

# DAILY SCIENCE LOG BOOK

MISSION  
NUMBER

2019-009

DATE:

From: MARCH 2, 2019

To: MARCH 7, 2019

VESSEL:

VECTOR

PROJECT(S):

OPP - MEQ - NOISE

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

WaterProperties.ca

**Rosette Setup:**

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

**Winches:**

1. Make: \_\_\_\_\_ Model: \_\_\_\_\_ Serial #: \_\_\_\_\_ Used for: \_\_\_\_\_  
2. Make: \_\_\_\_\_ Model: \_\_\_\_\_ Serial #: \_\_\_\_\_ Used for: \_\_\_\_\_  
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: Seasave v7 Version: V7 S/N: 3411  
Sampling interval (seconds): 30  
Fluorometer sensor serial number: N/A

*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:*

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**\*\* 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: Notebook 10 (silver)  
Data acquisition program: Seaterm  
CTD deck unit make: N/A model: \_\_\_\_\_ serial number: \_\_\_\_\_

#### Primary CTD

Make: SBE model: 25 serial number: 0334

Primary temperature serial number: 4484

Primary conductivity serial number: 2128

Secondary temperature serial number: \_\_\_\_\_

Secondary conductivity serial number: \_\_\_\_\_

Transmissometer: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_

Transmissometer: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_

Fluorometer: Model ECO Cable gain: 24 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: 1483 PS or NO pump?

PAR sensor: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_ Surface PAR? Y / N

Other sensors: Turbidity \_\_\_\_\_ s/n: \_\_\_\_\_ P, S or NO pump?

Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_ 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: \_\_\_\_\_ model: \_\_\_\_\_ serial number: \_\_\_\_\_

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

Primary conductivity serial number: \_\_\_\_\_

Secondary temperature serial number: \_\_\_\_\_

Secondary conductivity serial number: \_\_\_\_\_

Transmissometer: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_

Transmissometer: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_

Fluorometer: Model \_\_\_\_\_ Cable gain: \_\_\_\_\_ s/n: \_\_\_\_\_ P, S or NO pump?

Fluorometer: Model \_\_\_\_\_ Cable gain: \_\_\_\_\_ s/n: \_\_\_\_\_ P, S or NO pump?

Oxygen sensor: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_ P, S or NO pump?

PAR sensor: \_\_\_\_\_ Model: \_\_\_\_\_ s/n: \_\_\_\_\_ Surface PAR? Y / N

Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_ P, S or NO pump?

Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_ 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-rossette casts (e.g., W.E. Ricker)

\* This instrument  
may be in PST?

## DAILY SCIENCE LOG

## Ocean Sciences Division, Institute of Ocean Sciences

Page 1 of 6

| Month        |              |     |            | Year      |            |               | Vessel              |                       |                 | Cruise ID         |                       |              |               |                                                   |                                |
|--------------|--------------|-----|------------|-----------|------------|---------------|---------------------|-----------------------|-----------------|-------------------|-----------------------|--------------|---------------|---------------------------------------------------|--------------------------------|
| MARCH        |              |     |            | 2019      |            |               | VECTOR              |                       |                 | 2019-009          |                       |              |               |                                                   |                                |
| Event Number | Station Name | Day | Time (UTC) | Time Code | Event Type | Firing Method | Positional Latitude | Information Longitude | Bottom Pressure | Max Cast Pressure | Sample Serial Numbers | # of Bottles | Watch Keepers | Trns/FI Cleaned                                   | Comments                       |
| 1            | SWIFTSURE    | 3   | 17:40      |           | TL         |               | 48° 31.010          | 124° 56.185           |                 |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | TL Shallow at Swiftsure        |
| 2            | SWIFTSURE    | 3   | 19:00      |           | MOR        |               | 48° 30.995          | 124° 56.271           | 67              |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | 17=053' fall                   |
| 3            | SWIFTSURE    | 3   | 21:52      |           | MOR        |               | 48° 30.911          | 124° 56.160           | 75              |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | Depth 200 Swiftsure            |
| 4            | 004          | 3   | 22:03      | BE        | CTD        |               | 48° 30.953          | 124° 56.150           | 72              | 70                | -                     |              | COUSV         | <input type="checkbox"/> <input type="checkbox"/> | CTD at mooring                 |
|              |              |     | 22:07      | EN        | CTD        |               | 48° 30.974          | ? ° ?                 |                 |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                                |
| 5            | 005          | 4   | 04:07      | BE        | CTD        |               | 48° 30.059          | 124° 30.074           | 163             |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                                |
|              |              |     | 04:17      | EN        | CTD        |               | 48° 30.027          | 124° 30.103           | 163             | 158               | -                     |              | CO            | <input type="checkbox"/> <input type="checkbox"/> | sol bottle                     |
| 6            | 006          | 4   | 06:03      | BE        | CTD        |               | 48° 30.594          | 124° 32.571           | 171             |                   | 01-01                 | 1            |               | <input type="checkbox"/> <input type="checkbox"/> |                                |
|              |              |     | 06:13      | EN        |            |               | 48° 30.468          | 124° 32.406           |                 | 166               | 02-02                 | 1            |               | <input type="checkbox"/> <input type="checkbox"/> | 2xTSC                          |
| 7            | 007          | 04  | 08:04      | BE        | CTD        |               | 48° 31.542          | 124° 34.981           | 139             |                   | <del>-</del>          | Ø            | ✓             | <input type="checkbox"/> <input type="checkbox"/> |                                |
|              |              |     | 08:15      | EN        |            |               | 48° 31.587          | 124° 34.987           |                 | 135               | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                                |
| 8            | 008          | 04  | 10:04      | BE        | CTD        |               | 48° 30.933          | 124° 33.020           | 156             |                   | <del>-</del>          | Ø            |               | <input type="checkbox"/> <input type="checkbox"/> | Tendency to                    |
|              |              |     | 10:15      | EN        |            |               | 48° 30.970          | 124° 32.928           |                 | 148               | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | shallow                        |
| 9            | 009          | 04  | 11:57      | BE        | CTD        |               | 48° 30.011          | 124° 30.694           | 174             |                   | <del>-</del>          | Ø            | ↓             | <input type="checkbox"/> <input type="checkbox"/> | Shallowing                     |
|              |              |     | 12:07      | EN        |            |               | 48° 30.082          | 124° 30.651           |                 | 167               | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> |                                |
| 10           | 010          | 04  | 13:57      | BE        | CTD        |               | 48° 31.803          | 124° 35.385           | 146             |                   | <del>-</del>          | Ø            |               | <input type="checkbox"/> <input type="checkbox"/> |                                |
|              |              |     | 14:06      | EN        |            |               | 48° 31.506          | 124° 35.395           |                 | 140               | -                     |              | ↓             | <input type="checkbox"/> <input type="checkbox"/> |                                |
| 11           | PORT RENFREW | 04  | 15:30      | EN        |            |               | 48° 30.319          | 124° 31.177           |                 |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/> | PORT RENFREW MOORING RECOVERED |
|              |              |     | :          |           |            |               | °                   | °                     |                 |                   | -                     |              |               | <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  
 TL = Trawl

## 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: 20 April 2016

Notes:

Sample #

001

002

Variable

sal = 158 m

A/B TSS = surf (~1.5 m)

This page is for any notes or observations

Note the SBE 25 itself.  
is in PST

down to 10m - 3min soak → to surface and then back down

leaky niskin @ 158m in 001

niskin on 002 = good seal; position immediately above CTD

0400 local - v. windy - seas ~1m

cast 10 - the wire jumped the shiv - stopped the CTD then restarted  
will rename after download.

Casts 0-7 on SBE 25

4=0 10=7 -rename

5=1

6=2

7=3

8=4

9=5

cast 06

Capture file taken after  
cast 07 = 12.2 V left

## DAILY SCIENCE LOG

## Ocean Sciences Division, Institute of Ocean Sciences

Page 2 of 6

| Month <u>MARCH</u> |              |     | Year <u>2019</u> |           |            | Vessel <u>VECTOR</u> |                        |             | Cruise ID <u>2019-09</u> |                   |                       |              |               |                                     |                                |
|--------------------|--------------|-----|------------------|-----------|------------|----------------------|------------------------|-------------|--------------------------|-------------------|-----------------------|--------------|---------------|-------------------------------------|--------------------------------|
| Event Number       | Station Name | Day | Time (UTC)       | Time Code | Event Type | Firing Method        | Positional Information |             | Bottom Pressure          | Max Cast Pressure | Sample Serial Numbers | # of Bottles | Watch Keepers | Trns/FI Cleaned                     | Comments                       |
|                    |              |     |                  |           |            |                      | Latitude               | Longitude   |                          |                   |                       |              |               |                                     |                                |
| 12                 | PORT RENEW   | 4   | 17:10            | BE        | MOR        |                      | 48° 30.269             | 124° 31.006 | 167                      |                   | -                     |              |               | <input type="checkbox"/>            | Port-RENEW                     |
| 13                 | 013          | 4   | 17:17            | BE        | CTD        |                      | 48° 30.257             | 124° 30.907 | 166                      |                   | -                     |              | CON SV        | <input type="checkbox"/>            | 17:17:17 02/04/20              |
| 13                 | 013          | 4   | 17:19            | BO        | CTD        |                      | ° .258                 | ° .906      |                          | 160               | -                     |              |               | <input type="checkbox"/>            |                                |
| 13                 | 013          | 4   | 17:23            | EN        | CTD        |                      | ° .261                 | ° .902      |                          |                   | -                     |              |               | <input type="checkbox"/>            |                                |
| 14                 | JORDAN RIVER | 4   | 20:17            | EN        | MOR        |                      | 48° 23.826             | 124° 8.101  | 119                      |                   | -                     |              |               | <input type="checkbox"/>            | Recovered Jordan River moor.   |
| 15                 | JORDAN RIVER | 4   | 22:00            | BE        | MOR        |                      | 48° 23.778             | 124° 08.068 | 120                      |                   | -                     |              |               | <input type="checkbox"/>            | Jordan River 17:00:00 02/04/20 |
| 16                 | 014          | 4   | 22:11            | BE        | CTD        |                      | 48° 23.850             | 124° 07.872 | 118                      |                   | -                     |              | CON SV        | <input type="checkbox"/>            |                                |
|                    |              |     | 22:13            | BO        |            |                      | ° .869                 | ° .860      |                          | 113               | -                     |              |               | <input type="checkbox"/>            |                                |
|                    |              |     | 22:15            | EN        |            |                      | ° .892                 | ° .860      |                          |                   | -                     |              |               | <input type="checkbox"/>            |                                |
| 17                 | 017          | 5   | 02:16            | BE        | CTD        |                      | 48° 25.359             | 124° 11.689 | 100                      |                   | -                     |              | CON SV        | <input type="checkbox"/>            |                                |
|                    |              |     | 02:17            | BO        |            |                      | ° .376                 | ° .754      |                          | 97                | -                     |              |               | <input type="checkbox"/>            |                                |
|                    |              |     | 02:20            | EN        |            |                      | ° .406                 | ° .873      |                          |                   | -                     |              |               | <input type="checkbox"/>            |                                |
| 18                 | 018          | 5   | 04:05            | BE        | CTD        |                      | 48° 24.107             | 124° 08.346 | 111                      |                   | -                     |              | CON           | <input checked="" type="checkbox"/> |                                |
|                    |              |     | 04:09            | BO        |            |                      | 48° 24.138             | 124° 08.565 |                          | 106               | -                     |              |               | <input type="checkbox"/>            |                                |
|                    |              |     | 04:11            | EN        |            |                      | 48° 24.143             | 124° 08.562 |                          |                   | -                     |              |               | <input type="checkbox"/>            |                                |
| 19                 | 019          | 5   | 06:03            | BE        |            |                      | 48° 23.488             | 124° 07.126 | 122                      |                   | 003-003               | 1            |               | <input checked="" type="checkbox"/> | 003 TSS                        |
|                    |              |     | 06:07            | BO        |            |                      | 48° 23.484             | 124° 07.103 |                          | 117               | -                     |              |               | <input type="checkbox"/>            |                                |
|                    |              |     | 06:10            | EN        |            |                      | 48° 23.481             | 124° 07.102 |                          |                   | -                     |              |               | <input type="checkbox"/>            |                                |
|                    |              |     | :                |           |            |                      | ° .                    | ° .         |                          |                   | -                     |              |               | <input type="checkbox"/>            |                                |

## Event Type:

BOT = Bottle cast (no CTD)  
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LOOP = Sea Water Loop  
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 =

## Bottle Firing Method:

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

## Notes:

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Produced by the Water Properties Group, IOS

WaterProperties.ca  
 Version: 20 April 2016

Event #

Costs 8 = 13  
 # 25 9 = 16  
 10 = 17  
 11 = 18  
 12 = 19

13 = 20

14 = 21

15 = 22

16 = 23

17 = 24

18 = 27

19 = 28

20 = 29

21 = 30

22 = 31

23 = 32

Last set to down load

24 = 35

29 = 43 ✓

25 = 38

30 = 44

26 = 40

27 = 41

28 = 42

This page is for any notes or observations

March 4

NOTE @ 1658 local  
 (March 5 @ 0658)

- I moved the flow on the seawater pump from slow to fast on discussion with Scott Maule quite a bit of noise.

- sounds like air in the system

- momentary jump in conductivity but T° ↑ and stayed high

@ 1149 the. pipe blew off - shut down water flow. line was plugged with mussels

- engineers re attached, cleared out and freed

- @ High flow it seems to be too much pressure - the whole system was shut down / off for the duration of the cruise.!!

Cost 19 surface skin for TSS (A + B)

6384

## DAILY SCIENCE LOG

## Ocean Sciences Division, Institute of Ocean Sciences

Page 3 of 6

| Month <u>March</u> |              |     | Year <u>2019</u> |           |            | Vessel <u>Vee-tan</u> |                     |                       | Cruise ID <u>2019-09</u> |                   |                       |              |               |                                     |                            |
|--------------------|--------------|-----|------------------|-----------|------------|-----------------------|---------------------|-----------------------|--------------------------|-------------------|-----------------------|--------------|---------------|-------------------------------------|----------------------------|
| Event Number       | Station Name | Day | Time (UTC)       | Time Code | Event Type | Firing Method         | Positional Latitude | Information Longitude | Bottom Pressure          | Max Cast Pressure | Sample Serial Numbers | # of Bottles | Watch Keepers | Trns/FI Cleaned                     | Comments                   |
| 20                 | 20           | 5   | 08:05            | BE        | CTD        |                       | 48°23.309           | 124°06.498            | 122                      |                   | -                     | 0            | (W)           | <input checked="" type="checkbox"/> |                            |
|                    |              |     | 08:10            | BO        |            |                       | 48°23.297           | 124°06.463            |                          | 117               |                       |              |               | <input type="checkbox"/>            |                            |
|                    |              |     | 08:12            | EN        |            |                       | 48°23.278           | 124°06.440            |                          |                   | -                     |              |               | <input type="checkbox"/>            |                            |
| 21                 | 21           | 05  | 10:02            | BE        | CTD        |                       | 48°22.512           | 124°03.965            | 128                      |                   |                       | Ø            |               | <input checked="" type="checkbox"/> |                            |
|                    |              |     | 10:07            | BO        |            |                       | 48°22.508           | 124°03.950            |                          | 123               | -                     |              |               | <input type="checkbox"/>            |                            |
|                    |              |     | 10:09            | EN        |            |                       | 48°22.510           | 124°03.929            |                          |                   | -                     |              |               | <input type="checkbox"/>            |                            |
| 22                 | 22           | 05  | 12:02            | BE        | CTD        |                       | 48°23.423           | 124°06.888            | 122                      |                   | 004-004               |              |               | <input checked="" type="checkbox"/> |                            |
|                    |              |     | 12:08            | BO        |            |                       | 48°23.423           | 124°06.893            |                          | 117               | -                     | 1            |               | <input type="checkbox"/>            |                            |
|                    |              |     | 12:09            | EN        |            |                       | 48°23.412           | 124°06.889            |                          |                   | -                     |              |               | <input type="checkbox"/>            |                            |
| 23                 | 23           | 05  | 13:50            | BE        | CTD        |                       | 48°23.688           | 124°07.230            | 115                      |                   |                       | Ø            |               | <input checked="" type="checkbox"/> |                            |
|                    |              |     | 13:55            | BO        |            |                       | 48°23.731           | 124°07.301            |                          | 110               | -                     |              |               | <input type="checkbox"/>            |                            |
|                    |              |     | 13:57            | EN        |            |                       | 48°23.730           | 124°07.304            |                          |                   | -                     |              |               | <input type="checkbox"/>            |                            |
| 24                 | 24           | 05  | 19:28            | BE        | CTD        |                       | 48°22.170           | 123°55.784            | 105                      |                   | -                     |              | COOL SV       | <input type="checkbox"/>            |                            |
|                    |              |     | 19:30            | BO        |            |                       | °22.164             | °55.755               |                          | 100               | -                     |              |               | <input type="checkbox"/>            |                            |
|                    |              |     | 19:32            | EN        |            |                       | °22.161             | °55.739               |                          |                   | -                     |              |               | <input type="checkbox"/>            |                            |
| 25                 | SOOKE        | 05  | 21:25            | EN        | MOR        |                       | 48°17.240           | 123°38.845            |                          |                   | -                     |              |               | <input type="checkbox"/>            | RECOVERED<br>SOOKE MOORING |
| 26                 | SOOKE        | 05  | 23:06            | BE        | MOR        |                       | 48°17.393           | 123°39.294            | 168                      |                   | -                     |              |               | <input type="checkbox"/>            | SOOKE MOORING<br>DEPLOYED  |
|                    |              |     | :                |           |            |                       | °                   | °                     |                          |                   | -                     |              |               | <input type="checkbox"/>            |                            |
|                    |              |     | :                |           |            |                       | °                   | °                     |                          |                   | -                     |              |               | <input type="checkbox"/>            |                            |

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## Notes:

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Produced by the Water Properties Group, IOS

WaterProperties.ca  
 Version: 20 April 2016

*This page is for any notes or observations*

Event 22 = TSS. Niskin @ surface.

## DAILY SCIENCE LOG

## Ocean Sciences Division, Institute of Ocean Sciences

Page 4 of 6

| Month <u>MARCH</u> |              |     | Year <u>2019</u> |           |            | Vessel <u>VECTOR</u> |                     |                       | Cruise ID <u>2019-09</u> |                   |                       |              |               |                                                              |                 |
|--------------------|--------------|-----|------------------|-----------|------------|----------------------|---------------------|-----------------------|--------------------------|-------------------|-----------------------|--------------|---------------|--------------------------------------------------------------|-----------------|
| Event Number       | Station Name | Day | Time (UTC)       | Time Code | Event Type | Firing Method        | Positional Latitude | Information Longitude | Bottom Pressure          | Max Cast Pressure | Sample Serial Numbers | # of Bottles | Watch Keepers | Trns/FI Cleaned                                              | Comments        |
| 27                 | 27           | 5   | 23:14            | BE        | CTD        |                      | 48° 17.415          | 123° 39.243           | 168                      |                   | -                     |              | CON SV        | <input type="checkbox"/> <input type="checkbox"/>            |                 |
|                    |              |     | 23:17            | BO        |            |                      | ° 17.412            | ° 39.185              |                          | 163               | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/>            |                 |
|                    |              |     | 23:20            | EN        |            |                      | ° 17.417            | ° 39.128              |                          |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/>            |                 |
| 28                 | 28           | 6   | 02:36            | BE        | CTD        |                      | 48° 17.812          | 123° 41.025           | 168                      |                   | -                     |              | CON SV        | <input type="checkbox"/> <input type="checkbox"/>            |                 |
|                    |              |     | 02:39            | BO        |            |                      | ° 17.818            | ° 41.023              |                          | 163               | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/>            |                 |
|                    |              |     | 02:41            | EN        |            |                      | ° 17.824            | ° 41.156              |                          |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/>            |                 |
| 29                 | 29           | 6   | 04:00            | BE        | CTD        |                      | 48° 17.144          | 123° 35.909           | 181                      |                   | -                     | 4            | CW            | <input type="checkbox"/> <input checked="" type="checkbox"/> | lots of current |
|                    |              |     | 04:06            | BO        |            |                      | ° 17.038            | ° 35.241              |                          | 176               | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/>            |                 |
|                    |              |     | 04:09            | EN        |            |                      | ° 17.051            | ° 35.298              |                          |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/>            |                 |
| 30                 | 30           | 6   | 06:10            | BE        | CTD        |                      | 48° 17.282          | 123° 37.269           | 185                      |                   | -                     |              |               | <input type="checkbox"/> <input checked="" type="checkbox"/> | surf n skin     |
|                    |              |     | 06:15            | EN        |            |                      | ° 17.373            | ° 37.454              |                          | 180               | 005-005               | 1            |               | <input type="checkbox"/> <input type="checkbox"/>            | TSS             |
|                    |              |     | 06:17            | BO        |            |                      | ° 17.416            | ° 37.528              |                          |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/>            |                 |
| 31                 | 31           | 6   | 08:06            | BE        | CTD        |                      | 48° 17.282          | 123° 40.131           | 175                      |                   | -                     | 10           |               | <input type="checkbox"/> <input checked="" type="checkbox"/> |                 |
|                    |              |     | 08:11            | BO        |            |                      | ° 17.310            | ° 40.080              |                          | 170               | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/>            |                 |
|                    |              |     | 08:14            | EN        |            |                      | ° 17.322            | ° 40.045              |                          |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/>            |                 |
| 32                 | 32           | 6   | 10:00            | BE        | CTD        |                      | 48° 17.390          | 123° 43.459           | 175                      |                   | 006-006               | 1            |               | <input type="checkbox"/> <input checked="" type="checkbox"/> | Sal + TSS       |
|                    |              |     | 10:06            | BO        |            |                      | ° 17.363            | ° 43.299              |                          | 170               | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/>            |                 |
|                    |              |     | 10:10            | EN        |            |                      | ° 17.320            | ° 43.319              |                          |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/>            |                 |
|                    |              |     | :                |           |            |                      | °                   | °                     |                          |                   | -                     |              |               | <input type="checkbox"/> <input type="checkbox"/>            |                 |

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 DN = Down / No stop

## Notes:

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

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Produced by the Water Properties Group, IOS

WaterProperties.ca  
 Version: 20 April 2016

Cast Event

20 = 297

21 = 301

22 = 319

This page is for any notes or observations

→ sal & TSS @ bot depth.

@ 1128 The bridge discontinued the transect work and headed for Haro

## DAILY SCIENCE LOG

## Ocean Sciences Division, Institute of Ocean Sciences

Page 5 of 6

| Month <u>March</u> |                        |               |              | Year <u>2019</u> |                | Vessel <u>Vectra</u> |                        |              |                 | Cruise ID <u>2019-097</u> |                       |              |               |                                     |                                  |
|--------------------|------------------------|---------------|--------------|------------------|----------------|----------------------|------------------------|--------------|-----------------|---------------------------|-----------------------|--------------|---------------|-------------------------------------|----------------------------------|
| Event Number       | Station Name           | Day           | Time (UTC)   | Time Code        | Event Type     | Firing Method        | Positional Information |              | Bottom Pressure | Max Cast Pressure         | Sample Serial Numbers | # of Bottles | Watch Keepers | Trns/FI Cleaned                     | Comments                         |
| <del>33</del>      | <del>133</del>         | <del>06</del> | <del>:</del> | <del>BE</del>    | <del>CTD</del> |                      | <del>°</del>           | <del>°</del> |                 |                           | -                     |              |               | <input type="checkbox"/>            |                                  |
|                    |                        |               | <del>:</del> | <del>BO</del>    |                |                      | <del>°</del>           | <del>°</del> |                 |                           | -                     |              |               | <input type="checkbox"/>            |                                  |
|                    |                        |               | <del>:</del> | <del>EN</del>    |                |                      | <del>°</del>           | <del>°</del> |                 |                           | -                     |              |               | <input type="checkbox"/>            |                                  |
| 33                 | HARO STRAIT            | 06            | 15:20        | EN               | MOR            |                      | 48° 29.704             | 123° 11.760  |                 |                           | -                     |              |               | <input type="checkbox"/>            | HARO STRAIT<br>MOORING RECOVERED |
| 34                 | HARO STRAIT            | 06            | 17:27        | BE               | MOR            |                      | 48° 29.749             | 123° 11.603  | 230             |                           | -                     |              |               | <input type="checkbox"/>            | HARO STRAIT<br>MOORING DEPLOYED  |
| 35                 | 35                     | 06            | 17:34        | BE               | CTD            |                      | 48° 29.765             | 123° 11.651  | 229             |                           | -                     |              | CON SV        | <input type="checkbox"/>            |                                  |
|                    |                        |               | 17:39        | BO               |                |                      | ° 29.741               | ° 11.687     |                 | 225                       | -                     |              |               | <input type="checkbox"/>            |                                  |
|                    |                        |               | 17:44        | EN               |                |                      | ° 29.700               | ° 11.740     |                 |                           | -                     |              |               | <input type="checkbox"/>            |                                  |
| 36                 | BOUNDARY PASS          | 06            | 20:30        | EN               |                |                      | 48° 44.107             | 123° 09.106  |                 |                           | -                     |              |               | <input type="checkbox"/>            | RECOVERED<br>BP MOORING          |
| 37                 | BOUNDARY PASS          | 06            | 21:49        | BE               | MOR            |                      | 48° 43.988             | 123° 09.124  | 185             |                           | -                     |              |               | <input type="checkbox"/>            | BP MOORING<br>DEPLOYED           |
| 38                 | 38                     | 06            | 21:56        | BE               | CTD            |                      | 48° 43.925             | 123° 09.136  | 188             |                           | -                     |              | CON SV        | <input type="checkbox"/>            |                                  |
|                    |                        |               | 21:59        | BO               |                |                      | 48° 43.927             | 123° 09.119  |                 | 183                       | -                     |              |               | <input type="checkbox"/>            |                                  |
|                    |                        |               | 22:02        | EN               |                |                      | 48° 43.927             | 123° 09.077  |                 |                           | -                     |              |               | <input type="checkbox"/>            |                                  |
| 39                 | HARO STRAIT<br>MOORING |               | 23:52        | BE               |                |                      | 48° 29.755             | 123° 11.597  | 200             |                           | -                     |              |               | <input type="checkbox"/>            | HARO STRAIT<br>MOORING DEPLOYED  |
| 40                 | 40                     | 07            | 04:03        | BE               | CTD            |                      | 48° 29.454             | 123° 10.931  | 225*            |                           | -                     |              | CON           | <input checked="" type="checkbox"/> | Shallowing up                    |
|                    |                        |               | 04:10        | EN               |                |                      | ° 29.325               | ° 10.903     |                 | 203                       | -                     |              |               | <input checked="" type="checkbox"/> |                                  |
|                    |                        |               | 04:12        | BO               |                |                      | ° 29.280               | ° 10.892     |                 |                           | -                     |              |               | <input type="checkbox"/>            |                                  |
|                    |                        |               | :            |                  |                |                      | °                      | °            |                 |                           | -                     |              |               | <input type="checkbox"/>            |                                  |
|                    |                        |               | :            |                  |                |                      | °                      | °            |                 |                           | -                     |              |               | <input type="checkbox"/>            |                                  |

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Produced by the Water Properties Group, IOS

WaterProperties.ca  
Version: 20 April 2016

Hard Strait mooring had to be retrieved and redeployed See Event 39.

→ need to adjust cast depth as the depth shallowed up. quite a bit from BE depth.  
②10m on the way back up.

# DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 6 of 6

| Month <u>March</u> |              | Year <u>2019</u> |            | Vessel <u>Vector</u> |            | Cruise ID <u>2019-09</u> |                        |             |                 |                   |                       |              |               |                          |          |
|--------------------|--------------|------------------|------------|----------------------|------------|--------------------------|------------------------|-------------|-----------------|-------------------|-----------------------|--------------|---------------|--------------------------|----------|
| Event Number       | Station Name | Day              | Time (UTC) | Time Code            | Event Type | Firing Method            | Positional Information |             | Bottom Pressure | Max Cast Pressure | Sample Serial Numbers | # of Bottles | Watch Keepers | Trns/FI Cleaned          | Comments |
|                    |              |                  |            |                      |            |                          | Latitude               | Longitude   |                 |                   |                       |              |               |                          |          |
| 41                 | 41           | 07               | 06:00      | BE                   | CTD        |                          | 48° 31.427             | 123° 12.654 | 196             |                   | 007 - 007             | 1            | CW            | <input type="checkbox"/> | →        |
|                    |              |                  | 06:05      | BO                   |            |                          | ° 31.181               | ° 12.499    |                 | 195               | -                     |              |               | <input type="checkbox"/> |          |
|                    |              |                  | 06:09      | EN                   |            |                          | ° 31.019               | ° 12.410    |                 |                   | -                     |              |               | <input type="checkbox"/> |          |
| 42                 | 42           | 07               | 08:22      | BE                   | CTD        |                          | 48° 33.683             | 123° 13.240 | 299             |                   | 008 - 008             | 1            |               | <input type="checkbox"/> | surf TSS |
|                    |              |                  | 08:30      | BO                   |            |                          | ° 33.721               | ° 13.183    |                 | 294               | -                     |              |               | <input type="checkbox"/> |          |
|                    |              |                  | 08:35      | EN                   |            |                          | ° 33.754               | ° 13.195    |                 |                   | -                     |              |               | <input type="checkbox"/> |          |
| 43                 | 43           | 07               | 10:04      | BE                   | CTD        |                          | 48° 28.926             | 123° 11.360 | 194             |                   | -                     | 0            |               | <input type="checkbox"/> |          |
|                    |              |                  | 10:10      | BO                   |            |                          | ° 28.936               | ° 11.403    |                 | 189               | -                     |              |               | <input type="checkbox"/> |          |
|                    |              |                  | 10:13      | EN                   |            |                          | ° 28.938               | ° 11.429    |                 |                   | -                     |              |               | <input type="checkbox"/> |          |
| 44                 | 44           | 07               | 11:33      | BE                   | CTD        |                          | 48° 32.465             | 123° 12.548 | 248             |                   | -                     | 0            |               | <input type="checkbox"/> |          |
|                    |              |                  | 11:39      | BO                   |            |                          | ° 32.530               | ° 12.447    |                 | 243               | -                     |              |               | <input type="checkbox"/> |          |
|                    |              |                  | 11:42      | EN                   |            |                          | ° 32.585               | ° 12.402    |                 |                   | -                     |              |               | <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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Produced by the Water Properties Group, IOS

WaterProperties.ca  
 Version: 20 April 2016

bottom sal + TSS @ bottom.

- Cast is deepening 199m @ Bo  
(196m @ start).

Cast 44 had a bat fact ! - died @ 6606