

# DAILY SCIENCE LOG BOOK

MISSION  
NUMBER

2010 - 21

DATE:

From: 29 SEP 2010 to: 3 OCT 2010

VESSEL:

VECTOR

PROJECT(S):

STRAIT OF GEORGIA / JUAN DE FUCA  
STRAIT WATER PROPERTIES SURVEY

Water Properties Group  
Fisheries and Oceans Canada  
Institute of Ocean Sciences  
Ocean Sciences Division  
North Saanich, BC, Canada

[WaterProperties.ca](http://WaterProperties.ca)

Captain: Nike McCullough  
 Second Officer: Say  
 Fishing Master: \_\_\_\_\_  
 First Officer: Ian  
 Third Officer: \_\_\_\_\_

## Mission Participants / Agencies:

[illegible][illegible]

### Data logging computer:

Data acquisition program: SEASAVE 911 +  
 CTD deck unit make: SEABIRD model: 11 serial number: 0425

## Primary CTD

|       |        |                |
|-------|--------|----------------|
| Make: | model: | serial number: |
|-------|--------|----------------|

**Primary temperature serial number:**

Primary conductivity serial number:

Secondary temperature serial number:

Secondary conductivity serial number:

|                  |        |      |
|------------------|--------|------|
| Transmissometer: | Model: | s/n: |
|------------------|--------|------|

| Fluorometer: Model | Cable gain: s/n: |
|--------------------|------------------|
|                    |                  |

Oxygen sensor: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_

Only sensor: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_  
PAR sensor: \_\_\_\_\_

Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_

| Other sensors: | s/n: |
|----------------|------|
|                |      |

| Other sensors: | s/n: |
|----------------|------|
|                |      |

Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_

Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_

## Secondary CTD

Make: \_\_\_\_\_ model: \_\_\_\_\_ serial number: \_\_\_\_\_

Primary temperature serial number: \_\_\_\_\_

Primary conductivity serial number:

Secondary temperature serial number:

Secondary conductivity serial number:

|                  |        |      |
|------------------|--------|------|
| Transmissometer: | Model: | s/n: |
|------------------|--------|------|

|                    |             |      |
|--------------------|-------------|------|
| Fluorometer: Model | Cable gain: | s/n: |
|--------------------|-------------|------|

Oxygen sensor: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_

PAR sensor: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_

Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_

Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_

Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_

Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_

CTD calibration bottle location (height above CTD in metres):

**Rosette Setup:**

Number of bottles: \_\_\_\_\_  
Manufacturer: \_\_\_\_\_  
Volume of bottles (litres): \_\_\_\_\_

**Winches:**

1. Make: SWAN Model: 329 Serial #: 1483 Used for: PORT SIDE PODASTAY \*  
2. Make: SWAN Model: 329 Serial #: 1307 Used for: CENTRE PAD - STAY  
3. Make: \_\_\_\_\_ Model: \_\_\_\_\_ Serial #: \_\_\_\_\_ Used for: \_\_\_\_\_

*Comments on performance during cruise* (comments should also be reflected in the post-cruise report):

**Salinometer:**

Make: \_\_\_\_\_ Model: \_\_\_\_\_ Serial Number: \_\_\_\_\_  
*Comments on performance during cruise* (comments should also be reflected in the post-cruise report):

**Oxygen Kit(s):**

Make: \_\_\_\_\_ Model: \_\_\_\_\_ Kit Number: \_\_\_\_\_  
Make: \_\_\_\_\_ Model: \_\_\_\_\_ Kit Number: \_\_\_\_\_  
*Comments on performance during cruise* (comments should also be reflected in the post-cruise report):

**Thermosalinograph System (SBE21):**

Program: \_\_\_\_\_ Version: \_\_\_\_\_  
Sampling interval (seconds): \_\_\_\_\_  
Fluorometer sensor serial number: \_\_\_\_\_  
*Comments on performance during cruise* (comments should also be reflected in the post-cruise report):

**ADCP Setup:**

Computer time zone: \_\_\_\_\_ User Exits: Name: \_\_\_\_\_ Exit points: \_\_\_\_\_  
Sampling interval (sec): \_\_\_\_\_ Name: \_\_\_\_\_ Exit points: \_\_\_\_\_  
Bin Length: (2^x): \_\_\_\_\_ Name: \_\_\_\_\_ Exit points: \_\_\_\_\_  
Pulse Length: \_\_\_\_\_ Work File: \_\_\_\_\_  
Buffer (bytes): \_\_\_\_\_  
Gyro Offset: \_\_\_\_\_

*Comments on performance during cruise* (comments should also be reflected in the post-cruise report):

**CTD Test Cast Information**

Test Cast along side? Yes ☐ No ☐

*Comments*

Test Cast in Saanich Inlet or other location? Yes ☐ No ☐

*Comments*

CTD pressure reading on deck (db), before cast: \_\_\_\_\_ after cast: \_\_\_\_\_

Pumps working? Yes ☐ (0011) No ☐ (0010)

Secondary Temp – Primary Temp:

(Average from the mixed region) \_\_\_\_\_

Secondary Salinity – Primary Salinity:

(Average from the mixed region) \_\_\_\_\_

*Additional Comments:*

FREEZER NOT WELL SEALED - NUTRIENT SAMPLES  
TAKE SAMPLES HOURS TO FREEZE



## DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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| Month <u>SEP</u> |              | Year <u>2010</u> |           | Ship <u>VECTOR</u> |               | Cruise ID <u>2010-21</u> |                        |            |              |           |                |              |               |                     |                                                      |
|------------------|--------------|------------------|-----------|--------------------|---------------|--------------------------|------------------------|------------|--------------|-----------|----------------|--------------|---------------|---------------------|------------------------------------------------------|
| Day              | Station Name | Time (UTC)       | Time Code | Cast Type          | Firing Method | Event Number             | Positional Information |            | Bottom Depth | Max Depth | Sample Numbers | # of Bottles | Watch Keepers | Trans. Cleaned      | Comments                                             |
|                  |              |                  |           |                    |               |                          | Latitude               | Longitude  |              |           |                |              |               |                     |                                                      |
| 29               | SI           | 2332             | BE        | ROS                |               | 1                        | 48 39.39               | 123 29.98  | 175          |           | 1-9            | 9            | PP/DT         | ✓                   | down to 100 m to prime system                        |
|                  |              | 2339             | BO        |                    |               |                          | 48 39.41               | 123 30.04  |              | 100       |                |              |               |                     |                                                      |
|                  |              | 2348             | EN        |                    |               |                          | 48 39.42               | 123 30.09  |              |           |                |              |               |                     |                                                      |
| 30               | 58           | 0126             | BE        | ROS                |               | 2                        | 48 42.99               | 123 14.27  | 332          |           |                |              | PP/WM         | ✓                   |                                                      |
|                  |              | 0134             | BO        |                    |               |                          | 48 42.99               | 123 14.17  |              | 328       |                |              |               |                     |                                                      |
|                  |              | 0140             | EN        |                    |               |                          | 48 42.98               | 123 14.13  |              |           |                |              |               |                     |                                                      |
| 30               | 59           | 0225             | BE        | ROS                |               | 3-4                      | 48 37.80               | 123 14.67  | 230          |           | 10-23          |              | PP            | ✓                   | * over →<br>SFC bottle 1/2 full<br>only 1 chl sample |
|                  |              | 0232             | BO        |                    |               |                          | 48 37.72               | 123 14.67  |              | 223       |                |              |               |                     |                                                      |
|                  |              | 0253             | EN        |                    |               |                          | 48 37.78               | 123 14.85  |              |           |                |              |               |                     |                                                      |
| 30               | 60           | 0328             | BE        | ROS                |               | 5-6                      | 48 33.85               | 123 12.76  | 292          |           |                |              | PP            | ✓                   | * Computer crash<br>reboot →                         |
|                  |              | 0336             | BO        |                    |               |                          | 48 33.79               | 123 12.69  |              | 289       |                |              |               |                     |                                                      |
|                  |              | 0347             | EN        |                    |               |                          | 48 33.76               | 123 12.68  |              |           |                |              |               |                     |                                                      |
| 30               | 61           | 0435             | BE        |                    |               | 7                        | 48 29.23               | 123 9.22   | 282          |           |                |              | PP            | ✓                   |                                                      |
|                  |              | 0444             | BO        |                    |               |                          | 48 29.14               | 123 9.19   |              | 276       |                |              |               |                     |                                                      |
|                  |              | 0448             | EN        |                    |               |                          | 48 29.14               | 123 9.21   |              |           |                |              |               |                     |                                                      |
| 30               | 101          | 1123             | BE        | CTD                |               | 8                        | 48 25.44               | 124 45.17  | 242          |           |                |              |               | 2 LE/N <sup>2</sup> |                                                      |
|                  |              | 1130             | BO        |                    |               |                          | 48 25.42               | 124 45.110 |              | 230       |                |              |               |                     |                                                      |
|                  |              | 1135             | EN        |                    |               |                          | 48 25.44               | 124 45.017 |              |           |                |              |               |                     |                                                      |

## Cast Type:

BOT = Bottle cast, no CTD  
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 SET = Fish Set

USW = Sea Water Loop  
 MOR = Mooring  
 NET = Plankton Net Haul  
 DRF = Drifter

## Bottle Firing Method:

US = Up / Stop  
 UN = Up / No stop  
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## Notes:

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BE = Beginning Time of Cast  
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Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca  
 Version: 16 April 2010

- Depart Port Bay 16:00 local - weather clear + warm

1634 - Surf PAR 1.89 003  
Wet 9.3 002

Saanich Inlet PAR  
SPAR

- BAD SPINNING @ 80 - 75m - TURN OFF DECK UNIT, TURN BACK ON - CANCEL RETRY - REALTIME DATA START - RENAME FILE CONSECUTIVELY - START PUMP  
CONTINUE ON TO SURFACE NOTE - FIRE BOTTLE CONTROL WILL RESET TO #1 SO FIRE ALREADY TRIGGERED BOTTLES UNTIL  
ONTO THE RIGHT NISHIN

- CTD okay but computer crashed stop winch, reboot computer, restart data acquisition  
with new hex. file (+ event #) - continue cast.

## DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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| Month |              |            |           | Year      |               |              | Ship                   |            |              |           | Cruise ID      |              |                                   |                |                           |
|-------|--------------|------------|-----------|-----------|---------------|--------------|------------------------|------------|--------------|-----------|----------------|--------------|-----------------------------------|----------------|---------------------------|
| Day   | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Positional Information |            | Bottom Depth | Max Depth | Sample Numbers | # of Bottles | Watch Keepers                     | Trans. Cleaned | Comments                  |
|       |              |            |           |           |               |              | Latitude               | Longitude  |              |           |                |              |                                   |                |                           |
| 30    | 102          | 1216       | BE        | ROS       |               | 9            | 48 30.006              | 124 43 986 | 256          |           |                |              | 2LE/N <sup>2</sup>                |                |                           |
|       |              | 1225       | BO        |           |               |              | 48 30.022              | 124 43 812 |              | 252       | 24-38          | 15           |                                   | ✓              |                           |
|       |              | 1243       | EN        |           |               |              | 48 30 006              | 124 43 622 |              |           |                |              |                                   |                | Surf-no Trip              |
| 30    | 103          | 1316       | BE        | ROS       |               | 10           | 48 33 006              | 124 42 991 | 120          |           | —              | 0            | 2LE/N <sup>2</sup>                | ✓              |                           |
|       |              | 1319       | BO        |           |               |              | 48 33 050              | 124 42 961 |              | 116       |                |              |                                   |                |                           |
|       |              | 1322       | EN        |           |               |              | 48 33 036              | 124 42 932 |              |           |                |              |                                   |                |                           |
| 30    | 76           | 1422       | BE        | ROS       |               | 11           | 48 31 372              | 124 30 036 | 90           |           | —              | 0            | (DT) <sup>2</sup> +N <sup>2</sup> |                |                           |
|       |              | 1424       | BO        |           |               |              | 48 31 344              | 124 30 046 |              |           |                |              |                                   |                |                           |
|       |              | 1426       | EN        |           |               |              | 48 31 324              | 124 30 019 |              |           |                |              |                                   |                |                           |
| 30    | 75           | 1458       | BE        | ROS       |               | 12           | 48 28 162              | 124 32 926 | 226          |           | 39-52          | 14           | (DT) <sup>2</sup> +N <sup>2</sup> | ✓              |                           |
|       |              | 1503       | BO        |           |               |              | 48 28 135              | 124 32 940 |              | 226       |                |              |                                   |                |                           |
|       |              | 1520       | EN        |           |               |              | 48 30 006              | 124 43 622 |              |           |                |              |                                   |                |                           |
| 30    | 74           | 1551       | BE        | ROS       |               | 13           | 48 25 043              | 124 35 671 |              | 190       | —              | 0            |                                   | ✓              |                           |
|       |              | 1556       | BO        |           |               |              | 48 25 027              | 124 35 765 |              | 176       |                |              |                                   |                |                           |
|       |              | 1601       | EN        |           |               |              | 48 25 021              | 124 35 773 |              |           |                |              |                                   |                |                           |
|       | 73           | 1826       | BE        | ROS       |               | 14           | 48 15 011              | 124 06 577 | 162          |           |                |              | (DT) <sup>2</sup> +N <sup>2</sup> | ✓              | Spikes @ 20m on down cast |
|       |              | 1830       | BO        |           |               | 15           | 48 15 051              | 124 06 510 |              | 152       |                |              |                                   |                | new upcast                |
|       |              | 1837       | EN        |           |               |              | 48 15 062              | 124 06 485 |              |           |                |              |                                   |                |                           |

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*This page is for any notes or observations*

1130 - STN 73 - Spikes on downcast ~ 70m Event 14  
- re cast for up cast - event 15

# DAILY SCIENCE LOG

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| Month |              | Year       |           | Ship      |               | Cruise ID    |                        |           |              |           |                |              |               |                |          |
|-------|--------------|------------|-----------|-----------|---------------|--------------|------------------------|-----------|--------------|-----------|----------------|--------------|---------------|----------------|----------|
| Day   | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Positional Information |           | Bottom Depth | Max Depth | Sample Numbers | # of Bottles | Watch Keepers | Trans. Cleaned | Comments |
|       |              |            |           |           |               |              | Latitude               | Longitude |              |           |                |              |               |                |          |
| 30    | 72           | 19:11      | BE        | ROS       |               | 16           | 48 18.71               | 124 4.00  | 187          |           |                | 13           | RM/JP         | ✓              |          |
|       |              | 19:18      | BO        |           |               |              | 48 18.86               | 124 3.87  |              | 175       | 53-65          |              |               |                |          |
|       |              | 19:31      | EN        |           |               |              | 48 19.17               | 124 3.97  |              |           |                |              |               |                |          |
| 30    | 71           | 20:13      | BE        | ROS       |               | 17           | 48 22.17               | 123 59.52 | 110          |           |                |              | RM/JP         | ✓              |          |
|       |              | 20:18      | BO        |           |               |              | 48 22.26               | 123 59.45 |              | 105       |                |              |               |                |          |
|       |              | 20:21      | EN        |           |               |              | 48 22.30               | 123 59.41 |              |           |                |              |               | ✓              |          |
| 30    | 70           | 21:41      | BE        | ROS       |               | 18           | 48 19.20               | 123 43.23 | 150          |           |                |              |               |                |          |
|       |              | 21:44      | BO        |           |               |              | 48 19.21               | 123 43.27 |              | 145       |                |              |               |                |          |
|       |              | 21:47      | EN        |           |               |              | 48 19.22               | 123 43.28 |              |           |                |              |               |                |          |
| 30    | 69           | 22:21      | BE        | ROS       |               | 19           | 48 15.66               | 123 43.28 | 179          |           | 66-77          |              |               | ✓              |          |
|       |              | 22:26      | BO        |           |               |              | 48 15.69               | 123 43.26 |              | 174       |                |              |               |                |          |
|       |              | 22:42      | EN        |           |               |              | 48 15.81               | 123 43.29 |              |           |                |              |               |                |          |
| 30    | 68           | 23:28      | BE        | ROS       |               | 20           | 48 12.23               | 123 43.12 | 138          |           |                |              |               | ✓              |          |
|       |              | 23:30      | BO        |           |               |              | 48 12.23               | 123 43.19 |              | 133       |                |              |               |                |          |
|       |              | 23:33      | EN        |           |               |              | 48 12.25               | 123 43.27 |              |           |                |              |               |                |          |
| 01    | 105          | 01:18      | BE        |           |               | 21           | 48 10.99               | 123 19.01 | 84           |           |                |              |               | ✓              |          |
|       |              | 01:20      | BO        |           |               |              | 48 10.97               | 123 18.98 |              | 80        |                |              |               |                |          |
|       |              | 01:22      | EN        |           |               |              | 48 10.96               | 123 18.96 |              |           |                |              |               |                |          |

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| Month |              |            |           | Year      |               |              | Ship                   |           |              |           | Cruise ID      |              |               |                |          |
|-------|--------------|------------|-----------|-----------|---------------|--------------|------------------------|-----------|--------------|-----------|----------------|--------------|---------------|----------------|----------|
| OCT   |              |            |           | 2010      |               |              | VECTOR                 |           |              |           | 2010-21        |              |               |                |          |
| Day   | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Positional Information |           | Bottom Depth | Max Depth | Sample Numbers | # of Bottles | Watch Keepers | Trans. Cleaned | Comments |
|       |              |            |           |           |               |              | Latitude               | Longitude |              |           |                |              |               |                |          |
| 01    | ADCP         | 01:48      | BE        | ROS       |               | 22           | 48 13.97               | 123 17.99 | 119          |           | 78-87          |              | PC/WH/JP      | ✓              |          |
|       |              | 01:52      | BO        |           |               |              | 48 13.97               | 123 17.95 |              | 115       |                |              |               |                |          |
|       |              | 02:04      | EN        |           |               |              | 48 13.96               | 123 17.74 |              |           |                |              |               |                |          |
| 01    | 104          | 02:46      | BE        | ROS       |               | 23           | 48 19.98               | 123 18.03 | 85           |           |                |              | "             | ✓              |          |
|       |              | 02:51      | BO        |           |               |              | 48 20.00               | 123 18.05 |              | 80        |                |              |               |                |          |
|       |              | 02:52      | EN        |           |               |              | 48 20.01               | 123 18.06 |              |           |                |              |               |                |          |
| 01    | 67           | 03:19      | BE        | ROS       |               | 24           | 48 22.68               | 123 18.09 | 110          |           |                |              | "             | ✓              |          |
|       |              | 03:22      | BO        |           |               |              | 48 22.73               | 123 18.07 |              | 106       |                |              |               |                |          |
|       |              | 03:24      | EN        |           |               |              | 48 22.75               | 123 18.04 |              |           |                |              |               |                |          |
| 01    | 66           | 03:57      | BE        | ROS       |               | 25           | 48 19.32               | 123 14.15 | 100          |           |                |              | "             | ✓              |          |
|       |              | 04:00      | BO        |           |               |              | 48 19.31               | 123 14.17 |              | 96        |                |              |               |                |          |
|       |              | 04:02      | EN        |           |               |              | 48 19.30               | 123 14.18 |              |           |                |              |               |                |          |
| 01    | 65           | 04:34      | BE        | ROS       |               | 26           | 48 15.87               | 123 9.87  | 125          |           | 88-97          |              | "             | ✓              |          |
|       |              | 04:37      | BO        |           |               |              | 48 15.80               | 123 9.90  |              | 122       |                |              |               |                |          |
|       |              | 04:49      | EN        |           |               |              | 48 15.63               | 123 10.03 |              |           |                |              |               |                |          |
| 01    | 64           | 05:31      | BE        | ROS       |               | 27           | 48 12.82               | 123 5.88  | 108          |           |                |              | "             | ✓              |          |
|       |              | 05:35      | BO        |           |               |              | 48 12.82               | 123 5.90  |              | 105       |                |              |               |                |          |
|       |              | 05:37      | EN        |           |               |              | 48 12.81               | 123 5.92  |              |           |                |              |               |                |          |

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| Month <u>OCT</u> |              |            |           | Year <u>2010</u> |               |              | Ship <u>VECTOR</u>     |            |              |           | Cruise ID <u>2010-21</u> |              |                                  |                |                 |
|------------------|--------------|------------|-----------|------------------|---------------|--------------|------------------------|------------|--------------|-----------|--------------------------|--------------|----------------------------------|----------------|-----------------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Positional Information |            | Bottom Depth | Max Depth | Sample Numbers           | # of Bottles | Watch Keepers                    | Trans. Cleaned | Comments        |
|                  |              |            |           |                  |               |              | Latitude               | Longitude  |              |           |                          |              |                                  |                |                 |
| 01               | 63           | 0622       | BE        | ROS              |               | 28           | 48 14.62               | 122 58.62  | 153          |           |                          |              | RE/MT/JP                         | ✓              |                 |
|                  |              | 0627       | BO        |                  |               |              | 48 14.66               | 122 58.79  |              | 150       |                          |              |                                  |                |                 |
|                  |              | 0630       | EN        |                  |               |              | 48 14.68               | 122 58.91  |              |           |                          |              |                                  |                |                 |
| 01               | 62           | 0730       | BE        | ROS              |               | 29           | 48 22.83               | 123 02.66  | 148          |           | 98-108                   | 11           | (DT) <sup>2</sup> N <sup>2</sup> |                |                 |
|                  |              | 0735       | BO        |                  |               |              | 48 22.87               | 123 02.76  |              | 144       |                          |              |                                  | ✓              |                 |
|                  |              | 0749       | EN        |                  |               |              | 48 22.84               | 123 02.99  |              |           |                          |              |                                  |                |                 |
| 01               | 54           | 0940       | BE        | ROS              |               | 30           | 48 26.64               | 122 44.32  | 77           |           | —                        | 0            | (DT) <sup>3</sup> N <sup>2</sup> |                |                 |
|                  |              | 0943       | BO        |                  |               |              | 48 26.55               | 122 44.29  |              | 74        |                          |              |                                  | ✓              |                 |
|                  |              | 0946       | EN        |                  |               |              | 48 26.56               | 122 44.29  |              |           |                          |              |                                  |                |                 |
| 01               | 53           | 1049       | BE        | ROS              |               | 31           | 48 33.23               | 122 44.99  | 62           |           | —                        | 0            | (DT) <sup>3</sup> N <sup>2</sup> | ✓              |                 |
|                  |              | 1052       | BO        |                  |               |              | 48 33.13               | 122 44.96  |              | 55        |                          |              |                                  |                |                 |
|                  |              | 1054       | EN        |                  |               |              | 48 33.06               | 122 44.99  |              |           |                          |              |                                  |                |                 |
| 01               | 52           | 1155       | BE        | ROS              |               | 32           | 48 39.04               | 122° 43.31 | 87           |           | —                        | 0            | (DT) <sup>3</sup> N <sup>2</sup> | ✓              |                 |
|                  |              | 1159       | BO        |                  |               |              | 48 38.89               | 122° 43.21 |              | 78        |                          |              |                                  |                |                 |
|                  |              | 1202       | EN        |                  |               |              | 48 38.75               | 122° 43.17 |              |           |                          |              |                                  |                |                 |
| 01               | 51           | 1331       | BE        | ROS              |               | 33           | 48° 46.91              | 122 51.61  | 165          |           | —                        | 0            | (DT) <sup>2</sup> N <sup>2</sup> | ✓              | - repositioning |
|                  |              | 1340       | BO        |                  |               |              | 46.81                  | 51.52      |              | 159       |                          |              |                                  |                | boat w/ CTD in  |
|                  |              | 1343       | EN        |                  |               |              | 46.82                  | 51.43      |              |           |                          |              |                                  |                | water @ surface |
|                  |              |            |           |                  |               |              |                        |            |              |           |                          |              |                                  |                | horizontal tank |

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| Month OCTOBER |              |            |           | Year 2010 |               |              | Ship VECTOR            |             |              |           | Cruise ID 2010-21 |              |                                  |                |                               |
|---------------|--------------|------------|-----------|-----------|---------------|--------------|------------------------|-------------|--------------|-----------|-------------------|--------------|----------------------------------|----------------|-------------------------------|
| Day           | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Positional Information |             | Bottom Depth | Max Depth | Sample Numbers    | # of Bottles | Watch Keepers                    | Trans. Cleaned | Comments                      |
|               |              |            |           |           |               |              | Latitude               | Longitude   |              |           |                   |              |                                  |                |                               |
| 01            | 57           | 1508       | BE        | ROS       |               | 34           | 48° 43.99              | 123° 08.06  | 160          |           | —                 | 0            | (DT) <sup>2</sup> N <sup>2</sup> | ✓              |                               |
|               |              | 1512       | BO        |           |               |              | 48° 44.04              | 123° 08.01  |              | 148       |                   |              |                                  |                |                               |
|               |              | 1515       | EN        |           |               |              | 48° 44.07              | 123° 07.99  |              |           |                   |              |                                  |                |                               |
| 01            | 56           | 1544       | BE        | ROS       |               | 35           | 48° 46.22              | 123° 02.01  | 210          |           | 109-122           | 14           | (DT) <sup>2</sup> N <sup>2</sup> | ✓              | -drifted into shallower water |
|               |              | 1549       | BO        |           |               |              | 48° 46.41              | 123° 01.85  |              | 196       |                   |              |                                  |                |                               |
|               |              | 1604       | EN        |           |               |              | 48° 46.71              | 123° 01.50  |              |           |                   |              |                                  |                |                               |
| 01            | 47           | 1646       | BE        | ROS       |               | 36           | 48° 49.28              | 123° 06.17  | 185          |           | —                 | 0            | (DT) <sup>2</sup> N <sup>2</sup> | ✓              |                               |
|               |              | 1652       | BO        |           |               |              | 48° 49.29              | 123° 06.21  |              | 180       |                   |              |                                  |                |                               |
|               |              | 1655       | EN        |           |               |              | 48° 49.30              | 123° 06.23  |              |           |                   |              |                                  |                |                               |
| 01            | 48           | 1718       | BE        | ROS       |               | 37↓          | 48° 51.71              | 123° 03.23  | 228          |           |                   |              | (DT) <sup>2</sup> N <sup>2</sup> |                | Spikes from 150m              |
|               |              | 1726       | BO        |           |               | 38↑          | 48° 51.74              | 123° 03.29  |              | 214       |                   |              |                                  | ✓              | New cast for up               |
|               |              | 1730       | EN        |           |               |              | 48° 51.745             | 123° 03.346 |              |           |                   |              |                                  |                |                               |
| 01            | 49           | 1801       | BE        | ROS       |               | 39           | 48° 55.016             | 122° 59.609 | 132          |           |                   |              | (DT) <sup>2</sup> N <sup>2</sup> | ✓              |                               |
|               |              | 1805       | BO        |           |               |              | 48° 55.057             | 122° 59.627 |              | 128       |                   |              |                                  |                |                               |
|               |              | 1808       | EN        |           |               |              | 48° 55.093             | 122° 59.648 |              |           |                   |              |                                  |                |                               |
|               | 50           | 1834       | BE        | ROS       |               | 40           | 48° 57.69              | 122° 56.04  | 30           |           |                   |              | (DT) <sup>2</sup> N <sup>2</sup> | ✓              |                               |
|               |              | 1836       | BO        |           |               |              | 48° 57.701             | 122° 56.06  |              | 26        |                   |              |                                  |                |                               |
|               |              | 1837       | EN        |           |               |              | 48° 57.704             | 122° 56.06  |              |           |                   |              |                                  |                |                               |

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| Month <u>OCT</u> |              |            |           | Year <u>2010</u> |               |              | Ship <u>VECTOR</u>     |           |              |           | Cruise ID <u>2010-21</u> |              |               |                |              |
|------------------|--------------|------------|-----------|------------------|---------------|--------------|------------------------|-----------|--------------|-----------|--------------------------|--------------|---------------|----------------|--------------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Positional Information |           | Bottom Depth | Max Depth | Sample Numbers           | # of Bottles | Watch Keepers | Trans. Cleaned | Comments     |
|                  |              |            |           |                  |               |              | Latitude               | Longitude |              |           |                          |              |               |                |              |
| 01               | 44           | 1925       | BE        | ROS              |               | 41           | 48 56.76               | 123 6.01  | 118          |           |                          |              | PC/NM/JP      | ✓              |              |
|                  |              | 1928       | BO        |                  |               |              | 48 56.76               | 123 5.97  |              | 115       |                          |              |               |                |              |
|                  |              | 1930       | EN        |                  |               |              | 48 56.76               | 123 5.97  |              |           |                          |              |               |                |              |
| 01               | UVEX         | 2003       | BE        | ROS              |               | 42           | 48 56.70               | 123 9.60  | 139          |           |                          |              |               | ✓              | Damen's UV   |
|                  |              | 2015       | BO        |                  |               |              | 48 52.53               | 123 9.52  |              | 8         |                          |              |               |                | experiment → |
|                  |              | 2021       | EN        |                  |               |              | 48 52.49               | 123 9.49  |              |           |                          |              |               |                |              |
| 01               | 45           | 2040       | BE        | ROS              |               | 43           | 48 53.86               | 123 8.36  | 128          |           |                          |              |               | ✓              |              |
|                  |              | 2044       | BO        |                  |               |              | 48 53.81               | 123 8.36  |              | 125       |                          |              |               |                |              |
|                  |              | 2047       | EN        |                  |               |              | 48 53.80               | 123 8.38  |              |           |                          |              |               |                |              |
| 01               | 46           | 2110       | BE        |                  |               | 44           | 48 51.39               | 123 10.79 | 178          |           |                          |              |               | ✓              |              |
|                  |              | 2115       | BO        |                  |               |              | 48 51.36               | 123 10.76 |              | 175       |                          |              |               |                |              |
|                  |              | 2128       | EN        |                  |               |              | 48 51.28               | 123 10.65 |              |           |                          |              |               |                |              |
| 01               | 106          | 2238       | BE        |                  |               | 45           | 49 1.05                | 123 13.27 | 75           |           |                          |              |               | ✓              |              |
|                  |              | 2241       | BO        |                  |               |              | 49 1.03                | 123 13.30 |              | 73        |                          |              |               |                |              |
|                  |              | 2243       | EN        |                  |               |              | 49 1.02                | 123 13.32 |              |           |                          |              |               |                |              |
| 01               | 107          | 2318       | BE        |                  |               | 46           | 48 58.44               | 123 17.89 | 180          |           |                          |              |               |                |              |
|                  |              | 2323       | BO        |                  |               |              | 48 58.43               | 123 17.85 |              | 175       |                          |              |               | ✓              |              |
|                  |              | 2326       | EN        |                  |               |              | 48 58.43               | 123 17.81 |              |           |                          |              |               |                |              |

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SOLAR NOON 1302 LOCAL

|              | WV<br>Press. | CTD<br>PRESS. | UTC<br>TIME | PAR                | SPAR               | TRANS | FLUOR                | SAL  | TEMP |
|--------------|--------------|---------------|-------------|--------------------|--------------------|-------|----------------------|------|------|
| DARK TEST    |              |               | 20 04       | $3.74 \times 10^3$ | $2.22 \times 10^3$ | 85.22 |                      |      |      |
| LIGHT TEST   |              |               | 20 05       | $3.77 \times 10^3$ | $2.22 \times 10^3$ | 85.22 |                      |      |      |
| SURFACE TEST | 1.4          |               | 20 07       | $1.32 \times 10^3$ | $2.21 \times 10^3$ | 74.86 | $2 \times 10^{-2}$   | 21.8 | 14.4 |
| PROFILE @ 5M | 5.92         |               | 20 12       | $2.01 \times 10^2$ | $2.2 \times 10^3$  | 74.42 | 1.56                 | 26.5 | 13.1 |
| BOTTOM @ 7M  | 8.05         |               | 20 15       | $1.04 \times 10^2$ | $2.20 \times 10^3$ | 75.50 | 1.58                 | 27.7 | 12.6 |
| PROFILE @ 3M | 3.94         |               | 20 16       | $4.01 \times 10^2$ | $2.20 \times 10^3$ | 75.16 | 1.38                 | 25.7 | 13.4 |
| @ 1M         | 2.05         |               | 20 18       | $8.78 \times 10^2$ | $2.20 \times 10^3$ | 74.49 | $7.5 \times 10^{-1}$ | 22.7 | 14.4 |
| SURFACE      | 1.3          |               | 20 19       | $1.40 \times 10^3$ | $2.20 \times 10^3$ | 72.3  | $4.1 \times 10^{-1}$ | 21.5 | 14.7 |
| LIGHT (AIR)  |              |               | 20 21       | $3.77 \times 10^3$ | $2.21 \times 10^3$ | 82.4  |                      |      | 14.9 |
| DARK         |              |               | 20 22       | $3.76 \times 10^3$ | $2.21 \times 10^3$ | 82.3  |                      |      | 15.0 |



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| Month <u>OCT</u> |              |            |           | Year <u>2010</u> |               |              | Ship <u>VECTOR</u>     |           |              |           | Cruise ID <u>2010-21</u> |              |               |                |          |
|------------------|--------------|------------|-----------|------------------|---------------|--------------|------------------------|-----------|--------------|-----------|--------------------------|--------------|---------------|----------------|----------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Positional Information |           | Bottom Depth | Max Depth | Sample Numbers           | # of Bottles | Watch Keepers | Trans. Cleaned | Comments |
|                  |              |            |           |                  |               |              | Latitude               | Longitude |              |           |                          |              |               |                |          |
| 02               | 43           | 0026       | BE        | ROS              |               | 47           | 49 0.19                | 123 30.09 | 198          |           |                          |              | RE/HM/JP      | ✓              |          |
|                  |              | 0030       | BO        |                  |               |              | 49 0.18                | 123 30.13 |              | 192       |                          |              |               |                |          |
|                  |              | 0034       | EN        |                  |               |              | 49 0.17                | 123 30.16 |              |           |                          |              |               |                |          |
| 02               | 42           | 0059       | BE        | ROS              |               | 48           | 49 1.74                | 123 26.22 | 320          |           |                          |              |               | ✓              |          |
|                  |              | 0107       | BO        |                  |               |              | 49 1.69                | 123 26.23 |              | 315       |                          |              |               |                |          |
|                  |              | 0134       | EN        |                  |               |              | 49 1.47                | 123 26.44 |              |           |                          |              |               |                |          |
| 02               | 41           | 0200       | BE        | ROS              |               | 49           | 49 3.26                | 123 22.30 | 240          |           |                          |              |               | ✓              |          |
|                  |              | 0206       | BO        |                  |               |              | 49 3.25                | 123 22.39 |              | 240       |                          |              |               |                |          |
|                  |              | 0210       | EN        |                  |               |              | 49 3.26                | 123 22.42 |              |           |                          |              |               |                |          |
| 02               | 108          | 0236       | BE        | ROS              |               | 50           | 49 4.39                | 123 19.20 | 101          |           |                          |              |               | ✓              |          |
|                  |              | 0240       | BO        |                  |               |              | 49 4.40                | 123 19.25 |              | 95        |                          |              |               |                |          |
|                  |              | 0241       | EN        |                  |               |              | 49 4.40                | 123 19.27 |              |           |                          |              |               |                |          |
| 02               | 37           | 0347       | BE        |                  |               | 51           | 49 13.60               | 123 20.71 | 214          |           |                          |              |               | ✓              |          |
|                  |              | 0352       | BO        |                  |               |              | 49 13.63               | 123 20.79 |              | 210       |                          |              |               |                |          |
|                  |              | 0356       | EN        |                  |               |              | 49 13.65               | 123 20.83 |              |           |                          |              |               |                |          |
| 02               | 38           | 0429       | BE        |                  |               | 52           | 49 12.01               | 123 26.35 | 306          |           |                          |              |               |                |          |
|                  |              | 0435       | BO        |                  |               |              | 49 12.04               | 123 26.51 |              | 302       |                          |              |               |                |          |
|                  |              | 0441       | EN        |                  |               |              | 49 12.06               | 123 26.66 |              |           |                          |              |               |                |          |

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Notes:

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| Month <u>OCT</u> |              |            |           | Year <u>2010</u> |               |              | Ship <u>VECTOR</u>     |            |              |           | Cruise ID <u>2010-21</u> |              |                                   |                |                                                                                                  |
|------------------|--------------|------------|-----------|------------------|---------------|--------------|------------------------|------------|--------------|-----------|--------------------------|--------------|-----------------------------------|----------------|--------------------------------------------------------------------------------------------------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Positional Information |            | Bottom Depth | Max Depth | Sample Numbers           | # of Bottles | Watch Keepers                     | Trans. Cleaned | Comments                                                                                         |
|                  |              |            |           |                  |               |              | Latitude               | Longitude  |              |           |                          |              |                                   |                |                                                                                                  |
| 02               | 39           | 05.20      | BE        | ROS              |               | 53           | 49 9.75                | 123 32.88  | 374          |           | 151-167                  | 17           | Re/Am/SP                          | ✓              |                                                                                                  |
|                  |              | 05.28      | BO        |                  |               |              | 49 9.72                | 123 32.92  |              | 371       |                          |              |                                   |                |                                                                                                  |
|                  |              | 05.48      | EN        |                  |               |              | 49 9.65                | 123 33.14  |              |           |                          |              |                                   |                |                                                                                                  |
| 02               | 40           | 06.23      | BE        | ROS              |               | 54           | 49 8.61                | 123 36.74  | 148          |           | —                        | 0            |                                   | ✓              |                                                                                                  |
|                  |              | 06.27      | BO        |                  |               |              | 49 8.62                | 123 36.70  |              | 145       |                          |              |                                   |                |                                                                                                  |
|                  |              | 06.29      | EN        |                  |               |              | 49 8.65                | 123 36.69  |              |           |                          | 0            |                                   |                |                                                                                                  |
| 02               | 26           | 07.48      | BE        | CTD              |               | 55           | 49 14.316              | 123 50.800 | 254          |           | —                        |              | (DT) <sup>2</sup> +N <sup>2</sup> | ✓              | spiked data right off on 1st cast. wrote over w/ a 2nd cast.                                     |
|                  |              | 07.54      | BO        |                  |               |              | 49 14.321              | 123 50.819 |              | 248       |                          |              |                                   |                |                                                                                                  |
|                  |              | 07.59      | EN        |                  |               |              | 49 14.321              | 123 50.822 |              |           |                          |              |                                   |                |                                                                                                  |
| 02               | 27           | 08.38      | BE        | ROS              |               | 56/57        | 49 19.135              | 123 48.049 | 347          |           | 168-182                  | 15           | "                                 | ✓              | spike on upcast caused program to shut down before firing bottle #4. Finished firing in cast 57. |
|                  |              | 08.46      | BO        |                  |               |              | 49 19.141              | 123 48.041 |              | 342       |                          |              |                                   |                |                                                                                                  |
|                  |              | 09.12      | EN        |                  |               |              | 49 19.163              | 123 48.026 |              |           |                          |              |                                   |                |                                                                                                  |
| 02               | 28           | 09.54      | BE        | ROS              |               | 58           | 49 24.15               | 123 45.45  | 132          |           | —                        | 0            | "                                 | ✓              |                                                                                                  |
|                  |              | 09.59      | BO        |                  |               |              | 49 24.192              | 123 45.55  |              | 129       |                          |              |                                   |                |                                                                                                  |
|                  |              | 10.03      | EN        |                  |               |              | 49 24.24               | 123 45.63  |              |           |                          |              |                                   |                |                                                                                                  |
| 02               | 24           | 11.42      | BE        | ROS              |               | 59           | 49 30.348              | 124 5.928  | 426          |           | —                        | 0            | "                                 | ✓              |                                                                                                  |
|                  |              | 11.51      | BO        |                  |               |              | 49 30.427              | 124 5.908  |              | 420       |                          |              |                                   |                |                                                                                                  |
|                  |              | 11.58      | EN        |                  |               |              | 49 30.486              | 124 5.888  |              |           |                          |              |                                   |                |                                                                                                  |

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Notes:

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*This page is for any notes or observations*

0400 - Nutrient samples take too long to freeze. Vector freezer lid not sealed well, is very old, needs to be replaced.

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| Month OCTOBER |              |            | Year 2010 |           |               |              | Ship VECTOR            |             |              | Cruise ID 2010-21 |                |              |                                  |                |                  |
|---------------|--------------|------------|-----------|-----------|---------------|--------------|------------------------|-------------|--------------|-------------------|----------------|--------------|----------------------------------|----------------|------------------|
| Day           | Station Name | Time (UTC) | Time Code | Cast Type | Firing Method | Event Number | Positional Information |             | Bottom Depth | Max Depth         | Sample Numbers | # of Bottles | Watch Keepers                    | Trans. Cleaned | Comments         |
|               |              |            |           |           |               |              | Latitude               | Longitude   |              |                   |                |              |                                  |                |                  |
| 02            | 25           | 1241       | BE        | ROS       |               | 60           | 49° 27.72              | 124° 7.48   | 289          |                   | —              | 0            | (DT) <sup>2</sup> N <sup>2</sup> | —              |                  |
|               |              | 1247       | BO        |           |               |              | 49° 27.75              | 124° 7.44   |              | 286               |                |              |                                  |                |                  |
|               |              | 1253       | EN        |           |               |              | 49° 27.78              | 124° 7.41   |              |                   |                |              |                                  |                |                  |
| 02            | 2            | 1344       | BE        | ROS       |               | 61           | 49 24.110              | 124° 09.284 | 275          |                   | 183-198        | 16           | (DT) <sup>2</sup> N <sup>2</sup> | —              | 198 not sampled  |
|               |              | 1350       | BO        |           |               |              | 49° 24.107             | 124° 09.294 |              | 271               |                |              |                                  |                |                  |
|               |              | 1406       | EN        |           |               |              | 49° 24.101             | 124° 09.300 |              |                   |                |              |                                  |                |                  |
| 02            | 1            | 1435       | BE        | CTD       |               | 62           | 49° 20.935             | 124° 12.006 | 244          |                   | —              | 0            | (DT) <sup>2</sup> N <sup>2</sup> | ✓              | repositioning    |
|               |              | 1444       | BO        |           |               |              | 49° 20.293             | 124° 12.096 |              | 241               |                |              |                                  |                |                  |
|               |              | 1450       | EN        |           |               |              | 49° 20.305             | 124° 12.116 |              |                   |                |              |                                  |                |                  |
| 02            | 4            | 1541       | BE        | CTD       |               | 63           | 49 24.485              | 124 22 100  | 340          |                   | —              |              |                                  |                |                  |
|               |              | 1548       | BO        |           |               |              | 49 24 457              | 124 22 070  |              | 335               |                |              |                                  |                | spikes on upcast |
|               |              | 1552       | EN        |           |               |              | 49 24 451              | 124 22 061  |              |                   |                |              |                                  |                |                  |
| 02            | 3            | 1616       | BE        | ROS       |               | 64           | 49 26.59               | 124 20.224  | 321          |                   | 199-214        | 16           |                                  | ✓              |                  |
|               |              | 1624       | BO        |           |               |              | 49 26.62               | 124 20.36   |              | 317               |                |              |                                  |                |                  |
|               |              | 1643       | EN        |           |               |              | 49 26.628              | 124 20 653  |              |                   |                |              |                                  |                |                  |
| 02            | 5            | 1730       | BE        | CTD       |               | 65           | 49 27.409              | 124 30 779  | 314          |                   |                |              |                                  | ✓              |                  |
|               |              | 1736       | BO        |           |               |              | 49 27.403              | 124 30 756  |              | 313               |                |              |                                  |                |                  |
|               |              | 1743       | EN        |           |               |              | 49 27.399              | 124 30 734  |              |                   |                |              |                                  |                |                  |

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we all disagree with calling everything "ROSETTE". Distinction should be made between deployments with and without fired bottles.



# DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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| Month <u>Oct</u> |              |            |           | Year <u>2010</u> |               |              |                        | Ship <u>Vector</u> |              |           |                | Cruise ID <u>2010-21</u> |                  |                |                |
|------------------|--------------|------------|-----------|------------------|---------------|--------------|------------------------|--------------------|--------------|-----------|----------------|--------------------------|------------------|----------------|----------------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Positional Information |                    | Bottom Depth | Max Depth | Sample Numbers | # of Bottles             | Watch Keepers    | Trans. Cleaned | Comments       |
|                  |              |            |           |                  |               |              | Latitude               | Longitude          |              |           |                |                          |                  |                |                |
| 02               | 6            | 18:13      | BE        | ROS              |               | 66           | 49 30.624              | 124 27.830         | 192          |           | 215-227        | 13                       | DTN <sup>2</sup> | ✓              |                |
|                  |              | 18:19      | BO        |                  |               |              | 49 30.620              | 124 27.703         |              | 188       |                |                          |                  |                |                |
|                  |              | 18:33      | EN        |                  |               |              | 49 30.576              | 124 27.527         |              |           |                |                          |                  |                |                |
| 02               | 7            | 19:03      | BE        | ROS              |               | 67           | 49 34.43               | 124 24.24          | 350          |           |                |                          | R/NM/JP          | ✓              |                |
|                  |              | 19:10      | BO        |                  |               |              | 49 34.46               | 124 24.23          |              | 346       |                |                          |                  |                |                |
|                  |              | 19:16      | EN        |                  |               |              | 49 34.47               | 124 24.21          |              |           |                |                          |                  |                |                |
| 02               | 9            | 20:17      | BE        | ROS              |               | 68           | 49 35.52               | 124 38.28          | 170          |           | 228-239        |                          | "                | ✓              |                |
|                  |              | 20:22      | BO        |                  |               |              | 49 35.52               | 124 38.34          |              | 165       |                |                          |                  |                |                |
|                  |              | 20:35      | EN        |                  |               |              | 49 35.57               | 124 38.37          |              |           |                |                          |                  |                |                |
| 02               | 8            | 21:15      | BE        | ROS              |               | 69           | 49 39.28               | 124 32.97          | 336          |           |                |                          |                  | ✓              | BLUE SCREEN OF |
|                  |              | 21:27      | BO        |                  |               | 70           | 49 39.25               | 124 32.99          |              | 333       |                |                          |                  |                |                |
|                  |              | 21:32      | EN        |                  |               |              | 49 39.23               | 124 32.95          |              |           |                |                          |                  |                |                |
| 02               | 12           | 22:22      | BE        | ROS              |               | 71           | 49 43.56               | 124 40.78          | 356          |           |                |                          |                  | ✓              |                |
|                  |              | 22:30      | BO        |                  |               |              | 49 43.59               | 124 40.72          |              | 351       |                |                          |                  |                |                |
|                  |              | 22:50      | EN        |                  |               |              | 49 43.41               | 124 40.50          |              |           |                |                          |                  |                |                |
| 02               | 11           | 23:18      | BE        | ROS              |               | 72           | 49 42.42               | 124 43.39          | 300          |           |                |                          |                  | ✓              |                |
|                  |              | 23:24      | BO        |                  |               |              | 49 42.40               | 124 43.46          |              | 295       |                |                          |                  |                |                |
|                  |              | 23:29      | EN        |                  |               |              | 49 42.35               | 124 43.48          |              |           |                |                          |                  |                |                |

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*This page is for any notes or observations*

DEATH - REBOOT @ 2124  
DIED @ 236m (END OF #69) START #70 @ 236m @ 2125<sub>HR</sub>

# DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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| Month <u>Oct</u> |              |            |           | Year <u>2010</u> |               |              | Ship <u>VECTOR</u>     |           |              |           | Cruise ID <u>2010-21</u> |              |               |                |                                |
|------------------|--------------|------------|-----------|------------------|---------------|--------------|------------------------|-----------|--------------|-----------|--------------------------|--------------|---------------|----------------|--------------------------------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Positional Information |           | Bottom Depth | Max Depth | Sample Numbers           | # of Bottles | Watch Keepers | Trans. Cleaned | Comments                       |
|                  |              |            |           |                  |               |              | Latitude               | Longitude |              |           |                          |              |               |                |                                |
| 02               | 10           | 2353       | BE        | ROS              |               | 73           | 49 40.70               | 124 47.30 | 94           |           |                          |              | Re/Am/CP      | ✓              |                                |
|                  |              | 2356       | BO        |                  |               |              | 49 40.69               | 124 47.34 |              | 90        |                          |              |               |                |                                |
|                  |              | 2358       | EN        |                  |               |              | 49 40.69               | 124 47.37 |              |           |                          |              |               |                |                                |
| 03               | 15           | 0135       | BE        | ROS              |               | 74           | 49 51.59               | 125 1.53  | 130          |           |                          |              |               | ✓              |                                |
|                  |              | 0138       | BO        |                  |               |              | 49 51.61               | 125 1.51  |              | 125       |                          |              |               |                |                                |
|                  |              | 0141       | EN        |                  |               |              | 49 51.61               | 125 1.48  |              |           |                          |              |               |                |                                |
| 03               | 16           | 0232       | BE        | ROS              |               | 75           | 49 57.66               | 125 8.85  | 154          |           | 273-283                  | 11           |               | ✓              |                                |
|                  |              | 0236       | BO        |                  |               |              | 49 57.62               | 125 8.96  |              | 150       |                          |              |               |                |                                |
|                  |              | 0246       | EN        |                  |               |              | 49 57.55               | 125 9.12  |              |           |                          |              |               |                |                                |
| 03               | 21           | 0339       | BE        | ROS              |               | 76           | 50 1.99                | 125 13.60 | 75           |           |                          |              |               | ✓              |                                |
|                  |              | 0342       | BO        |                  |               |              | 50 1.99                | 125 13.59 |              | 70        |                          |              |               |                |                                |
|                  |              | 0343       | EN        |                  |               |              | 50 1.98                | 125 13.59 |              |           |                          |              |               |                |                                |
| 03               | 14           | 0506       | BE        | ROS              |               | 77           | 49 52.92               | 124 59.65 | 314          |           | 257-272                  | 16           |               | ✓              | spikes @ 75 m upcast - rebound |
|                  |              | 0512       | BO        |                  |               | 78           | 49 52.97               | 124 59.65 |              | 309       |                          |              |               |                |                                |
|                  |              | 0531       | EN        |                  |               |              | 49 52.92               | 124 59.61 |              |           |                          |              |               |                |                                |
| 03               | 13           | 0602       | BE        | ROS              |               | 79           | 49 55.30               | 124 55.18 | 236          |           |                          |              |               | ✓              |                                |
|                  |              | 0607       | BO        |                  |               |              | 49 55.23               | 124 55.21 |              | 231       |                          |              |               |                |                                |
|                  |              | 0610       | EN        |                  |               |              | 49 55.19               | 124 55.16 |              |           |                          |              |               |                |                                |

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FIVE SIX

## DAILY SCIENCE LOG

## Ocean Sciences Division, Institute of Ocean Sciences

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| Month <u>OCT</u> |              |            |           | Year <u>2010</u> |               |              | Ship <u>VECTOR</u>     |            |              |           | Cruise ID <u>2010-21</u> |              |                                  |                |                       |
|------------------|--------------|------------|-----------|------------------|---------------|--------------|------------------------|------------|--------------|-----------|--------------------------|--------------|----------------------------------|----------------|-----------------------|
| Day              | Station Name | Time (UTC) | Time Code | Cast Type        | Firing Method | Event Number | Positional Information |            | Bottom Depth | Max Depth | Sample Numbers           | # of Bottles | Watch Keepers                    | Trans. Cleaned | Comments              |
|                  |              |            |           |                  |               |              | Latitude               | Longitude  |              |           |                          |              |                                  |                |                       |
| 03               | 17           | 0701       | BE        | ROS              |               | 80           | 49 58 813              | 125 04 301 | 264          |           |                          |              | (DT) <sup>2</sup> N <sup>2</sup> | ✓              | spikes                |
|                  |              | 0709       | BO        |                  |               |              | 49 58 828              | 125 04 301 |              | 258       |                          |              |                                  |                |                       |
|                  |              | 0714       | EN        |                  |               |              | 49 58 856              | 125 04 308 |              |           |                          |              |                                  |                |                       |
| 03               | 18           | 0742       | BE        |                  |               | 81           | 49 59 225              | 124 58 822 | 145          |           |                          |              | (DT) <sup>2</sup> N <sup>2</sup> | ✓              | spikes at end of cast |
|                  |              | 0745       | BO        |                  |               |              | 49 59 178              | 124 58 764 |              | 140       |                          |              |                                  |                |                       |
|                  |              | 0749       | EN        |                  |               |              | 49 59 124              | 124 58 724 |              |           |                          |              |                                  |                |                       |
|                  | 19           | 0827       | BE        |                  |               | 82           | 50 01 283              | 124 52 907 | 290          |           |                          |              | (DT) <sup>2</sup> N <sup>2</sup> | ✓              |                       |
|                  |              | 0833       | BO        |                  |               |              | 50 01 259              | 124 52 912 |              | 282       |                          |              |                                  |                |                       |
|                  |              | 0839       | EN        |                  |               |              | 50 01 226              | 124 52 914 |              |           |                          |              |                                  |                |                       |
|                  | 20           | 1040       | BE        |                  |               | 83           | 49 47 195              | 124 32 278 | 308          |           |                          |              | (DT) <sup>2</sup> N <sup>2</sup> | ✓              |                       |
|                  |              | 1046       | BO        |                  |               |              | 49 47.17               | 124 32.222 |              | 308       |                          |              |                                  |                | - alt @ 5m            |
|                  |              | 1052       | EN        |                  |               |              | 49 47 15               | 124 32.21  |              |           |                          |              |                                  |                |                       |
|                  | 22           | 1209       | BE        |                  |               | 84           | 49 40 162              | 124 16 240 | 350          |           |                          |              |                                  |                |                       |
|                  |              | 1217       | BO        |                  |               |              | 49 40.090              | 124 16.182 |              | 347       |                          |              |                                  |                |                       |
|                  |              | 1224       | EN        |                  |               |              | 49 40.045              | 124 16.133 |              |           |                          |              |                                  |                |                       |

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