 | 3 | 65 | 2 | 9  | 1600 | 34 | 51 | S | 133 | 9  | E | 19.4 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1626 | 34 | 51 | S | 133 | 9  | E | 19.4 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1636 | 34 | 51 | S | 133 | 9  | E | 19.4 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1700 | 34 | 51 | S | 133 | 9  | E | 19.4 |       | 1 |
| T2 | 3 | 65 | 2 | 9  | 1800 | 34 | 51 | S | 132 | 57 | E | 18.8 | 35.46 | 1 |
| T2 | 3 | 65 | 2 | 9  | 1900 | 34 | 45 | S | 133 | 9  | E | 19.4 |       | 1 |
| T2 | 3 | 65 | 2 | 10 | 0710 | 34 | 39 | S | 133 | 15 | E | 19.1 |       | 1 |
| T2 | 3 | 65 | 2 | 10 | 0800 | 34 | 33 | S | 133 | 27 | E | 19.1 |       | 1 |
| T2 | 3 | 65 | 2 | 10 | 0900 | 34 | 33 | S | 133 | 39 | E | 18.6 | 35.48 | 1 |
| T2 | 3 | 65 | 2 | 10 | 1000 | 34 | 33 | S | 133 | 51 | E | 18.6 |       | 1 |
| T2 | 3 | 65 | 2 | 10 | 1100 | 34 | 27 | S | 134 | 3  | E | 18.3 |       | 1 |
| T2 | 3 | 65 | 2 | 10 | 1200 | 34 | 27 | S | 134 | 15 | E | 18.2 | 35.37 | 1 |
| T2 | 3 | 65 | 2 | 10 | 1300 | 34 | 15 | S | 134 | 15 | E | 18.1 |       | 1 |
| T2 | 3 | 65 | 2 | 10 | 1400 | 34 | 3  | S | 134 | 15 | E | 18.1 |       | 1 |
| T2 | 3 | 65 | 2 | 10 | 1500 | 33 | 57 | S | 134 | 15 | E | 17.8 | 35.50 | 1 |
| T2 | 3 | 65 | 2 | 10 | 1530 | 33 | 57 | S | 134 | 15 | E | 17.8 |       | 1 |
| T2 | 3 | 65 | 2 | 11 | 0700 | 34 | 9  | S | 134 | 27 | E | 17.4 |       | 1 |
| T2 | 3 | 65 | 2 | 11 | 0800 | 34 | 9  | S | 134 | 27 | E | 17.2 |       | 1 |
| T2 | 3 | 65 | 2 | 11 | 0900 | 34 | 15 | S | 134 | 39 | E | 17.0 | 35.55 | 1 |

| VESSEL CRUISE NUMBER | STATION NUMBER | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND DN. AMT. | SEA DN. AMT. | SMELL DN. AMT. | VIS. | BAROM. | SAMPLING METHOD |
|----------------------|----------------|-----|------|-----|------|----------|-----------|-------|----------|---------------|--------------|----------------|------|--------|-----------------|
| T2                   | 3              | 65  | 2    | 11  | 1000 | 34 21 S  | 134 45 E  | 17.1  |          |               |              |                |      |        | 1               |
| T2                   | 3              | 65  | 2    | 11  | 1100 | 34 33 S  | 134 45 E  | 17.4  |          |               |              |                |      |        | 1               |
| T2                   | 3              | 65  | 2    | 11  | 1200 | 34 39 S  | 134 51 E  | 17.3  | 35.73    |               |              |                |      |        | 1               |
| T2                   | 3              | 65  | 2    | 11  | 1300 | 34 45 S  | 134 57 E  | 17.7  |          |               |              |                |      |        | 1               |
| T2                   | 3              | 65  | 2    | 11  | 1400 | 34 51 S  | 135 9 E   | 17.6  |          |               |              |                |      |        | 1               |
| T2                   | 3              | 65  | 2    | 11  | 1500 | 34 51 S  | 135 21 E  | 18.1  | 35.84    |               |              |                |      |        | 1               |
| T2                   | 3              | 65  | 2    | 11  | 1600 | 34 51 S  | 135 21 E  | 18.1  |          |               |              |                |      |        | 1               |
| T2                   | 3              | 65  | 2    | 11  | 1700 | 34 47 S  | 135 33 E  | 18.2  |          |               |              |                |      |        | 1               |
| T2                   | 3              | 65  | 2    | 11  | 1800 | 35 3 S   | 135 39 E  | 18.1  | 36.00    |               |              |                |      |        | 1               |
| T2                   | 3              | 65  | 2    | 11  | 1900 | 35 3 S   | 135 37 E  | 18.4  |          |               |              |                |      |        | 1               |
| T2                   | 3              | 65  | 2    | 11  | 2000 | 34 37 S  | 136 3 E   | 18.4  |          |               |              |                |      |        | 1               |
| T2                   | 3              | 65  | 2    | 11  | 2100 | 34 51 S  | 136 3 E   | 18.8  |          |               |              |                |      |        | 1               |
| T2                   | 3              | 65  | 2    | 11  | 2200 | 34 45 S  | 135 37 E  | 19.7  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 0100 | 34 45 S  | 135 37 E  | 20.4  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 0200 | 34 51 S  | 136 3 E   | 19.4  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 0300 | 35 9 S   | 136 3 E   | 18.2  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 0400 | 35 9 S   | 135 37 E  | 18.5  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 0500 | 35 21 S  | 135 37 E  | 18.2  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 0600 | 35 27 S  | 135 31 E  | 18.0  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 0700 | 35 39 S  | 135 51 E  | 18.0  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 0800 | 35 51 S  | 135 45 E  | 17.9  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 0900 | 35 51 S  | 135 39 E  | 18.5  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 0910 | 35 51 S  | 135 33 E  | 18.2  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1000 | 35 51 S  | 135 27 E  | 18.2  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1100 | 35 45 S  | 135 27 E  | 18.9  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1200 | 35 45 S  | 135 15 E  | 19.0  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1300 | 35 39 S  | 135 3 E   | 19.0  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1320 | 35 39 S  | 135 3 E   | 19.0  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1342 | 35 39 S  | 135 3 E   | 18.5  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1400 | 35 39 S  | 135 3 E   | 18.6  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1420 | 35 39 S  | 135 3 E   | 18.6  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1500 | 35 39 S  | 134 51 E  | 18.6  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1600 | 35 45 S  | 134 39 E  | 18.7  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1700 | 35 33 S  | 134 33 E  | 18.9  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1733 | 35 33 S  | 134 27 E  | 18.9  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1751 | 35 33 S  | 134 27 E  | 18.9  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1800 | 35 33 S  | 134 27 E  | 19.1  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1815 | 35 33 S  | 134 27 E  | 19.1  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1824 | 35 33 S  | 134 27 E  | 19.1  |          |               |              |                |      |        | 1               |
| T2                   | 4              | 65  | 2    | 14  | 1900 | 35 33 S  | 134 27 E  | 19.1  |          |               |              |                |      |        | 1               |

VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND DN, AMT. SEA SWELL DN, AMT. BAROM. WEA. VIS. BAROM. SAMPLING METHOD

|    |   |    |   |    |      |    |    |   |     |    |   |      |   |
|----|---|----|---|----|------|----|----|---|-----|----|---|------|---|
| 12 | 4 | 65 | 2 | 14 | 1929 | 35 | 53 | S | 134 | 27 | E | 19.1 | 1 |
| 12 | 4 | 65 | 2 | 14 | 2000 | 35 | 27 | S | 134 | 53 | E | 19.0 | 1 |
| 12 | 4 | 65 | 2 | 14 | 2025 | 35 | 21 | S | 134 | 39 | E | 19.0 | 1 |
| 12 | 4 | 65 | 2 | 15 | 0620 | 35 | 15 | S | 134 | 45 | E | 18.3 | 1 |
| 12 | 4 | 65 | 2 | 15 | 0700 | 35 | 21 | S | 134 | 39 | E | 18.0 | 1 |
| 12 | 4 | 65 | 2 | 15 | 0800 | 35 | 21 | S | 134 | 39 | E | 18.4 | 1 |
| 12 | 4 | 65 | 2 | 15 | 0830 | 35 | 21 | S | 134 | 33 | E | 18.4 | 1 |
| 12 | 4 | 65 | 2 | 15 | 0844 | 35 | 21 | S | 134 | 33 | E | 18.4 | 1 |
| 12 | 4 | 65 | 2 | 15 | 0900 | 35 | 21 | S | 134 | 33 | E | 18.4 | 1 |
| 12 | 4 | 65 | 2 | 15 | 0922 | 35 | 21 | S | 134 | 27 | E | 18.4 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1000 | 35 | 21 | S | 134 | 27 | E | 18.5 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1005 | 35 | 21 | S | 134 | 27 | E | 18.4 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1014 | 35 | 21 | S | 134 | 27 | E | 18.4 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1032 | 35 | 21 | S | 134 | 33 | E | 18.5 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1100 | 35 | 27 | S | 134 | 33 | E | 18.5 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1135 | 35 | 27 | S | 134 | 33 | E | 18.6 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1142 | 35 | 21 | S | 134 | 27 | E | 18.6 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1159 | 35 | 21 | S | 134 | 27 | E | 18.6 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1300 | 35 | 21 | S | 134 | 21 | E | 18.9 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1322 | 35 | 15 | S | 134 | 21 | E | 19.1 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1345 | 35 | 15 | S | 134 | 21 | E | 19.1 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1348 | 35 | 15 | S | 134 | 21 | E | 19.3 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1359 | 35 | 15 | S | 134 | 21 | E | 19.4 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1400 | 35 | 15 | S | 134 | 21 | E | 19.3 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1500 | 35 | 15 | S | 134 | 15 | E | 19.5 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1523 | 35 | 15 | S | 134 | 15 | E | 19.7 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1600 | 35 | 15 | S | 134 | 15 | E | 19.7 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1600 | 35 | 9  | S | 134 | 9  | E | 19.7 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1700 | 35 | 9  | S | 134 | 15 | E | 19.8 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1800 | 35 | 9  | S | 134 | 15 | E | 19.8 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1832 | 35 | 15 | S | 134 | 9  | E | 19.9 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1845 | 35 | 15 | S | 134 | 9  | E | 19.9 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1900 | 35 | 15 | S | 134 | 9  | E | 19.8 | 1 |
| 12 | 4 | 65 | 2 | 15 | 1922 | 35 | 15 | S | 134 | 9  | E | 19.8 | 1 |
| 12 | 4 | 65 | 2 | 15 | 2000 | 35 | 15 | S | 134 | 15 | E | 19.7 | 1 |
| 12 | 4 | 65 | 2 | 15 | 2100 | 35 | 15 | S | 134 | 15 | E | 19.5 | 1 |
| 12 | 4 | 65 | 2 | 15 | 2200 | 35 | 9  | S | 134 | 39 | E | 19.2 | 1 |
| 12 | 4 | 65 | 2 | 16 | 0300 | 35 | 9  | S | 134 | 45 | E | 18.8 | 1 |
| 12 | 4 | 65 | 2 | 16 | 0400 | 35 | 9  | S | 134 | 51 | E | 18.5 | 1 |
| 12 | 4 | 65 | 2 | 16 | 0500 | 35 | 9  | S | 134 | 3  | E | 18.5 | 1 |







VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SWELL WEA. VIS. BAROM. SAMPLING METHOD

|    |    |    |   |    |      |    |    |   |     |    |   |      |       |  |  |   |
|----|----|----|---|----|------|----|----|---|-----|----|---|------|-------|--|--|---|
| 12 | 11 | 65 | 3 | 15 | 1746 | 35 | 51 | S | 139 | 21 | E | 18.9 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 15 | 1800 | 35 | 51 | S | 135 | 21 | E | 18.6 | 35.48 |  |  | 1 |
| 12 | 11 | 65 | 3 | 15 | 1900 | 35 | 45 | S | 135 | 27 | E | 19.2 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 0600 | 36 | 15 | S | 136 | 15 | E | 18.9 | 35.68 |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 0700 | 36 | 21 | S | 136 | 9  | E | 18.9 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 0800 | 36 | 21 | S | 136 | 3  | E | 18.9 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 0900 | 36 | 21 | S | 136 | 9  | E | 18.9 | 35.70 |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1000 | 36 | 21 | S | 136 | 9  | E | 18.9 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1028 | 36 | 27 | S | 136 | 9  | E | 18.9 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1100 | 36 | 27 | S | 136 | 15 | E | 18.6 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1112 | 36 | 27 | S | 136 | 15 | E | 18.6 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1200 | 36 | 27 | S | 136 | 21 | E | 18.6 | 35.51 |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1216 | 36 | 27 | S | 136 | 21 | E | 18.6 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1245 | 36 | 27 | S | 136 | 21 | E | 18.7 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1300 | 36 | 27 | S | 136 | 21 | E | 18.7 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1315 | 36 | 27 | S | 136 | 21 | E | 18.6 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1326 | 36 | 27 | S | 136 | 21 | E | 18.6 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1346 | 36 | 27 | S | 136 | 21 | E | 18.7 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1400 | 36 | 27 | S | 136 | 21 | E | 18.7 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1430 | 36 | 27 | S | 136 | 21 | E | 18.6 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1500 | 36 | 27 | S | 136 | 21 | E | 18.7 | 35.55 |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1545 | 36 | 33 | S | 136 | 21 | E | 18.6 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1600 | 36 | 33 | S | 136 | 21 | E | 18.6 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1614 | 36 | 33 | S | 136 | 21 | E | 18.6 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1640 | 36 | 33 | S | 136 | 21 | E | 18.7 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1700 | 36 | 33 | S | 136 | 21 | E | 18.8 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1726 | 36 | 33 | S | 136 | 21 | E | 18.7 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1737 | 36 | 33 | S | 136 | 15 | E | 18.7 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1800 | 36 | 33 | S | 136 | 15 | E | 18.6 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1808 | 36 | 33 | S | 136 | 15 | E | 18.6 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1841 | 36 | 33 | S | 136 | 15 | E | 18.6 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 1900 | 36 | 27 | S | 136 | 15 | E | 18.6 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 16 | 2000 | 36 | 21 | S | 136 | 21 | E | 18.7 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 17 | 0700 | 36 | 27 | S | 136 | 21 | E | 19.1 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 17 | 0746 | 36 | 27 | S | 136 | 27 | E | 19.1 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 17 | 0800 | 36 | 27 | S | 136 | 27 | E | 19.1 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 17 | 0900 | 36 | 27 | S | 136 | 21 | E | 19.0 | 35.67 |  |  | 1 |
| 12 | 11 | 65 | 3 | 17 | 0917 | 36 | 27 | S | 136 | 21 | E | 19.0 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 17 | 0920 | 36 | 27 | S | 136 | 21 | E | 18.9 |       |  |  | 1 |
| 12 | 11 | 65 | 3 | 17 | 1000 | 36 | 33 | S | 136 | 21 | E | 17.9 |       |  |  | 1 |





VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SWELL WEA. VIS. BAROM. SAMPLING METHOD

| VESSEL | CRUISE | STATION | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND | SEA | SWELL | WEA. | VIS. | BAROM. | SAMPLING METHOD |
|--------|--------|---------|-----|------|-----|------|----------|-----------|-------|----------|------|-----|-------|------|------|--------|-----------------|
| 12     | 12     | 12      | 65  | 3    | 21  | 0600 | 35 33 S  | 133 51 E  | 17.8  | 35.86    |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 0623 | 35 27 S  | 133 51 E  | 19.3  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 0700 | 35 27 S  | 133 51 E  | 19.3  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 0709 | 35 15 S  | 133 51 E  | 19.3  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 0730 | 35 15 S  | 133 51 E  | 18.8  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 0800 | 35 15 S  | 133 51 E  | 19.5  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 0843 | 35 9 S   | 133 51 E  | 19.0  | 56.00    |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 0900 | 35 3 S   | 133 51 E  | 19.6  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 1000 | 34 37 S  | 133 57 E  | 19.6  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 1100 | 34 45 S  | 134 3 E   | 19.3  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 1200 | 34 39 S  | 134 9 E   | 19.4  | 55.83    |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 1300 | 34 33 S  | 134 3 E   | 18.9  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 1400 | 34 21 S  | 134 9 E   | 18.9  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 1500 | 34 15 S  | 134 9 E   | 19.0  | 55.81    |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 1600 | 34 9 S   | 134 9 E   | 18.9  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 1700 | 33 57 S  | 134 15 E  | 18.9  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 1800 | 33 57 S  | 134 15 E  | 18.6  | 55.82    |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 21  | 1810 | 33 57 S  | 134 15 E  | 18.6  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 22  | 0900 | 33 57 S  | 134 15 E  | 18.7  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 22  | 1000 | 33 57 S  | 134 9 E   | 19.1  | 55.81    |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 22  | 1100 | 33 57 S  | 134 9 E   | 19.1  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 22  | 1200 | 33 57 S  | 134 9 E   | 19.3  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 22  | 1300 | 33 57 S  | 134 9 E   | 19.3  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 22  | 1400 | 33 57 S  | 134 9 E   | 19.4  | 55.86    |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 22  | 1500 | 33 57 S  | 134 9 E   | 19.4  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 22  | 1600 | 33 57 S  | 134 3 E   | 19.3  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 22  | 1700 | 33 57 S  | 134 3 E   | 19.2  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 22  | 1800 | 34 57 S  | 134 15 E  | 18.7  | 55.81    |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 23  | 0700 | 34 57 S  | 133 51 E  | 19.9  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 23  | 0800 | 34 57 S  | 133 51 E  | 19.9  | 55.98    |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 23  | 0900 | 35 3 S   | 133 57 E  | 19.9  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 23  | 1000 | 35 3 S   | 134 3 E   | 19.7  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 23  | 1100 | 35 9 S   | 134 15 E  | 18.3  | 55.96    |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 23  | 1200 | 35 15 S  | 134 21 E  | 18.3  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 23  | 1300 | 35 15 S  | 134 21 E  | 18.3  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 23  | 1400 | 35 15 S  | 134 27 E  | 18.3  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 23  | 1500 | 35 21 S  | 134 33 E  | 18.3  | 55.92    |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 23  | 1600 | 35 27 S  | 134 45 E  | 19.6  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 23  | 1700 | 35 33 S  | 134 57 E  | 19.6  |          |      |     |       |      |      |        | 1               |
| 12     | 12     | 12      | 65  | 3    | 23  | 1800 | 35 39 S  | 134 3 E   | 18.8  | 55.60    |      |     |       |      |      |        | 1               |

VESSEL CRUISE STATION YR, MTH, DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SMELL MEA. VIS. BAROM. SAMPLING METHOD

|    |    |    |   |    |      |    |    |   |     |    |   |      |   |
|----|----|----|---|----|------|----|----|---|-----|----|---|------|---|
| 12 | 12 | 65 | 3 | 24 | 0700 | 36 | 9  | 5 | 135 | 27 | E | 18.0 | 1 |
| 12 | 12 | 65 | 3 | 24 | 0800 | 36 | 3  | 5 | 135 | 33 | E | 17.2 | 1 |
| 12 | 12 | 65 | 3 | 24 | 0900 | 36 | 3  | 5 | 135 | 33 | E | 18.3 | 1 |
| 12 | 12 | 65 | 3 | 24 | 1000 | 36 | 3  | 5 | 135 | 39 | E | 18.0 | 1 |
| 12 | 12 | 65 | 3 | 24 | 1100 | 36 | 9  | 5 | 135 | 45 | E | 17.9 | 1 |
| 12 | 12 | 65 | 3 | 24 | 1200 | 36 | 21 | 5 | 135 | 51 | E | 18.3 | 1 |
| 12 | 12 | 65 | 3 | 24 | 1300 | 36 | 15 | 5 | 135 | 45 | E | 17.6 | 1 |
| 12 | 12 | 65 | 3 | 24 | 1400 | 36 | 9  | 5 | 135 | 39 | E | 18.3 | 1 |
| 12 | 12 | 65 | 3 | 24 | 1500 | 36 | 3  | 5 | 135 | 33 | E | 18.4 | 1 |
| 12 | 12 | 65 | 3 | 24 | 1600 | 36 | 3  | 5 | 135 | 33 | E | 18.4 | 1 |
| 12 | 12 | 65 | 3 | 24 | 1700 | 35 | 37 | 5 | 135 | 33 | E | 18.3 | 1 |
| 12 | 12 | 65 | 3 | 24 | 1800 | 35 | 31 | 5 | 135 | 33 | E | 17.8 | 1 |
| 12 | 12 | 65 | 3 | 24 | 1900 | 35 | 31 | 5 | 135 | 27 | E | 18.1 | 1 |
| 12 | 12 | 65 | 3 | 24 | 2000 | 35 | 39 | 5 | 135 | 21 | E | 18.1 | 1 |
| 12 | 12 | 65 | 3 | 25 | 0700 | 35 | 39 | 5 | 135 | 15 | E | 18.6 | 1 |
| 12 | 12 | 65 | 3 | 25 | 0800 | 35 | 39 | 5 | 135 | 21 | E | 18.9 | 1 |
| 12 | 12 | 65 | 3 | 25 | 0900 | 35 | 45 | 5 | 135 | 21 | E | 19.3 | 1 |
| 12 | 12 | 65 | 3 | 25 | 1000 | 35 | 37 | 5 | 135 | 27 | E | 19.2 | 1 |
| 12 | 12 | 65 | 3 | 25 | 1100 | 35 | 37 | 5 | 135 | 27 | E | 18.6 | 1 |
| 12 | 12 | 65 | 3 | 25 | 1200 | 36 | 3  | 5 | 135 | 33 | E | 18.8 | 1 |
| 12 | 12 | 65 | 3 | 25 | 1300 | 36 | 15 | 5 | 135 | 39 | E | 19.0 | 1 |
| 12 | 12 | 65 | 3 | 25 | 1400 | 36 | 21 | 5 | 135 | 45 | E | 19.2 | 1 |
| 12 | 12 | 65 | 3 | 25 | 1500 | 36 | 27 | 5 | 135 | 45 | E | 18.8 | 1 |
| 12 | 12 | 65 | 3 | 25 | 1600 | 36 | 27 | 5 | 135 | 45 | E | 18.8 | 1 |
| 12 | 12 | 65 | 3 | 25 | 1700 | 36 | 27 | 5 | 135 | 51 | E | 18.7 | 1 |
| 12 | 12 | 65 | 3 | 25 | 1800 | 36 | 27 | 5 | 135 | 57 | E | 18.6 | 1 |
| 12 | 12 | 65 | 3 | 26 | 0900 | 36 | 21 | 5 | 135 | 37 | E | 18.1 | 1 |
| 12 | 12 | 65 | 3 | 26 | 1000 | 36 | 27 | 5 | 135 | 31 | E | 17.6 | 1 |
| 12 | 12 | 65 | 3 | 26 | 1100 | 36 | 33 | 5 | 135 | 31 | E | 18.1 | 1 |
| 12 | 12 | 65 | 3 | 26 | 1200 | 36 | 33 | 5 | 135 | 31 | E | 18.0 | 1 |
| 12 | 12 | 65 | 3 | 26 | 1300 | 36 | 27 | 5 | 135 | 31 | E | 18.0 | 1 |
| 12 | 12 | 65 | 3 | 26 | 1400 | 36 | 21 | 5 | 135 | 31 | E | 17.8 | 1 |
| 12 | 12 | 65 | 3 | 26 | 1500 | 36 | 21 | 5 | 135 | 31 | E | 17.9 | 1 |
| 12 | 12 | 65 | 3 | 26 | 1600 | 36 | 15 | 5 | 135 | 45 | E | 18.8 | 1 |
| 12 | 12 | 65 | 3 | 26 | 1700 | 36 | 9  | 5 | 135 | 31 | E | 19.1 | 1 |
| 12 | 12 | 65 | 3 | 26 | 1800 | 36 | 15 | 5 | 135 | 31 | E | 19.1 | 1 |
| 12 | 12 | 65 | 3 | 26 | 1900 | 36 | 15 | 5 | 135 | 37 | E | 17.8 | 1 |
| 12 | 12 | 65 | 3 | 29 | 0900 | 35 | 3  | 5 | 136 | 3  | E | 17.7 | 1 |
| 12 | 16 | 65 | 3 | 29 | 1000 | 35 | 15 | 5 | 136 | 3  | E | 18.3 | 1 |
| 12 | 16 | 65 | 3 | 29 | 1100 | 35 | 15 | 5 | 136 | 9  | E | 18.6 | 1 |

VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND DN, AMT, DN, AMT, UN, AMT, SEA SWELL WEA. VIS. BAHON. SAMPLING METHOD

|    |    |    |   |    |      |    |          |           |       |   |
|----|----|----|---|----|------|----|----------|-----------|-------|---|
| T2 | 16 | 65 | 3 | 29 | 1200 | 35 | 21 S 136 | 9 E 18.3  | 35.81 | 1 |
| T2 | 16 | 65 | 3 | 29 | 1300 | 35 | 21 S 136 | 9 E 18.4  |       | 1 |
| T2 | 16 | 65 | 3 | 30 | 0830 | 36 | 39 S 135 | 37 E 18.9 |       | 1 |
| T2 | 16 | 65 | 3 | 30 | 0900 | 36 | 39 S 136 | 3 E 18.3  | 35.53 | 1 |
| T2 | 16 | 65 | 3 | 30 | 1135 | 36 | 33 S 135 | 3 E 17.2  |       | 1 |
| T2 | 16 | 65 | 3 | 30 | 1200 | 36 | 33 S 135 | 3 E 17.2  | 35.55 | 1 |
| T2 | 16 | 65 | 3 | 30 | 1300 | 36 | 21 S 134 | 51 E 17.6 |       | 1 |
| T2 | 16 | 65 | 3 | 30 | 1400 | 36 | 9 S 134  | 45 E 17.5 |       | 1 |
| T2 | 16 | 65 | 3 | 30 | 1500 | 36 | 3 S 134  | 33 E 17.7 | 35.37 | 1 |
| T2 | 16 | 65 | 3 | 30 | 1745 | 36 | 33 S 135 | 45 E 18.3 |       | 1 |
| T2 | 16 | 65 | 3 | 30 | 1845 | 36 | 33 S 135 | 45 E 18.4 |       | 1 |
| T2 | 16 | 65 | 3 | 31 | 0700 | 36 | 33 S 135 | 27 E 18.0 |       | 1 |
| T2 | 16 | 65 | 3 | 31 | 0800 | 36 | 39 S 135 | 33 E 18.8 |       | 1 |
| T2 | 16 | 65 | 3 | 31 | 0900 | 36 | 39 S 135 | 39 E 18.4 |       | 1 |
| T2 | 16 | 65 | 3 | 31 | 0950 | 36 | 39 S 135 | 45 E 18.4 | 35.57 | 1 |
| T2 | 16 | 65 | 3 | 31 | 1000 | 36 | 39 S 135 | 45 E 18.6 |       | 1 |
| T2 | 16 | 65 | 3 | 31 | 1015 | 36 | 39 S 135 | 45 E 18.0 |       | 1 |
| T2 | 16 | 65 | 3 | 31 | 1040 | 36 | 39 S 135 | 45 E 18.6 |       | 1 |
| T2 | 16 | 65 | 3 | 31 | 1200 | 36 | 27 S 135 | 37 E 18.6 | 35.72 | 1 |
| T2 | 16 | 65 | 3 | 31 | 1300 | 36 | 33 S 135 | 37 E 18.9 |       | 1 |
| T2 | 16 | 65 | 3 | 31 | 1415 | 36 | 27 S 135 | 51 E 18.9 |       | 1 |
| T2 | 16 | 65 | 3 | 31 | 1500 | 36 | 21 S 135 | 31 E 18.5 | 35.55 | 1 |
| T2 | 16 | 65 | 3 | 31 | 1600 | 36 | 27 S 135 | 37 E 18.7 |       | 1 |
| T2 | 16 | 65 | 3 | 31 | 1700 | 36 | 33 S 136 | 3 E 18.4  |       | 1 |
| T2 | 16 | 65 | 4 | 1  | 0900 | 36 | 39 S 135 | 37 E 18.8 |       | 1 |
| T2 | 16 | 65 | 4 | 1  | 1200 | 36 | 27 S 135 | 39 E 19.0 |       | 1 |
| T2 | 16 | 65 | 4 | 1  | 1300 | 36 | 27 S 135 | 39 E 19.0 |       | 1 |
| T2 | 16 | 65 | 4 | 1  | 1500 | 36 | 3 S 135  | 31 E 19.0 |       | 1 |
| T2 | 16 | 65 | 4 | 1  | 1600 | 35 | 37 S 135 | 37 E 19.0 |       | 1 |
| T2 | 16 | 65 | 4 | 1  | 1700 | 35 | 31 S 135 | 31 E 18.7 |       | 1 |
| T2 | 16 | 65 | 4 | 1  | 1800 | 35 | 39 S 135 | 31 E 18.7 |       | 1 |
| T2 | 17 | 65 | 4 | 6  | 0700 | 35 | 21 S 135 | 31 E 19.2 |       | 1 |
| T2 | 17 | 65 | 4 | 6  | 0800 | 35 | 27 S 135 | 31 E 19.1 | 35.81 | 1 |
| T2 | 17 | 65 | 4 | 6  | 0900 | 36 | 9 S 135  | 31 E 19.1 |       | 1 |
| T2 | 17 | 65 | 4 | 6  | 1000 | 36 | 9 S 135  | 31 E 18.8 |       | 1 |
| T2 | 17 | 65 | 4 | 6  | 1100 | 36 | 9 S 135  | 31 E 18.6 |       | 1 |
| T2 | 17 | 65 | 4 | 6  | 1200 | 36 | 9 S 135  | 31 E 18.5 | 35.59 | 1 |
| T2 | 17 | 65 | 4 | 6  | 1300 | 36 | 9 S 135  | 31 E 18.8 |       | 1 |
| T2 | 17 | 65 | 4 | 6  | 1400 | 36 | 9 S 135  | 31 E 18.8 |       | 1 |
| T2 | 17 | 65 | 4 | 6  | 1500 | 36 | 9 S 135  | 31 E 18.6 | 35.61 | 1 |





VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SWELL WEA. VIS. BARDN. SAMPLING METHOD

|    |    |    |   |    |      |    |    |   |     |    |   |      |       |   |
|----|----|----|---|----|------|----|----|---|-----|----|---|------|-------|---|
| 12 | 21 | 65 | 4 | 26 | 0900 | 35 | 3  | S | 135 | 33 | E | 17.7 | 35.82 | 1 |
| 12 | 21 | 65 | 4 | 26 | 1000 | 35 | 3  | S | 135 | 27 | E | 17.4 |       | 1 |
| 12 | 21 | 65 | 4 | 26 | 1100 | 35 | 3  | S | 135 | 21 | E | 17.6 |       | 1 |
| 12 | 21 | 65 | 4 | 26 | 1200 | 35 | 3  | S | 135 | 15 | E | 17.7 | 35.82 | 1 |
| 12 | 21 | 65 | 4 | 26 | 1300 | 35 | 9  | S | 135 | 21 | E | 17.7 |       | 1 |
| 12 | 21 | 65 | 4 | 26 | 1400 | 35 | 9  | S | 135 | 27 | E | 17.6 |       | 1 |
| 12 | 21 | 65 | 4 | 26 | 1500 | 35 | 15 | S | 135 | 39 | E | 17.9 | 35.88 | 1 |
| 12 | 21 | 65 | 4 | 26 | 1600 | 35 | 15 | S | 135 | 31 | E | 18.0 |       | 1 |
| 12 | 21 | 65 | 4 | 26 | 1700 | 35 | 21 | S | 135 | 37 | E | 17.3 |       | 1 |
| 12 | 21 | 65 | 4 | 26 | 1800 | 35 | 21 | S | 136 | 9  | E | 17.3 | 36.18 | 1 |
| 12 | 21 | 65 | 4 | 27 | 0800 | 35 | 21 | S | 135 | 45 | E | 18.9 |       | 1 |
| 12 | 21 | 65 | 4 | 27 | 0900 | 35 | 15 | S | 135 | 33 | E | 18.1 | 35.86 | 1 |
| 12 | 21 | 65 | 4 | 27 | 1000 | 35 | 15 | S | 135 | 45 | E | 18.0 |       | 1 |
| 12 | 21 | 65 | 4 | 27 | 1100 | 35 | 9  | S | 135 | 31 | E | 17.9 |       | 1 |
| 12 | 21 | 65 | 4 | 27 | 1200 | 35 | 3  | S | 135 | 37 | E | 17.7 | 35.82 | 1 |
| 12 | 21 | 65 | 4 | 27 | 1300 | 34 | 37 | S | 136 | 3  | E | 17.4 |       | 1 |
| 12 | 21 | 65 | 4 | 27 | 1400 | 34 | 45 | S | 136 | 3  | E | 17.2 |       | 1 |
| 12 | 23 | 65 | 4 | 28 | 0800 | 35 | 9  | S | 135 | 27 | E | 17.8 |       | 1 |
| 12 | 23 | 65 | 4 | 28 | 0900 | 35 | 3  | S | 135 | 9  | E | 17.8 | 35.84 | 1 |
| 12 | 23 | 65 | 4 | 28 | 1000 | 34 | 37 | S | 135 | 9  | E | 17.6 |       | 1 |
| 12 | 23 | 65 | 4 | 28 | 1100 | 34 | 51 | S | 135 | 9  | E | 17.4 |       | 1 |
| 12 | 23 | 65 | 4 | 28 | 1200 | 34 | 45 | S | 135 | 9  | E | 17.4 | 35.84 | 1 |
| 12 | 23 | 65 | 4 | 28 | 1300 | 34 | 51 | S | 135 | 9  | E | 17.4 |       | 1 |
| 12 | 23 | 65 | 4 | 28 | 1400 | 34 | 51 | S | 135 | 9  | E | 17.4 |       | 1 |
| 12 | 23 | 65 | 4 | 28 | 1500 | 34 | 51 | S | 135 | 9  | E | 17.6 | 35.82 | 1 |
| 12 | 23 | 65 | 4 | 28 | 1600 | 34 | 51 | S | 135 | 9  | E | 17.8 |       | 1 |
| 12 | 23 | 65 | 4 | 28 | 1700 | 34 | 31 | S | 135 | 9  | E | 17.4 |       | 1 |
| 12 | 23 | 65 | 4 | 28 | 0800 | 34 | 35 | S | 135 | 9  | E | 17.3 |       | 1 |
| 12 | 23 | 65 | 4 | 29 | 0900 | 34 | 31 | S | 135 | 9  | E | 17.6 | 35.82 | 1 |
| 12 | 23 | 65 | 4 | 29 | 1000 | 34 | 51 | S | 135 | 15 | E | 17.6 |       | 1 |
| 12 | 23 | 65 | 4 | 29 | 1100 | 34 | 51 | S | 135 | 15 | E | 17.4 |       | 1 |
| 12 | 23 | 65 | 4 | 29 | 1200 | 34 | 51 | S | 135 | 15 | E | 17.8 | 35.79 | 1 |
| 12 | 23 | 65 | 4 | 29 | 1300 | 34 | 45 | S | 135 | 9  | E | 17.8 |       | 1 |
| 12 | 23 | 65 | 4 | 29 | 1400 | 34 | 51 | S | 135 | 15 | E | 17.8 |       | 1 |
| 12 | 23 | 65 | 4 | 29 | 1500 | 34 | 51 | S | 135 | 15 | E | 17.8 | 35.82 | 1 |
| 12 | 23 | 65 | 4 | 29 | 1600 | 34 | 51 | S | 135 | 15 | E | 17.8 |       | 1 |
| 12 | 23 | 65 | 4 | 29 | 1700 | 34 | 51 | S | 135 | 15 | E | 17.9 |       | 1 |
| 12 | 23 | 65 | 4 | 29 | 1800 | 34 | 37 | S | 135 | 27 | E | 17.8 | 35.84 | 1 |
| 12 | 23 | 65 | 4 | 29 | 1900 | 35 | 3  | S | 135 | 27 | E | 17.8 |       | 1 |
| 12 | 23 | 65 | 4 | 30 | 0700 | 35 | 3  | S | 135 | 15 | E | 17.4 |       | 1 |



VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SWELL HEA. VIS. BAROM. SAMPLING  
 NUMBER

|    |    |    |    |      |    |    |   |     |    |   |      |   |
|----|----|----|----|------|----|----|---|-----|----|---|------|---|
| T2 | 65 | 11 | 18 | 1700 | 36 | 33 | S | 150 | 33 | E | 18.9 | G |
| T2 | 65 | 11 | 18 | 1800 | 36 | 27 | S | 150 | 39 | E | 18.6 | G |
| T2 | 65 | 11 | 18 | 1900 | 36 | 21 | S | 150 | 33 | E | 18.3 | G |
| T2 | 65 | 11 | 18 | 2000 | 36 | 15 | S | 150 | 21 | E | 18.4 | G |
| T2 | 65 | 11 | 18 | 2100 | 36 | 15 | S | 150 | 21 | E | 18.6 | G |
| T2 | 65 | 11 | 18 | 2200 | 36 | 15 | S | 150 | 15 | E | 18.3 | G |
| T2 | 65 | 11 | 19 | 0600 | 36 | 15 | S | 150 | 41 | E | 17.3 | G |
| T2 | 65 | 11 | 19 | 0700 | 36 | 21 | S | 150 | 33 | E | 17.8 | G |
| T2 | 65 | 11 | 19 | 0800 | 36 | 27 | S | 150 | 33 | E | 17.8 | G |
| T2 | 65 | 11 | 19 | 0900 | 36 | 33 | S | 150 | 27 | E | 18.1 | G |
| T2 | 65 | 11 | 19 | 1000 | 36 | 39 | S | 150 | 27 | E | 18.3 | G |
| T2 | 65 | 11 | 19 | 1100 | 36 | 45 | S | 150 | 27 | E | 18.7 | G |
| T2 | 65 | 11 | 19 | 1200 | 36 | 33 | S | 150 | 27 | E | 18.6 | G |
| T2 | 65 | 11 | 19 | 1300 | 36 | 21 | S | 150 | 27 | E | 18.6 | G |
| T2 | 65 | 11 | 19 | 1400 | 36 | 15 | S | 150 | 27 | E | 18.6 | G |
| T2 | 65 | 11 | 19 | 1500 | 36 | 21 | S | 150 | 27 | E | 18.8 | G |
| T2 | 65 | 11 | 19 | 1600 | 36 | 21 | S | 150 | 21 | E | 18.8 | G |
| T2 | 65 | 11 | 19 | 1700 | 36 | 15 | S | 150 | 15 | E | 18.3 | G |
| T2 | 65 | 11 | 20 | 0800 | 36 | 9  | S | 150 | 15 | E | 18.1 | G |
| T2 | 65 | 11 | 20 | 0900 | 36 | 9  | S | 150 | 27 | E | 17.9 | G |
| T2 | 65 | 11 | 20 | 1000 | 36 | 21 | S | 150 | 27 | E | 18.3 | G |
| T2 | 65 | 11 | 20 | 1100 | 36 | 27 | S | 150 | 21 | E | 18.2 | G |
| T2 | 65 | 11 | 20 | 1200 | 36 | 39 | S | 150 | 21 | E | 18.3 | G |
| T2 | 65 | 11 | 20 | 1300 | 36 | 21 | S | 150 | 15 | E | 18.3 | G |
| T2 | 65 | 11 | 20 | 1400 | 36 | 37 | S | 150 | 15 | E | 18.3 | G |
| T2 | 65 | 11 | 20 | 1500 | 37 | 3  | S | 150 | 9  | E | 17.8 | G |
| T2 | 65 | 11 | 20 | 1600 | 37 | 3  | S | 149 | 37 | E | 16.2 | G |
| T2 | 65 | 11 | 22 | 0800 | 36 | 27 | S | 150 | 15 | E | 18.1 | G |
| T2 | 65 | 11 | 22 | 0900 | 36 | 27 | S | 150 | 21 | E | 18.1 | G |
| T2 | 65 | 11 | 22 | 1000 | 36 | 21 | S | 150 | 27 | E | 18.1 | G |
| T2 | 65 | 11 | 22 | 1100 | 36 | 15 | S | 150 | 33 | E | 18.1 | G |
| T2 | 65 | 11 | 22 | 1200 | 36 | 27 | S | 150 | 27 | E | 17.9 | G |
| T2 | 65 | 11 | 22 | 1300 | 36 | 21 | S | 150 | 21 | E | 18.1 | G |
| T2 | 65 | 11 | 22 | 1400 | 36 | 27 | S | 150 | 15 | E | 18.2 | G |
| T2 | 65 | 11 | 23 | 0900 | 36 | 21 | S | 150 | 19 | E | 18.1 | G |
| T2 | 65 | 11 | 23 | 1000 | 36 | 27 | S | 150 | 21 | E | 17.9 | G |
| T2 | 65 | 11 | 23 | 1100 | 36 | 33 | S | 150 | 21 | E | 18.0 | G |
| T2 | 65 | 11 | 23 | 1200 | 36 | 45 | S | 150 | 15 | E | 17.8 | G |
| T2 | 65 | 11 | 23 | 1300 | 36 | 37 | S | 150 | 9  | E | 17.3 | G |



VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND DN, AMT. SEA SWELL WEA. VIS. BAROM. SAMPLING METHOD

|    |    |    |    |      |    |    |   |     |    |   |      |   |
|----|----|----|----|------|----|----|---|-----|----|---|------|---|
| T2 | 65 | 11 | 26 | 0600 | 37 | 3  | S | 150 | 3  | E | 15.6 | G |
| T2 | 65 | 11 | 26 | 0700 | 36 | 37 | S | 150 | 9  | E | 17.2 | G |
| T2 | 65 | 11 | 26 | 0800 | 36 | 31 | S | 150 | 21 | E | 17.5 | G |
| T2 | 65 | 11 | 26 | 0900 | 36 | 39 | S | 150 | 21 | E | 17.5 | G |
| T2 | 65 | 11 | 26 | 1000 | 36 | 33 | S | 150 | 21 | E | 17.4 | G |
| T2 | 65 | 11 | 26 | 1100 | 36 | 33 | S | 150 | 33 | E | 17.8 | G |
| T2 | 65 | 11 | 26 | 1200 | 36 | 21 | S | 150 | 39 | E | 18.0 | G |
| T2 | 65 | 11 | 26 | 1300 | 36 | 15 | S | 150 | 45 | E | 18.4 | G |
| T2 | 65 | 11 | 26 | 1400 | 36 | 15 | S | 150 | 33 | E | 17.6 | G |
| T2 | 65 | 11 | 26 | 1500 | 36 | 15 | S | 150 | 21 | E | 17.8 | G |
| T2 | 65 | 11 | 26 | 1600 | 36 | 15 | S | 150 | 3  | E | 17.8 | G |
| T2 | 65 | 11 | 26 | 1700 | 36 | 21 | S | 150 | 9  | E | 17.8 | G |
| T2 | 65 | 11 | 27 | 0700 | 36 | 21 | S | 150 | 9  | E | 17.5 | G |
| T2 | 65 | 11 | 27 | 0800 | 36 | 21 | S | 150 | 21 | E | 17.7 | G |
| T2 | 65 | 11 | 27 | 0900 | 36 | 21 | S | 150 | 33 | E | 17.8 | G |
| T2 | 65 | 11 | 27 | 1000 | 36 | 9  | S | 150 | 33 | E | 17.8 | G |
| T2 | 65 | 11 | 27 | 1100 | 35 | 37 | S | 150 | 33 | E | 17.7 | G |
| T2 | 65 | 11 | 27 | 1200 | 35 | 45 | S | 150 | 27 | E | 18.3 | G |
| T2 | 65 | 11 | 27 | 1300 | 35 | 39 | S | 150 | 33 | E | 18.3 | G |
| T2 | 65 | 11 | 27 | 1400 | 35 | 33 | S | 150 | 39 | E | 18.3 | G |
| T2 | 65 | 11 | 27 | 1500 | 35 | 33 | S | 150 | 38 | E | 18.2 | G |
| T2 | 65 | 11 | 27 | 1600 | 35 | 27 | S | 150 | 45 | E | 18.2 | G |
| T2 | 65 | 11 | 28 | 1300 | 35 | 21 | S | 150 | 39 | E | 17.9 | G |
| T2 | 65 | 11 | 28 | 1400 | 35 | 21 | S | 150 | 33 | E | 17.8 | G |
| T2 | 65 | 11 | 28 | 1500 | 35 | 21 | S | 150 | 45 | E | 18.4 | G |
| T2 | 65 | 11 | 28 | 1600 | 35 | 15 | S | 150 | 37 | E | 18.4 | G |
| T2 | 65 | 11 | 28 | 1700 | 35 | 15 | S | 150 | 37 | E | 19.2 | G |
| T2 | 65 | 11 | 28 | 1800 | 35 | 9  | S | 151 | 3  | E | 18.9 | G |
| T2 | 65 | 11 | 29 | 0600 | 35 | 3  | S | 150 | 37 | E | 18.5 | G |
| T2 | 65 | 11 | 29 | 0700 | 35 | 3  | S | 151 | 3  | E | 18.5 | G |
| T2 | 65 | 11 | 29 | 0800 | 35 | 9  | S | 151 | 3  | E | 18.6 | G |
| T2 | 65 | 11 | 29 | 0900 | 35 | 15 | S | 151 | 3  | E | 18.9 | G |
| T2 | 65 | 11 | 29 | 1000 | 35 | 15 | S | 151 | 3  | E | 18.9 | G |
| T2 | 65 | 11 | 29 | 1100 | 35 | 21 | S | 151 | 3  | E | 18.9 | G |
| T2 | 65 | 11 | 29 | 1200 | 35 | 15 | S | 151 | 3  | E | 18.9 | G |
| T2 | 65 | 11 | 29 | 1300 | 35 | 9  | S | 151 | 3  | E | 18.9 | G |
| T2 | 65 | 11 | 29 | 1400 | 35 | 9  | S | 150 | 3  | E | 18.9 | G |
| T2 | 65 | 11 | 30 | 0900 | 35 | 3  | S | 151 | 3  | E | 18.6 | G |
| T2 | 65 | 11 | 30 | 1000 | 35 | 9  | S | 151 | 3  | E | 18.9 | G |

| VESSEL | CRUISE | STATION | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND     | SEA      | SHELL    | WEA. | VIS. | BAROM. | SAMPLING |
|--------|--------|---------|-----|------|-----|------|----------|-----------|-------|----------|----------|----------|----------|------|------|--------|----------|
|        |        | NUMBER  |     |      |     |      |          |           |       |          | DN. AMT. | DN. AMT. | DN. AMT. |      |      |        | METHOD   |
| T2     |        | 35      | 65  | 11   | 30  | 1100 | 39       | 15 S      | 150   | 57 E     | 19.4     |          |          |      |      |        | 0        |
| T2     |        | 35      | 65  | 11   | 30  | 1200 | 35       | 27 S      | 150   | 57 E     | 18.9     |          |          |      |      |        | 0        |
| T2     |        | 35      | 65  | 11   | 30  | 1300 | 35       | 33 S      | 150   | 45 E     | 18.3     |          |          |      |      |        | 0        |
| T2     |        | 35      | 65  | 11   | 30  | 1400 | 35       | 21 S      | 150   | 39 E     | 18.3     |          |          |      |      |        | 0        |
| T2     | 35     | 35      | 65  | 12   | 2   | 1000 | 35       | 21 S      | 150   | 39 E     | 16.7     |          |          |      |      |        | 1        |
| T2     | 35     | 35      | 65  | 12   | 2   | 1100 | 35       | 15 S      | 150   | 51 E     | 17.9     |          |          |      |      |        | 1        |
| T2     | 35     | 35      | 65  | 12   | 2   | 1200 | 35       | 15 S      | 150   | 57 E     | 18.3     |          |          |      |      |        | 1        |
| T2     | 35     | 35      | 65  | 12   | 2   | 1300 | 35       | 27 S      | 150   | 45 E     | 18.9     |          |          |      |      |        | 1        |
| T2     | 35     | 35      | 65  | 12   | 2   | 1400 | 35       | 33 S      | 150   | 51 E     | 18.3     |          |          |      |      |        | 1        |
| T2     | 35     | 35      | 65  | 12   | 2   | 1500 | 35       | 27 S      | 150   | 39 E     | 18.2     |          |          |      |      |        | 1        |
| T2     | 29     | 35      | 65  | 12   | 2   | 1600 | 35       | 21 S      | 150   | 33 E     | 17.1     |          |          |      |      |        | 1        |
| T2     | 29     | 29      | 65  | 12   | 27  | 0700 | 37       | 3 S       | 149   | 57 E     | 18.1     |          |          |      |      |        | 1        |
| T2     | 29     | 29      | 65  | 12   | 27  | 0800 | 37       | 3 S       | 150   | 3 E      | 19.7     |          |          |      |      |        | 1        |
| T2     | 29     | 29      | 65  | 12   | 27  | 0825 | 37       | 9 S       | 150   | 9 E      | 19.7     |          |          |      |      |        | 1        |
| T2     | 29     | 29      | 65  | 12   | 27  | 0900 | 37       | 9 S       | 150   | 15 E     | 19.3     |          |          |      |      |        | 1        |
| T2     | 29     | 29      | 65  | 12   | 27  | 1000 | 37       | 15 S      | 150   | 21 E     | 19.3     |          |          |      |      |        | 1        |
| T2     | 29     | 29      | 65  | 12   | 27  | 1100 | 37       | 15 S      | 150   | 15 E     | 18.6     |          |          |      |      |        | 1        |
| T2     | 29     | 29      | 65  | 12   | 27  | 1200 | 37       | 9 S       | 150   | 9 E      | 20.0     |          |          |      |      |        | 1        |
| T2     | 29     | 29      | 65  | 12   | 27  | 1300 | 36       | 37 S      | 150   | 9 E      | 20.3     |          |          |      |      |        | 1        |
| T2     | 29     | 29      | 65  | 12   | 27  | 1400 | 36       | 45 S      | 150   | 15 E     | 19.7     |          |          |      |      |        | 1        |
| T2     | 29     | 29      | 65  | 12   | 27  | 1500 | 36       | 45 S      | 150   | 21 E     | 19.8     |          |          |      |      |        | 1        |
| T2     | 29     | 29      | 65  | 12   | 27  | 1600 | 36       | 31 S      | 150   | 21 E     | 20.1     |          |          |      |      |        | 1        |
| T2     | 29     | 29      | 65  | 12   | 27  | 1700 | 36       | 37 S      | 150   | 3 E      | 20.0     |          |          |      |      |        | 1        |

VESSEL CRUISE STATION YR. MTH. DAY TIME : LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SWELL HEA. VIS. BARDN. SAMPLING METHOD

| VESSEL | CRUISE | STATION | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND | SEA  | SWELL | HEA. | VIS. | BARDN. | SAMPLING | METHOD |
|--------|--------|---------|-----|------|-----|------|----------|-----------|-------|----------|------|------|-------|------|------|--------|----------|--------|
| T3     | 10     | 10      | 65  | 11   | 19  | 0600 | 37       | 3         | S     | 149      | 57 E | 15.6 | 35.43 |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 0700 | 37       | 3         | S     | 149      | 57 E | 15.6 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 0740 | 37       | 57        | S     | 150      | 9 E  | 16.4 | 35.61 |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 0800 | 36       | 51        | S     | 150      | 9 E  | 16.4 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 0845 | 36       | 57        | S     | 150      | 21 E | 16.7 | 35.53 |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 0850 | 36       | 57        | S     | 150      | 21 E | 17.5 | 35.59 |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 0900 | 36       | 51        | S     | 150      | 15 E | 18.1 | 35.64 |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 0915 | 36       | 45        | S     | 150      | 21 E | 18.3 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 0955 | 36       | 45        | S     | 150      | 21 E | 18.2 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 1000 | 36       | 39        | S     | 150      | 21 E | 18.1 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 1005 | 36       | 39        | S     | 150      | 21 E | 18.2 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 1020 | 36       | 39        | S     | 150      | 21 E | 18.2 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 1025 | 36       | 39        | S     | 150      | 21 E | 18.4 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 1050 | 36       | 39        | S     | 150      | 21 E | 18.6 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 1100 | 36       | 33        | S     | 150      | 21 E | 18.6 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 1200 | 36       | 27        | S     | 150      | 21 E | 18.6 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 1220 | 36       | 27        | S     | 150      | 21 E | 18.4 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 1300 | 36       | 21        | S     | 150      | 27 E | 18.6 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 1400 | 36       | 15        | S     | 150      | 15 E | 18.6 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 1500 | 36       | 21        | S     | 150      | 27 E | 18.4 | 35.61 |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 19  | 1600 | 36       | 15        | S     | 150      | 15 E | 18.4 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 20  | 0730 | 36       | 15        | S     | 150      | 15 E | 17.9 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 20  | 0800 | 36       | 15        | S     | 150      | 15 E | 18.1 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 20  | 0900 | 36       | 9         | S     | 150      | 21 E | 18.3 | 35.66 |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 20  | 1000 | 36       | 9         | S     | 150      | 27 E | 18.4 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 20  | 1100 | 36       | 15        | S     | 150      | 27 E | 18.3 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 20  | 1200 | 36       | 21        | S     | 150      | 27 E | 18.6 | 35.62 |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 20  | 1300 | 36       | 27        | S     | 150      | 27 E | 18.6 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 20  | 1400 | 36       | 39        | S     | 150      | 21 E | 18.3 |       |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 20  | 1500 | 36       | 51        | S     | 150      | 15 E | 18.2 | 35.59 |      |      |        | 1        |        |
| T3     | 10     | 10      | 65  | 11   | 20  | 1600 | 37       | 3         | S     | 150      | 9 E  | 16.8 |       |      |      |        | 1        |        |
| T3     | 13     | 13      | 65  | 11   | 22  | 0600 | 37       | 3         | S     | 149      | 57 E | 17.5 | 35.59 |      |      |        | 1        |        |
| T3     | 13     | 13      | 65  | 11   | 22  | 0800 | 36       | 57        | S     | 150      | 15 E | 17.2 |       |      |      |        | 1        |        |
| T3     | 13     | 13      | 65  | 11   | 22  | 0815 | 36       | 57        | S     | 150      | 15 E | 17.5 |       |      |      |        | 1        |        |
| T3     | 13     | 13      | 65  | 11   | 22  | 0830 | 36       | 57        | S     | 150      | 21 E | 17.8 |       |      |      |        | 1        |        |
| T3     | 13     | 13      | 65  | 11   | 22  | 0845 | 36       | 57        | S     | 150      | 21 E | 17.9 | 35.68 |      |      |        | 1        |        |
| T3     | 13     | 13      | 65  | 11   | 22  | 0900 | 36       | 51        | S     | 150      | 27 E | 17.6 |       |      |      |        | 1        |        |
| T3     | 13     | 13      | 65  | 11   | 22  | 0905 | 36       | 51        | S     | 150      | 27 E | 17.9 | 35.68 |      |      |        | 1        |        |
| T3     | 13     | 13      | 65  | 11   | 22  | 0910 | 36       | 51        | S     | 150      | 27 E | 17.9 |       |      |      |        | 1        |        |
| T3     | 13     | 13      | 65  | 11   | 22  | 1000 | 36       | 45        | S     | 150      | 27 E | 17.9 |       |      |      |        | 1        |        |



VESSEL CRUISE STATION NO., MTH., DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SWELL WEA. VIS. BAROM. SAMPLING METHOD

|    |    |    |    |    |      |    |    |   |      |    |   |      |       |   |
|----|----|----|----|----|------|----|----|---|------|----|---|------|-------|---|
| T2 | 18 | 65 | 11 | 28 | 1200 | 37 | 3  | S | 150. | 9  | E | 16.4 | 35.50 | 1 |
| T2 | 18 | 65 | 11 | 28 | 1300 | 36 | 57 | S | 150  | 3  | E | 17.3 |       | 1 |
| T2 | 18 | 65 | 11 | 28 | 1400 | 36 | 51 | S | 150  | 3  | E | 17.5 |       | 1 |
| T2 | 18 | 65 | 11 | 28 | 1500 | 36 | 39 | S | 150  | 9  | E | 17.5 | 35.61 | 1 |
| T2 | 18 | 65 | 11 | 28 | 1600 | 36 | 27 | S | 150  | 15 | E | 17.4 |       | 1 |
| T2 | 18 | 65 | 11 | 28 | 1700 | 36 | 21 | S | 150  | 15 | E | 17.4 |       | 1 |
| T2 | 18 | 65 | 11 | 29 | 0700 | 36 | 9  | S | 150  | 15 | E | 17.5 |       | 1 |
| T2 | 18 | 65 | 11 | 29 | 0800 | 36 | 3  | S | 150  | 21 | E | 17.8 |       | 1 |
| T2 | 18 | 65 | 11 | 29 | 0900 | 36 | 3  | S | 150  | 27 | E | 18.1 | 35.64 | 1 |
| T2 | 18 | 65 | 11 | 29 | 0930 | 35 | 57 | S | 150  | 27 | E | 18.1 |       | 1 |
| T2 | 18 | 65 | 11 | 29 | 1000 | 35 | 51 | S | 150  | 27 | E | 17.9 |       | 1 |
| T2 | 18 | 65 | 11 | 29 | 1100 | 35 | 45 | S | 150  | 33 | E | 18.1 |       | 1 |
| T2 | 18 | 65 | 11 | 29 | 1200 | 35 | 39 | S | 150  | 33 | E | 17.9 | 35.59 | 1 |
| T2 | 18 | 65 | 11 | 29 | 1230 | 35 | 39 | S | 150  | 33 | E | 17.6 |       | 1 |
| T2 | 18 | 65 | 11 | 29 | 1300 | 35 | 33 | S | 150  | 33 | E | 17.1 |       | 1 |
| T2 | 18 | 65 | 11 | 29 | 1400 | 35 | 27 | S | 150  | 33 | E | 17.7 |       | 1 |
| T2 | 18 | 65 | 11 | 30 | 0720 | 35 | 27 | S | 150  | 33 | E | 17.6 |       | 1 |
| T2 | 18 | 65 | 11 | 30 | 0800 | 35 | 27 | S | 150  | 39 | E | 17.8 |       | 1 |
| T2 | 18 | 65 | 11 | 30 | 0820 | 35 | 27 | S | 150  | 39 | E | 18.1 |       | 1 |
| T2 | 18 | 65 | 11 | 30 | 0845 | 35 | 27 | S | 150  | 39 | E | 18.2 | 35.61 | 1 |
| T2 | 18 | 65 | 11 | 30 | 0900 | 35 | 27 | S | 150  | 39 | E | 18.4 | 35.68 | 1 |
| T2 | 18 | 65 | 11 | 30 | 0920 | 35 | 27 | S | 150  | 45 | E | 18.7 |       | 1 |
| T2 | 18 | 65 | 11 | 30 | 0930 | 35 | 27 | S | 150  | 45 | E | 18.7 | 35.68 | 1 |
| T2 | 18 | 65 | 11 | 30 | 0945 | 35 | 33 | S | 150  | 45 | E | 18.7 |       | 1 |
| T2 | 18 | 65 | 11 | 30 | 1000 | 35 | 33 | S | 150  | 45 | E | 18.6 |       | 1 |
| T2 | 18 | 65 | 11 | 30 | 1030 | 35 | 33 | S | 150  | 51 | E | 19.1 |       | 1 |
| T2 | 18 | 65 | 11 | 30 | 1100 | 35 | 27 | S | 150  | 51 | E | 19.2 | 35.61 | 1 |
| T2 | 18 | 65 | 11 | 30 | 1200 | 35 | 15 | S | 150  | 57 | E | 19.1 | 35.70 | 1 |
| T2 | 18 | 65 | 11 | 30 | 1230 | 35 | 9  | S | 151  | 3  | E | 19.1 |       | 1 |
| T2 | 18 | 65 | 11 | 30 | 1300 | 35 | 3  | S | 151  | 3  | E | 18.6 |       | 1 |
| T2 | 18 | 65 | 11 | 30 | 1340 | 35 | 3  | S | 151  | 9  | E | 19.1 |       | 1 |
| T2 | 18 | 65 | 11 | 30 | 1400 | 35 | 9  | S | 151  | 9  | E | 19.1 |       | 1 |
| T2 | 18 | 65 | 11 | 30 | 1445 | 35 | 9  | S | 151  | 3  | E | 19.1 | 35.70 | 1 |
| T2 | 18 | 65 | 11 | 30 | 1500 | 35 | 9  | S | 151  | 3  | E | 19.6 | 35.70 | 1 |
| T2 | 18 | 65 | 11 | 30 | 1610 | 35 | 9  | S | 150  | 57 | E | 19.0 | 35.64 | 1 |
| T2 | 18 | 65 | 11 | 30 | 1700 | 35 | 9  | S | 150  | 57 | E | 19.0 |       | 1 |
| T2 | 18 | 65 | 11 | 30 | 1800 | 35 | 9  | S | 150  | 45 | E | 17.9 | 35.62 | 1 |
| T2 | 18 | 65 | 12 | 2  | 0800 | 35 | 3  | S | 150  | 45 | E | 17.9 |       | 1 |
| T2 | 18 | 65 | 12 | 2  | 0900 | 35 | 9  | S | 150  | 51 | E | 18.0 | 35.59 | 1 |
| T2 | 18 | 65 | 12 | 2  | 0935 | 35 | 9  | S | 150  | 57 | E | 19.1 | 35.55 | 1 |











| VESSEL | CRUISE | STATION | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP.     | SALINITY | WIND     | SEA      | SWELL    | WEA. | VIS. | BAROM. | SAMPLING | METHOD |
|--------|--------|---------|-----|------|-----|------|----------|-----------|-----------|----------|----------|----------|----------|------|------|--------|----------|--------|
|        |        | NUMBER  |     |      |     |      |          |           |           |          | DN, AMT. | DN, AMT. | DN, AMT. |      |      |        |          |        |
| T3     | 24     |         | 65  | 12   | 21  | 1100 | 36       | 15 S 150  | 27 E 19.8 |          |          |          |          |      |      |        |          | 1      |
| T3     | 24     |         | 65  | 12   | 21  | 1200 | 36       | 21 S 150  | 21 E 20.0 | 35.71    |          |          |          |      |      |        |          | 1      |
| T3     | 24     |         | 65  | 12   | 21  | 1300 | 36       | 15 S 150  | 21 E 19.6 |          |          |          |          |      |      |        |          | 1      |
| T3     | 24     |         | 65  | 12   | 21  | 1400 | 36       | 15 S 150  | 21 E 19.7 |          |          |          |          |      |      |        |          | 1      |
| T3     | 24     |         | 65  | 12   | 21  | 1500 | 36       | 15 S 150  | 21 E 20.1 | 35.68    |          |          |          |      |      |        |          | 1      |
| T3     | 24     |         | 65  | 12   | 21  | 1600 | 36       | 15 S 150  | 21 E 19.8 |          |          |          |          |      |      |        |          | 1      |
| T3     | 24     |         | 65  | 12   | 21  | 1700 | 36       | 15 S 150  | 15 E 19.6 |          |          |          |          |      |      |        |          | 1      |
| T3     | 24     |         | 65  | 12   | 22  | 0900 | 36       | 15 S 150  | 21 E 19.2 | 35.71    |          |          |          |      |      |        |          | 1      |
| T3     | 24     |         | 65  | 12   | 22  | 1000 | 36       | 21 S 150  | 21 E 19.4 |          |          |          |          |      |      |        |          | 1      |
| T3     | 24     |         | 65  | 12   | 22  | 1100 | 36       | 27 S 150  | 21 E 19.2 |          |          |          |          |      |      |        |          | 1      |
| T3     | 24     |         | 65  | 12   | 22  | 1200 | 36       | 27 S 150  | 21 E 19.4 | 35.82    |          |          |          |      |      |        |          | 1      |
| T3     | 24     |         | 65  | 12   | 22  | 1300 | 36       | 39 S 150  | 21 E 19.2 |          |          |          |          |      |      |        |          | 1      |
| T3     | 24     |         | 65  | 12   | 22  | 1400 | 36       | 51 S 150  | 15 E 18.9 |          |          |          |          |      |      |        |          | 1      |
| T3     | 24     |         | 65  | 12   | 22  | 1500 | 37       | 3 S 150   | 3 E 18.4  | 35.53    |          |          |          |      |      |        |          | 1      |
| T3     | 26     |         | 65  | 12   | 24  | 0800 | 37       | 3 S 149   | 57 E 19.6 |          |          |          |          |      |      |        |          | 1      |
| T3     | 26     |         | 65  | 12   | 24  | 0900 | 37       | 3 S 150   | 3 E 16.9  | 35.61    |          |          |          |      |      |        |          | 1      |
| T3     | 26     |         | 65  | 12   | 24  | 1000 | 36       | 57 S 150  | 9 E 18.8  |          |          |          |          |      |      |        |          | 1      |
| T3     | 28     |         | 65  | 12   | 24  | 1100 | 36       | 51 S 150  | 15 E 19.2 |          |          |          |          |      |      |        |          | 1      |
| T3     | 28     |         | 65  | 12   | 24  | 1200 | 36       | 57 S 150  | 3 E 17.1  | 35.50    |          |          |          |      |      |        |          | 1      |

VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SWELL HEA. VIS. BAROM. SAMPLING METHOD

| VESSEL | CRUISE STATION | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP.     | SALINITY | WIND | SEA | SWELL | HEA. | VIS. | BAROM. | SAMPLING METHOD |
|--------|----------------|-----|------|-----|------|----------|-----------|-----------|----------|------|-----|-------|------|------|--------|-----------------|
| T4     | 88             | 65  | 1    | 10  | 0700 | 37       | 3 S 149   | 57 E 18.3 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 0800 | 37       | 3 S 150   | 9 E 19.6  |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 0836 | 36       | 57 S 150  | 9 E 19.9  |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 0900 | 36       | 57 S 150  | 15 E 20.4 | 35.70    |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 0942 | 36       | 51 S 150  | 21 E 20.4 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 1000 | 36       | 51 S 150  | 21 E 19.5 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 1040 | 37       | 3 S 150   | 21 E 19.5 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 1100 | 37       | 9 S 150   | 21 E 19.1 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 1200 | 37       | 21 S 150  | 21 E 19.1 | 35.68    |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 1220 | 37       | 27 S 150  | 15 E 19.6 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 1315 | 37       | 33 S 150  | 21 E 19.6 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 1330 | 37       | 33 S 150  | 21 E 19.6 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 1400 | 37       | 39 S 150  | 15 E 19.6 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 1500 | 37       | 39 S 150  | 9 E 19.4  | 35.58    |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 10  | 1600 | 37       | 33 S 149  | 57 E 18.2 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 11  | 0001 | 37       | 33 S 149  | 51 E 17.8 | 35.57    |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 11  | 0900 | 37       | 33 S 149  | 57 E 17.1 | 35.58    |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 11  | 1000 | 37       | 33 S 150  | 3 E 16.9  |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 11  | 1100 | 37       | 21 S 150  | 3 E 17.8  |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 11  | 1200 | 37       | 9 S 150   | 3 E 18.0  | 35.57    |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 11  | 1300 | 37       | 3 S 149   | 57 E 18.4 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 1    | 11  | 0730 | 37       | 3 S 149   | 57 E 19.4 | 35.59    |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 0800 | 37       | 9 S 150   | 3 E 16.6  |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 0823 | 37       | 9 S 150   | 3 E 19.2  |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 0825 | 37       | 15 S 150  | 3 E 19.4  |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 0850 | 37       | 15 S 150  | 3 E 19.2  |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 0852 | 37       | 15 S 150  | 3 E 17.2  |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 0855 | 37       | 15 S 150  | 3 E 18.2  |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 0900 | 37       | 21 S 150  | 3 E 18.6  | 35.59    |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 0930 | 37       | 21 S 150  | 3 E 19.1  |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 1000 | 37       | 27 S 150  | 3 E 19.1  | 35.55    |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 1020 | 37       | 27 S 149  | 57 E 18.6 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 1022 | 37       | 27 S 149  | 57 E 17.5 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 1045 | 37       | 33 S 149  | 57 E 17.5 | 35.50    |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 1100 | 37       | 33 S 149  | 57 E 17.8 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 1130 | 37       | 39 S 149  | 51 E 18.1 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 1200 | 37       | 45 S 149  | 51 E 18.1 | 35.50    |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 1230 | 37       | 51 S 149  | 45 E 18.4 |          |      |     |       |      |      |        | 1               |
| T4     | 88             | 65  | 12   | 31  | 1300 | 37       | 51 S 149  | 39 E 18.1 | 35.53    |      |     |       |      |      |        | 1               |

















VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SWELL WEA. VIS. BAROM. SAMPLING METHOD

|    |    |    |   |    |      |    |      |     |      |      |       |   |
|----|----|----|---|----|------|----|------|-----|------|------|-------|---|
| T6 | 34 | 65 | 3 | 26 | 1100 | 40 | 57 S | 148 | 39 E | 15.8 | 35.23 | 1 |
| T6 | 34 | 65 | 3 | 26 | 1200 | 41 | 03 S | 148 | 39 E | 15.0 |       | 1 |
| T6 | 34 | 65 | 3 | 26 | 1300 | 41 | 09 S | 148 | 33 E | 15.4 |       | 1 |
| T6 | 34 | 65 | 3 | 26 | 1400 | 41 | 09 S | 148 | 27 E | 15.3 | 34.97 | 1 |
| T6 | 34 | 65 | 3 | 26 | 1500 | 41 | 15 S | 148 | 27 E | 15.4 |       | 1 |
| T6 | 34 | 65 | 3 | 26 | 1600 | 41 | 15 S | 148 | 21 E | 15.5 |       | 1 |
| T6 | 35 | 65 | 3 | 29 | 1100 | 41 | 15 S | 148 | 21 E | 15.0 | 34.96 | 1 |
| T6 | 35 | 65 | 3 | 29 | 1200 | 41 | 09 S | 148 | 27 E | 15.1 |       | 1 |
| T6 | 35 | 65 | 3 | 29 | 1300 | 41 | 03 S | 148 | 33 E | 15.4 |       | 1 |
| T6 | 35 | 65 | 3 | 29 | 1400 | 40 | 57 S | 148 | 39 E | 15.0 | 35.10 | 1 |
| T6 | 35 | 65 | 3 | 29 | 1500 | 40 | 51 S | 148 | 45 E | 15.4 |       | 1 |
| T6 | 35 | 65 | 3 | 29 | 1600 | 41 | 03 S | 148 | 39 E | 15.1 |       | 1 |
| T6 | 35 | 65 | 3 | 29 | 1700 | 41 | 09 S | 148 | 27 E | 15.3 |       | 1 |
| T6 | 35 | 65 | 3 | 29 | 1800 | 41 | 15 S | 148 | 21 E | 15.5 |       | 1 |
| T6 | 36 | 65 | 3 | 31 | 0800 | 41 | 15 S | 148 | 21 E | 15.0 | 35.05 | 1 |
| T6 | 36 | 65 | 3 | 31 | 0900 | 41 | 15 S | 148 | 33 E | 15.1 |       | 1 |
| T6 | 36 | 65 | 3 | 31 | 1000 | 41 | 21 S | 148 | 33 E | 15.0 |       | 1 |
| T6 | 36 | 65 | 3 | 31 | 1100 | 41 | 27 S | 148 | 33 E | 15.0 | 35.10 | 1 |
| T6 | 36 | 65 | 3 | 31 | 1200 | 41 | 33 S | 148 | 39 E | 15.3 |       | 1 |
| T6 | 36 | 65 | 3 | 31 | 1300 | 41 | 33 S | 148 | 45 E | 15.3 | 35.16 | 1 |
| T6 | 36 | 65 | 3 | 31 | 1330 | 41 | 27 S | 148 | 45 E | 15.4 |       | 1 |
| T6 | 36 | 65 | 3 | 31 | 1400 | 41 | 27 S | 148 | 45 E | 15.1 | 34.96 | 1 |
| T6 | 36 | 65 | 3 | 31 | 1500 | 41 | 21 S | 148 | 27 E | 15.1 |       | 1 |
| T6 | 36 | 65 | 3 | 31 | 1600 | 41 | 21 S | 148 | 21 E | 15.0 |       | 1 |
| T6 | 37 | 65 | 4 | 1  | 1000 | 41 | 09 S | 148 | 27 E | 15.0 |       | 1 |
| T6 | 37 | 65 | 4 | 1  | 1100 | 41 | 03 S | 148 | 27 E | 15.1 |       | 1 |
| T6 | 37 | 65 | 4 | 1  | 1200 | 40 | 51 S | 148 | 21 E | 15.1 |       | 1 |
| T6 | 37 | 65 | 4 | 1  | 1400 | 41 | 03 S | 148 | 21 E | 15.1 |       | 1 |
| T6 | 37 | 65 | 4 | 1  | 1500 | 41 | 09 S | 148 | 21 E | 15.1 |       | 1 |
| T6 | 37 | 65 | 4 | 1  | 1600 | 41 | 15 S | 148 | 21 E | 15.1 | 34.96 | 1 |
| T6 | 38 | 65 | 4 | 2  | 0900 | 41 | 09 S | 148 | 27 E | 14.7 |       | 1 |
| T6 | 38 | 65 | 4 | 2  | 1000 | 41 | 03 S | 148 | 33 E | 14.9 |       | 1 |
| T6 | 38 | 65 | 4 | 2  | 1100 | 40 | 57 S | 148 | 39 E | 15.4 | 35.35 | 1 |
| T6 | 38 | 65 | 4 | 2  | 1200 | 40 | 51 S | 148 | 39 E | 15.6 |       | 1 |
| T6 | 38 | 65 | 4 | 2  | 1300 | 40 | 57 S | 148 | 33 E | 15.4 | 35.19 | 1 |
| T6 | 38 | 65 | 4 | 2  | 1500 | 40 | 57 S | 148 | 33 E | 15.1 |       | 1 |
| T6 | 38 | 65 | 4 | 2  | 1600 | 41 | 09 S | 148 | 27 E | 15.0 |       | 1 |
| T6 | 38 | 65 | 4 | 2  | 1700 | 41 | 15 S | 148 | 21 E | 15.0 |       | 1 |
| T6 | 39 | 65 | 4 | 3  | 0900 | 41 | 09 S | 148 | 21 E | 14.9 |       | 1 |
| T6 | 39 | 65 | 4 | 3  | 1000 | 41 | 03 S | 148 | 21 E | 14.9 |       | 1 |







VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND DN. AMT. SEA SWELL WEA. VIS. BAROM. SAMPLING METHOD

|    |    |    |   |    |      |    |    |   |     |    |   |      |       |  |  |  |  |  |   |
|----|----|----|---|----|------|----|----|---|-----|----|---|------|-------|--|--|--|--|--|---|
| T6 | 56 | 65 | 5 | 5  | 0900 | 40 | 27 | S | 148 | 21 | E | 14.4 | 35.37 |  |  |  |  |  | 1 |
| T6 | 56 | 65 | 5 | 5  | 1000 | 40 | 27 | S | 148 | 27 | E | 14.4 |       |  |  |  |  |  | 1 |
| T6 | 56 | 65 | 5 | 5  | 1100 | 40 | 21 | S | 148 | 27 | E | 14.4 |       |  |  |  |  |  | 1 |
| T6 | 56 | 65 | 5 | 5  | 1200 | 40 | 15 | S | 148 | 21 | E | 14.3 | 35.50 |  |  |  |  |  | 1 |
| T6 | 56 | 65 | 5 | 5  | 1300 | 40 | 09 | S | 148 | 21 | E | 14.3 |       |  |  |  |  |  | 1 |
| T6 | 56 | 65 | 5 | 5  | 1400 | 40 | 03 | S | 148 | 21 | E | 14.1 |       |  |  |  |  |  | 1 |
| T6 | 56 | 65 | 5 | 5  | 1500 | 39 | 57 | S | 148 | 21 | E | 14.5 | 35.23 |  |  |  |  |  | 1 |
| T6 | 56 | 65 | 5 | 5  | 1600 | 39 | 57 | S | 148 | 21 | E | 14.5 |       |  |  |  |  |  | 1 |
| T6 | 56 | 65 | 5 | 5  | 1700 | 39 | 57 | S | 148 | 21 | E | 14.3 |       |  |  |  |  |  | 1 |
| T6 | 57 | 65 | 5 | 6  | 0700 | 39 | 57 | S | 148 | 21 | E | 14.0 |       |  |  |  |  |  | 1 |
| T6 | 57 | 65 | 5 | 6  | 0800 | 39 | 51 | S | 148 | 09 | E | 14.1 |       |  |  |  |  |  | 1 |
| T6 | 57 | 65 | 5 | 6  | 0900 | 39 | 39 | S | 148 | 09 | E | 14.3 | 35.32 |  |  |  |  |  | 1 |
| T6 | 57 | 65 | 5 | 6  | 1000 | 39 | 39 | S | 148 | 09 | E | 14.4 |       |  |  |  |  |  | 1 |
| T6 | 57 | 65 | 5 | 6  | 1100 | 39 | 39 | S | 148 | 03 | E | 14.3 |       |  |  |  |  |  | 1 |
| T6 | 57 | 65 | 5 | 6  | 1200 | 39 | 39 | S | 147 | 57 | E | 14.5 | 35.41 |  |  |  |  |  | 1 |
| T6 | 57 | 65 | 5 | 6  | 1300 | 39 | 39 | S | 147 | 57 | E | 14.6 |       |  |  |  |  |  | 1 |
| T6 | 57 | 65 | 5 | 6  | 1400 | 39 | 45 | S | 147 | 51 | E | 14.6 |       |  |  |  |  |  | 1 |
| T6 | 57 | 65 | 5 | 6  | 1500 | 39 | 39 | S | 147 | 39 | E | 15.0 | 35.55 |  |  |  |  |  | 1 |
| T6 | 57 | 65 | 5 | 6  | 1600 | 39 | 51 | S | 147 | 51 | E | 14.7 |       |  |  |  |  |  | 1 |
| T6 | 58 | 65 | 5 | 7  | 1200 | 39 | 51 | S | 147 | 45 | E | 14.2 | 35.46 |  |  |  |  |  | 1 |
| T6 | 58 | 65 | 5 | 7  | 1300 | 40 | 03 | S | 147 | 51 | E | 14.5 |       |  |  |  |  |  | 1 |
| T6 | 58 | 65 | 5 | 7  | 1400 | 40 | 09 | S | 147 | 51 | F | 14.6 |       |  |  |  |  |  | 1 |
| T6 | 58 | 65 | 5 | 7  | 1500 | 40 | 15 | S | 147 | 51 | E | 14.5 |       |  |  |  |  |  | 1 |
| T6 | 59 | 65 | 5 | 8  | 1600 | 40 | 09 | S | 148 | 03 | E | 14.5 |       |  |  |  |  |  | 1 |
| T6 | 59 | 65 | 5 | 8  | 1700 | 40 | 15 | S | 148 | 03 | E | 14.5 |       |  |  |  |  |  | 1 |
| T6 | 60 | 65 | 5 | 9  | 0700 | 40 | 15 | S | 148 | 03 | E | 14.5 |       |  |  |  |  |  | 1 |
| T6 | 60 | 65 | 5 | 9  | 0800 | 40 | 21 | S | 147 | 57 | E | 14.5 |       |  |  |  |  |  | 1 |
| T6 | 60 | 65 | 5 | 9  | 0900 | 40 | 27 | S | 148 | 03 | E | 14.5 | 35.59 |  |  |  |  |  | 1 |
| T6 | 60 | 65 | 5 | 9  | 1000 | 40 | 33 | S | 148 | 03 | E | 14.4 |       |  |  |  |  |  | 1 |
| T6 | 60 | 65 | 5 | 9  | 1100 | 40 | 39 | S | 148 | 15 | E | 14.0 |       |  |  |  |  |  | 1 |
| T6 | 60 | 65 | 5 | 9  | 1200 | 40 | 51 | S | 148 | 21 | E | 13.8 | 34.85 |  |  |  |  |  | 1 |
| T6 | 60 | 65 | 5 | 9  | 1300 | 40 | 57 | S | 148 | 21 | E | 13.8 |       |  |  |  |  |  | 1 |
| T6 | 60 | 65 | 5 | 9  | 1400 | 41 | 03 | S | 148 | 21 | F | 14.0 |       |  |  |  |  |  | 1 |
| T6 | 60 | 65 | 5 | 9  | 1500 | 41 | 09 | S | 148 | 21 | E | 13.8 | 34.81 |  |  |  |  |  | 1 |
| T6 | 62 | 65 | 5 | 13 | 0710 | 41 | 15 | S | 148 | 21 | E | 13.5 |       |  |  |  |  |  | 1 |
| T6 | 62 | 65 | 5 | 13 | 0915 | 41 | 15 | S | 148 | 21 | E | 13.7 |       |  |  |  |  |  | 1 |
| T6 | 62 | 65 | 5 | 13 | 1000 | 41 | 09 | S | 148 | 21 | E | 13.6 |       |  |  |  |  |  | 1 |
| T6 | 62 | 65 | 5 | 13 | 1100 | 41 | 03 | S | 148 | 21 | E | 13.6 |       |  |  |  |  |  | 1 |
| T6 | 62 | 65 | 5 | 13 | 1200 | 41 | 03 | S | 148 | 21 | E | 13.6 |       |  |  |  |  |  | 1 |
| T6 | 62 | 65 | 5 | 13 | 1300 | 41 | 09 | S | 148 | 21 | E | 13.6 |       |  |  |  |  |  | 1 |

| VESSEL | CRUISE | STATION | YR. | MTH. | DAY  | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND | SEA | SWELL | WEA. | VIS. | BAROM. | SAMPLING | METHOD |
|--------|--------|---------|-----|------|------|------|----------|-----------|-------|----------|------|-----|-------|------|------|--------|----------|--------|
| T6     | 62     | 65      | 5   | 13   | 1400 | 41   | 15 S     | 148       | 21 E  | 13.7     |      |     |       |      |      |        |          | 1      |
| T6     | 63     | 65      | 5   | 14   | 0800 | 41   | 15 S     | 148       | 21 E  | 13.6     |      |     |       |      |      |        |          | 1      |
| T6     | 63     | 65      | 5   | 14   | 0900 | 41   | 15 S     | 148       | 21 E  | 13.6     |      |     |       |      |      |        |          | 1      |
| T6     | 63     | 65      | 5   | 14   | 1000 | 41   | 21 S     | 148       | 21 E  | 13.6     |      |     |       |      |      |        |          | 1      |
| T6     | 63     | 65      | 5   | 14   | 1100 | 41   | 27 S     | 148       | 21 E  | 13.6     |      |     |       |      |      |        |          | 1      |
| T6     | 63     | 65      | 5   | 14   | 1200 | 41   | 33 S     | 148       | 21 E  | 13.4     |      |     |       |      |      |        |          | 1      |
| T6     | 63     | 65      | 5   | 14   | 1300 | 41   | 33 S     | 148       | 21 E  | 13.4     |      |     |       |      |      |        |          | 1      |
| T6     | 63     | 65      | 5   | 14   | 1400 | 41   | 27 S     | 148       | 21 E  | 13.4     |      |     |       |      |      |        |          | 1      |
| T6     | 63     | 65      | 5   | 14   | 1500 | 41   | 21 S     | 148       | 21 E  | 13.5     |      |     |       |      |      |        |          | 1      |
| T6     | 64     | 65      | 5   | 15   | 0800 | 41   | 15 S     | 148       | 21 E  | 13.4     |      |     |       |      |      |        |          | 1      |
| T6     | 64     | 65      | 5   | 15   | 0900 | 41   | 15 S     | 148       | 21 E  | 13.7     |      |     |       |      |      |        |          | 1      |
| T6     | 64     | 65      | 5   | 15   | 1100 | 41   | 03 S     | 148       | 21 E  | 13.8     |      |     |       |      |      |        |          | 1      |
| T6     | 64     | 65      | 5   | 15   | 1200 | 41   | 03 S     | 148       | 21 E  | 13.7     |      |     |       |      |      |        |          | 1      |
| T6     | 64     | 65      | 5   | 15   | 1300 | 41   | 09 S     | 148       | 21 E  | 13.7     |      |     |       |      |      |        |          | 1      |
| T6     | 65     | 65      | 5   | 16   | 0900 | 41   | 15 S     | 148       | 21 E  | 13.3     |      |     |       |      |      |        |          | 1      |
| T6     | 65     | 65      | 5   | 16   | 1000 | 41   | 15 S     | 148       | 21 E  | 13.6     |      |     |       |      |      |        |          | 1      |
| T6     | 65     | 65      | 5   | 16   | 1100 | 41   | 15 S     | 148       | 21 E  | 13.7     |      |     |       |      |      |        |          | 1      |
| T6     | 65     | 65      | 5   | 16   | 1200 | 41   | 15 S     | 148       | 21 E  | 13.7     |      |     |       |      |      |        |          | 1      |
| T6     | 65     | 65      | 5   | 16   | 1300 | 41   | 09 S     | 148       | 21 E  | 13.7     |      |     |       |      |      |        |          | 1      |
| T6     | 65     | 65      | 5   | 16   | 1400 | 41   | 15 S     | 148       | 21 E  | 13.7     |      |     |       |      |      |        |          | 1      |
| T6     | 66     | 65      | 5   | 16   | 1500 | 41   | 15 S     | 148       | 21 E  | 13.7     |      |     |       |      |      |        |          | 1      |
| T6     | 66     | 65      | 5   | 17   | 0900 | 41   | 15 S     | 148       | 21 E  | 13.3     |      |     |       |      |      |        |          | 1      |
| T6     | 66     | 65      | 5   | 17   | 1000 | 41   | 21 S     | 148       | 21 E  | 13.4     |      |     |       |      |      |        |          | 1      |
| T6     | 66     | 65      | 5   | 17   | 1100 | 41   | 21 S     | 148       | 21 E  | 13.3     |      |     |       |      |      |        |          | 1      |
| T6     | 66     | 65      | 5   | 17   | 1200 | 41   | 27 S     | 148       | 21 E  | 13.3     |      |     |       |      |      |        |          | 1      |
| T6     | 66     | 65      | 5   | 17   | 1300 | 41   | 27 S     | 148       | 21 E  | 13.5     |      |     |       |      |      |        |          | 1      |
| T6     | 66     | 65      | 5   | 17   | 1400 | 41   | 27 S     | 148       | 21 E  | 13.5     |      |     |       |      |      |        |          | 1      |
| T6     | 66     | 65      | 5   | 17   | 1500 | 41   | 27 S     | 148       | 21 E  | 13.5     |      |     |       |      |      |        |          | 1      |
| T6     | 66     | 65      | 5   | 17   | 1600 | 41   | 15 S     | 148       | 21 E  | 13.5     |      |     |       |      |      |        |          | 1      |
| T6     | 67     | 65      | 5   | 18   | 1200 | 41   | 09 S     | 148       | 21 E  | 13.5     |      |     |       |      |      |        |          | 1      |
| T6     | 67     | 65      | 5   | 18   | 1300 | 41   | 03 S     | 148       | 21 E  | 13.5     |      |     |       |      |      |        |          | 1      |
| T6     | 67     | 65      | 5   | 18   | 1400 | 41   | 03 S     | 148       | 21 E  | 13.5     |      |     |       |      |      |        |          | 1      |
| T6     | 67     | 65      | 5   | 18   | 1500 | 41   | 03 S     | 148       | 21 E  | 13.5     |      |     |       |      |      |        |          | 1      |
| T6     | 67     | 65      | 5   | 18   | 1600 | 41   | 03 S     | 148       | 21 E  | 13.5     |      |     |       |      |      |        |          | 1      |
| T6     | 67     | 65      | 5   | 18   | 1700 | 41   | 09 S     | 148       | 21 E  | 13.5     |      |     |       |      |      |        |          | 1      |
| T6     | 68     | 65      | 5   | 19   | 0900 | 41   | 15 S     | 148       | 27 E  | 13.1     |      |     |       |      |      |        |          | 1      |
| T6     | 68     | 65      | 5   | 19   | 1000 | 41   | 09 S     | 148       | 21 E  | 13.3     |      |     |       |      |      |        |          | 1      |
| T6     | 68     | 65      | 5   | 19   | 1100 | 41   | 03 S     | 148       | 21 E  | 13.4     |      |     |       |      |      |        |          | 1      |
| T6     | 68     | 65      | 5   | 19   | 1200 | 41   | 03 S     | 148       | 21 E  | 13.2     |      |     |       |      |      |        |          | 1      |
| T6     | 68     | 65      | 5   | 19   | 1300 | 41   | 03 S     | 148       | 21 E  | 13.3     |      |     |       |      |      |        |          | 1      |
|        |        |         |     |      |      |      |          |           |       | 34.85    |      |     |       |      |      |        |          |        |
|        |        |         |     |      |      |      |          |           |       | 34.92    |      |     |       |      |      |        |          |        |







VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SWELL WEA. VIS. BAROM. SAMPLING METHOD

|    |   |    |   |    |      |    |      |     |      |      |       |   |
|----|---|----|---|----|------|----|------|-----|------|------|-------|---|
| TB | 1 | 65 | 6 | 12 | 0800 | 35 | 09 S | 117 | 57 E | 19.0 | 35.75 | 1 |
| TB | 1 | 65 | 6 | 12 | 0900 | 35 | 09 S | 117 | 45 E | 19.9 | 35.75 | 1 |
| TB | 1 | 65 | 6 | 12 | 1000 | 35 | 09 S | 117 | 39 E | 18.8 | 35.75 | 1 |
| TB | 1 | 65 | 6 | 12 | 1100 | 35 | 09 S | 117 | 39 E | 19.1 | 35.75 | 1 |
| TB | 1 | 65 | 6 | 12 | 1200 | 35 | 09 S | 117 | 57 E | 19.2 | 35.75 | 1 |
| TB | 1 | 65 | 6 | 12 | 1400 | 35 | 09 S | 118 | 03 E | 19.2 | 35.77 | 1 |
| TB | 1 | 65 | 6 | 12 | 1500 | 35 | 09 S | 118 | 03 E | 18.7 | 35.76 | 1 |
| TB | 1 | 65 | 6 | 13 | 0900 | 35 | 09 S | 117 | 57 E | 18.6 | 35.75 | 1 |
| TB | 1 | 65 | 6 | 13 | 1000 | 35 | 09 S | 117 | 57 E | 19.0 | 35.75 | 1 |
| TB | 1 | 65 | 6 | 13 | 1000 | 35 | 09 S | 118 | 03 E | 18.3 | 35.75 | 1 |
| TB | 1 | 65 | 6 | 13 | 1100 | 35 | 09 S | 117 | 57 E | 18.3 | 35.44 | 1 |
| TB | 1 | 65 | 6 | 13 | 1200 | 35 | 09 S | 118 | 03 E | 18.4 | 35.59 | 1 |
| TB | 1 | 65 | 6 | 13 | 1300 | 35 | 09 S | 117 | 57 E | 18.4 | 35.59 | 1 |
| TB | 1 | 65 | 6 | 13 | 1400 | 35 | 03 S | 118 | 03 E | 18.4 | 35.75 | 1 |
| TB | 1 | 65 | 6 | 13 | 1500 | 35 | 03 S | 118 | 03 E | 18.6 | 35.75 | 1 |
| TB | 1 | 65 | 6 | 13 | 1600 | 35 | 09 S | 118 | 03 E | 18.6 | 35.75 | 1 |
| TB | 1 | 65 | 9 | 15 | 0800 | 33 | 57 S | 151 | 27 E | 16.9 | 35.75 | G |
| TB | 1 | 65 | 9 | 15 | 0845 | 33 | 57 S | 151 | 33 E | 17.3 | 35.75 | G |
| TB | 1 | 65 | 9 | 15 | 1000 | 34 | 9 S  | 151 | 33 E | 17.7 | 35.75 | G |
| TB | 1 | 65 | 9 | 15 | 1100 | 34 | 21 S | 151 | 33 E | 17.7 | 35.75 | G |
| TB | 1 | 65 | 9 | 15 | 1200 | 34 | 27 S | 151 | 21 E | 17.7 | 35.75 | G |
| TB | 1 | 65 | 9 | 15 | 1300 | 34 | 33 S | 151 | 15 E | 17.7 | 35.75 | G |
| TB | 1 | 65 | 9 | 15 | 1400 | 34 | 39 S | 151 | 15 E | 17.7 | 35.75 | G |
| TB | 1 | 65 | 9 | 15 | 1500 | 34 | 51 S | 151 | 3 E  | 16.9 | 35.75 | G |
| TB | 1 | 65 | 9 | 18 | 1200 | 35 | 21 S | 151 | 15 E | 18.2 | 35.75 | G |
| TB | 1 | 65 | 9 | 19 | 0850 | 35 | 15 S | 150 | 57 E | 17.7 | 35.75 | G |
| TB | 1 | 65 | 9 | 24 | 0900 | 36 | 51 S | 150 | 15 E | 16.8 | 35.75 | G |
| TB | 1 | 65 | 9 | 24 | 1000 | 36 | 45 S | 150 | 27 E | 17.2 | 35.75 | G |
| TB | 1 | 65 | 9 | 24 | 1010 | 36 | 39 S | 150 | 27 E | 17.3 | 35.75 | G |
| TB | 1 | 65 | 9 | 24 | 1100 | 36 | 33 S | 150 | 33 E | 16.9 | 35.75 | G |
| TB | 1 | 65 | 9 | 24 | 1200 | 36 | 27 S | 150 | 39 E | 18.1 | 35.75 | G |
| TB | 1 | 65 | 9 | 24 | 1300 | 36 | 21 S | 150 | 45 E | 18.3 | 35.75 | G |
| TB | 1 | 65 | 9 | 24 | 1330 | 36 | 15 S | 150 | 39 E | 18.2 | 35.75 | G |
| TB | 1 | 65 | 9 | 24 | 1500 | 36 | 27 S | 150 | 21 E | 18.1 | 35.75 | G |
| TB | 1 | 65 | 9 | 26 | 1015 | 36 | 45 S | 150 | 21 E | 17.2 | 35.75 | G |
| TB | 1 | 65 | 9 | 26 | 1100 | 36 | 33 S | 150 | 27 E | 17.2 | 35.75 | G |
| TB | 1 | 65 | 9 | 26 | 1200 | 36 | 27 S | 150 | 39 E | 17.8 | 35.75 | G |
| TB | 1 | 65 | 9 | 26 | 1215 | 36 | 27 S | 150 | 39 E | 18.4 | 35.75 | G |
| TB | 1 | 65 | 9 | 26 | 1230 | 36 | 21 S | 150 | 45 E | 18.3 | 35.75 | G |
| TB | 1 | 65 | 9 | 26 | 1300 | 36 | 21 S | 150 | 33 E | 18.3 | 35.75 | G |

| VESSEL | CRUISE | STATION | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND | SEA | SWELL | WEA. | VIS. | BAROM. | SAMPLING | METHOD |
|--------|--------|---------|-----|------|-----|------|----------|-----------|-------|----------|------|-----|-------|------|------|--------|----------|--------|
| TR     | 65     | 9       | 26  | 1400 | 36  | 15   | S        | 150       | 27    | E        | 17.8 |     |       |      |      |        |          | G      |
| TR     | 65     | 9       | 26  | 1500 | 36  | 15   | S        | 150       | 21    | E        | 17.2 |     |       |      |      |        |          | G      |
| TR     | 65     | 9       | 26  | 1700 | 35  | 57   | S        | 150       | 21    | E        | 16.9 |     |       |      |      |        |          | G      |
| TR     | 65     | 9       | 27  | 1000 | 35  | 39   | S        | 150       | 39    | E        | 18.3 |     |       |      |      |        |          | G      |
| TR     | 65     | 9       | 27  | 1100 | 35  | 39   | S        | 150       | 33    | E        | 17.8 |     |       |      |      |        |          | G      |
| TR     | 65     | 9       | 27  | 1200 | 35  | 39   | S        | 150       | 21    | E        | 16.9 |     |       |      |      |        |          | G      |
| TR     | 65     | 9       | 28  | 0930 | 36  | 9    | S        | 150       | 27    | E        | 17.8 |     |       |      |      |        |          | G      |
| TR     | 65     | 9       | 28  | 1100 | 36  | 3    | S        | 150       | 45    | E        | 18.9 |     |       |      |      |        |          | G      |
| TR     | 65     | 9       | 28  | 1500 | 35  | 57   | S        | 151       | 15    | E        | 19.4 |     |       |      |      |        |          | G      |
| TR     | 65     | 9       | 28  | 1600 | 35  | 45   | S        | 151       | 3     | E        | 19.2 |     |       |      |      |        |          | G      |
| TR     | 65     | 9       | 28  | 1700 | 35  | 45   | S        | 150       | 57    | E        | 19.4 |     |       |      |      |        |          | G      |
| TR     | 65     | 9       | 29  | 0900 | 36  | 27   | S        | 150       | 39    | E        | 18.6 |     |       |      |      |        |          | G      |
| TR     | 65     | 9       | 29  | 1300 | 36  | 39   | S        | 150       | 33    | E        | 17.2 |     |       |      |      |        |          | G      |
| TR     | 65     | 9       | 29  | 1400 | 36  | 45   | S        | 150       | 21    | E        | 17.8 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 3   | 0830 | 37  | 3    | S        | 150       | 9     | E        | 14.4 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 3   | 1000 | 37  | 3    | S        | 150       | 27    | E        | 17.2 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 3   | 1100 | 36  | 57   | S        | 150       | 39    | E        | 18.3 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 3   | 1400 | 36  | 57   | S        | 151       | 15    | E        | 18.3 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 3   | 1500 | 36  | 57   | S        | 151       | 27    | E        | 18.3 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 3   | 1600 | 36  | 51   | S        | 151       | 39    | E        | 18.3 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 3   | 1700 | 36  | 45   | S        | 151       | 39    | E        | 18.3 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 3   | 1830 | 36  | 33   | S        | 151       | 45    | E        | 17.2 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 3   | 1900 | 36  | 27   | S        | 151       | 51    | E        | 17.2 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 3   | 2200 | 36  | 3    | S        | 151       | 45    | E        | 17.8 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 3   | 2400 | 35  | 45   | S        | 151       | 45    | E        | 17.2 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 4   | 0940 | 34  | 57   | S        | 151       | 39    | E        | 17.2 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 4   | 1030 | 34  | 45   | S        | 151       | 39    | E        | 18.3 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 4   | 1045 | 34  | 39   | S        | 151       | 39    | E        | 18.3 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 4   | 1130 | 34  | 39   | S        | 151       | 39    | E        | 18.9 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 4   | 1300 | 34  | 33   | S        | 151       | 23    | E        | 19.0 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 4   | 1400 | 34  | 33   | S        | 151       | 21    | E        | 18.9 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 4   | 1500 | 34  | 39   | S        | 151       | 9     | E        | 18.6 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 6   | 0900 | 35  | 3    | S        | 151       | 3     | E        | 17.5 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 6   | 1000 | 35  | 3    | S        | 151       | 15    | E        | 18.1 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 11  | 0700 | 36  | 57   | S        | 150       | 9     | E        | 14.4 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 11  | 0900 | 36  | 39   | S        | 150       | 27    | E        | 17.8 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 11  | 1000 | 36  | 33   | S        | 150       | 39    | E        | 17.8 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 11  | 1100 | 36  | 27   | S        | 150       | 45    | E        | 18.1 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 11  | 1200 | 36  | 21   | S        | 150       | 45    | E        | 17.9 |     |       |      |      |        |          | G      |
| TR     | 65     | 10      | 11  | 1300 | 36  | 21   | S        | 150       | 33    | E        | 17.9 |     |       |      |      |        |          | G      |





VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND WIND SEA SWELL WEA. VIS. BAROM. SAMPLING METHOD

|    |   |    |    |   |      |    |    |   |     |    |   |      |       |  |  |  |  |  |   |
|----|---|----|----|---|------|----|----|---|-----|----|---|------|-------|--|--|--|--|--|---|
| TR | 2 | 65 | 11 | 5 | 0900 | 36 | 21 | S | 150 | 21 | E | 18.1 | 35.64 |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 5 | 1000 | 36 | 21 | S | 150 | 15 | E | 18.1 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 6 | 0945 | 36 | 27 | S | 150 | 3  | E | 17.3 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 6 | 1000 | 36 | 27 | S | 150 | 9  | E | 17.6 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 6 | 1100 | 36 | 27 | S | 150 | 15 | E | 17.9 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 6 | 1200 | 36 | 21 | S | 150 | 21 | E | 17.8 | 35.57 |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 6 | 1300 | 36 | 15 | S | 150 | 21 | E | 18.0 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 6 | 1400 | 36 | 9  | S | 150 | 21 | E | 17.8 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 6 | 1500 | 35 | 57 | S | 150 | 21 | E | 17.5 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 0700 | 35 | 51 | S | 150 | 15 | E | 17.5 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 0800 | 35 | 57 | S | 150 | 15 | E | 17.8 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 0835 | 36 | 3  | S | 150 | 21 | E | 17.8 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 0900 | 36 | 9  | S | 150 | 21 | E | 18.3 | 35.61 |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 0945 | 36 | 15 | S | 150 | 21 | E | 18.1 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1000 | 36 | 15 | S | 150 | 21 | E | 18.2 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1020 | 36 | 15 | S | 150 | 21 | E | 18.9 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1100 | 36 | 15 | S | 150 | 21 | E | 18.3 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1115 | 36 | 15 | S | 150 | 21 | E | 18.8 | 35.62 |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1137 | 36 | 21 | S | 150 | 21 | E | 18.8 | 35.75 |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1200 | 36 | 21 | S | 150 | 21 | E | 18.5 | 35.61 |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1300 | 36 | 27 | S | 150 | 21 | E | 18.6 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1400 | 36 | 33 | S | 150 | 27 | E | 18.6 | 35.59 |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1440 | 36 | 33 | S | 150 | 27 | E | 19.0 | 35.62 |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1500 | 36 | 33 | S | 150 | 27 | E | 19.6 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1510 | 36 | 33 | S | 150 | 27 | E | 19.7 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1515 | 36 | 33 | S | 150 | 27 | E | 19.4 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1600 | 36 | 45 | S | 150 | 21 | E | 18.6 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1700 | 36 | 45 | S | 150 | 9  | E | 18.2 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 7 | 1800 | 36 | 45 | S | 150 | 3  | E | 17.3 | 35.48 |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 8 | 0700 | 36 | 45 | S | 150 | 3  | E | 17.6 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 8 | 0800 | 36 | 45 | S | 150 | 9  | E | 18.1 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 8 | 0900 | 36 | 45 | S | 150 | 21 | E | 18.7 | 35.61 |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 8 | 1000 | 36 | 51 | S | 150 | 21 | E | 18.3 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 8 | 1100 | 36 | 57 | S | 150 | 27 | E | 18.3 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 8 | 1150 | 37 | 9  | S | 150 | 21 | E | 18.4 | 35.64 |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 8 | 1230 | 37 | 9  | S | 150 | 21 | E | 18.4 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 8 | 1300 | 37 | 3  | S | 150 | 21 | E | 18.4 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 8 | 1400 | 37 | 9  | S | 150 | 21 | E | 18.4 |       |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 8 | 1500 | 37 | 3  | S | 150 | 21 | E | 18.4 | 35.66 |  |  |  |  |  | 1 |
| TR | 2 | 65 | 11 | 8 | 1600 | 37 | 3  | S | 150 | 21 | E | 18.4 |       |  |  |  |  |  | 1 |

VFSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SMOELL HEA. VIS. BAROM. SAMPLING METHOD

| TR | 2 | 65 | 11 | 8  | 1700 | 37 | 3 S  | 150 | 9  | E | 18.2 | 1 |
|----|---|----|----|----|------|----|------|-----|----|---|------|---|
| TR |   | 65 | 11 | 14 | 1000 | 36 | 51 S | 150 | 21 | E | 18.7 | G |
| TR |   | 65 | 11 | 14 | 1100 | 34 | 45 S | 150 | 21 | E | 18.9 | G |
| TR |   | 65 | 11 | 14 | 1200 | 36 | 51 S | 150 | 15 | E | 16.0 | G |
| TR |   | 65 | 11 | 15 | 0900 | 37 | 3 S  | 150 | 21 | E | 16.1 | G |
| TR |   | 65 | 11 | 15 | 1000 | 37 | 3 S  | 150 | 33 | E | 18.3 | G |
| TR |   | 65 | 11 | 15 | 1100 | 37 | 15 S | 150 | 33 | E | 19.1 | G |
| TR |   | 65 | 11 | 15 | 1200 | 37 | 27 S | 150 | 33 | E | 19.2 | G |
| TR |   | 65 | 11 | 15 | 1300 | 37 | 27 S | 150 | 27 | E | 19.2 | G |
| TR |   | 65 | 11 | 15 | 1400 | 37 | 9 S  | 150 | 21 | E | 19.2 | G |
| TR |   | 65 | 11 | 15 | 1500 | 37 | 3 S  | 150 | 21 | E | 18.8 | G |
| TR |   | 65 | 11 | 15 | 1600 | 37 | 9 S  | 150 | 21 | E | 19.2 | G |
| TR |   | 65 | 11 | 16 | 0900 | 36 | 27 S | 150 | 9  | E | 17.8 | G |
| TR |   | 65 | 11 | 16 | 1000 | 36 | 21 S | 150 | 21 | E | 18.5 | G |
| TR |   | 65 | 11 | 16 | 1100 | 36 | 15 S | 150 | 27 | E | 18.5 | G |
| TR |   | 65 | 11 | 16 | 1200 | 35 | 57 S | 150 | 33 | E | 18.5 | G |
| TR |   | 65 | 11 | 16 | 1300 | 35 | 51 S | 150 | 39 | E | 18.9 | G |
| TR |   | 65 | 11 | 16 | 1400 | 35 | 45 S | 150 | 39 | E | 18.9 | G |
| TR |   | 65 | 11 | 16 | 1600 | 35 | 39 S | 150 | 39 | E | 18.0 | G |
| TR |   | 65 | 11 | 16 | 1700 | 35 | 33 S | 150 | 39 | E | 18.3 | G |
| TR |   | 65 | 11 | 16 | 1800 | 35 | 21 S | 150 | 39 | E | 18.3 | G |
| TR |   | 65 | 11 | 16 | 2000 | 35 | 9 S  | 150 | 39 | E | 16.4 | G |
| TR |   | 65 | 11 | 18 | 0800 | 35 | 33 S | 150 | 45 | E | 18.1 | G |
| TR |   | 65 | 11 | 18 | 0900 | 35 | 45 S | 150 | 39 | E | 18.2 | G |
| TR |   | 65 | 11 | 18 | 1000 | 35 | 51 S | 150 | 39 | E | 18.1 | G |
| TR |   | 65 | 11 | 18 | 1100 | 35 | 57 S | 150 | 33 | E | 17.8 | G |
| TR |   | 65 | 11 | 18 | 1200 | 36 | 9 S  | 150 | 33 | E | 17.9 | G |
| TR |   | 65 | 11 | 18 | 1300 | 36 | 21 S | 150 | 33 | E | 18.2 | G |
| TR |   | 65 | 11 | 18 | 1400 | 36 | 21 S | 150 | 33 | E | 18.3 | G |
| TR |   | 65 | 11 | 18 | 1500 | 36 | 21 S | 150 | 39 | E | 18.9 | G |
| TR |   | 65 | 11 | 18 | 1700 | 36 | 21 S | 150 | 51 | E | 18.9 | G |
| TR |   | 65 | 11 | 19 | 0700 | 36 | 15 S | 150 | 21 | E | 17.8 | G |
| TR |   | 65 | 11 | 19 | 0800 | 36 | 21 S | 150 | 33 | E | 17.8 | G |
| TR |   | 65 | 11 | 19 | 0900 | 36 | 21 S | 150 | 39 | E | 17.9 | G |
| TR |   | 65 | 11 | 19 | 1000 | 36 | 27 S | 150 | 45 | E | 18.3 | G |
| TR |   | 65 | 11 | 19 | 1100 | 36 | 39 S | 150 | 45 | E | 18.3 | G |
| TR |   | 65 | 11 | 19 | 1200 | 36 | 45 S | 150 | 45 | E | 18.4 | G |
| TR |   | 65 | 11 | 19 | 1300 | 36 | 39 S | 150 | 39 | E | 18.5 | G |
| TR |   | 65 | 11 | 19 | 1400 | 36 | 27 S | 150 | 39 | E | 19.0 | G |
| TR |   | 65 | 11 | 19 | 1500 | 36 | 21 S | 150 | 57 | E | 18.9 | G |





| VESSEL | CRUISE | STATION | YF. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND     | SEA      | SWELL    | WEA. | VIS. | BAROM. | SAMPLING | METHOD |
|--------|--------|---------|-----|------|-----|------|----------|-----------|-------|----------|----------|----------|----------|------|------|--------|----------|--------|
|        |        | NUMB-R  |     |      |     |      |          |           |       |          | DN, AMT. | DN, AMT. | DN, AMT. |      |      |        |          |        |
| T8     | 27     |         | 65  | 12   | 20  | 1400 | 36       | 21        | S 150 | 21       | E 20.0   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 20  | 1425 | 36       | 15        | S 150 | 21       | E 20.0   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 20  | 1430 | 36       | 15        | S 150 | 21       | E 20.0   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 20  | 1500 | 36       | 21        | S 150 | 21       | E 20.0   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 20  | 1600 | 36       | 21        | S 150 | 21       | E 20.0   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 20  | 1700 | 36       | 27        | S 150 | 21       | E 20.0   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 20  | 1745 | 36       | 21        | S 150 | 21       | E 19.9   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 21  | 0700 | 35       | 57        | S 150 | 15       | E 19.1   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 21  | 0800 | 36       | 9         | S 150 | 21       | E 19.4   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 21  | 0900 | 36       | 15        | S 150 | 21       | E 19.6   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 21  | 1000 | 36       | 21        | S 150 | 27       | E 19.4   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 21  | 1100 | 36       | 27        | S 150 | 39       | E 19.4   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 21  | 1200 | 36       | 27        | S 150 | 27       | E 19.7   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 21  | 1300 | 36       | 27        | S 150 | 39       | E 19.7   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 21  | 1310 | 36       | 27        | S 150 | 39       | E 19.7   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 21  | 1400 | 36       | 33        | S 150 | 33       | E 19.4   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 21  | 1500 | 36       | 45        | S 150 | 27       | E 19.4   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 21  | 1516 | 36       | 45        | S 150 | 27       | E 19.4   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 21  | 1600 | 36       | 51        | S 150 | 15       | E 19.4   |          |          |      |      |        |          | 1      |
| T8     | 27     |         | 65  | 12   | 21  | 1700 | 36       | 51        | S 150 | 3        | E 19.4   |          |          |      |      |        |          | 1      |

VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SWELL SEA SWELL MEA. VIS. BAROM. SAMPLING METHOD

|    |   |    |   |   |      |    |      |     |      |      |       |   |
|----|---|----|---|---|------|----|------|-----|------|------|-------|---|
| T9 | 2 | 65 | 2 | 1 | 0500 | 34 | 45 S | 135 | 57 E | 20.6 | 35.97 | 1 |
| T9 | 2 | 65 | 2 | 1 | 0600 | 34 | 51 S | 136 | 3 E  | 19.9 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 0700 | 35 | 3 S  | 136 | 3 E  | 17.9 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 0800 | 35 | 3 S  | 135 | 51 E | 17.7 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 0900 | 34 | 57 S | 135 | 39 E | 17.9 | 35.70 | 1 |
| T9 | 2 | 65 | 2 | 1 | 1000 | 34 | 51 S | 135 | 27 E | 17.5 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 1015 | 34 | 51 S | 135 | 27 E | 17.7 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 1100 | 34 | 45 S | 135 | 21 E | 17.6 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 1200 | 34 | 45 S | 135 | 9 E  | 17.7 | 35.92 | 1 |
| T9 | 2 | 65 | 2 | 1 | 1235 | 34 | 45 S | 135 | 3 E  | 17.8 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 1300 | 34 | 45 S | 135 | 3 E  | 17.9 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 1334 | 34 | 48 S | 134 | 57 E | 18.1 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 1400 | 34 | 45 S | 134 | 51 E | 18.5 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 1451 | 34 | 51 S | 134 | 45 E | 18.7 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 1500 | 34 | 51 S | 134 | 45 E | 18.8 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 1600 | 34 | 51 S | 134 | 45 E | 18.8 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 1700 | 34 | 51 S | 134 | 45 E | 18.8 | 35.39 | 1 |
| T9 | 2 | 65 | 2 | 1 | 1800 | 34 | 51 S | 134 | 45 E | 18.7 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 1928 | 34 | 51 S | 134 | 45 E | 18.6 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 2000 | 34 | 45 S | 134 | 45 E | 18.2 |       | 1 |
| T9 | 2 | 65 | 2 | 1 | 2100 | 34 | 39 S | 134 | 45 E | 18.2 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 0700 | 34 | 39 S | 134 | 45 E | 17.9 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 0800 | 34 | 51 S | 134 | 45 E | 18.2 | 35.44 | 1 |
| T9 | 2 | 65 | 2 | 2 | 0900 | 34 | 51 S | 134 | 45 E | 18.1 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 1000 | 34 | 51 S | 134 | 45 E | 18.1 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 1100 | 34 | 51 S | 134 | 45 E | 18.1 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 1116 | 34 | 51 S | 134 | 45 E | 18.3 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 1200 | 34 | 51 S | 134 | 39 E | 18.3 | 35.35 | 1 |
| T9 | 2 | 65 | 2 | 2 | 1300 | 34 | 51 S | 134 | 45 E | 18.3 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 1400 | 34 | 51 S | 134 | 45 E | 18.2 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 1435 | 34 | 51 S | 134 | 45 E | 18.4 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 1500 | 34 | 51 S | 134 | 45 E | 18.8 | 35.37 | 1 |
| T9 | 2 | 65 | 2 | 2 | 1600 | 34 | 51 S | 134 | 45 E | 18.8 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 1700 | 34 | 51 S | 134 | 39 E | 18.7 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 1800 | 34 | 51 S | 134 | 39 E | 18.6 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 1900 | 34 | 51 S | 134 | 57 E | 18.3 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 2000 | 34 | 57 S | 135 | 9 E  | 18.0 |       | 1 |
| T9 | 2 | 65 | 2 | 2 | 2100 | 34 | 57 S | 135 | 21 E | 17.8 |       | 1 |

VESEL CRUISE STATION YR, MTH, DAY TIME LATITUDE LONGITUDE TEMP, SALINITY WIND, SEA SMOELL, WEA, VIS, BAROM, SAMPLING METHOD

|    |   |    |   |      |    |      |     |      |      |   |
|----|---|----|---|------|----|------|-----|------|------|---|
| T9 | 2 | 65 | 2 | 2200 | 35 | 3 S  | 135 | 27 E | 17.7 | 1 |
| T9 | 2 | 65 | 2 | 2300 | 35 | 3 S  | 135 | 39 E | 17.7 | 1 |
| T9 | 2 | 65 | 2 | 2359 | 35 | 3 S  | 135 | 51 E | 17.5 | 1 |
| T9 | 2 | 65 | 2 | 0100 | 35 | 3 S  | 135 | 57 E | 17.5 | 1 |
| T9 | 2 | 65 | 2 | 0200 | 34 | 57 S | 136 | 3 E  | 17.6 | 1 |
| T9 | 2 | 65 | 2 | 0300 | 34 | 45 S | 136 | 3 E  | 17.6 | 1 |
| T9 | 2 | 65 | 2 | 0400 | 34 | 45 S | 135 | 57 E | 17.7 | 1 |
| T9 | 5 | 65 | 2 | 0700 | 34 | 51 S | 134 | 51 E | 18.5 | 1 |
| T9 | 5 | 65 | 2 | 0800 | 34 | 49 S | 134 | 39 E | 18.2 | 1 |
| T9 | 5 | 65 | 2 | 0815 | 34 | 45 S | 134 | 39 E | 18.0 | 1 |
| T9 | 5 | 65 | 2 | 0900 | 34 | 51 S | 134 | 39 E | 18.5 | 1 |
| T9 | 5 | 65 | 2 | 1000 | 34 | 51 S | 134 | 39 E | 18.6 | 1 |
| T9 | 5 | 65 | 2 | 1100 | 34 | 51 S | 134 | 39 E | 18.6 | 1 |
| T9 | 5 | 65 | 2 | 1135 | 34 | 45 S | 134 | 39 E | 18.5 | 1 |
| T9 | 5 | 65 | 2 | 1140 | 34 | 51 S | 134 | 39 E | 18.7 | 1 |
| T9 | 5 | 65 | 2 | 1200 | 34 | 51 S | 134 | 39 E | 18.5 | 1 |
| T9 | 5 | 65 | 2 | 1300 | 34 | 51 S | 134 | 39 E | 18.2 | 1 |
| T9 | 5 | 65 | 2 | 1400 | 34 | 51 S | 134 | 39 E | 18.4 | 1 |
| T9 | 5 | 65 | 2 | 1500 | 34 | 51 S | 134 | 39 E | 18.1 | 1 |
| T9 | 5 | 65 | 2 | 1600 | 34 | 49 S | 134 | 39 E | 18.4 | 1 |
| T9 | 5 | 65 | 2 | 1700 | 34 | 51 S | 134 | 39 E | 18.4 | 1 |
| T9 | 5 | 65 | 2 | 1800 | 34 | 49 S | 135 | 3 E  | 18.0 | 1 |
| T9 | 5 | 65 | 2 | 0700 | 34 | 45 S | 134 | 51 E | 18.5 | 1 |
| T9 | 5 | 65 | 2 | 0800 | 34 | 45 S | 134 | 39 E | 18.2 | 1 |
| T9 | 5 | 65 | 2 | 0815 | 34 | 45 S | 134 | 39 E | 18.0 | 1 |
| T9 | 5 | 65 | 2 | 0840 | 34 | 51 S | 134 | 39 E | 18.1 | 1 |
| T9 | 5 | 65 | 2 | 0900 | 34 | 51 S | 134 | 39 E | 18.5 | 1 |
| T9 | 5 | 65 | 2 | 1000 | 34 | 51 S | 134 | 39 E | 18.6 | 1 |
| T9 | 5 | 65 | 2 | 1100 | 34 | 51 S | 134 | 39 E | 18.6 | 1 |
| T9 | 5 | 65 | 2 | 1135 | 34 | 51 S | 134 | 39 E | 18.5 | 1 |
| T9 | 5 | 65 | 2 | 1200 | 34 | 51 S | 134 | 39 E | 18.7 | 1 |
| T9 | 5 | 65 | 2 | 1300 | 34 | 51 S | 134 | 39 E | 18.2 | 1 |
| T9 | 5 | 65 | 2 | 1400 | 34 | 51 S | 134 | 39 E | 18.4 | 1 |
| T9 | 5 | 65 | 2 | 1500 | 34 | 51 S | 134 | 39 E | 18.1 | 1 |
| T9 | 5 | 65 | 2 | 1600 | 34 | 51 S | 134 | 39 E | 18.4 | 1 |
| T9 | 5 | 65 | 2 | 1700 | 34 | 51 S | 134 | 39 E | 18.4 | 1 |
| T9 | 5 | 65 | 2 | 1800 | 34 | 51 S | 134 | 39 E | 18.4 | 1 |
| T9 | 5 | 65 | 2 | 0600 | 34 | 39 S | 134 | 45 E | 18.4 | 1 |
| T9 | 5 | 65 | 2 | 0700 | 34 | 39 S | 134 | 45 E | 18.4 | 1 |







VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SWELL SEA SWELL WEATHER VIS. BAROM. SAMPLING METHOD

|    |    |    |   |    |      |    |      |     |      |      |       |   |
|----|----|----|---|----|------|----|------|-----|------|------|-------|---|
| T9 | 14 | 65 | 3 | 25 | 1500 | 35 | 15 S | 136 | 3 E  | 18.7 | 35.71 | 1 |
| T9 | 14 | 65 | 3 | 25 | 1600 | 35 | 15 S | 136 | 3 E  | 18.6 |       | 1 |
| T9 | 14 | 65 | 3 | 25 | 1700 | 35 | 21 S | 136 | 3 E  | 18.6 |       | 1 |
| T9 | 14 | 65 | 3 | 25 | 1800 | 35 | 21 S | 136 | 9 E  | 18.7 | 35.71 | 1 |
| T9 | 14 | 65 | 3 | 25 | 1815 | 35 | 21 S | 136 | 9 E  | 18.2 |       | 1 |
| T9 | 14 | 65 | 3 | 26 | 0600 | 35 | 21 S | 136 | 9 E  | 18.2 | 35.68 | 1 |
| T9 | 14 | 65 | 3 | 26 | 0700 | 35 | 21 S | 136 | 9 E  | 18.2 |       | 1 |
| T9 | 14 | 65 | 3 | 26 | 0800 | 35 | 21 S | 136 | 9 E  | 18.3 |       | 1 |
| T9 | 14 | 65 | 3 | 26 | 0900 | 35 | 21 S | 136 | 9 E  | 18.6 | 35.81 | 1 |
| T9 | 14 | 65 | 3 | 26 | 0945 | 35 | 15 S | 136 | 3 E  | 18.6 |       | 1 |
| T9 | 14 | 65 | 3 | 26 | 1000 | 35 | 15 S | 136 | 3 E  | 18.6 |       | 1 |
| T9 | 14 | 65 | 3 | 26 | 1100 | 35 | 15 S | 136 | 3 E  | 18.7 |       | 1 |
| T9 | 14 | 65 | 3 | 26 | 1200 | 35 | 15 S | 136 | 3 E  | 18.4 | 35.66 | 1 |
| T9 | 14 | 65 | 3 | 26 | 1300 | 35 | 9 S  | 136 | 3 E  | 18.8 |       | 1 |
| T9 | 14 | 65 | 3 | 26 | 1400 | 34 | 57 S | 136 | 3 E  | 18.8 |       | 1 |
| T9 | 14 | 65 | 3 | 26 | 1500 | 34 | 45 S | 136 | 3 E  | 19.1 | 35.53 | 1 |
| T9 | 14 | 65 | 3 | 26 | 1600 | 34 | 45 S | 135 | 57 E | 20.4 |       | 1 |
| T9 | 14 | 65 | 3 | 26 | 1900 | 34 | 45 S | 135 | 57 E | 20.4 |       | 1 |
| T9 | 14 | 65 | 3 | 27 | 0600 | 35 | 15 S | 136 | 3 E  | 18.4 | 35.95 | 1 |
| T9 | 14 | 65 | 3 | 27 | 0700 | 35 | 15 S | 136 | 3 E  | 18.5 |       | 1 |
| T9 | 14 | 65 | 3 | 27 | 0800 | 35 | 15 S | 136 | 3 E  | 18.4 |       | 1 |
| T9 | 14 | 65 | 3 | 27 | 0900 | 35 | 21 S | 136 | 9 E  | 18.4 | 35.75 | 1 |
| T9 | 14 | 65 | 3 | 27 | 1000 | 35 | 21 S | 136 | 9 E  | 18.6 |       | 1 |
| T9 | 14 | 65 | 3 | 27 | 1100 | 35 | 21 S | 136 | 9 E  | 18.7 |       | 1 |
| T9 | 14 | 65 | 3 | 27 | 1200 | 35 | 15 S | 136 | 3 E  | 18.7 | 36.08 | 1 |
| T9 | 14 | 65 | 3 | 27 | 1300 | 35 | 21 S | 136 | 3 E  | 18.7 |       | 1 |
| T9 | 14 | 65 | 3 | 27 | 1310 | 35 | 21 S | 136 | 3 E  | 18.6 |       | 1 |
| T9 | 14 | 65 | 3 | 27 | 1500 | 35 | 3 S  | 136 | 3 E  | 17.8 | 35.88 | 1 |
| T9 | 14 | 65 | 3 | 27 | 1600 | 34 | 45 S | 134 | 3 E  | 18.4 |       | 1 |
| T9 | 14 | 65 | 3 | 27 | 1700 | 34 | 45 S | 135 | 57 E | 19.8 |       | 1 |
| T9 | 18 | 65 | 4 | 6  | 0600 | 35 | 35 S | 135 | 57 E | 18.1 | 35.82 | 1 |
| T9 | 18 | 65 | 4 | 6  | 0700 | 35 | 39 S | 135 | 57 E | 19.2 |       | 1 |
| T9 | 18 | 65 | 4 | 6  | 0800 | 35 | 51 S | 135 | 57 E | 18.8 |       | 1 |
| T9 | 18 | 65 | 4 | 6  | 0900 | 35 | 57 S | 135 | 51 E | 18.6 | 35.68 | 1 |
| T9 | 18 | 65 | 4 | 6  | 1000 | 36 | 3 S  | 135 | 51 E | 18.7 |       | 1 |
| T9 | 18 | 65 | 4 | 6  | 1100 | 36 | 3 S  | 135 | 51 E | 18.7 |       | 1 |
| T9 | 18 | 65 | 4 | 6  | 1200 | 36 | 15 S | 135 | 51 E | 17.8 | 35.37 | 1 |
| T9 | 18 | 65 | 4 | 6  | 1300 | 36 | 3 S  | 135 | 51 E | 17.8 |       | 1 |
| T9 | 18 | 65 | 4 | 6  | 1400 | 36 | 9 S  | 135 | 51 E | 17.9 |       | 1 |
| T9 | 18 | 65 | 4 | 6  | 1500 | 36 | 15 S | 135 | 51 E | 18.4 | 35.37 | 1 |







| VESSEL | CRUISE | STATION | YR. | MTH. | DAY  | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND     | SEA      | SWELL    | WEA. | VIS. | BAROM. | SAMPLING |
|--------|--------|---------|-----|------|------|------|----------|-----------|-------|----------|----------|----------|----------|------|------|--------|----------|
|        |        | NUMBER  |     |      |      |      |          |           |       |          | DN, AMT, | DN, AMT, | DN, AMT, |      |      |        | METHOD   |
| T9     | 20     | 65      | 4   | 29   | 1300 | 34   | 51 S     | 135       | 9 E   | 18.0     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 29   | 1400 | 34   | 51 S     | 135       | 9 E   | 18.0     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 29   | 1500 | 34   | 51 S     | 135       | 15 E  | 17.9     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 29   | 1545 | 34   | 45 S     | 135       | 9 E   | 18.1     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 29   | 1600 | 34   | 45 S     | 135       | 9 E   | 18.1     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 29   | 1700 | 34   | 45 S     | 135       | 9 E   | 17.9     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 29   | 1800 | 34   | 45 S     | 135       | 3 E   | 17.8     | 35.84    |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 30   | 0800 | 34   | 45 S     | 135       | 3 E   | 17.6     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 30   | 0900 | 34   | 51 S     | 135       | 3 E   | 17.9     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 30   | 1000 | 34   | 51 S     | 135       | 9 E   | 17.9     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 30   | 1100 | 34   | 51 S     | 135       | 3 E   | 17.8     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 30   | 1200 | 34   | 51 S     | 135       | 3 E   | 18.0     | 35.84    |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 30   | 1300 | 34   | 45 S     | 135       | 9 E   | 18.1     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 30   | 1400 | 34   | 45 S     | 135       | 9 E   | 18.1     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 30   | 1500 | 34   | 45 S     | 135       | 9 E   | 18.3     | 35.52    |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 30   | 1600 | 34   | 51 S     | 135       | 21 E  | 17.8     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 30   | 1700 | 34   | 57 S     | 135       | 27 E  | 17.9     |          |          |          |      |      |        | 1        |
| T9     | 20     | 65      | 4   | 30   | 1800 | 34   | 57 S     | 135       | 31 E  | 17.6     | 35.59    |          |          |      |      |        | 1        |



















| VESSEL | CRUISE NUMBER | STATION NUMBER | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP.     | SALINITY | WIND<br>DN, AMT. | SEA<br>DN, AMT. | SWELL<br>DN, AMT. | WEA. | VIS. | BAROM. | SAMPLING<br>METHOD |
|--------|---------------|----------------|-----|------|-----|------|----------|-----------|-----------|----------|------------------|-----------------|-------------------|------|------|--------|--------------------|
| U3     | 40            | 40             | 65  | 4    | 1   | 1405 | 43       | 15 S 148  | 03 E 14.2 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 40            | 40             | 65  | 4    | 1   | 1505 | 43       | 15 S 148  | 03 E 14.2 | 34.92    |                  |                 |                   |      |      |        | 1                  |
| U3     | 40            | 40             | 65  | 4    | 1   | 1600 | 43       | 09 S 148  | 03 E 14.0 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 2   | 0800 | 43       | 09 S 148  | 03 E 14.1 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 2   | 0920 | 43       | 09 S 148  | 03 E 14.0 | 34.92    |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 2   | 1100 | 43       | 09 S 148  | 03 E 14.0 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 2   | 1200 | 43       | 09 S 148  | 03 E 14.1 | 34.94    |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 2   | 1300 | 43       | 03 S 148  | 03 E 14.1 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 2   | 1400 | 42       | 57 S 148  | 03 E 14.1 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 2   | 1500 | 42       | 51 S 148  | 03 E 14.1 | 35.05    |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 2   | 1600 | 42       | 45 S 148  | 03 E 14.2 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 2   | 1700 | 42       | 39 S 148  | 03 E 14.3 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 4   | 0700 | 42       | 33 S 147  | 57 E 14.2 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 4   | 0800 | 42       | 27 S 148  | 03 E 14.5 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 4   | 0900 | 42       | 21 S 148  | 09 E 14.6 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 4   | 1000 | 42       | 15 S 148  | 09 E 14.6 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 4   | 1100 | 42       | 09 S 148  | 09 E 14.6 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 4   | 1200 | 42       | 15 S 148  | 15 E 14.6 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 4   | 1300 | 42       | 15 S 148  | 21 E 14.4 | 34.94    |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 4   | 1400 | 42       | 21 S 148  | 21 E 14.3 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 4   | 1500 | 42       | 21 S 148  | 09 E 14.4 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 4   | 1600 | 42       | 27 S 148  | 15 E 14.4 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 4   | 1700 | 42       | 33 S 148  | 15 E 14.4 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 41            | 41             | 65  | 4    | 4   | 1800 | 42       | 33 S 148  | 09 E 14.4 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 43            | 43             | 65  | 4    | 5   | 1000 | 42       | 33 S 148  | 09 E 14.3 | 35.01    |                  |                 |                   |      |      |        | 1                  |
| U3     | 43            | 43             | 65  | 4    | 5   | 1100 | 42       | 39 S 148  | 15 E 14.3 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 43            | 43             | 65  | 4    | 5   | 1200 | 42       | 51 S 148  | 09 E 14.3 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 43            | 43             | 65  | 4    | 5   | 1300 | 42       | 51 S 148  | 09 E 14.6 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 43            | 43             | 65  | 4    | 5   | 1400 | 42       | 57 S 148  | 03 E 14.4 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 43            | 43             | 65  | 4    | 5   | 1500 | 42       | 45 S 148  | 03 E 14.5 | 35.03    |                  |                 |                   |      |      |        | 1                  |
| U3     | 43            | 43             | 65  | 4    | 5   | 1600 | 42       | 39 S 148  | 03 E 14.0 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 43            | 43             | 65  | 4    | 5   | 1700 | 42       | 33 S 148  | 03 E 14.3 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 44            | 44             | 65  | 4    | 6   | 0800 | 42       | 39 S 148  | 03 E 13.8 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 44            | 44             | 65  | 4    | 6   | 0900 | 42       | 45 S 148  | 03 E 14.2 | 35.03    |                  |                 |                   |      |      |        | 1                  |
| U3     | 44            | 44             | 65  | 4    | 6   | 1000 | 42       | 51 S 148  | 03 E 14.1 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 44            | 44             | 65  | 4    | 6   | 1100 | 42       | 57 S 148  | 03 E 14.1 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 44            | 44             | 65  | 4    | 6   | 1200 | 43       | 03 S 148  | 03 E 14.0 | 35.01    |                  |                 |                   |      |      |        | 1                  |
| U3     | 44            | 44             | 65  | 4    | 6   | 1300 | 43       | 09 S 148  | 03 E 14.1 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 44            | 44             | 65  | 4    | 6   | 1400 | 43       | 09 S 148  | 03 E 14.0 |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 44            | 44             | 65  | 4    | 6   | 1500 | 43       | 09 S 148  | 03 E 14.0 | 35.01    |                  |                 |                   |      |      |        | 1                  |







| VESSEL | CRUISE NUMBER | STATION | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND<br>DN. AMT. | SEA<br>DN. AMT. | SWELL<br>DN. AMT. | WEA. | VIS. | BAROM. | SAMPLING<br>METHOD |
|--------|---------------|---------|-----|------|-----|------|----------|-----------|-------|----------|------------------|-----------------|-------------------|------|------|--------|--------------------|
| U3     | 61            | 61      | 65  | 4    | 27  | 0800 | 42 33 S  | 148 03 E  | 12.9  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 61            | 61      | 55  | 4    | 27  | 0900 | 42 27 S  | 148 09 E  | 13.3  | 35.07    |                  |                 |                   |      |      |        | 1                  |
| U3     | 61            | 61      | 65  | 4    | 27  | 1000 | 42 21 S  | 148 15 E  | 13.4  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 61            | 61      | 55  | 4    | 27  | 1100 | 42 15 S  | 148 15 E  | 12.9  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 61            | 61      | 55  | 4    | 27  | 1200 | 42 15 S  | 148 21 E  | 13.4  | 35.07    |                  |                 |                   |      |      |        | 1                  |
| U3     | 61            | 61      | 65  | 4    | 27  | 1300 | 42 09 S  | 148 21 E  | 13.6  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 61            | 61      | 65  | 4    | 27  | 1400 | 42 15 S  | 148 21 E  | 13.6  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 61            | 61      | 65  | 4    | 27  | 1500 | 42 21 S  | 148 15 E  | 13.6  | 34.99    |                  |                 |                   |      |      |        | 1                  |
| U3     | 61            | 61      | 65  | 4    | 27  | 1600 | 42 27 S  | 148 09 E  | 13.3  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 61            | 61      | 65  | 4    | 27  | 1700 | 42 33 S  | 148 03 E  | 13.3  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 62            | 62      | 65  | 4    | 28  | 0800 | 42 33 S  | 148 03 E  | 12.8  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 62            | 62      | 65  | 4    | 28  | 0900 | 42 33 S  | 148 09 E  | 12.5  | 34.94    |                  |                 |                   |      |      |        | 1                  |
| U3     | 62            | 62      | 65  | 4    | 28  | 1000 | 42 39 S  | 148 09 E  | 13.2  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 62            | 62      | 65  | 4    | 28  | 1100 | 42 45 S  | 148 09 E  | 13.4  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 62            | 62      | 65  | 4    | 28  | 1200 | 42 51 S  | 147 57 E  | 13.5  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 62            | 62      | 65  | 4    | 28  | 1300 | 42 45 S  | 147 57 E  | 13.3  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 62            | 62      | 65  | 4    | 28  | 1400 | 42 39 S  | 148 03 E  | 13.7  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 62            | 62      | 65  | 4    | 28  | 1500 | 42 33 S  | 148 03 E  | 13.3  | 34.92    |                  |                 |                   |      |      |        | 1                  |
| U3     | 63            | 63      | 65  | 4    | 29  | 0700 | 42 33 S  | 148 03 E  | 12.5  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 63            | 63      | 65  | 4    | 29  | 0800 | 42 27 S  | 148 03 E  | 13.3  | 34.97    |                  |                 |                   |      |      |        | 1                  |
| U3     | 63            | 63      | 65  | 4    | 29  | 0900 | 42 33 S  | 148 09 E  | 13.3  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 63            | 63      | 65  | 4    | 29  | 1000 | 42 33 S  | 148 15 E  | 13.4  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 63            | 63      | 65  | 4    | 29  | 1100 | 42 39 S  | 148 15 E  | 13.5  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 63            | 63      | 65  | 4    | 29  | 1200 | 42 45 S  | 148 09 E  | 13.5  | 35.01    |                  |                 |                   |      |      |        | 1                  |
| U3     | 63            | 63      | 65  | 4    | 29  | 1300 | 42 45 S  | 148 03 E  | 13.6  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 63            | 63      | 65  | 4    | 29  | 1400 | 42 39 S  | 148 03 E  | 13.7  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 63            | 63      | 65  | 4    | 29  | 1500 | 42 33 S  | 148 03 E  | 13.6  | 34.94    |                  |                 |                   |      |      |        | 1                  |
| U3     | 63            | 63      | 65  | 4    | 29  | 1600 | 42 33 S  | 148 09 E  | 13.6  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 63            | 63      | 65  | 4    | 29  | 1700 | 42 33 S  | 148 03 E  | 13.6  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 64            | 64      | 65  | 4    | 30  | 0800 | 42 33 S  | 148 03 E  | 13.4  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 64            | 64      | 65  | 4    | 30  | 0900 | 42 27 S  | 148 03 E  | 13.3  | 34.79    |                  |                 |                   |      |      |        | 1                  |
| U3     | 64            | 64      | 65  | 4    | 30  | 1000 | 42 27 S  | 148 09 E  | 13.5  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 64            | 64      | 65  | 4    | 30  | 1100 | 42 21 S  | 148 21 E  | 13.6  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 64            | 64      | 65  | 4    | 30  | 1200 | 42 15 S  | 148 21 E  | 13.6  | 35.01    |                  |                 |                   |      |      |        | 1                  |
| U3     | 64            | 64      | 65  | 4    | 30  | 1300 | 42 15 S  | 148 15 E  | 13.6  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 64            | 64      | 65  | 4    | 30  | 1400 | 42 21 S  | 148 09 E  | 13.8  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 64            | 64      | 65  | 4    | 30  | 1500 | 42 27 S  | 148 03 E  | 13.8  | 34.96    |                  |                 |                   |      |      |        | 1                  |
| U3     | 65            | 65      | 65  | 5    | 2   | 0800 | 42 33 S  | 148 03 E  | 13.6  |          |                  |                 |                   |      |      |        | 1                  |
| U3     | 65            | 65      | 65  | 5    | 2   | 0900 | 42 33 S  | 148 09 E  | 13.3  | 34.94    |                  |                 |                   |      |      |        | 1                  |



| VFSEL | CRUISE | STATION | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND     | SEA      | WEA.     | VIS. | BAROM. | SAMPLING |
|-------|--------|---------|-----|------|-----|------|----------|-----------|-------|----------|----------|----------|----------|------|--------|----------|
|       |        | NUMBER  |     |      |     |      |          |           |       |          | DN. AMT. | DN. AMT. | DN. AMT. |      |        | METHOD   |
| U1    | 65     |         | 65  | 5    | 2   | 1000 | 42 39 S  | 148 09 E  | 15.6  |          |          |          |          |      |        | 1        |
| U1    | 65     |         | 65  | 5    | 2   | 1100 | 42 33 S  | 148 09 E  | 15.6  | 34.85    |          |          |          |      |        | 1        |
| U3    | 65     |         | 65  | 5    | 2   | 1200 | 42 27 S  | 148 03 E  | 13.5  |          |          |          |          |      |        | 1        |
| U3    | 65     |         | 65  | 5    | 2   | 1300 | 42 23 S  | 148 03 E  | 13.6  |          |          |          |          |      |        | 1        |
| U3    | 65     |         | 65  | 5    | 2   | 1400 | 42 21 S  | 148 03 E  | 13.4  |          |          |          |          |      |        | 1        |
| U3    | 65     |         | 65  | 5    | 2   | 1500 | 42 33 S  | 148 03 E  | 13.6  | 34.88    |          |          |          |      |        | 1        |
| U3    | 66     |         | 65  | 5    | 3   | 0700 | 42 33 S  | 148 03 E  | 13.1  |          |          |          |          |      |        | 1        |
| U3    | 66     |         | 65  | 5    | 3   | 0800 | 42 27 S  | 148 03 E  | 13.4  | 34.76    |          |          |          |      |        | 1        |
| U3    | 66     |         | 65  | 5    | 3   | 0900 | 42 21 S  | 148 03 E  | 13.3  |          |          |          |          |      |        | 1        |
| U3    | 66     |         | 65  | 5    | 3   | 1000 | 42 21 S  | 148 09 E  | 13.3  |          |          |          |          |      |        | 1        |
| U3    | 66     |         | 65  | 5    | 3   | 1100 | 42 21 S  | 148 09 E  | 13.3  |          |          |          |          |      |        | 1        |
| U3    | 66     |         | 65  | 5    | 3   | 1200 | 42 15 S  | 148 15 E  | 13.3  | 34.97    |          |          |          |      |        | 1        |
| U3    | 66     |         | 65  | 5    | 3   | 1300 | 42 21 S  | 148 15 E  | 13.6  |          |          |          |          |      |        | 1        |
| U3    | 66     |         | 65  | 5    | 3   | 1400 | 42 27 S  | 148 03 E  | 13.6  |          |          |          |          |      |        | 1        |
| U3    | 66     |         | 65  | 5    | 4   | 0700 | 42 33 S  | 147 57 E  | 13.2  |          |          |          |          |      |        | 1        |
| U3    | 67     |         | 65  | 5    | 4   | 0800 | 42 27 S  | 148 03 E  | 13.5  |          |          |          |          |      |        | 1        |
| U3    | 67     |         | 65  | 5    | 4   | 0900 | 42 33 S  | 148 03 E  | 13.3  | 34.92    |          |          |          |      |        | 1        |
| U3    | 67     |         | 65  | 5    | 4   | 1000 | 42 33 S  | 148 03 E  | 13.3  |          |          |          |          |      |        | 1        |
| U3    | 67     |         | 65  | 5    | 4   | 1100 | 42 27 S  | 148 03 E  | 13.4  |          |          |          |          |      |        | 1        |
| U3    | 67     |         | 65  | 5    | 4   | 1200 | 42 33 S  | 148 03 E  | 13.5  | 34.87    |          |          |          |      |        | 1        |
| U3    | 67     |         | 65  | 5    | 4   | 1300 | 42 27 S  | 148 03 E  | 13.6  |          |          |          |          |      |        | 1        |
| U3    | 67     |         | 65  | 5    | 4   | 1400 | 42 33 S  | 148 03 E  | 13.6  |          |          |          |          |      |        | 1        |
| U3    | 67     |         | 65  | 5    | 4   | 1500 | 42 33 S  | 148 03 E  | 13.7  | 35.03    |          |          |          |      |        | 1        |
| U3    | 67     |         | 65  | 5    | 4   | 1600 | 42 33 S  | 147 57 E  | 13.7  |          |          |          |          |      |        | 1        |
| U3    | 68     |         | 65  | 5    | 5   | 0800 | 42 33 S  | 148 03 E  | 13.3  |          |          |          |          |      |        | 1        |
| U3    | 68     |         | 65  | 5    | 5   | 0900 | 42 27 S  | 148 09 E  | 13.4  | 34.94    |          |          |          |      |        | 1        |
| U3    | 68     |         | 65  | 5    | 5   | 1000 | 42 21 S  | 148 03 E  | 13.4  |          |          |          |          |      |        | 1        |
| U3    | 68     |         | 65  | 5    | 5   | 1100 | 42 15 S  | 148 09 E  | 13.4  |          |          |          |          |      |        | 1        |
| U3    | 68     |         | 65  | 5    | 5   | 1200 | 42 09 S  | 148 03 E  | 13.3  | 34.72    |          |          |          |      |        | 1        |
| U3    | 68     |         | 65  | 5    | 5   | 1300 | 42 15 S  | 148 03 E  | 13.4  |          |          |          |          |      |        | 1        |
| U3    | 68     |         | 65  | 5    | 5   | 1400 | 42 21 S  | 148 03 E  | 13.4  |          |          |          |          |      |        | 1        |
| U3    | 68     |         | 65  | 5    | 5   | 1500 | 42 27 S  | 148 03 E  | 13.5  | 34.92    |          |          |          |      |        | 1        |
| U3    | 68     |         | 65  | 5    | 5   | 1600 | 42 33 S  | 148 03 E  | 13.5  |          |          |          |          |      |        | 1        |
| U3    | 69     |         | 65  | 5    | 6   | 0800 | 42 33 S  | 149 03 E  | 14.3  | 34.96    |          |          |          |      |        | 1        |
| U3    | 69     |         | 65  | 5    | 6   | 0900 | 42 33 S  | 149 09 E  | 13.3  |          |          |          |          |      |        | 1        |
| U3    | 69     |         | 65  | 5    | 6   | 1000 | 42 27 S  | 148 09 E  | 13.4  |          |          |          |          |      |        | 1        |
| U3    | 69     |         | 65  | 5    | 6   | 1100 | 42 27 S  | 148 09 E  | 13.4  |          |          |          |          |      |        | 1        |
| U3    | 69     |         | 65  | 5    | 6   | 1200 | 42 21 S  | 148 09 E  | 13.5  | 35.05    |          |          |          |      |        | 1        |
| U3    | 69     |         | 65  | 5    | 6   | 1300 | 42 27 S  | 148 09 E  | 13.4  |          |          |          |          |      |        | 1        |
| U3    | 69     |         | 65  | 5    | 6   | 1400 | 42 33 S  | 148 03 E  | 13.4  |          |          |          |          |      |        | 1        |
| U3    | 69     |         | 65  | 5    | 6   | 1500 | 42 33 S  | 148 03 E  | 13.3  | 34.90    |          |          |          |      |        | 1        |

| VESSEL | CRUISE NUMBER | STATION NUMBER | YR. | MTH. | DAY  | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND DN. AMT. | SEA DN. AMT. | SMELL DN. AMT. | WEA. | VIS. | BAROM. | SAMPLING METHOD |
|--------|---------------|----------------|-----|------|------|------|----------|-----------|-------|----------|---------------|--------------|----------------|------|------|--------|-----------------|
| U3     | 69            | 65             | 5   | 6    | 1600 | 42   | 27 S     | 148       | 03 E  | 13.3     |               |              |                |      |      |        | 1               |
| U3     | 70            | 65             | 5   | 7    | 0800 | 42   | 33 S     | 147       | 57 E  | 12.6     |               |              |                |      |      |        | 1               |
| U3     | 70            | 65             | 5   | 7    | 0900 | 42   | 27 S     | 148       | 03 E  | 13.1     | 34.97         |              |                |      |      |        | 1               |
| U3     | 70            | 65             | 5   | 7    | 1000 | 42   | 33 S     | 148       | 03 E  | 13.2     |               |              |                |      |      |        | 1               |
| U3     | 70            | 65             | 5   | 7    | 1100 | 42   | 39 S     | 148       | 03 E  | 12.9     |               |              |                |      |      |        | 1               |
| U3     | 70            | 65             | 5   | 7    | 1200 | 42   | 45 S     | 148       | 03 E  | 13.1     | 35.07         |              |                |      |      |        | 1               |
| U3     | 70            | 65             | 5   | 7    | 1300 | 42   | 39 S     | 148       | 03 E  | 13.2     |               |              |                |      |      |        | 1               |
| U3     | 70            | 65             | 5   | 7    | 1405 | 42   | 33 S     | 148       | 03 E  | 13.2     |               |              |                |      |      |        | 1               |
| U3     | 70            | 65             | 5   | 7    | 1500 | 42   | 33 S     | 148       | 03 E  | 13.2     | 34.90         |              |                |      |      |        | 1               |
| U3     | 70            | 65             | 5   | 7    | 1600 | 42   | 27 S     | 148       | 03 E  | 13.2     |               |              |                |      |      |        | 1               |
| U3     | 71            | 65             | 5   | 8    | 0800 | 42   | 33 S     | 148       | 03 E  | 13.1     |               |              |                |      |      |        | 1               |
| U3     | 71            | 65             | 5   | 8    | 0900 | 42   | 33 S     | 148       | 03 E  | 13.1     |               |              |                |      |      |        | 1               |
| U3     | 71            | 65             | 5   | 8    | 1000 | 42   | 33 S     | 148       | 03 E  | 13.1     |               |              |                |      |      |        | 1               |
| U3     | 71            | 65             | 5   | 8    | 1100 | 42   | 33 S     | 148       | 03 E  | 13.0     |               |              |                |      |      |        | 1               |
| U3     | 71            | 65             | 5   | 8    | 1200 | 42   | 27 S     | 148       | 03 E  | 13.1     |               |              |                |      |      |        | 1               |
| U3     | 71            | 65             | 5   | 8    | 1300 | 42   | 33 S     | 148       | 09 E  | 13.0     |               |              |                |      |      |        | 1               |
| U3     | 71            | 65             | 5   | 8    | 1400 | 42   | 33 S     | 148       | 03 E  | 13.1     |               |              |                |      |      |        | 1               |
| U3     | 71            | 65             | 5   | 8    | 1500 | 42   | 33 S     | 148       | 03 E  | 13.1     |               |              |                |      |      |        | 1               |
| U3     | 71            | 65             | 5   | 8    | 1600 | 42   | 33 S     | 148       | 03 E  | 13.0     |               |              |                |      |      |        | 1               |
| U3     | 72            | 65             | 5   | 9    | 0800 | 42   | 33 S     | 148       | 03 E  | 13.0     | 34.88         |              |                |      |      |        | 1               |
| U3     | 72            | 65             | 5   | 9    | 0900 | 42   | 33 S     | 148       | 09 E  | 12.9     |               |              |                |      |      |        | 1               |
| U3     | 72            | 65             | 5   | 9    | 1000 | 42   | 33 S     | 148       | 03 E  | 13.1     |               |              |                |      |      |        | 1               |
| U3     | 73            | 65             | 5   | 10   | 0800 | 42   | 33 S     | 148       | 03 E  | 13.2     |               |              |                |      |      |        | 1               |
| U3     | 73            | 65             | 5   | 10   | 0900 | 42   | 33 S     | 148       | 03 E  | 12.9     |               |              |                |      |      |        | 1               |
| U3     | 73            | 65             | 5   | 10   | 1000 | 42   | 33 S     | 148       | 03 E  | 12.9     |               |              |                |      |      |        | 1               |
| U3     | 73            | 65             | 5   | 10   | 1100 | 42   | 33 S     | 148       | 03 E  | 13.0     |               |              |                |      |      |        | 1               |
| U3     | 73            | 65             | 5   | 10   | 1200 | 42   | 33 S     | 148       | 03 E  | 13.1     | 35.12         |              |                |      |      |        | 1               |
| U3     | 73            | 65             | 5   | 10   | 1300 | 42   | 33 S     | 148       | 03 E  | 13.0     |               |              |                |      |      |        | 1               |
| U3     | 73            | 65             | 5   | 10   | 1400 | 42   | 33 S     | 148       | 03 E  | 13.3     | 34.92         |              |                |      |      |        | 1               |
| U3     | 73            | 65             | 5   | 10   | 1500 | 42   | 33 S     | 148       | 03 E  | 13.3     |               |              |                |      |      |        | 1               |
| U3     | 73            | 65             | 5   | 10   | 1600 | 42   | 33 S     | 148       | 03 E  | 13.1     |               |              |                |      |      |        | 1               |
| U3     | 74            | 65             | 5   | 11   | 0800 | 42   | 27 S     | 148       | 03 E  | 13.1     | 34.81         |              |                |      |      |        | 1               |
| U3     | 74            | 65             | 5   | 11   | 0900 | 42   | 33 S     | 148       | 03 E  | 13.1     |               |              |                |      |      |        | 1               |
| U3     | 74            | 65             | 5   | 11   | 1000 | 42   | 33 S     | 148       | 03 E  | 13.1     |               |              |                |      |      |        | 1               |
| U3     | 74            | 65             | 5   | 11   | 1100 | 42   | 33 S     | 148       | 03 E  | 13.1     |               |              |                |      |      |        | 1               |
| U3     | 74            | 65             | 5   | 11   | 1200 | 42   | 33 S     | 148       | 03 E  | 13.1     | 35.01         |              |                |      |      |        | 1               |
| U3     | 74            | 65             | 5   | 11   | 1300 | 42   | 27 S     | 148       | 03 E  | 13.2     |               |              |                |      |      |        | 1               |
| U3     | 74            | 65             | 5   | 11   | 1400 | 42   | 27 S     | 148       | 03 E  | 13.1     |               |              |                |      |      |        | 1               |
| U3     | 74            | 65             | 5   | 11   | 1500 | 42   | 33 S     | 148       | 03 E  | 13.2     | 34.99         |              |                |      |      |        | 1               |
| U3     | 74            | 65             | 5   | 11   | 1600 | 42   | 27 S     | 148       | 03 E  | 13.2     |               |              |                |      |      |        | 1               |









VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND DN. AMT. SEA SHELL WEA. VIS. BAROM. SAMPLING METHOD

|    |    |    |    |      |    |    |   |     |    |   |      |   |
|----|----|----|----|------|----|----|---|-----|----|---|------|---|
| U3 | 65 | 11 | 7  | 1600 | 36 | 33 | S | 150 | 27 | E | 19.6 | 1 |
| U3 | 65 | 11 | 7  | 1630 | 36 | 27 | S | 150 | 21 | E | 18.5 | 1 |
| U3 | 65 | 11 | 8  | 0740 | 36 | 33 | S | 150 | 15 | E | 18.1 | 1 |
| U3 | 65 | 11 | 8  | 0850 | 36 | 39 | S | 150 | 15 | E | 18.2 | 1 |
| U3 | 65 | 11 | 8  | 0910 | 36 | 39 | S | 150 | 21 | E | 18.8 | 1 |
| U3 | 65 | 11 | 8  | 0950 | 36 | 45 | S | 150 | 21 | E | 19.3 | 1 |
| U3 | 65 | 11 | 8  | 1005 | 36 | 45 | S | 150 | 21 | E | 18.9 | 1 |
| U3 | 65 | 11 | 8  | 1035 | 36 | 45 | S | 150 | 15 | E | 18.3 | 1 |
| U3 | 65 | 11 | 8  | 1120 | 36 | 51 | S | 150 | 15 | E | 18.3 | 1 |
| U3 | 65 | 11 | 8  | 1200 | 36 | 51 | S | 150 | 21 | E | 18.4 | 1 |
| U3 | 65 | 11 | 8  | 1240 | 36 | 51 | S | 150 | 15 | E | 18.3 | 1 |
| U3 | 65 | 11 | 8  | 1315 | 36 | 51 | S | 150 | 21 | E | 18.3 | 1 |
| U3 | 65 | 11 | 8  | 1415 | 36 | 51 | S | 150 | 21 | E | 18.3 | 1 |
| U3 | 65 | 11 | 14 | 0725 | 37 | 3  | S | 149 | 57 | E | 15.7 | 1 |
| U3 | 65 | 11 | 14 | 0845 | 36 | 31 | S | 150 | 9  | E | 15.4 | 1 |
| U3 | 65 | 11 | 15 | 0710 | 36 | 57 | S | 150 | 3  | E | 15.9 | 1 |
| U3 | 65 | 11 | 15 | 0740 | 36 | 57 | S | 150 | 9  | E | 15.6 | 1 |
| U3 | 65 | 11 | 15 | 0830 | 36 | 51 | S | 150 | 15 | E | 16.4 | 1 |
| U3 | 65 | 11 | 15 | 0900 | 36 | 45 | S | 150 | 21 | E | 18.2 | 1 |
| U3 | 65 | 11 | 15 | 0950 | 36 | 39 | S | 150 | 21 | E | 18.6 | 1 |
| U3 | 65 | 11 | 15 | 1025 | 36 | 33 | S | 150 | 27 | E | 18.6 | 1 |
| U3 | 65 | 11 | 15 | 1130 | 36 | 27 | S | 150 | 27 | E | 18.8 | 1 |
| U3 | 65 | 11 | 15 | 1210 | 36 | 21 | S | 150 | 27 | E | 19.1 | 1 |
| U3 | 65 | 11 | 15 | 1240 | 36 | 21 | S | 150 | 27 | E | 19.3 | 1 |
| U3 | 65 | 11 | 15 | 1710 | 36 | 27 | S | 150 | 27 | E | 18.9 | 1 |
| U3 | 65 | 11 | 16 | 0820 | 36 | 21 | S | 150 | 15 | E | 17.8 | 1 |
| U3 | 65 | 11 | 18 | 0900 | 36 | 21 | S | 150 | 21 | E | 17.8 | 1 |
| U3 | 65 | 11 | 18 | 0955 | 36 | 21 | S | 150 | 27 | E | 18.1 | 1 |
| U3 | 65 | 11 | 18 | 1015 | 36 | 21 | S | 150 | 27 | E | 18.2 | 1 |
| U3 | 65 | 11 | 18 | 1140 | 36 | 21 | S | 150 | 33 | E | 17.9 | 1 |
| U3 | 65 | 11 | 18 | 1150 | 36 | 21 | S | 150 | 33 | E | 18.6 | 1 |
| U3 | 65 | 11 | 18 | 1205 | 36 | 21 | S | 150 | 33 | E | 17.8 | 1 |
| U3 | 65 | 11 | 18 | 1215 | 36 | 21 | S | 150 | 33 | E | 19.2 | 1 |
| U3 | 65 | 11 | 18 | 1300 | 36 | 21 | S | 150 | 33 | E | 18.8 | 1 |
| U3 | 65 | 11 | 18 | 1325 | 36 | 27 | S | 150 | 33 | E | 18.3 | 1 |
| U3 | 65 | 11 | 18 | 1345 | 36 | 27 | S | 150 | 33 | E | 18.8 | 1 |
| U3 | 65 | 11 | 19 | 0930 | 36 | 45 | S | 150 | 21 | E | 18.2 | 1 |
| U3 | 65 | 11 | 19 | 1020 | 36 | 45 | S | 150 | 27 | E | 18.3 | 1 |
| U3 | 65 | 11 | 19 | 1035 | 36 | 39 | S | 150 | 27 | E | 18.3 | 1 |
| U3 | 65 | 11 | 19 | 1040 | 36 | 39 | S | 150 | 27 | E | 17.5 | 1 |





VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SWELL WEA. VIS. BAROM. SAMPLING METHOD

|    |    |    |    |    |      |    |    |   |     |    |   |      |   |
|----|----|----|----|----|------|----|----|---|-----|----|---|------|---|
| U4 | 22 | 65 | 4  | 26 | 0600 | 34 | 45 | S | 136 | 3  | E | 17.3 | 1 |
| U4 | 22 | 65 | 4  | 26 | 0700 | 34 | 57 | S | 136 | 3  | E | 17.4 | 1 |
| U4 | 22 | 65 | 4  | 26 | 0800 | 35 | 3  | S | 135 | 51 | E | 17.4 | 1 |
| U4 | 22 | 65 | 4  | 26 | 0900 | 35 | 9  | S | 135 | 39 | E | 17.7 | 1 |
| U4 | 22 | 65 | 4  | 26 | 1000 | 35 | 15 | S | 135 | 39 | E | 18.0 | 1 |
| U4 | 22 | 65 | 4  | 26 | 1100 | 35 | 9  | S | 135 | 39 | E | 17.7 | 1 |
| U4 | 22 | 65 | 4  | 26 | 1200 | 35 | 3  | S | 135 | 39 | E | 17.7 | 1 |
| U4 | 22 | 65 | 4  | 26 | 1300 | 35 | 9  | S | 135 | 39 | E | 17.7 | 1 |
| U4 | 22 | 65 | 4  | 26 | 1500 | 35 | 15 | S | 135 | 39 | E | 17.8 | 1 |
| U4 | 22 | 65 | 4  | 26 | 1600 | 35 | 15 | S | 135 | 39 | E | 17.9 | 1 |
| U4 | 22 | 65 | 4  | 26 | 1700 | 35 | 15 | S | 135 | 39 | E | 17.9 | 1 |
| U4 | 22 | 65 | 4  | 26 | 1800 | 35 | 15 | S | 135 | 39 | E | 17.9 | 1 |
| U4 | 22 | 65 | 4  | 27 | 0600 | 35 | 3  | S | 135 | 27 | E | 17.8 | 1 |
| U4 | 22 | 65 | 4  | 27 | 0700 | 34 | 57 | S | 135 | 15 | E | 17.8 | 1 |
| U4 | 22 | 65 | 4  | 27 | 0800 | 34 | 45 | S | 135 | 3  | E | 17.9 | 1 |
| U4 | 22 | 65 | 4  | 27 | 0900 | 34 | 45 | S | 135 | 3  | E | 17.8 | 1 |
| U4 | 22 | 65 | 4  | 27 | 1000 | 34 | 45 | S | 135 | 3  | E | 17.8 | 1 |
| U4 | 22 | 65 | 4  | 27 | 1100 | 34 | 45 | S | 135 | 3  | E | 17.8 | 1 |
| U4 | 22 | 65 | 4  | 27 | 1200 | 34 | 45 | S | 135 | 3  | E | 17.8 | 1 |
| U4 | 22 | 65 | 4  | 27 | 1300 | 34 | 45 | S | 135 | 3  | E | 17.8 | 1 |
| U4 | 22 | 65 | 4  | 27 | 1400 | 34 | 45 | S | 135 | 3  | E | 17.8 | 1 |
| U4 | 22 | 65 | 4  | 27 | 1500 | 34 | 45 | S | 135 | 3  | E | 17.8 | 1 |
| U4 | 22 | 65 | 4  | 27 | 1600 | 34 | 45 | S | 135 | 3  | E | 17.9 | 1 |
| U4 | 22 | 65 | 4  | 27 | 1700 | 34 | 45 | S | 135 | 3  | E | 17.9 | 1 |
| U4 | 22 | 65 | 4  | 27 | 1800 | 34 | 45 | S | 135 | 3  | E | 17.9 | 1 |
| U4 | 22 | 65 | 4  | 28 | 0600 | 34 | 57 | S | 135 | 45 | E | 17.2 | 1 |
| U4 | 22 | 65 | 4  | 28 | 0700 | 34 | 57 | S | 135 | 51 | E | 17.2 | 1 |
| U4 | 22 | 65 | 4  | 28 | 0800 | 34 | 57 | S | 135 | 57 | E | 17.3 | 1 |
| U4 | 22 | 65 | 4  | 28 | 0900 | 34 | 57 | S | 136 | 3  | E | 17.3 | 1 |
| U4 | 22 | 65 | 4  | 28 | 1000 | 34 | 45 | S | 136 | 3  | E | 16.9 | 1 |
| U4 | 22 | 65 | 11 | 7  | 0900 | 36 | 51 | S | 150 | 9  | E | 18.9 | G |
| U4 | 22 | 65 | 11 | 7  | 1000 | 36 | 45 | S | 150 | 21 | E | 19.4 | G |
| U4 | 22 | 65 | 11 | 7  | 1100 | 36 | 45 | S | 150 | 21 | E | 19.4 | G |
| U4 | 22 | 65 | 11 | 7  | 1200 | 36 | 45 | S | 150 | 27 | E | 19.4 | G |
| U4 | 22 | 65 | 11 | 7  | 1245 | 36 | 45 | S | 150 | 27 | E | 19.4 | G |
| U4 | 22 | 65 | 11 | 7  | 1310 | 36 | 45 | S | 150 | 21 | E | 19.4 | G |
| U4 | 22 | 65 | 11 | 7  | 1400 | 36 | 45 | S | 150 | 21 | E | 19.3 | G |
| U4 | 22 | 65 | 11 | 7  | 1500 | 36 | 45 | S | 150 | 21 | E | 19.6 | G |
| U4 | 22 | 65 | 11 | 7  | 1520 | 36 | 45 | S | 150 | 21 | E | 19.6 | G |
| U4 | 22 | 65 | 11 | 7  | 1600 | 36 | 45 | S | 150 | 21 | E | 19.4 | G |



VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND DN. AMT. SEA SWELL WE. VIS. BAROM. SAMPLING METHOD

|    |   |    |    |    |      |    |    |   |     |    |   |      |       |  |  |  |  |  |  |   |
|----|---|----|----|----|------|----|----|---|-----|----|---|------|-------|--|--|--|--|--|--|---|
| W2 | 1 | 65 | 10 | 31 | 0500 | 37 | 9  | S | 149 | 57 | E | 16.4 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 10 | 31 | 0600 | 37 | 3  | S | 150 | 3  | E | 16.2 | 35.34 |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 10 | 31 | 0700 | 36 | 57 | S | 150 | 9  | E | 17.5 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 10 | 31 | 0800 | 36 | 51 | S | 150 | 15 | E | 17.8 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 10 | 31 | 0900 | 36 | 45 | S | 150 | 15 | E | 18.0 | 35.64 |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 10 | 31 | 1000 | 36 | 39 | S | 150 | 15 | E | 18.0 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 10 | 31 | 1100 | 36 | 33 | S | 150 | 15 | E | 18.1 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 10 | 31 | 1200 | 36 | 27 | S | 150 | 9  | E | 18.1 | 35.68 |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 10 | 31 | 1300 | 36 | 21 | S | 150 | 15 | E | 18.9 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 10 | 31 | 1400 | 36 | 27 | S | 150 | 9  | E | 18.4 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 10 | 31 | 1440 | 36 | 27 | S | 150 | 9  | E | 18.2 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 10 | 31 | 1500 | 36 | 27 | S | 150 | 9  | E | 18.2 | 35.62 |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 10 | 31 | 1600 | 36 | 27 | S | 150 | 9  | E | 18.2 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 10 | 31 | 1700 | 36 | 33 | S | 150 | 9  | E | 17.7 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 1  | 0800 | 36 | 33 | S | 150 | 3  | E | 17.3 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 2  | 0630 | 36 | 33 | S | 150 | 3  | E | 17.3 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 2  | 0700 | 36 | 33 | S | 150 | 9  | E | 17.7 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 2  | 0800 | 36 | 33 | S | 150 | 15 | E | 17.5 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 2  | 0900 | 36 | 27 | S | 150 | 21 | E | 17.3 | 35.53 |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 2  | 0940 | 36 | 27 | S | 150 | 21 | E | 18.0 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 2  | 1000 | 36 | 27 | S | 150 | 21 | E | 18.1 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 2  | 1100 | 36 | 19 | S | 150 | 21 | E | 18.0 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 2  | 1200 | 36 | 27 | S | 150 | 15 | E | 18.1 | 35.62 |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 2  | 1300 | 36 | 33 | S | 150 | 9  | E | 17.7 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 2  | 1400 | 36 | 39 | S | 150 | 3  | E | 17.8 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 2  | 1500 | 36 | 45 | S | 150 | 3  | E | 16.2 | 35.44 |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 2  | 1600 | 36 | 51 | S | 150 | 3  | E | 16.5 |       |  |  |  |  |  |  | 1 |
| W2 | 1 | 65 | 11 | 2  | 1700 | 36 | 57 | S | 150 | 3  | E | 15.9 |       |  |  |  |  |  |  | 1 |
| W2 | 3 | 65 | 11 | 4  | 0500 | 37 | 3  | S | 149 | 57 | E | 16.4 |       |  |  |  |  |  |  | 1 |
| W2 | 3 | 65 | 11 | 4  | 0600 | 37 | 3  | S | 149 | 57 | E | 16.1 | 35.39 |  |  |  |  |  |  | 1 |
| W2 | 3 | 65 | 11 | 4  | 0700 | 36 | 57 | S | 150 | 3  | E | 17.7 |       |  |  |  |  |  |  | 1 |
| W2 | 3 | 65 | 11 | 4  | 0800 | 36 | 51 | S | 150 | 9  | E | 17.6 |       |  |  |  |  |  |  | 1 |
| W2 | 3 | 65 | 11 | 4  | 0830 | 36 | 51 | S | 150 | 15 | E | 17.9 |       |  |  |  |  |  |  | 1 |
| W2 | 3 | 65 | 11 | 4  | 0900 | 36 | 45 | S | 150 | 15 | E | 18.1 |       |  |  |  |  |  |  | 1 |
| W2 | 3 | 65 | 11 | 4  | 0930 | 36 | 39 | S | 150 | 21 | E | 18.2 | 35.59 |  |  |  |  |  |  | 1 |
| W2 | 3 | 65 | 11 | 4  | 0950 | 36 | 39 | S | 150 | 21 | E | 18.2 |       |  |  |  |  |  |  | 1 |
| W2 | 3 | 65 | 11 | 4  | 1015 | 36 | 39 | S | 150 | 21 | E | 18.2 | 35.62 |  |  |  |  |  |  | 1 |
| W2 | 3 | 65 | 11 | 4  | 1100 | 36 | 39 | S | 150 | 21 | E | 18.4 |       |  |  |  |  |  |  | 1 |
| W2 | 3 | 65 | 11 | 4  | 1200 | 36 | 39 | S | 150 | 15 | E | 18.4 | 35.62 |  |  |  |  |  |  | 1 |
| W2 | 3 | 65 | 11 | 4  | 1300 | 36 | 33 | S | 150 | 15 | E | 18.3 | 35.61 |  |  |  |  |  |  | 1 |

| VESSEL | CRUISE NUMBER | STATION | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND | SEA | SWELL | WEA. | VIS. | BAROM. | SAMPLING METHOD |
|--------|---------------|---------|-----|------|-----|------|----------|-----------|-------|----------|------|-----|-------|------|------|--------|-----------------|
| W2     | 3             | 3       | 65  | 11   | 4   | 1335 | 36       | 39 S      | 150   | 21 E     | 18.3 |     |       |      |      |        | 1               |
| W2     | 3             | 3       | 65  | 11   | 4   | 1350 | 36       | 39 S      | 150   | 21 E     | 18.2 |     |       |      |      |        | 1               |
| W2     | 3             | 3       | 65  | 11   | 4   | 1400 | 36       | 39 S      | 150   | 21 E     | 18.3 |     |       |      |      |        | 1               |
| W2     | 3             | 3       | 65  | 11   | 4   | 1430 | 36       | 39 S      | 150   | 21 E     | 18.3 |     |       |      |      |        | 1               |
| W2     | 3             | 3       | 65  | 11   | 4   | 1445 | 36       | 45 S      | 150   | 21 E     | 18.3 |     |       |      |      |        | 1               |
| W2     | 3             | 3       | 65  | 11   | 4   | 1450 | 36       | 45 S      | 150   | 21 E     | 18.2 |     |       |      |      |        | 1               |
| W2     | 3             | 3       | 65  | 11   | 4   | 1500 | 36       | 45 S      | 150   | 21 E     | 18.2 |     |       |      |      |        | 1               |
| W2     | 3             | 3       | 65  | 11   | 4   | 1600 | 36       | 45 S      | 150   | 21 E     | 18.2 |     |       |      |      |        | 1               |
| W2     | 3             | 3       | 65  | 11   | 4   | 1630 | 36       | 45 S      | 150   | 15 E     | 18.1 |     |       |      |      |        | 1               |
| W2     | 3             | 3       | 65  | 11   | 4   | 1700 | 36       | 51 S      | 150   | 9 E      | 18.2 |     |       |      |      |        | 1               |
| W2     | 3             | 3       | 65  | 11   | 4   | 1800 | 36       | 57 S      | 150   | 3 E      | 18.0 |     |       |      |      |        | 1               |
| W2     | 4             | 4       | 65  | 11   | 6   | 0600 | 37       | 3 S       | 149   | 57 E     | 16.3 |     |       |      |      |        | 1               |
| W2     | 4             | 4       | 65  | 11   | 6   | 0700 | 37       | 9 S       | 150   | 9 E      | 17.4 |     |       |      |      |        | 1               |
| W2     | 4             | 4       | 65  | 11   | 6   | 0800 | 37       | 3 S       | 150   | 15 E     | 17.9 |     |       |      |      |        | 1               |
| W2     | 4             | 4       | 65  | 11   | 6   | 0900 | 36       | 57 S      | 150   | 21 E     | 18.0 |     |       |      |      |        | 1               |
| W2     | 4             | 4       | 65  | 11   | 6   | 1000 | 36       | 51 S      | 150   | 15 E     | 17.9 |     |       |      |      |        | 1               |
| W2     | 4             | 4       | 65  | 11   | 6   | 1100 | 36       | 45 S      | 150   | 15 E     | 17.9 |     |       |      |      |        | 1               |
| W2     | 4             | 4       | 65  | 11   | 6   | 1200 | 36       | 51 S      | 150   | 9 E      | 17.9 |     |       |      |      |        | 1               |
| W2     | 4             | 4       | 65  | 11   | 6   | 1300 | 36       | 57 S      | 150   | 3 E      | 17.8 |     |       |      |      |        | 1               |
| W2     | 4             | 4       | 65  | 11   | 6   | 1400 | 37       | 3 S       | 149   | 57 E     | 17.1 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 0700 | 37       | 3 S       | 149   | 57 E     | 16.2 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 0800 | 37       | 3 S       | 150   | 3 E      | 17.8 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 0815 | 37       | 3 S       | 150   | 3 E      | 17.9 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 0840 | 37       | 3 S       | 150   | 9 E      | 18.1 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 0900 | 37       | 3 S       | 150   | 15 E     | 18.2 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 0915 | 37       | 3 S       | 150   | 15 E     | 18.4 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 0930 | 37       | 3 S       | 150   | 21 E     | 18.3 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 0940 | 37       | 3 S       | 150   | 21 E     | 18.3 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 0950 | 37       | 3 S       | 150   | 21 E     | 18.3 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 1000 | 37       | 3 S       | 150   | 15 E     | 18.4 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 1020 | 36       | 57 S      | 150   | 15 E     | 18.4 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 1045 | 36       | 51 S      | 150   | 15 E     | 18.8 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 1100 | 36       | 51 S      | 150   | 15 E     | 18.5 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 1130 | 36       | 45 S      | 150   | 15 E     | 18.9 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 1145 | 36       | 45 S      | 150   | 15 E     | 19.1 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 1200 | 36       | 45 S      | 150   | 15 E     | 19.2 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 1206 | 36       | 45 S      | 150   | 15 E     | 19.1 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 1225 | 36       | 45 S      | 150   | 15 E     | 18.9 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 1235 | 36       | 45 S      | 150   | 15 E     | 19.0 |     |       |      |      |        | 1               |
| W2     | 5             | 5       | 65  | 11   | 7   | 1300 | 36       | 45 S      | 150   | 15 E     | 18.8 |     |       |      |      |        | 1               |



| VESSEL | CRUISE | STATION | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND     | SEA      | SMELL    | HEA.     | VIS. | RARDH. | SAMPLING |
|--------|--------|---------|-----|------|-----|------|----------|-----------|-------|----------|----------|----------|----------|----------|------|--------|----------|
|        |        | NUMBEP  |     |      |     |      |          |           |       |          | DN, AMT. | DN, AMT. | DN, AMT. | DN, AMT. |      |        | METHOD   |
| 42     | 8      |         | 65  | 11   | 15  | 1900 | 36       | 27 S      | 150   | 9        | E        | 17.2     |          |          |      |        | 1        |
| 42     | 8      |         | 65  | 11   | 16  | 0940 | 36       | 27 S      | 150   | 3        | E        | 16.6     |          |          |      |        | 1        |
| 42     | 8      |         | 65  | 11   | 16  | 1000 | 36       | 27 S      | 150   | 9        | E        | 17.1     |          |          |      |        | 1        |
| 42     | 8      |         | 65  | 11   | 16  | 1100 | 36       | 27 S      | 150   | 15       | E        | 17.8     |          |          |      |        | 1        |
| 42     | 8      |         | 65  | 11   | 16  | 1200 | 36       | 33 S      | 150   | 15       | E        | 17.8     | 35.59    |          |      |        | 1        |
| 42     | 8      |         | 65  | 11   | 16  | 1300 | 36       | 39 S      | 150   | 15       | E        | 17.8     |          |          |      |        | 1        |
| 42     | 8      |         | 65  | 11   | 16  | 1400 | 36       | 45 S      | 150   | 9        | E        | 16.7     |          |          |      |        | 1        |
| 42     | 8      |         | 65  | 11   | 16  | 1500 | 36       | 51 S      | 150   | 3        | E        | 15.6     | 35.46    |          |      |        | 1        |
| 42     | 8      |         | 65  | 11   | 16  | 1600 | 36       | 57 S      | 149   | 57       | E        | 15.7     |          |          |      |        | 1        |
| 42     | 8      |         | 65  | 11   | 16  | 1700 | 37       | 3 S       | 149   | 57       | E        | 15.4     |          |          |      |        | 1        |



VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SWELL SEA WEATHER VIS. BAROM. SAMPLING METHOD

|    |    |    |    |      |    |      |     |      |      |   |
|----|----|----|----|------|----|------|-----|------|------|---|
| M4 | 65 | 10 | 21 | 1100 | 36 | 51 S | 150 | 39 E | 17.8 | G |
| M4 | 65 | 10 | 21 | 1200 | 34 | 45 S | 150 | 39 E | 18.3 | G |
| M4 | 65 | 10 | 21 | 1300 | 36 | 27 S | 150 | 39 E | 18.6 | G |
| M4 | 65 | 10 | 21 | 1430 | 36 | 15 S | 150 | 45 E | 18.6 | G |
| M4 | 65 | 10 | 21 | 1500 | 36 | 15 S | 150 | 45 E | 17.8 | G |
| M4 | 65 | 10 | 21 | 1630 | 36 | 21 S | 150 | 27 E | 17.8 | G |
| M4 | 65 | 10 | 21 | 1810 | 36 | 15 S | 150 | 15 E | 17.8 | G |
| M4 | 65 | 10 | 22 | 0815 | 36 | 15 S | 150 | 15 E | 16.7 | G |
| M4 | 65 | 10 | 22 | 0900 | 36 | 15 S | 150 | 21 E | 17.7 | G |
| M4 | 65 | 10 | 22 | 0930 | 36 | 15 S | 150 | 27 E | 17.2 | G |
| M4 | 65 | 10 | 22 | 1030 | 36 | 15 S | 150 | 39 E | 17.8 | G |
| M4 | 65 | 10 | 22 | 1045 | 36 | 15 S | 150 | 39 E | 18.2 | G |
| M4 | 65 | 10 | 22 | 1100 | 34 | 15 S | 150 | 39 E | 17.7 | G |
| M4 | 65 | 10 | 22 | 1345 | 36 | 21 S | 151 | 15 E | 18.8 | G |
| M4 | 65 | 10 | 22 | 1355 | 36 | 21 S | 151 | 15 E | 17.8 | G |
| M4 | 65 | 10 | 22 | 1445 | 36 | 27 S | 151 | 15 E | 18.6 | G |
| M4 | 65 | 10 | 22 | 1600 | 36 | 33 S | 151 | 21 E | 18.9 | G |
| M4 | 65 | 10 | 22 | 1730 | 36 | 45 S | 150 | 57 E | 18.9 | G |
| M4 | 65 | 10 | 22 | 1805 | 36 | 51 S | 150 | 39 E | 18.9 | G |
| M4 | 65 | 10 | 22 | 1855 | 36 | 51 S | 150 | 39 E | 18.3 | G |
| M4 | 65 | 10 | 23 | 0850 | 36 | 57 S | 150 | 21 E | 17.8 | G |
| M4 | 65 | 10 | 23 | 1100 | 36 | 51 S | 150 | 39 E | 18.3 | G |
| M4 | 65 | 10 | 23 | 1200 | 36 | 51 S | 150 | 39 E | 17.8 | G |
| M4 | 65 | 10 | 25 | 1030 | 37 | 3 S  | 149 | 57 E | 16.7 | G |
| M4 | 65 | 10 | 25 | 1130 | 37 | 3 S  | 150 | 9 E  | 15.0 | G |
| M4 | 65 | 10 | 25 | 1230 | 37 | 3 S  | 150 | 21 E | 17.5 | G |
| M4 | 65 | 10 | 25 | 1330 | 36 | 57 S | 150 | 27 E | 18.3 | G |
| M4 | 65 | 10 | 25 | 1345 | 36 | 57 S | 150 | 27 E | 18.6 | G |
| M4 | 65 | 10 | 25 | 1415 | 34 | 57 S | 150 | 33 E | 17.9 | G |
| M4 | 65 | 10 | 25 | 1500 | 34 | 57 S | 150 | 33 E | 18.5 | G |
| M4 | 65 | 10 | 25 | 1700 | 36 | 39 S | 150 | 33 E | 18.8 | G |
| M4 | 65 | 10 | 25 | 1800 | 36 | 45 S | 150 | 21 E | 18.8 | G |
| M4 | 65 | 10 | 25 | 1900 | 34 | 57 S | 150 | 15 E | 17.1 | G |
| M4 | 65 | 10 | 25 | 2000 | 37 | 3 S  | 150 | 3 E  | 17.8 | G |
| M4 | 65 | 10 | 27 | 0645 | 37 | 3 S  | 150 | 3 E  | 16.9 | G |
| M4 | 65 | 10 | 27 | 0800 | 36 | 57 S | 150 | 21 E | 17.9 | G |
| M4 | 65 | 10 | 27 | 0915 | 34 | 57 S | 150 | 27 E | 18.3 | G |
| M4 | 65 | 10 | 27 | 1000 | 36 | 45 S | 150 | 21 E | 18.6 | G |
| M4 | 65 | 10 | 27 | 1130 | 36 | 39 S | 150 | 33 E | 18.6 | G |
| M4 | 65 | 10 | 27 | 1215 | 36 | 33 S | 150 | 33 E | 18.8 | G |



VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND DN. AMT. SEA SWELL WEA. VIS. BAROM. SAMPLING METHOD

|    |    |    |    |      |    |    |   |     |    |   |      |   |
|----|----|----|----|------|----|----|---|-----|----|---|------|---|
| W4 | 65 | 10 | 27 | 1220 | 36 | 33 | S | 150 | 33 | E | 17.9 | G |
| W4 | 65 | 10 | 27 | 1330 | 34 | 27 | S | 150 | 21 | E | 18.8 | G |
| W4 | 65 | 10 | 27 | 1500 | 34 | 27 | S | 150 | 21 | E | 18.9 | G |
| W4 | 65 | 10 | 27 | 1700 | 36 | 27 | S | 150 | 3  | E | 18.3 | G |
| W4 | 65 | 10 | 27 | 1830 | 36 | 27 | S | 150 | 3  | E | 17.7 | G |
| W4 | 65 | 10 | 28 | 0830 | 36 | 27 | S | 150 | 21 | E | 17.7 | G |
| W4 | 65 | 10 | 28 | 1000 | 36 | 39 | S | 150 | 21 | E | 17.9 | G |
| W4 | 65 | 10 | 28 | 1200 | 36 | 45 | S | 150 | 21 | E | 18.3 | G |
| W4 | 65 | 10 | 28 | 1300 | 36 | 45 | S | 150 | 21 | E | 18.8 | G |
| W4 | 65 | 10 | 26 | 1400 | 36 | 39 | S | 150 | 21 | E | 18.9 | G |
| W4 | 65 | 10 | 28 | 1500 | 36 | 33 | S | 150 | 21 | E | 18.9 | G |
| W4 | 65 | 10 | 28 | 1800 | 34 | 27 | S | 150 | 21 | E | 18.9 | G |
| W4 | 65 | 10 | 29 | 0630 | 36 | 15 | S | 150 | 21 | E | 17.8 | G |
| W4 | 65 | 10 | 29 | 0800 | 36 | 27 | S | 150 | 21 | E | 18.3 | G |
| W4 | 65 | 10 | 29 | 0900 | 36 | 15 | S | 150 | 27 | E | 18.2 | G |
| W4 | 65 | 10 | 29 | 1030 | 36 | 9  | S | 150 | 39 | E | 18.3 | G |
| W4 | 65 | 10 | 29 | 1115 | 36 | 9  | S | 150 | 39 | E | 18.6 | G |
| W4 | 65 | 10 | 29 | 1400 | 36 | 9  | S | 150 | 51 | E | 18.6 | G |
| W4 | 65 | 10 | 29 | 1530 | 36 | 9  | S | 150 | 27 | E | 18.9 | G |
| W4 | 65 | 10 | 29 | 1930 | 36 | 15 | S | 150 | 15 | E | 17.8 | G |
| W4 | 65 | 10 | 30 | 0715 | 36 | 15 | S | 150 | 21 | E | 17.7 | G |
| W4 | 65 | 10 | 30 | 0900 | 36 | 15 | S | 150 | 45 | E | 18.3 | G |
| W4 | 65 | 10 | 30 | 1100 | 36 | 15 | S | 150 | 39 | E | 18.9 | G |
| W4 | 65 | 10 | 30 | 1200 | 36 | 21 | S | 150 | 21 | E | 18.9 | G |
| W4 | 65 | 10 | 30 | 1333 | 36 | 21 | S | 150 | 21 | E | 18.9 | G |
| W4 | 65 | 10 | 30 | 1700 | 36 | 27 | S | 150 | 21 | E | 18.9 | G |
| W4 | 65 | 10 | 30 | 2100 | 36 | 57 | S | 149 | 57 | E | 16.7 | G |
| W4 | 65 | 10 | 31 | 0700 | 36 | 45 | S | 150 | 15 | E | 18.1 | G |
| W4 | 65 | 10 | 31 | 0900 | 36 | 27 | S | 150 | 21 | E | 18.3 | G |
| W4 | 65 | 10 | 31 | 1030 | 36 | 27 | S | 150 | 21 | E | 18.3 | G |
| W4 | 65 | 10 | 31 | 1200 | 36 | 45 | S | 150 | 9  | E | 18.1 | G |
| W4 | 65 | 10 | 31 | 1400 | 37 | 2  | S | 150 | 3  | E | 16.7 | G |
| W4 | 65 | 11 | 4  | 0615 | 36 | 57 | S | 150 | 3  | E | 17.8 | G |
| W4 | 65 | 11 | 4  | 0900 | 36 | 39 | S | 150 | 15 | E | 18.4 | G |
| W4 | 65 | 11 | 4  | 1000 | 36 | 27 | S | 150 | 21 | E | 18.9 | G |
| W4 | 65 | 11 | 4  | 1040 | 36 | 27 | S | 150 | 21 | E | 18.9 | G |
| W4 | 65 | 11 | 4  | 1110 | 36 | 27 | S | 150 | 21 | E | 18.8 | G |
| W4 | 65 | 11 | 4  | 1300 | 36 | 27 | S | 150 | 21 | E | 18.9 | G |
| W4 | 65 | 11 | 4  | 1600 | 36 | 33 | S | 150 | 21 | E | 18.9 | G |
| W4 | 65 | 11 | 4  | 1700 | 36 | 45 | S | 150 | 15 | E | 18.9 | G |

| VESSEL | CRUISE NUMBER | STATION | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND DN. | SEA AMT. | SMELL DN. | VIS. AMT. | BAROM. | SAMPLING METHOD |
|--------|---------------|---------|-----|------|-----|------|----------|-----------|-------|----------|----------|----------|-----------|-----------|--------|-----------------|
| K4     | 65            | 11      | 4   | 1900 | 36  | 57 S | 149      | 57 E      | 18.3  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 5   | 0630 | 36  | 57 S | 140      | 57 E      | 16.1  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 5   | 0830 | 36  | 39 S | 150      | 15 E      | 18.3  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 5   | 1000 | 36  | 27 S | 150      | 21 E      | 18.6  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 5   | 1200 | 36  | 39 S | 150      | 15 E      | 18.3  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 5   | 1340 | 36  | 45 S | 149      | 57 E      | 17.8  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 7   | 0800 | 36  | 57 S | 150      | 9 E       | 17.8  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 7   | 1000 | 36  | 45 S | 150      | 15 E      | 18.3  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 7   | 1115 | 36  | 45 S | 150      | 21 E      | 18.9  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 7   | 1400 | 36  | 51 S | 150      | 27 E      | 18.9  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 7   | 1600 | 36  | 51 S | 150      | 21 E      | 18.9  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 7   | 1800 | 37  | 3 S  | 150      | 3 E       | 17.8  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 7   | 1940 | 37  | 3 S  | 149      | 51 E      | 17.2  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 8   | 0800 | 37  | 3 S  | 150      | 15 E      | 18.6  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 8   | 1000 | 36  | 51 S | 150      | 21 E      | 19.2  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 8   | 1100 | 36  | 45 S | 150      | 21 E      | 19.7  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 8   | 1300 | 37  | 3 S  | 150      | 15 E      | 19.4  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 8   | 1500 | 37  | 3 S  | 150      | 21 E      | 19.4  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 14  | 0800 | 36  | 57 S | 150      | 21 E      | 15.6  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 14  | 0820 | 36  | 57 S | 150      | 21 E      | 18.5  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 14  | 0900 | 36  | 51 S | 150      | 27 E      | 18.9  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 14  | 1100 | 36  | 45 S | 150      | 21 E      | 18.9  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 14  | 1230 | 36  | 57 S | 150      | 15 E      | 15.6  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 15  | 0830 | 36  | 57 S | 150      | 21 E      | 15.6  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 15  | 0900 | 36  | 57 S | 150      | 21 E      | 17.7  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 15  | 1100 | 36  | 45 S | 150      | 15 E      | 19.1  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 15  | 1200 | 36  | 39 S | 150      | 21 E      | 19.4  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 15  | 1500 | 36  | 15 S | 150      | 21 E      | 19.9  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 15  | 1705 | 36  | 15 S | 150      | 27 E      | 19.9  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 15  | 1835 | 36  | 15 S | 150      | 27 E      | 19.7  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 15  | 2220 | 36  | 27 S | 150      | 3 E       | 17.8  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 16  | 1100 | 36  | 27 S | 150      | 21 E      | 18.1  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 16  | 1145 | 36  | 21 S | 150      | 27 E      | 18.1  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 16  | 1300 | 36  | 15 S | 150      | 27 E      | 18.3  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 16  | 1500 | 36  | 21 S | 150      | 21 E      | 18.9  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 16  | 1700 | 36  | 27 S | 150      | 9 E       | 16.7  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 16  | 2100 | 37  | 3 S  | 149      | 57 E      | 16.1  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 19  | 0800 | 36  | 51 S | 150      | 15 E      | 17.7  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 19  | 1000 | 36  | 33 S | 150      | 27 E      | 18.8  |          |          |          |           |           |        | G               |
| K4     | 65            | 11      | 19  | 1100 | 36  | 27 S | 150      | 27 E      | 18.9  |          |          |          |           |           |        | G               |

| VESSEL | CRUISE | STATION | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND | SEA | SKELL | WEA. | VIS. | BAROM. | SAMPLING | METHOD |
|--------|--------|---------|-----|------|-----|------|----------|-----------|-------|----------|------|-----|-------|------|------|--------|----------|--------|
| K4     |        |         | 65  | 11   | 19  | 1320 | 34       | 15 S      | 150   | 27 E     | 18.9 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 11   | 19  | 1500 | 34       | 9 S       | 150   | 33 E     | 18.9 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 11   | 19  | 1800 | 36       | 21 S      | 150   | 21 E     | 19.4 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 11   | 19  | 1900 | 36       | 15 S      | 150   | 15 E     | 18.9 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 11   | 20  | 0800 | 36       | 15 S      | 150   | 21 E     | 17.9 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 11   | 20  | 1000 | 36       | 27 S      | 150   | 27 E     | 18.9 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 11   | 20  | 1300 | 36       | 27 S      | 150   | 21 E     | 19.0 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 11   | 20  | 1500 | 36       | 45 S      | 150   | 21 E     | 19.2 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 11   | 20  | 1600 | 36       | 57 S      | 150   | 21 E     | 18.9 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 11   | 20  | 1740 | 37       | 3 S       | 150   | 3 E      | 17.5 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 11   | 20  | 1830 | 37       | 3 S       | 149   | 57 E     | 16.1 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 3   | 0630 | 36       | 57 S      | 150   | 9 E      | 16.1 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 3   | 0900 | 36       | 45 S      | 150   | 15 E     | 18.8 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 3   | 1000 | 36       | 32 S      | 150   | 15 E     | 18.9 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 3   | 1200 | 36       | 21 S      | 150   | 21 E     | 19.2 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 3   | 1400 | 36       | 15 S      | 150   | 27 E     | 19.9 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 3   | 1600 | 36       | 9 S       | 150   | 21 E     | 20.0 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 3   | 1800 | 35       | 51 S      | 150   | 33 E     | 20.0 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 3   | 2045 | 35       | 51 S      | 150   | 27 E     | 20.2 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 4   | 0900 | 35       | 57 S      | 150   | 27 E     | 18.5 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 4   | 0945 | 35       | 57 S      | 150   | 27 E     | 19.4 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 4   | 1100 | 35       | 57 S      | 150   | 27 E     | 19.1 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 4   | 1300 | 35       | 51 S      | 150   | 27 E     | 19.7 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 4   | 1500 | 35       | 57 S      | 150   | 27 E     | 19.4 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 4   | 1700 | 35       | 51 S      | 150   | 27 E     | 19.3 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 4   | 1800 | 35       | 51 S      | 150   | 27 E     | 19.4 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 5   | 0900 | 35       | 51 S      | 150   | 33 E     | 18.6 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 5   | 1100 | 35       | 51 S      | 150   | 33 E     | 19.1 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 5   | 1300 | 36       | 3 S       | 150   | 21 E     | 18.9 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 5   | 1500 | 35       | 57 S      | 150   | 27 E     | 19.1 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 5   | 1615 | 35       | 51 S      | 150   | 27 E     | 19.1 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 6   | 0900 | 35       | 51 S      | 150   | 27 E     | 18.3 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 6   | 1020 | 36       | 3 S       | 150   | 21 E     | 18.8 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 6   | 1205 | 36       | 9 S       | 150   | 21 E     | 18.9 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 6   | 1300 | 36       | 3 S       | 150   | 21 E     | 19.1 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 6   | 1500 | 35       | 51 S      | 150   | 21 E     | 19.2 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 6   | 1603 | 36       | 3 S       | 150   | 21 E     | 18.7 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 6   | 1657 | 36       | 9 S       | 150   | 21 E     | 18.9 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 6   | 1840 | 36       | 15 S      | 150   | 21 E     | 19.1 |     |       |      |      |        | G        |        |
| K4     |        |         | 65  | 12   | 7   | 0900 | 36       | 15 S      | 150   | 21 E     | 19.1 |     |       |      |      |        | G        |        |



VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SWELL WEA. VIS. BAROM. SAMPLING METHOD

|    |    |    |    |      |    |      |     |      |      |   |
|----|----|----|----|------|----|------|-----|------|------|---|
| H4 | 65 | 12 | 20 | 1500 | 36 | 15 S | 150 | 21 E | 20.0 | G |
| H4 | 65 | 12 | 20 | 1700 | 36 | 15 S | 150 | 21 E | 20.0 | G |
| H4 | 65 | 12 | 20 | 1832 | 36 | 15 S | 150 | 27 E | 20.0 | G |
| H4 | 65 | 12 | 21 | 0900 | 36 | 15 S | 150 | 27 E | 19.1 | G |
| H4 | 65 | 12 | 21 | 0945 | 36 | 15 S | 150 | 27 E | 19.1 | G |
| H4 | 65 | 12 | 21 | 1015 | 36 | 15 S | 150 | 27 E | 19.1 | G |
| H4 | 65 | 12 | 21 | 1200 | 36 | 15 S | 150 | 21 E | 19.9 | G |
| H4 | 65 | 12 | 21 | 1400 | 36 | 15 S | 150 | 21 E | 19.8 | G |
| H4 | 65 | 12 | 21 | 1500 | 36 | 3 S  | 130 | 27 E | 20.0 | G |
| H4 | 65 | 12 | 22 | 0900 | 36 | 3 S  | 130 | 27 E | 19.6 | G |
| H4 | 65 | 12 | 22 | 1100 | 36 | 3 S  | 130 | 21 E | 19.4 | G |
| H4 | 65 | 12 | 22 | 1300 | 36 | 27 S | 150 | 21 E | 17.2 | G |
| H4 | 65 | 12 | 22 | 1500 | 36 | 39 S | 150 | 21 E | 19.8 | G |
| H4 | 65 | 12 | 22 | 1700 | 36 | 57 S | 150 | 9 E  | 19.1 | G |
| H4 | 65 | 12 | 24 | 0900 | 37 | 3 S  | 150 | 9 E  | 16.7 | G |
| H4 | 65 | 12 | 24 | 1100 | 37 | 3 S  | 150 | 21 E | 20.7 | G |
| H4 | 65 | 12 | 24 | 1130 | 37 | 3 S  | 150 | 15 E | 20.0 | G |
| H4 | 65 | 12 | 24 | 1230 | 37 | 3 S  | 150 | 9 E  | 18.9 | G |
| H4 | 65 | 12 | 27 | 0800 | 37 | 3 S  | 150 | 15 E | 19.6 | G |
| H4 | 65 | 12 | 27 | 1000 | 36 | 51 S | 150 | 21 E | 19.8 | G |
| H4 | 65 | 12 | 27 | 1200 | 36 | 57 S | 150 | 15 E | 20.2 | G |
| H4 | 65 | 12 | 27 | 1400 | 36 | 51 S | 150 | 33 E | 20.0 | G |
| H4 | 65 | 12 | 27 | 1600 | 36 | 45 S | 130 | 15 E | 20.6 | G |
| H4 | 65 | 12 | 27 | 1800 | 37 | 3 S  | 150 | 3 E  | 20.0 | G |
| H4 | 65 | 12 | 28 | 0900 | 37 | 9 S  | 150 | 9 E  | 19.7 | G |
| H4 | 65 | 12 | 28 | 1100 | 37 | 15 S | 150 | 15 E | 20.6 | G |
| H4 | 65 | 12 | 28 | 1218 | 37 | 9 S  | 150 | 15 E | 20.9 | G |
| H4 | 65 | 12 | 28 | 1337 | 37 | 9 S  | 150 | 15 E | 21.9 | G |
| H4 | 65 | 12 | 28 | 1500 | 37 | 9 S  | 150 | 15 E | 20.6 | G |
| H4 | 65 | 12 | 28 | 1700 | 37 | 3 S  | 150 | 21 E | 20.1 | G |
| H4 | 65 | 12 | 28 | 1900 | 37 | 9 S  | 150 | 15 E | 20.0 | G |
| H4 | 65 | 12 | 29 | 0930 | 37 | 9 S  | 130 | 9 E  | 19.9 | G |
| H4 | 65 | 12 | 29 | 1100 | 37 | 15 S | 150 | 15 E | 20.6 | G |
| H4 | 65 | 12 | 29 | 1300 | 37 | 15 S | 150 | 15 E | 20.4 | G |
| H4 | 65 | 12 | 29 | 1500 | 37 | 9 S  | 150 | 3 E  | 20.8 | G |









VESSEL CRUISE STATION VR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SWELL WEA. VIS. BAROM. SAMPLING METHOD

| VR | STATION NUMBER | VR | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP.     | SALINITY | WIND DN. | SEA DN. | SWELL DN. | WEA. | VIS. | BAROM. | SAMPLING METHOD |
|----|----------------|----|------|-----|------|----------|-----------|-----------|----------|----------|---------|-----------|------|------|--------|-----------------|
| Y4 | 3              | 45 | 10   | 20  | 0730 | K 42     | 35 S 148  | 03 E 12.7 | 35.19    |          |         |           |      |      |        | 1               |
| Y4 | 3              | 46 | 10   | 20  | 0858 | K 42     | 35 S 148  | 02 E 12.7 | 35.19    |          |         |           |      |      |        | 1               |
| Y4 | 3              | 47 | 10   | 20  | 0930 | K 42     | 35 S 148  | 02 E 12.7 | 35.25    |          |         |           |      |      |        | 1               |
| Y4 | 3              | 48 | 10   | 20  | 0925 | K 42     | 36 S 147  | 57 E 12.8 |          |          |         |           |      |      |        | 1               |
| Y4 | 3              | 49 | 10   | 20  | 1030 | K 42     | 36 S 147  | 56 E 13.2 |          |          |         |           |      |      |        | 1               |
| Y4 | 3              | 50 | 10   | 20  | 1050 | K 42     | 36 S 147  | 56 E 13.2 | 35.34    |          |         |           |      |      |        | 1               |
| Y4 | 4              | 51 | 10   | 27  | 1954 | K 42     | 34 S 148  | 03 E 13.4 | 35.16    |          |         |           |      |      |        | 1               |
| Y4 | 4              | 52 | 10   | 27  | 2028 | K 42     | 34 S 148  | 01 E 13.9 | 35.19    |          |         |           |      |      |        | 1               |
| Y4 | 4              | 53 | 10   | 27  | 2100 | K 42     | 34 S 147  | 58 E 13.9 | 35.21    |          |         |           |      |      |        | 1               |
| Y4 | 4              | 54 | 10   | 28  | 0649 | K 42     | 36 S 147  | 56 E 13.9 | 35.17    |          |         |           |      |      |        | 1               |
| Y4 | 4              | 55 | 10   | 28  | 0711 | K 42     | 36 S 147  | 56 E 13.9 | 35.19    |          |         |           |      |      |        | 1               |
| Y4 | 4              | 56 | 10   | 28  | 0817 | K 42     | 36 S 147  | 57 E 13.9 | 35.17    |          |         |           |      |      |        | 1               |
| Y4 | 4              | 57 | 10   | 28  | 0843 | K 42     | 35 S 148  | 00 E 13.8 | 35.19    |          |         |           |      |      |        | 1               |
| Y4 | 4              | 58 | 10   | 28  | 0915 | K 42     | 35 S 148  | 02 E 14.0 | 35.21    |          |         |           |      |      |        | 1               |
| Y4 | 4              | 59 | 10   | 28  | 0945 | K 42     | 35 S 148  | 04 E 13.6 | 35.16    |          |         |           |      |      |        | 1               |
| Y4 | 4              | 60 | 10   | 28  | 1009 | K 42     | 35 S 148  | 03 E 13.7 | 35.17    |          |         |           |      |      |        | 1               |
| Y4 | 5              | 61 | 11   | 3   | 2010 | K 42     | 34 S 148  | 03 E 13.1 | 35.14    |          |         |           |      |      |        | 1               |
| Y4 | 5              | 62 | 11   | 3   | 2044 | K 42     | 34 S 148  | 01 E 13.9 | 35.16    |          |         |           |      |      |        | 1               |
| Y4 | 5              | 63 | 11   | 3   | 2118 | K 42     | 34 S 147  | 58 E 14.0 | 35.17    |          |         |           |      |      |        | 1               |
| Y4 | 5              | 64 | 11   | 4   | 0636 | K 42     | 36 S 147  | 56 E 13.6 | 35.17    |          |         |           |      |      |        | 1               |
| Y4 | 5              | 65 | 11   | 4   | 0656 | K 42     | 36 S 147  | 56 E 13.6 | 35.17    |          |         |           |      |      |        | 1               |
| Y4 | 5              | 66 | 11   | 4   | 0815 | K 42     | 36 S 147  | 57 E 14.0 | 35.16    |          |         |           |      |      |        | 1               |
| Y4 | 5              | 67 | 11   | 4   | 0845 | K 42     | 35 S 148  | 00 E 13.7 | 35.17    |          |         |           |      |      |        | 1               |
| Y4 | 5              | 68 | 11   | 4   | 0915 | K 42     | 35 S 148  | 02 E 13.6 | 35.17    |          |         |           |      |      |        | 1               |
| Y4 | 5              | 69 | 11   | 4   | 0938 | K 42     | 35 S 148  | 03 E 13.4 | 35.10    |          |         |           |      |      |        | 1               |
| Y4 | 5              | 70 | 11   | 4   | 1000 | K 42     | 35 S 148  | 04 E 13.3 | 35.14    |          |         |           |      |      |        | 1               |
| Y4 | 5              | 71 | 11   | 10  | 2015 | K 42     | 34 S 148  | 03 E 12.9 | 35.10    |          |         |           |      |      |        | 1               |
| Y4 | 6              | 72 | 11   | 10  | 2103 | K 42     | 34 S 148  | 01 E 13.7 | 35.14    |          |         |           |      |      |        | 1               |
| Y4 | 6              | 73 | 11   | 10  | 2135 | K 42     | 34 S 147  | 58 E 13.8 | 35.17    |          |         |           |      |      |        | 1               |
| Y4 | 6              | 74 | 11   | 11  | 0815 | K 42     | 35 S 148  | 04 E 13.1 | 35.10    |          |         |           |      |      |        | 1               |
| Y4 | 6              | 75 | 11   | 11  | 1000 | K 42     | 35 S 148  | 03 E 13.0 | 34.97    |          |         |           |      |      |        | 1               |
| Y4 | 6              | 76 | 11   | 11  | 1010 | K 42     | 35 S 148  | 02 E 13.4 | 35.01    |          |         |           |      |      |        | 1               |
| Y4 | 6              | 77 | 11   | 11  | 1040 | K 42     | 35 S 148  | 00 E 13.4 | 35.08    |          |         |           |      |      |        | 1               |
| Y4 | 6              | 78 | 11   | 11  | 1111 | K 42     | 36 S 147  | 57 E 13.6 | 35.10    |          |         |           |      |      |        | 1               |
| Y4 | 6              | 79 | 11   | 11  | 1138 | K 42     | 36 S 147  | 56 E 13.4 | 34.81    |          |         |           |      |      |        | 1               |
| Y4 | 6              | 80 | 11   | 11  | 1200 | K 42     | 36 S 147  | 56 E 13.7 |          |          |         |           |      |      |        | 1               |
| Y4 | 6              | 81 | 11   | 17  | 2016 | K 42     | 34 S 148  | 03 E 13.3 |          |          |         |           |      |      |        | 1               |
| Y4 | 7              | 82 | 11   | 17  | 2055 | K 42     | 34 S 148  | 01 E 13.2 | 35.07    |          |         |           |      |      |        | 1               |
| Y4 | 7              | 83 | 11   | 17  | 2125 | K 42     | 34 S 147  | 58 E 13.4 | 35.10    |          |         |           |      |      |        | 1               |
| Y4 | 7              | 84 | 11   | 18  | 0705 | K 42     | 35 S 148  | 04 E 13.0 | 35.08    |          |         |           |      |      |        | 1               |

VESSEL CRUISE STATION YR. MTH. DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND WEA. SEA SWELL DN. AMT. VIS. BAROM. SAMPLING METHOD

|    |    |     |    |    |    |      |      |      |     |      |      |       |   |
|----|----|-----|----|----|----|------|------|------|-----|------|------|-------|---|
| Y4 | 7  | 85  | 65 | 11 | 18 | 0726 | K 42 | 35 S | 148 | 03 E | 13.0 | 35.08 | 1 |
| Y4 | 7  | 86  | 65 | 11 | 18 | 0918 | K 42 | 35 S | 148 | 02 E | 13.3 | 35.07 | 1 |
| Y4 | 7  | 87  | 65 | 11 | 18 | 0955 | K 42 | 35 S | 148 | 00 E | 13.3 | 35.03 | 1 |
| Y4 | 7  | 88  | 65 | 11 | 18 | 1020 | K 42 | 36 S | 147 | 57 E | 13.4 | 35.07 | 1 |
| Y4 | 7  | 89  | 65 | 11 | 18 | 1228 | K 42 | 36 S | 147 | 56 E | 13.4 | 35.07 | 1 |
| Y4 | 7  | 90  | 65 | 11 | 18 | 1255 | K 42 | 36 S | 147 | 56 E | 13.6 | 35.08 | 1 |
| Y4 | 8  | 91  | 65 | 11 | 24 | 2036 | K 42 | 34 S | 148 | 03 E | 13.2 | 35.07 | 1 |
| Y4 | 8  | 92  | 65 | 11 | 24 | 2105 | K 42 | 34 S | 148 | 01 E | 14.0 | 35.10 | 1 |
| Y4 | 8  | 93  | 65 | 11 | 24 | 2140 | K 42 | 33 S | 147 | 58 E | 13.9 | 35.12 | 1 |
| Y4 | 8  | 94  | 65 | 11 | 25 | 0812 | K 42 | 35 S | 148 | 04 E | 12.7 | 35.05 | 1 |
| Y4 | 8  | 95  | 65 | 11 | 25 | 0844 | K 42 | 35 S | 148 | 03 E | 12.9 | 35.05 | 1 |
| Y4 | 8  | 96  | 65 | 11 | 25 | 1105 | K 42 | 35 S | 148 | 02 E | 14.1 | 35.07 | 1 |
| Y4 | 8  | 97  | 65 | 11 | 25 | 1138 | K 42 | 36 S | 148 | 00 E | 14.2 | 35.08 | 1 |
| Y4 | 8  | 98  | 65 | 11 | 25 | 1209 | K 42 | 36 S | 147 | 58 E | 14.2 | 35.07 | 1 |
| Y4 | 8  | 99  | 65 | 11 | 25 | 1231 | K 42 | 36 S | 147 | 56 E | 14.6 | 35.08 | 1 |
| Y4 | 8  | 100 | 65 | 11 | 25 | 1255 | K 42 | 36 S | 147 | 56 E | 14.9 | 35.12 | 1 |
| Y4 | 9  | 101 | 65 | 12 | 3  | 1135 | K 42 | 35 S | 148 | 04 E | 15.1 | 35.10 | 1 |
| Y4 | 9  | 102 | 65 | 12 | 3  | 1355 | K 42 | 35 S | 148 | 03 E | 16.6 | 34.25 | 1 |
| Y4 | 9  | 103 | 65 | 12 | 3  | 1420 | K 42 | 35 S | 148 | 02 E | 16.0 | 35.03 | 1 |
| Y4 | 9  | 104 | 65 | 12 | 3  | 1455 | K 42 | 36 S | 148 | 00 E | 15.0 | 35.03 | 1 |
| Y4 | 9  | 105 | 65 | 12 | 3  | 1535 | K 42 | 36 S | 147 | 58 E | 15.7 | 35.03 | 1 |
| Y4 | 9  | 106 | 65 | 12 | 3  | 1552 | K 42 | 36 S | 147 | 56 E | 16.3 | 34.16 | 1 |
| Y4 | 9  | 107 | 65 | 12 | 3  | 1622 | K 42 | 36 S | 147 | 56 E | 15.8 | 34.88 | 1 |
| Y4 | 9  | 108 | 65 | 12 | 3  | 2055 | K 42 | 35 S | 148 | 03 E | 15.4 | 35.07 | 1 |
| Y4 | 10 | 111 | 65 | 12 | 8  | 2107 | K 42 | 34 S | 148 | 01 E | 15.6 | 35.07 | 1 |
| Y4 | 10 | 112 | 65 | 12 | 8  | 2140 | K 42 | 34 S | 148 | 01 E | 15.1 | 35.07 | 1 |
| Y4 | 10 | 113 | 65 | 12 | 8  | 2215 | K 42 | 33 S | 147 | 58 E | 14.8 | 35.16 | 1 |
| Y4 | 10 | 114 | 65 | 12 | 8  | 2245 | K 42 | 36 S | 147 | 56 E | 15.3 | 35.16 | 1 |
| Y4 | 10 | 115 | 65 | 12 | 9  | 0705 | K 42 | 36 S | 147 | 56 E | 14.8 | 34.49 | 1 |
| Y4 | 10 | 116 | 65 | 12 | 9  | 0922 | K 42 | 36 S | 147 | 58 E | 15.6 | 34.85 | 1 |
| Y4 | 10 | 117 | 65 | 12 | 9  | 1004 | K 42 | 36 S | 148 | 00 E | 15.6 | 34.85 | 1 |
| Y4 | 10 | 118 | 65 | 12 | 9  | 1041 | K 42 | 35 S | 148 | 02 E | 15.8 | 35.07 | 1 |
| Y4 | 10 | 119 | 65 | 12 | 9  | 1300 | K 42 | 35 S | 148 | 04 E | 15.9 | 35.07 | 1 |
| Y4 | 10 | 120 | 65 | 12 | 9  | 1338 | K 42 | 35 S | 148 | 03 E | 16.2 | 35.05 | 1 |
| Y4 | 11 | 121 | 65 | 12 | 14 | 2055 | K 42 | 34 S | 148 | 03 E | 15.3 | 34.97 | 1 |
| Y4 | 11 | 122 | 65 | 12 | 14 | 2135 | K 42 | 34 S | 148 | 01 E | 15.3 | 35.01 | 1 |
| Y4 | 11 | 123 | 65 | 12 | 14 | 2205 | K 42 | 33 S | 147 | 58 E | 15.4 | 34.97 | 1 |
| Y4 | 11 | 124 | 65 | 12 | 15 | 0710 | K 42 | 35 S | 148 | 04 E | 15.0 | 35.14 | 1 |
| Y4 | 11 | 125 | 65 | 12 | 15 | 0735 | K 42 | 35 S | 148 | 03 E | 15.1 | 35.07 | 1 |
| Y4 | 11 | 126 | 65 | 12 | 15 | 0945 | K 42 | 35 S | 148 | 02 E | 14.7 | 35.03 | 1 |





VESSEL CRUISE STATION YF, MTH, DAY TIME LATITUDE LONGITUDE TEMP. SALINITY WIND SWELL SEA SWELL WE4, VIS. BAROM. SAMPLING  
 NUMBRH DN. AMT. DN. AMT. DN. AMT. DN. AMT. METHOD

|    |    |    |    |    |      |    |    |   |     |    |   |      |   |
|----|----|----|----|----|------|----|----|---|-----|----|---|------|---|
| Y6 | 7  | 65 | 11 | 15 | 0715 | 37 | 3  | S | 149 | 57 | E | 16.1 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 0740 | 37 | 3  | S | 150 | 9  | E | 15.9 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 0800 | 37 | 3  | S | 150 | 9  | E | 15.6 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 0830 | 37 | 3  | S | 150 | 15 | E | 15.9 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 0850 | 37 | 3  | S | 150 | 15 | E | 16.2 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 0855 | 37 | 3  | S | 150 | 15 | E | 16.8 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 0858 | 37 | 3  | S | 150 | 15 | E | 17.0 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 0900 | 37 | 3  | S | 150 | 15 | E | 17.1 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 0925 | 37 | 3  | S | 150 | 21 | E | 18.8 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 0950 | 37 | 9  | S | 150 | 21 | E | 18.8 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 1020 | 37 | 9  | S | 150 | 21 | E | 18.3 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 1030 | 37 | 15 | S | 150 | 21 | E | 18.1 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 1100 | 37 | 15 | S | 150 | 21 | E | 18.9 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 1130 | 37 | 15 | S | 150 | 21 | E | 18.9 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 1200 | 37 | 9  | S | 150 | 21 | E | 19.1 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 1230 | 37 | 9  | S | 150 | 21 | E | 18.9 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 1300 | 37 | 3  | S | 150 | 21 | E | 18.9 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 1400 | 36 | 57 | S | 150 | 21 | E | 18.5 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 1420 | 36 | 57 | S | 150 | 21 | E | 18.5 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 1500 | 36 | 57 | S | 150 | 21 | E | 18.7 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 1600 | 36 | 57 | S | 150 | 15 | E | 17.8 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 1700 | 37 | 3  | S | 150 | 9  | E | 16.2 | 1 |
| Y6 | 7  | 65 | 11 | 15 | 1730 | 37 | 3  | S | 149 | 57 | E | 16.7 | 1 |
| Y6 | 9  | 65 | 11 | 16 | 0600 | 37 | 3  | S | 149 | 57 | E | 15.8 | 1 |
| Y6 | 9  | 65 | 11 | 16 | 0710 | 36 | 57 | S | 150 | 9  | E | 16.1 | 1 |
| Y6 | 9  | 65 | 11 | 16 | 0800 | 36 | 51 | S | 150 | 15 | E | 18.3 | 1 |
| Y6 | 9  | 65 | 11 | 16 | 0820 | 36 | 51 | S | 150 | 15 | E | 18.4 | 1 |
| Y6 | 9  | 65 | 11 | 16 | 0850 | 36 | 45 | S | 150 | 15 | E | 18.4 | 1 |
| Y6 | 9  | 65 | 11 | 16 | 0900 | 36 | 45 | S | 150 | 15 | E | 18.4 | 1 |
| Y6 | 9  | 65 | 11 | 16 | 1000 | 36 | 39 | S | 150 | 15 | E | 18.3 | 1 |
| Y6 | 9  | 65 | 11 | 16 | 1100 | 36 | 33 | S | 150 | 21 | E | 16.1 | 1 |
| Y6 | 9  | 65 | 11 | 16 | 1120 | 36 | 33 | S | 150 | 15 | E | 17.3 | 1 |
| Y6 | 9  | 65 | 11 | 16 | 1200 | 36 | 39 | S | 150 | 15 | E | 16.2 | 1 |
| Y6 | 11 | 65 | 11 | 19 | 0500 | 36 | 57 | S | 150 | 15 | E | 16.6 | 1 |
| Y6 | 11 | 65 | 11 | 19 | 0530 | 36 | 57 | S | 150 | 15 | E | 16.7 | 1 |
| Y6 | 11 | 65 | 11 | 19 | 0550 | 36 | 51 | S | 150 | 21 | E | 16.4 | 1 |
| Y6 | 11 | 65 | 11 | 19 | 0605 | 36 | 51 | S | 150 | 21 | E | 17.6 | 1 |
| Y6 | 11 | 65 | 11 | 19 | 0635 | 36 | 51 | S | 150 | 21 | E | 18.3 | 1 |
| Y6 | 11 | 65 | 11 | 19 | 0700 | 36 | 45 | S | 150 | 21 | E | 18.2 | 1 |
| Y6 | 11 | 65 | 11 | 19 | 0703 | 36 | 45 | S | 150 | 21 | E | 18.2 | 1 |











| VESSEL | CRUISE | STATION | YR. | MTH. | DAY | TIME | LATITUDE | LONGITUDE | TEMP. | SALINITY | WIND | SEA  | SMELL | WEA. | VIS. | BAROM. | SAMPLING |       |
|--------|--------|---------|-----|------|-----|------|----------|-----------|-------|----------|------|------|-------|------|------|--------|----------|-------|
|        |        | NUMBER  |     |      |     |      |          |           |       |          | DN.  | DN.  | DN.   | DN.  | DN.  | DN.    | METHOD   |       |
| Y6     | 32     |         | 65  | 12   | 28  | 1330 | 37       | 9 S       | 150   | 15       | E    | 20.8 |       |      |      |        | 1        |       |
| Y6     | 32     |         | 65  | 12   | 28  | 1400 | 37       | 3 S       | 150   | 15       | E    | 20.6 |       |      |      |        | 1        |       |
| Y6     | 32     |         | 65  | 12   | 28  | 1500 | 37       | 3 S       | 150   | 9        | E    | 20.9 |       |      |      |        | 1        |       |
| Y6     | 32     |         | 65  | 12   | 28  | 1600 | 36       | 57 S      | 150   | 3        | E    | 20.6 |       |      |      |        | 1        |       |
|        |        |         |     |      |     |      |          |           |       |          |      |      |       |      |      |        |          | 35.68 |

VESEL CRUISE STATION YR. MTH. DAY TIME . LATITUDE LONGITUDE TEMP. SALINITY WIND SEA SWELL HEA. VIS. BAROM. SAMPLING METHOD

|    |    |    |   |    |      |    |    |   |     |    |   |      |  |  |  |  |  |  |   |
|----|----|----|---|----|------|----|----|---|-----|----|---|------|--|--|--|--|--|--|---|
| Y7 | 15 | 65 | 3 | 25 | 0700 | 35 | 15 | S | 135 | 39 | E | 18.2 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 25 | 0900 | 35 | 15 | S | 135 | 39 | E | 18.2 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 25 | 1100 | 35 | 15 | S | 135 | 39 | E | 18.7 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 25 | 1300 | 35 | 15 | S | 135 | 39 | E | 19.0 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 25 | 1600 | 35 | 15 | S | 135 | 39 | E | 19.0 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 25 | 1800 | 35 | 9  | S | 135 | 39 | E | 18.9 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 26 | 0600 | 35 | 15 | S | 135 | 39 | E | 18.1 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 26 | 0800 | 35 | 15 | S | 135 | 39 | E | 18.2 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 26 | 0900 | 35 | 15 | S | 135 | 39 | E | 18.5 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 26 | 1000 | 35 | 15 | S | 135 | 39 | E | 19.0 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 26 | 1100 | 35 | 9  | S | 135 | 45 | E | 18.5 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 26 | 1200 | 34 | 57 | S | 135 | 45 | E | 19.0 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 26 | 1300 | 34 | 57 | S | 135 | 45 | E | 19.1 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 26 | 1500 | 34 | 57 | S | 135 | 45 | E | 19.3 |  |  |  |  |  |  | 1 |
| Y7 | 15 | 65 | 3 | 26 | 1600 | 34 | 57 | S | 135 | 45 | E | 19.1 |  |  |  |  |  |  | 1 |

## OCEANOGRAPHICAL STATION LISTS

1. Hydrological and planktological observations by F.R.V. *Warreen* in south-eastern Australian waters, 1938-39
2. Hydrological and planktological observations by F.R.V. *Warreen* in south-eastern Australian waters, 1940-42
3. Hydrological and planktological observations by F.R.V. *Warreen* in south-western Australian waters, 1947-50
4. Onshore hydrological investigations in eastern Australia, 1942-50
5. Estuarine hydrological investigations in eastern Australia, 1940-50. Queensland: Nerang and Coomera Rivers, Moreton Bay and Brisbane River, Logan River, Dunwich Oyster Lease; New South Wales: Richmond River, Clarence River, Macleay River, Hastings River, Manning River, Port Stephens, Tilligerry Creek, Hawkesbury River
6. Estuarine hydrological investigations in eastern Australia, 1940-50. New South Wales: Middle Harbour and Port Jackson, Georges River-Botany Bay
7. Estuarine hydrological investigations in eastern Australia, 1940-50. New South Wales: Port Hacking, Lake Illawarra, Shoalhaven River, Jervis Bay, Clyde River, Moruya River, Tuross River, Wagonga Inlet; Victoria: Port Phillip; Tasmania: Tamar River, Derwent River, Huon River, D'Entrecasteaux Channel, Pittwater, Lake Dobson (freshwater), Penna Dam (freshwater)
8. Hydrological investigations in south-western Australia, 1944-50
9. Records of twenty-four hourly hydrological observations at selected stations in eastern Australian estuarine systems, 1942-50. Queensland: Logan River; New South Wales: Richmond River, Clarence River, Macleay River, Hastings River, Manning River, Port Stephens, Hawkesbury River, Georges River, Port Hacking, Clyde River, Tuross River; Tasmania: Tamar River, Derwent River
10. Records of twenty-four hourly hydrological observations at Shell Point, Georges River, New South Wales, 1942-50
11. Analyses of bottom deposits in eastern Australia, 1946-50
12. Estuarine hydrological investigations in eastern and south-western Australia, 1951
13. Analysis of bottom deposits in eastern and south-western Australia, 1951 and records of twenty-four hourly hydrological observations at selected stations in eastern Australian estuarine systems, 1951
14. Onshore hydrological investigations in eastern and south-western Australia, 1951
15. Estuarine hydrological investigations in eastern and south-western Australia, 1952
16. Analysis of bottom deposits in eastern and south-western Australia, 1952 and records of twenty-four hourly hydrological observations at selected stations in eastern Australian estuarine systems, 1952
17. Onshore hydrological investigations in eastern and south-western Australia, 1952
18. Onshore hydrological investigations in eastern and south-western Australia, 1953
19. Onshore planktological investigations in eastern Australia, 1945-54
20. Surface sampling in the Tasman Sea, 1953
21. Estuarine hydrological investigations in eastern and south-western Australia, 1953
22. Further onshore planktological investigations in eastern Australia, 1945-54
23. Planktological investigations made by F.R.V. *Derwent Hunter* in eastern Australian waters, 1952-54
24. Onshore hydrological investigations in eastern and south-western Australia, 1954
25. Surface sampling in the Tasman Sea, 1954
26. Estuarine hydrological investigations in eastern and south-western Australia, 1954
27. Onshore and oceanic hydrological investigations in eastern and south-western Australia, 1955
28. Surface sampling in the Tasman and Coral Seas, 1955
29. Estuarine hydrological investigations in eastern and south-western Australia, 1955
30. Onshore and oceanic hydrological investigations in eastern and south-western Australia, 1956
31. Surface sampling in the Tasman and Coral Seas and the south-eastern Indian Ocean, 1956
32. Estuarine hydrological investigations in eastern and south-western Australia, 1956
33. Coastal hydrological investigations in eastern and south-western Australia, 1957
34. Coastal hydrological investigations at Port Hacking, New South Wales, 1957
35. Coastal hydrological investigations at Eden, New South Wales, 1957

## OCEANOGRAPHICAL STATION LISTS

(Continued)

36. Surface sampling in the Tasman and Coral Seas, 1957
37. Hydrological investigations from F.R.V. *Derwent Hunter*, 1957
38. Coastal hydrological investigations in the New South Wales tuna fishing area, 1958
39. Surface sampling in the Coral and Tasman Seas, 1958
40. Coastal hydrological investigations in south-eastern Australia, 1958
41. Oceanic investigations in eastern Australian waters, F.R.V. *Derwent Hunter*, 1958
42. Coastal investigations at Port Hacking, New South Wales, 1958
43. Oceanic investigations in eastern Australia, H.M.A. Ships *Queenborough*, *Quickmatch*, and *Warrego*, 1958
44. Oceanic observations in Antarctic waters, M.V. *Magga Dan*, 1959
45. Coastal hydrological investigations in eastern Australia, 1959
46. Coastal hydrological investigations in the New South Wales tuna fishing area, 1959
47. Coastal investigations at Port Hacking, New South Wales, 1959
48. Oceanic investigations in eastern Australian waters, F.R.V. *Derwent Hunter*, 1959
49. Coastal hydrological sampling Rottneest Island, W.A., and Port Moresby, Papua, during the I.G.Y. (1957-58), and surface sampling in the Tasman and Coral Seas, 1959
50. Surface sampling in the Coral and Tasman Seas, 1960
51. Coastal hydrological investigations in eastern Australia, 1960
52. Coastal investigations at Port Hacking, New South Wales, 1960
53. Coastal hydrological investigations in the New South Wales tuna fishing area, 1960
54. Investigations by F.R.V. *Derwent Hunter* on the eastern Australian tuna grounds in 1961
55. Investigations by F.R.V. *Weerutta* on the South Australian tuna grounds in 1961
56. Investigations by F.R.V. *Marelda* on the eastern Australian tuna grounds in 1961
57. Investigations by F.V. *Estelle Star* in Western Australian waters in 1961
58. Temperature observations from Australian tuna fishing vessels in 1961
59. Investigations by F.R.V. *Derwent Hunter* on the eastern Australian tuna grounds in 1962
60. Investigations by F.R.V. *Investigator* on the South Australian tuna grounds in 1962
61. Investigations by F.R.V. *Marelda* on the eastern Australian tuna grounds in 1962
62. Investigations by F.V. *Estelle Star* in Western Australian waters in 1962
63. Temperature and salinity observations from Australian tuna fishing vessels in 1962
64. Investigations by F.R.V. *Investigator* on the South Australian tuna grounds in 1963
65. Investigations by F.R.V. *Marelda* on the eastern Australian tuna grounds in 1963
66. Temperature and salinity observations from Australian tuna fishing vessels in 1963
67. Investigations by F.R.V. *Investigator* on the South Australian tuna grounds in 1964
68. Investigations by F.R.V. *Marelda* on the eastern Australian tuna grounds in 1964
69. Temperature and salinity observations from Australian tuna fishing vessels in 1964
70. Investigations by F.R.V. *Investigator* on the South Australian tuna grounds in 1965
71. Investigations by F.V. *Estelle Star* in South Australian and New South Wales waters in 1965
72. Investigations by F.R.V. *Marelda* on the eastern Australian tuna grounds in 1965
73. Investigations by F.V. *Degei* in Queensland waters in 1965
74. Temperature and salinity observations from Australian tuna fishing vessels in 1965
75. Investigations by F.V. *Degei* in New South Wales, South, and Western Australian waters in 1966
76. Investigations by F.V. *Estelle Star* in South and Western Australian waters in 1966
77. Temperature and salinity observations from Australian tuna fishing vessels in 1966
78. Drift bottle releases and recoveries in Bass Strait and adjacent waters, 1958-1962
79. Drift bottle releases and recoveries in Western Australia, 1956-1957
80. Investigations by F.R.V. *Lancelin* in Western Australian waters in 1963