

# DAILY SCIENCE LOG BOOK

MISSION  
NUMBER

2015-26

Neville Cruise # 2015-04 COW  
2015-07 BQ

DATE:

From: 06 MAY 2015

To: 13 AUG 2015

VESSEL:

**SUMMERHAWK / OCEAN VENTURE**

PROJECT(S):

Neville - Salish Sea Marine Survival

Cowichan Purse Seine &

Big Qualicum Purse Seine

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

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



**\*\* The following 3 pages are VERY IMPORTANT as they document equipment and settings used on board \*\***

These pages are to be completed by the CTD Technician setting up the equipment, the Watch Leader on board, and the Chief Scientist MUST verify that all relevant sections are completed prior to leaving the vessel. Any mid-cruise changes to be noted by watch leader in the notes.

Data logging computer: \_\_\_\_\_  
Data acquisition program: N \_\_\_\_\_  
CTD deck unit make: \_\_\_\_\_ model: \_\_\_\_\_ serial number: \_\_\_\_\_

#### Primary CTD

Make: SBE 2 model: 25 serial number: 404  
Primary temperature serial number: 2095  
Primary conductivity serial number: 1764  
Secondary temperature serial number: \_\_\_\_\_  
Secondary conductivity serial number: \_\_\_\_\_  
Transmissometer: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_  
Transmissometer: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_  
Fluorometer: Model WETLABS ECO Cable gain: AFL/FL s/n: 2216 P, S or NO pump?  
Fluorometer: Model \_\_\_\_\_ Cable gain: \_\_\_\_\_ s/n: \_\_\_\_\_ P, S or NO pump?  
Oxygen sensor: SBE Model: 43 s/n: 1483 P, S or NO pump?  
PAR sensor: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_ Surface PAR? Y / N  
Other sensors: pH s/n: 0851 P, S or NO pump?  
Other sensors: PRESSURE s/n: 0482 P, S or NO pump?  
Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_ P, S or NO pump?  
Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_ P, S or NO pump?

#### Secondary CTD

Make: SBE model: 25 serial number: 0334  
Primary temperature serial number: 2968  
Primary conductivity serial number: 2173  
Secondary temperature serial number: \_\_\_\_\_  
Secondary conductivity serial number: \_\_\_\_\_  
Transmissometer: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_  
Transmissometer: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_  
Fluorometer: Model WETLABS ECO Cable gain: AFL/FL s/n: 2215 P, S or NO pump?  
Fluorometer: Model \_\_\_\_\_ Cable gain: \_\_\_\_\_ s/n: \_\_\_\_\_ P, S or NO pump?  
Oxygen sensor: SBE Model: 43 s/n: 0766 P, S or NO pump?  
PAR sensor: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_ Surface PAR? Y / N  
Other sensors: pH s/n: 0852 P, S or NO pump?  
Other sensors: PRESSURE s/n: 0464 P, S or NO pump?  
Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_ P, S or NO pump?  
Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_ P, S or NO pump?

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

*This also includes the bottle location above the CTD on non-rosette casts (e.g., W.E. Ricker)*

IOS Cruise # 2015-26 is associated with 2 Neville surveys: 502015-04 (CB) Cowichan Bay Purse Seine  
and 502015-07 (CB) Big Qualicum Purse Seine charter.

COWICHAN BAY: 8 survey days (CTDS conducted on 5 days; Zoop complete on 6 days)  
+ 3 pit tagging days (no CTD/Zoop sampling these days)

BIG QUALICUM: 4 survey days (CTDS conducted on all days)

## DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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| Month MAY    |                                                     |     | Year 2015  |           |            | Vessel SUMMER HAWK |                        |             | Cruise ID 2015-26 |              |                       |              |               |                                                   |             |
|--------------|-----------------------------------------------------|-----|------------|-----------|------------|--------------------|------------------------|-------------|-------------------|--------------|-----------------------|--------------|---------------|---------------------------------------------------|-------------|
| Event Number | Station Name                                        | Day | Time (UTC) | Time Code | Event Type | Firing Method      | Positional Information |             | Bottom Depth      | Max Pressure | Sample Serial Numbers | # of Bottles | Watch Keepers | Trns/FI Cleaned                                   | Comments    |
|              | COWICHAN BAY                                        |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
|              | — NO CTD/NET : MAY 6-7 DUE TO BOAT ISSUE (NO WINCH) |     |            |           |            |                    |                        |             |                   |              |                       |              |               |                                                   |             |
|              |                                                     |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
|              |                                                     |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
|              |                                                     |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
|              | BIG QUALICUM                                        |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
| 4            | BQSet3                                              | 27  | 17:47      | BE        | CTD        |                    | 49° 23.563             | 124° 34.653 | 30                | 25           | -                     | —            | MT            | <input type="checkbox"/> <input type="checkbox"/> | SBE 25-0404 |
| 5            | ↓                                                   |     | 17:52      | BE        | NET        |                    | ° ↓                    | ° ↓         | 30                | 20           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
|              |                                                     |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
| 9            | BQSET6                                              | 27  | 22:02      | BE        | CTD        |                    | 49° 25.729             | 124° 38.238 | 20                | 15           | -                     |              | MT            | <input type="checkbox"/> <input type="checkbox"/> | SBE 25-0404 |
| 10           | ↓                                                   |     | 22:07      | BE        | NET        |                    | ° ↓                    | ° ↓         | 20                | 15           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
| END OF DAY   |                                                     |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
| 14           | BQSET9                                              | 28  | 17:00      | BE        | CTD        |                    | 49° 25.546             | 124° 37.572 | 32                | 30           | -                     |              | MT            | <input type="checkbox"/> <input type="checkbox"/> | SBE 25-0404 |
| 15           | ↓                                                   |     | 17:05      | BE        | NET        |                    | ° ↓                    | ° ↓         | 32                | 27           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
|              |                                                     |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
| 18           | BQSet11                                             | 28  | 20:08      | BE        | CTD        |                    | 49° 24.998             | 124° 35.364 | 59                | 50           | -                     |              | MT            | <input type="checkbox"/> <input type="checkbox"/> | SBE 25-0404 |
| 19           | ↓                                                   |     | 20:14      | BE        | NET        |                    | ° ↓                    | ° ↓         | 59                | 50           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
|              |                                                     |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
| 22           | BQSet13                                             | 28  | 22:48      | BE        | CTD        |                    | 49° 24.771             | 124° 36.106 | 35                | 30           | -                     |              | MT            | <input type="checkbox"/> <input type="checkbox"/> | SBE 25-0404 |
| 23           | ↓                                                   |     | 22:52      | BE        | NET        |                    | ° ↓                    | ° ↓         | 35                | 30           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |

## Event Type:

BOT = Bottle cast (no CTD)  
 CTD = Standalone CTD  
 ROS = CTD in Rosette  
 SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring  
 NET = Plankton Net Haul  
 DRF = Drifter

## Bottle Firing Method:

US = Up / Stop (default)  
 UN = Up / No stop  
 DN = Down / No stop

## Time Code:

BE = Beginning Time of Cast  
 BO = Bottom Time of Cast  
 EN = End Time of Cast

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time  
 MR = Messenger Release Time  
 RE = Recover Mooring Time

Produced by the Water Properties Group, IOS

WaterProperties.ca  
 Version: 14 February 2013

Notes:

## BIG QUALICUM

Unit 0404 (Primary CTD)

Flowmeter Serial #718Z

BQ Set 3 Flowmeter START 15 820 END 15 950

BQ Set 6 Flowmeter START 15 950 END 16 045

BQ Set 9 CTD: Winch stopped & reversed several times on upcast to correct spooling problem.

BQ Set 9 Flowmeter START 16 045 END 16 215

BQ Set 11 Flowmeter START 16 215 END 16 535

BQ Set 13 CTD: Fluorometer changed from "lens up" position to "lens down" prior to this cast.

Flowmeter START 16 535 END 16 725

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| Month JUNE   |               |     | Year 2015  |           |            | Vessel SUMMER HAWK |                        |             | Cruise ID 2015-26 |              |                       |              |               |                                                   |             |
|--------------|---------------|-----|------------|-----------|------------|--------------------|------------------------|-------------|-------------------|--------------|-----------------------|--------------|---------------|---------------------------------------------------|-------------|
| Event Number | Station Name  | Day | Time (UTC) | Time Code | Event Type | Firing Method      | Positional Information |             | Bottom Depth      | Max Pressure | Sample Serial Numbers | # of Bottles | Watch Keepers | Trns/FI Cleaned                                   | Comments    |
|              | CDWI CHAN BAY |     |            |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
| 021          | CB Set 20     | 01  | 15:27      | BE        | CTD        |                    | 48° 45.423             | 123° 36.773 | 45                | 40           | -                     |              | MT            | <input type="checkbox"/> <input type="checkbox"/> | SBE 25-0334 |
| 022          | ↓             |     | 15:33      | BE        | NET        |                    | 48° 45.423             | 123° 36.773 | 45                | 40           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
|              |               |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
| 025          | CB Set 22     | 01  | 17:30      | BE        | CTD        |                    | 48° 44.378             | 123° 33.913 | 122               | 95           | -                     |              | MT            | <input type="checkbox"/> <input type="checkbox"/> | SBE 25-0334 |
| 026          | ↓             |     | 17:37      | BE        | NET        |                    | ° ↓                    | ° ↓         | 90                | 80           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
|              |               |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
| 029          | CB Set 24     | 01  | 20:49      | BE        | CTD        |                    | 48° 43.150             | 123° 32.442 | 68                | 60           | -                     |              | MT            | <input type="checkbox"/> <input type="checkbox"/> | SBE 25-0334 |
| 030          | ↓             |     | 20:54      | BE        | NET        |                    | ° ↓                    | ° ↓         | 68                | 40 (*)       | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
|              | END OF DAY    |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
| 033          | CB Set 26     | 02  | 14:27      | BE        | CTD        |                    | 48° 45.001             | 123° 36.630 | 53                | 50           | -                     |              | MT            | <input type="checkbox"/> <input type="checkbox"/> | SBE 25-0334 |
| 034          | ↓             |     | 14:30      | BE        | NET        |                    | ° ↓                    | ° ↓         | 53                | 50           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
|              |               |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
| 037          | CB Set 28     | 02  | 17:30      | BE        | CTD        |                    | 48° 45.067             | 123° 35.318 | 48                | 40           | -                     |              | MT            | <input type="checkbox"/> <input type="checkbox"/> | SBE 25-0334 |
| 038          | ↓             |     | 17:35      | BE        | NET        |                    | ° ↓                    | ° ↓         | 48                | 40           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
|              |               |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
| 040          | CB Set 29     | 02  | 19:06      | BE        | CTD        |                    | 48° 44.227             | 123° 32.250 | 60                | 63           | -                     |              | MT            | <input type="checkbox"/> <input type="checkbox"/> | SBE 25-0334 |
| 041          | ↓             |     | 19:11      | BE        | NET        |                    | ° ↓                    | ° ↓         | 55                | 61           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
|              |               |     | :          |           |            |                    | °                      | °           |                   |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |

**Event Type:**  
 BOT = Bottle cast (no CTD)  
 CTD = Standalone CTD  
 ROS = CTD in Rosette  
 SET = Fish Set

**LOOP = Sea Water Loop**  
 MOR = Mooring  
 NET = Plankton Net Haul  
 DRF = Drifter  
 \_\_\_\_\_ = \_\_\_\_\_

**Bottle Firing Method:**  
 US = Up / Stop (default)  
 UN = Up / No stop  
 DN = Down / No stop

**Time Code:**  
 BE = Beginning Time of Cast  
 BO = Bottom Time of Cast  
 EN = End Time of Cast

**CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products**  
 DE = Deployment Time  
 MR = Messenger Release Time  
 RE = Recover Mooring Time

**Notes:** \_\_\_\_\_

Produced by the Water Properties Group, IOS

WaterProperties.ca  
 Version: 14 February 2013

COWICHAN BAY (PIT TAGGING MAY 30-31, JUNE 3)

Unit 0334 (Secondary CTD)

Flowmeter Serial # 7182

This page is for any notes or observations

CB Set 20 Flowmeter START 16725 END 16915

CB Set 22 Flowmeter START 16915 END 17400

CB Set 24 Flowmeter START 17400 END 17795

(\*) Wind @ 20-25 kts boat drifting too fast (wire angle  $> 30^\circ$  & growing, so plankton cor aborted @ 40m wire out. Net dragged at surface at end of cast.

CB Set 26 Flowmeter START 17795 END 18065

CB Set 28 Flowmeter START 18065 END 18290

CB Set 29 Flowmeter START 18290 END 18590

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| Month JUNE   |              |     |            | Year 2015 |            | Vessel SUMMER HAWK |                        |             |              | Cruise ID 2015-26 |                       |              |               |                                                   |             |
|--------------|--------------|-----|------------|-----------|------------|--------------------|------------------------|-------------|--------------|-------------------|-----------------------|--------------|---------------|---------------------------------------------------|-------------|
| Event Number | Station Name | Day | Time (UTC) | Time Code | Event Type | Firing Method      | Positional Information |             | Bottom Depth | Max Pressure      | Sample Serial Numbers | # of Bottles | Watch Keepers | Trns/FI Cleaned                                   | Comments    |
| 044          | Set 31       | 02  | 21:57      | BE        | CTD        |                    | 48° 44.498             | 123° 36.028 | 50           | 45                | -                     |              | MT            | <input type="checkbox"/> <input type="checkbox"/> | SBE 25-0334 |
| 045          | ↓            |     | 22:01      | BE        | NET        |                    | ° ↓                    | ° ↓         | 50           | 45                | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
| = END OF DAY |              |     |            |           |            |                    |                        |             |              |                   |                       |              |               |                                                   |             |
| 070          | Set 55       | 29  | 15:00      | BE        | NET        |                    | 48° 45.131             | 123° 35.261 | 33           | 30                | -                     | 1            | OL            | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
| 074          | Set 57       | 29  | 19:00      | BE        | NET        |                    | 48° 45.528             | 123° 34.201 | 80           | 70                | -                     | 1            | 1             | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
| 075          | Set 58       | 29  | 20:30      | BE        | NET        |                    | 48° 43.217             | 123° 32.649 | 57           | 50                | -                     | 2            | V             | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
| 078          | Set 60       | 29  | 22:00      | BE        | NET        |                    | 48° 45.212             | 123° 36.061 | 56           | 50                | -                     | 1            |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
|              |              |     | :          |           |            |                    | °                      | °           |              |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
| 080          | Set 61       | 30  | 14:45      | BE        | CTD        |                    | 48° 45.504             | 123° 36.815 | 41           | 40                | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SBE19+-5299 |
| 081          | Set 61       | 30  | 15:00      | BE        | NET        |                    | 48° 45.504             | 123° 36.815 | 41           | 40                | -                     | 1            |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
| 084          | Set 63       | 30  | 17:30      | BE        | CTD        |                    | 48° 44.377             | 123° 33.932 | 114          | 85                | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SBE19+-5299 |
| 085          | Set 63       | 30  | 17:45      | BE        | NET        |                    | 48° 44.377             | 123° 33.932 | 114          | 85                | -                     | 1            |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET    |
|              |              |     | :          |           |            |                    | °                      | °           |              |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
|              |              |     | :          |           |            |                    | °                      | °           |              |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
|              |              |     | :          |           |            |                    | °                      | °           |              |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
|              |              |     | :          |           |            |                    | °                      | °           |              |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
|              |              |     | :          |           |            |                    | °                      | °           |              |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |
|              |              |     | :          |           |            |                    | °                      | °           |              |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |             |

## Event Type:

BOT = Bottle cast (no CTD)  
CTD = Standalone CTD  
ROS = CTD in Rosette  
SET = Fish Set

## LOOP = Sea Water Loop

MOR = Mooring  
NET = Plankton Net Haul  
DRF = Drifter  
=

## Bottle Firing Method:

US = Up / Stop (default)  
UN = Up / No stop  
DN = Down / No stop

## Notes:

## Time Code:

BE = Beginning Time of Cast  
BO = Bottom Time of Cast  
EN = End Time of Cast

## CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time  
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RE = Recover Mooring Time

Produced by the Water Properties Group, IOS

WaterProperties.ca  
Version: 14 February 2013

COWICHAN BAY

CTD Unit 0334

Flowmeter 7182

CB Set 31

START 18530 END 18870

→ JUNE 3, 15-17: Pit tagging sets (no CTD/bongo) Sets 32-54 (roughly) ←

JUNE 29 - NO CTD ONBOARD

CB SET 55 (CB-6)

FLOWMETER 7182

Start time & bottom depth from set sheet (approximation)

Event 70

START 18870

END 19038

CB SET 57

FLOWMETER 7182

Start time & bottom depth from set sheet (approximation)

Event 73 (CB-9)

START 19038

END 19468

CB SET 58 (Cherry Pt)

Start time & bottom depth from set sheet (approximation)

Event 75

START 19468

End 19845

- 2 jars

CB SET 60 (CB-3)

START 19845

End 20142

Start time & bottom depth from set sheet (approximation)

Event 78

JUNE 30 - CTD UNIT 5299 ✓

FLOWMETER 7182

CB SET 61 (CB-2)

START: 20142

EVENT 81

END: 20315

NOTE: CTD S/N: 19P45811-5299

(\*\*) Date/time setting on CTD was not correct (reading Feb 23 instead of June 30). Start time are approx. & depth

CB SET 63

START: 20315

Zoop/CTD start times are approximate. & depth

EVENT 85

END 20720

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| Month <u>JUNE/JULY</u> |                      | Year <u>2015</u> |            | Vessel <u>SUMMER HAWK</u> |            | Cruise ID <u>2015-26</u> |                     |                       |              |              |                       |              |               |                                                   |                          |
|------------------------|----------------------|------------------|------------|---------------------------|------------|--------------------------|---------------------|-----------------------|--------------|--------------|-----------------------|--------------|---------------|---------------------------------------------------|--------------------------|
| Event Number           | Station Name         | Day              | Time (UTC) | Time Code                 | Event Type | Firing Method            | Positional Latitude | Information Longitude | Bottom Depth | Max Pressure | Sample Serial Numbers | # of Bottles | Watch Keepers | Trns/FI Cleaned                                   | Comments                 |
| 87                     | SET 64               | 30               | 19:00      |                           | CTD        |                          | 48° 44.067          | 123° 31.798           | 61           | 60           | -                     | 1            |               | <input type="checkbox"/> <input type="checkbox"/> | SBE 19 <sup>+</sup> 5299 |
| 88                     | Set 64               | 30               | 19:15      |                           | NET        |                          | 48° 44.067          | 123° 31.798           | 61           | 60           | -                     | 1            |               | <input type="checkbox"/> <input type="checkbox"/> | SCOR NET                 |
| 90                     | Set 65               | 30               | 21:00      |                           | CTD        |                          | 48° 42.697          | 123° 29.562           | 65           | 60           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SBE 19 <sup>+</sup> 5299 |
| * 806                  | <u>2015-07 BQFS:</u> |                  |            |                           |            |                          |                     |                       |              |              |                       |              |               |                                                   |                          |
| 26                     | SET 15               | 3 JUL            | 08:55      | PST                       | CTD        |                          | 49° 22.544          | 124° 30.884           | 43           |              | -                     |              | 30            | <input type="checkbox"/> <input type="checkbox"/> | SBE 19 <sup>+</sup> 5299 |
| 27                     | ↓                    |                  | 09:03      |                           | NET        |                          | 49° 22.538          | 124° 30.878           | 43           |              | -                     |              | ↓             | <input type="checkbox"/> <input type="checkbox"/> | ST 21175<br>EN 21378     |
| 30                     | SET 17               |                  | 11:06      |                           | CTD        |                          | 49° 24.675          | 124° 35.870           | 30           |              | -                     |              | 30            | <input type="checkbox"/> <input type="checkbox"/> | SBE 19 <sup>+</sup> 5299 |
| 31                     | ↓                    |                  | 11:10      |                           | NET        |                          | 49° 24.695          | 124° 35.883           | ↓            |              | -                     |              | 20            | <input type="checkbox"/> <input type="checkbox"/> | ST 21378<br>EN 21504     |
| 34                     | SET 19               |                  | 13:29      |                           | CTD        |                          | 49° 25.680          | 124° 37.941           | 26           |              | -                     |              | ↓             | <input type="checkbox"/> <input type="checkbox"/> | SBE 19 <sup>+</sup> 5299 |
| 35                     | ↓                    |                  | 13:33      |                           | NET        |                          | 49° 25.670          | 124° 37.946           | ↓            |              | -                     |              | ↓             | <input type="checkbox"/> <input type="checkbox"/> | ST 21504<br>EN 21620     |
| 39                     | SET 22               |                  | 16:10      |                           | CTD        |                          | 49° 24.800          | 124° 35.628           | 44           |              | -                     |              | 40            | <input type="checkbox"/> <input type="checkbox"/> | SBE 19 <sup>+</sup> 5299 |
| 40                     | ↓                    |                  | 16:15      |                           | NET        |                          | 49° 24.808          | 124° 35.635           | ↓            |              | -                     | 10°          | ↓             | <input type="checkbox"/> <input type="checkbox"/> | ST 21620<br>EN 21900     |
| 42                     | SET 23               |                  | 17:10      |                           | CTD        |                          | 49° 23.753          | 124° 34.321           | 42           |              | -                     |              | 40            | <input type="checkbox"/> <input type="checkbox"/> | SBE 19 <sup>+</sup> 5299 |
| 43                     | ↓                    |                  | 17:13      | ↓                         | NET        |                          | 49° 23.764          | 124° 34.361           | ↓            |              | -                     | 10           | ↓             | <input type="checkbox"/> <input type="checkbox"/> | ST 21900<br>EN 22168     |
| END OF DAY             |                      |                  |            |                           |            |                          |                     |                       |              |              |                       |              |               |                                                   |                          |
| 45                     | SET 24               | 4 JUL            | 07:53      | PST                       | CTD        |                          | 49° 21.792          | 124° 27.423           | 39           |              | -                     |              | 30            | <input type="checkbox"/> <input type="checkbox"/> | SBE 19 <sup>+</sup> 5299 |
| 46                     | ↓                    |                  | 07:58      |                           | NET        |                          | 49° 21.796          | 124° 27.419           | ↓            |              | -                     | 0            | ↓             | <input type="checkbox"/> <input type="checkbox"/> | ST 22168<br>EN 22351     |
| 49                     | SET 26               |                  | 10:13      |                           | CTD        |                          | 49° 24.161          | 124° 33.944           | 60           |              | -                     |              | 50            | <input type="checkbox"/> <input type="checkbox"/> | SBE 19 <sup>+</sup> 5299 |
| 50                     | ↓                    |                  | 10:17      | ↓                         | NET        |                          | 49° 24.152          | 124° 33.953           | ↓            |              | -                     | 5            | ↓             | <input type="checkbox"/> <input type="checkbox"/> | ST 22351<br>EN 22690     |

## Event Type:

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MOR = Mooring  
 NET = Plankton Net Haul  
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## Bottle Firing Method:

US = Up / Stop (default)  
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## Time Code:

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Notes:

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COWICHAN BAY

This page is for any notes or observations

JUNE 30

CB SET-64 (SAS) FLOWMETER 7182

EVENT 88

START 20720

END 21175

CTD Start time <sup>& depth</sup> is approximate

CB Set 65: CTD start time is approximate.

3/4 JUL 2015: BQ Purse Seine

Note: Times recorded in PST not UTC.

## DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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| Month <u>JULY</u> |               |       |            | Year <u>2015</u> |            |               | Vessel <u>SUMMER NAVY</u> |            |              | Cruise ID    |                       | ANGLE        | T DEP         |                                                   |                      |
|-------------------|---------------|-------|------------|------------------|------------|---------------|---------------------------|------------|--------------|--------------|-----------------------|--------------|---------------|---------------------------------------------------|----------------------|
| Event Number      | Station Name  | Day   | Time (UTC) | Time Code        | Event Type | Firing Method | Positional Information    |            | Bottom Depth | Max Pressure | Sample Serial Numbers | # of Bottles | Watch Keepers | Trns/FI Cleaned                                   | Comments             |
| 54                | <u>Set</u> 29 | 4 JUL | 13:12      | PDT              | CTD        |               | 49°26.225                 | 124°37.261 | 64           |              | -                     |              | 50            | <input type="checkbox"/> <input type="checkbox"/> | SBE19-5299           |
| 55                | ↓             |       | 13:16      |                  | NET        |               | 49°26.227                 | 124°37.262 | 64           |              | -                     | 0            |               | <input type="checkbox"/> <input type="checkbox"/> | ST 22690<br>EN 22992 |
| 57                | <u>Set</u> 30 |       | 14:20      |                  | CTD        |               | 49°27.359                 | 124°39.439 | 63           |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SBE19-5299           |
| 58                | ↓             |       | 14:25      |                  | NET        |               | 49°27.365                 | 124°39.403 | ↓            |              | -                     | 0            |               | <input type="checkbox"/> <input type="checkbox"/> | ST 22992<br>EN 23262 |
| 60                | <u>Set</u> 31 |       | 15:27      |                  | CTD        |               | 49°26.438                 | 124°36.922 | 85           |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SBE19-5299           |
| 61                | ↓             |       | 15:31      |                  | NET        |               | 49°26.444                 | 124°36.940 | ↓            |              | -                     | 0            |               | <input type="checkbox"/> <input type="checkbox"/> | ST 23262<br>EN 23575 |
| 63                | <u>Set</u> 32 |       | 16:31      |                  | CTD        |               | 49°26.561                 | 124°36.616 | 104          |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | SBE19-5299           |
| 64                | ↓             | ↓     | 16:36      | ↓                | NET        |               | 49°26.573                 | 124°36.622 | ↓            |              | -                     | 0            | ↓             | <input type="checkbox"/> <input type="checkbox"/> | ST 23575<br>EN 23877 |
|                   |               |       | :          |                  |            |               | °                         | °          |              |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                      |
|                   |               |       | :          |                  |            |               | °                         | °          |              |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                      |
|                   |               |       | :          |                  |            |               | °                         | °          |              |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                      |
|                   |               |       | :          |                  |            |               | °                         | °          |              |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                      |
|                   |               |       | :          |                  |            |               | °                         | °          |              |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                      |
|                   |               |       | :          |                  |            |               | °                         | °          |              |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                      |
|                   |               |       | :          |                  |            |               | °                         | °          |              |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                      |
|                   |               |       | :          |                  |            |               | °                         | °          |              |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                      |
|                   |               |       | :          |                  |            |               | °                         | °          |              |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                      |
|                   |               |       | :          |                  |            |               | °                         | °          |              |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                      |
|                   |               |       | :          |                  |            |               | °                         | °          |              |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                      |

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*This page is for any notes or observations*

Note: Times recorded in PST not UTC.

## DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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| Month <u>AUGUST</u>    |              |        | Year <u>2015</u> |           |            | Vessel <u>OCEAN VENTURE</u> |                     |                       | Cruise ID <u>2015-26</u> |              |                       |              |               |                                                   |          |
|------------------------|--------------|--------|------------------|-----------|------------|-----------------------------|---------------------|-----------------------|--------------------------|--------------|-----------------------|--------------|---------------|---------------------------------------------------|----------|
| Event Number           | Station Name | Day    | Time (UTC)       | Time Code | Event Type | Firing Method               | Positional Latitude | Information Longitude | Bottom Depth             | Max Pressure | Sample Serial Numbers | # of Bottles | Watch Keepers | Trns/FI Cleaned                                   | Comments |
| 94                     | Set 68       | Aug 12 | 08:32            | NET       | CTD        |                             | 48° 45.481          | 123° 36.849           | 39                       | 35           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |
| 95                     | Set 68       | "      | 08:38            |           | NET        |                             | 48° 45.481          | 123° 36.849           | 39                       | 35           | -                     | 1            |               | <input type="checkbox"/> <input type="checkbox"/> |          |
| 97                     | Set 69       | "      | 09:40            |           | CTD        |                             | 48° 45.087          | 123° 35.318           | 38                       | 35           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |
| 99                     | Set 70       | "      | 10:50            |           | CTD        |                             | 48° 45.437          | 123° 34.111           | 86                       | 80           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |
| 100                    | Set 70       | "      | 10:55            |           | NET        |                             | 48° 45.458          | 123° 34.158           | 84                       | 80           | -                     | 1            |               | <input type="checkbox"/> <input type="checkbox"/> |          |
| 106                    | Set 75       | Aug 13 | 08:00            |           | CTD        |                             | 48° 45.279          | 123° 36.147           | 47                       | 40           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |
| 107                    | Set 75       | "      | 08:05            |           | NET        |                             | 48° 45.279          | 123° 36.147           | 47                       | 40           | -                     | 1            |               | <input type="checkbox"/> <input type="checkbox"/> |          |
| 109                    | Set 76       | "      | 09:05            |           | CTD        |                             | 48° 44.411          | 123° 33.982           | 109                      | 100          | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |
| 110                    | Set 76       | "      | 09:11            |           | NET        |                             | 48° 44.436          | 123° 33.974           | 92                       | 90           | -                     | 1            |               | <input type="checkbox"/> <input type="checkbox"/> |          |
| 112                    | Set 77       | "      | 10:06            |           | CTD        |                             | 48° 44.231          | 123° 32.169           | 62                       | 60           | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |
| 113                    | Set 77       | "      | 10:09            | ↓         | NET        |                             | 48° 44.234          | 123° 32.202           | 62                       | 60           | -                     | 1            |               | <input type="checkbox"/> <input type="checkbox"/> |          |
|                        |              |        | :                |           |            |                             | °                   | °                     |                          |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |
|                        |              |        | :                |           |            |                             | °                   | °                     |                          |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |
| <del>END SURVEYS</del> |              |        |                  |           |            |                             | °                   | °                     |                          |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |
|                        |              |        | :                |           |            |                             | °                   | °                     |                          |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |
|                        |              |        | :                |           |            |                             | °                   | °                     |                          |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |
|                        |              |        | :                |           |            |                             | °                   | °                     |                          |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |
|                        |              |        | :                |           |            |                             | °                   | °                     |                          |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |
|                        |              |        | :                |           |            |                             | °                   | °                     |                          |              | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |          |

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COWICHAN BAY  
AUGUST 12

2015-04  
CTD # 43

Note: Times recorded in PST not UTC.

CB SET # 68  
EVENT # 95

FLOWMETER: 7182  
START: 83718 END: 83901

CB SET # 70  
EVENT # 100

FLOWMETER: 7182  
START: 83901 END: 84330

AUGUST 13

CB SET # 75  
EVENT # 107

FLOWMETER: 7182  
START: 84330 END: 84548

CB SET # 76  
EVENT 110

FLOWMETER:  
START: 84548 END: 85575

CB SET # 77  
EVENT 113

FLOWMETER  
START: 85575 END: 85457 NOTE: CREW MEMBER MISHANLED METER HANDS / NEEDLE