DAILY SCIENCE LOG BOOK

MISSION NUMBER 2019-062

DATE: From: 30 SEP 2019 To:

VESSEL: CCGS VECTOR

PROJECT(S): SALISH SEA / BURRARD INLET WATER PROPERTIES SURVEY

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

WaterProperties.ca

Captain: BENNETT LIGHT First Officer: ALI BOTTERELL

Second Officer: CELINE RODZINYAK Third Officer: _____

~~Fishing Master~~ Bosun: DARREN EDWARDS Chief Engineer: ANGELA FRANCESCINI

Mission Participants / Agencies:

DFO - OSD

**** Chief Scientist to complete section below OR cut and tape from cruise plan ****

1st Leg Scientific Personnel: Chief Scientist: PETER CHANDLER

Name	Watch	Cabin	Name	Watch	Cabin
CHANDLER, P	1	1			
YOUNG, K	1	4			
BELTON, M	1	2			
MACLEAN, H	2	3			
NEMCEK, N	2	4			
COVERT, P	2	2			

2nd Leg Scientific Personnel: Chief Scientist: _____

Name	Watch	Cabin	Name	Watch	Cabin

**** 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: Vector Laptop

Data acquisition program: Seasave

CTD deck unit make: SBE model: 11+ serial number: _____

Primary CTD

Make: SBE model: 9+ serial number: 506

Primary temperature serial number: 2023

Primary conductivity serial number: 1763

Secondary temperature serial number: 5013

Secondary conductivity serial number: 3394

Transmissometer: Wetlabs Model: C-Star s/n: 1185DR

Transmissometer: Wetlabs Model: C-Star s/n: 1883DG

Fluorometer: Model Seapoint Cable gain: 3X s/n: 3640 (P) **S** or **NO** pump?

Fluorometer: Model _____ Cable gain: _____ s/n: _____ **P, S** or **NO** pump?

Oxygen sensor: SBE Model: 43 s/n: 3234 P,(S) or **NO** pump?

PAR sensor: Biospherical Model: QSP200L46 s/n: _____ **Surface PAR?** (Y) / **N**

Other sensors: Biospherical Surface PAR s/n: 20518 **P, S** or **NO** pump?

Other sensors: pH s/n: 0691 **P, S** or **NO** pump?

Other sensors: Altimeter s/n: 62355 **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-rosette casts (e.g., W.E. Ricker)

Rosette Setup:
Number of bottles: 24
Manufacturer: 105
Volume of bottles (litres): 10L

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 ~~Version~~: S/N 2488
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:_____
Sampling interval (sec):_____
Bin Length: (2^x):_____
Pulse Length:_____
Buffer (bytes):_____
Gyro Offset:_____

User Exits: Name: _____ Exit points:_____
Name: _____ Exit points:_____
Name: _____ Exit points:_____
Work File:_____

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:

_____
_____
_____
_____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEP | **Year** 2019 | **Vessel** VECTOR | **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
1	51	30	23:54	BE	ROS	US	48° 38.982	123° 29.971	183		1 - 9	9	PC	☑ ☐	16:54 local
			23:57	BO			° 38.984	° 29.980		100	-			☐ ☐	
		1	00:09	EN			° 38.990	° 29.984			-			☐ ☐	
2	59	1	02:04	BE	NET	—	48° 37.856	123° 14.619	231		-		KY	☐ ☐	1904 local
			02:12	BO			° 37.857	° 14.627		230	-			☐ ☐	
			02:16	EN			° 37.851	° 14.620			-			☐ ☐	
3	59	1	02:29	BE	ROS	US	48° 37.853	123° 14.624	230		10 - 24	15	PC	☑ ☐	
			02:35	BO			° 37.856	° 14.629		229	-			☐ ☐	
			02:52	EN			° 37.877	° 14.606			-			☐ ☐	
4	60	1	03:32	BE	ROS	—	48° 33.848	123° 12.830	295		-		PC	☑ ☐	
			03:38	BO			° 33.829	° 12.833		297	-			☐ ☐	
			03:43	EN			° 33.828	° 12.832			-			☐ ☐	
5	61	1	04:27	BE	ROS	—	48° 29.194	123° 09.304	282		-		PC	☑ ☐	
			04:32	BO			° 29.135	° 09.226		280	-			☐ ☐	
			04:37	EN			° 29.130	° 09.209			-			☐ ☐	
6	101	1	14:19	BE	ROS	—	48° 25.411	124° 45.148	234		-		MM	☑ ☐	
			14:23	BO			° 25.427	° 45.157		230	-			☐ ☐	
			14:28	EN			° 25.434	° 45.197			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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
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MR = Messenger Release Time
RE = Recover Mooring Time

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

Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

very nice weather depart K15 local time

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPT | **Year** 2019 | **Vessel** VECTOR | **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
7	102	1	15:11	BE	ROS	V.S.	48° 29.970	124° 44.081	255		25 - 38	14	HM	☑ ☐	
			15:18	BO			° 29.988	° 44.148		252	-			☐ ☐	
			15:35	EN			° 29.978	° 44.260			-			☐ ☐	
8	103	1	16:14	BE	ROS	—	48° 32.929	124° 43.051	121		—	—	H.M.	☑ ☐	
			16:30	BO			° 32.926	° 43.079		121	-			☐ ☐	
			16:21	EN			° 32.927	124° 43.090			-			☐ ☐	
9	76	1	17:37	BE	ROS	—	48° 31.394	124° 30.095	90		—	—	H.M.	☑ ☐	
			17:40	BO			° 31.394	° 30.122		87	-			☐ ☐	
			17:42	EN			° 31.397	° 30.124			-			☐ ☐	
10	75	1	18:19	BE	ROS	—	48° 28.321	124° 32.896	219		39 - 52	14	H.M.	☑ ☐	
			18:23	BO			48° 28.338	124° 32.940		219	-			☐ ☐	
			18:40	EN			48° 29.423	124° 33.223			-			☐ ☐	
11	74	1	19:15	BE	ROS	—	48° 25.135	124° 35.666	188		-	—	RC	☑ ☐	
			19:19	BO			° 25.138	° 35.672		184	-			☐ ☐	
			19:23	EN			° 25.130	° 35.664			-			☐ ☐	
12	73	1	22:02	BE			48° 14.993	124° 06.702	160		-	—	RC	☑ ☐	
			22:04	BO			° 14.990	° 06.691		159	-			☐ ☐	
			22:07	EN			° 14.996	° 06.688			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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UN = Up / No stop
DN = Down / No stop

Time Code:
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Notes: _____

½ hour out from rosette phone MCR #13 to pump out

ph buffer solution store 5.12

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCT | **Year** 2019 | **Vessel** VECTOR | **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
13	72	1	22:42	BE	NET		48° 18.616	124° 03.964	189		-	—	KY	☐☐	15:42 local
			22:50	BO			° 18.612	° 03.921		179	-			☐☐	
			22:53	EN			° 18.603	° 03.915			-			☐☐	
14	72	1	23:02	BE	ROS	US	48° 18.599	124° 03.960	189		53-66	14	PC	☑☐	
			23:05	BO			° 18.582	° 03.942			-			☐☐	
			23:19	EN			° 18.571	° 03.904			-			☐☐	
15	71	2	00:02	BE	ROS	—	48° 22.115	123° 59.326	111		-	—	PC	☑☐	Δs larger than
			00:04	BO			° 22.116	° 59.323		108	-			☐☐	usual ~ .020
			00:06	EN			° 22.130	° 59.323			-			☐☐	
16	70	2	01:20	BE	ROS	—	48° 19.207	123° 43.124	151		-	—	PC	☑☐	
			01:23	BO			° 19.194	° 43.116		150	-			☐☐	
			01:25	EN			° 19.220	° 43.102			-			☐☐	
17	69	2	01:56	BE	ROS	US	48° 15.601	123° 43.280	178		67-78	12	PC	☑☐	
			01:59	BO			° 15.566	° 43.318		175	-			☐☐	
			02:11	EN			° 15.434	° 43.391			-			☐☐	
18	68	2	02:45	BE	ROS	—	48° 12.173	123° 42.991	139		-		PC	☑☐	
			02:48	BO			° 12.180	° 43.010		135	-			☐☐	
			02:50	EN			° 12.178	° 43.030			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

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WaterProperties.ca
Version: 20 April 2016

deck inform bridge on downcast passing 10 m rosette depth

deck inform bridge on upcast @ 30 m ± 10 m rosette depth

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCT **Year** 2019 **Vessel** VECTOR **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
19	105	2	04:47	BE	ROS	—	48 ° 10.955	123 ° 19 .052	85		-	—	RE	☑ ☐	ΔS ~0.010
			04:48	BO			° 10.946	° 19 .052		80	-			☐ ☐	
			04:50	EN			° 10.946	° 19 .064			-			☐ ☐	
20	ADCP	2	05:23	BE	ROS	US	48 ° 13 .973	123 ° 18 .103	120		79 - 88	10	RE	☑ ☐	
			05:25	BO			° 13 .940	° 18 .089		115	-			☐ ☐	
			05:35	EN			° 13 .966	° 18 .122			-			☐ ☐	
21	104	2	06:23	BE	ROS	—	48 ° 19 .932	123 ° 18 .120	85		-	—	RE	☑ ☐	
			06:25	BO			° 19 .910	° 18 .130		83	-			☐ ☐	
			06:26	EN			° 19 .910	° 18 .112			-			☐ ☐	
22	67	2	07:01	BE	ROS	—	48 ° 22. 799	123 ° 18 .108	106		—	—	H.M	☑ ☐	ΔS - 0.011
			07:03	BO			° 22. 808	° 18 .106		101	-			☐ ☐	
			07:05	EN			° 22. 812	° 18 .106			-			☐ ☐	
23	66	2	08:09	BE	ROS	—	48 ° 19 . 248	123 ° 14 . 302	101		—	—	H.M.	☑ ☐	ΔS - 0.012
			09:11	BO			° 19 . 234	° 14 . 360		97	-			☐ ☐	
			09:13	EN			° 19 . 220	° 14 . 399			-			☐ ☐	
24	65	2	08:56	BE	ROS	U.S.	48 ° 15 . 908	123 ° 09 . 828	125		89 - 98	10	H.M.	☑ ☐	
			08:59	BO			° 15. 918	° 09 . 869		121	-			☐ ☐	
			09:10	EN			° 15. 950	° 09 . 938			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

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Ocean Sciences Division, Institute of Ocean Sciences

Month OCT | **Year** 2019 | **Vessel** VECTOR | **Cruise ID** 2019-062

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25	64	2	09:50	BE	ROS	—	48° 12.829	123° 05.836	110		—	—	W.M.	☑ ☐	ΔS = 0.008 −0.0013
			09:53	BO			48° 12.834	° 05.852		105	-			☐ ☐	
			09:55	EN			° 12.839	° 05.873			-			☐ ☐	
26	63	2	10:40	BE	NET	—	48° 14.516	122° 58.772	160		—	—	NN/PC	☐ ☐	SCORE NET
			10:45	BO			° 14.495	° 58.777		150	-			☐ ☐	
			10:47	EN			° 14.519	° 58.814			-			☐ ☐	
27	63	2	11:09	BE	ROS	U.S.	48° 14.638	122° 58.544	152		99 - 102	4	H.M.	☑ ☐	ΔS − 0.011
			11:13	BO			° 14.651	° 58.554		147	-			☐ ☐	
			11:19	EN			° 14.666	° 58.618			-			☐ ☐	
28	62	2	12:27	BE	ROS	VS	48° 22.825	123° 02.551	148		103 - 113	11	H.M	☑ ☐	ΔS - 0.013
			12:30	BO			° 22.844	° 02.539		144	-			☐ ☐	
			12:42	EN			° 22.898	° 02.532			-			☐ ☐	
29	54	2	14:17	BE	ROS	—	48° 26.606	122° 44.438	80		-	—	H.M.	☑ ☐	ΔS - 0.012
			14:19	BO			48° 26.632	122° 44.462		77	-			☐ ☐	
			14:20	EN			48° 26.640	122° 44.474			-			☐ ☐	
30	53	2	15:12	BE	ROS	—	48° 33.216	122° 44.957	56		-	—	HM	☑ ☐	ΔS - 0.012
			15:14	BO			48° 33.232	122° 44.844		55	-			☐ ☐	
			15:15	EN			48° 33.236	122° 44.833			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

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Month Oct **Year** 2019 **Vessel** VECTOR **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
31	52	2	16:00	BE	ROS	—	48° 38.890	122° 43.192	82		—	—	H.M.	☑ ☐	
			16:02	BO			48° 38.898	122° 43.184		79	-			☐ ☐	
			16:04	EN			48° 38.897	122° 43.180			-			☐ ☐	
32	51	2	17:15	BE	ROS	—	48° 46.706	122° 51.595	162		—	—	H.M.	☑ ☐	
			17:19	BO			48° 46.700	122° 51.590		160	-			☐ ☐	
			17:22	EN			48° 46.704	122° 51.587			—	—	Paul	☐ ☐	
33	56	2	18:17	BE	ROS	US	48° 46.396	123° 01.592	212		114 - 127	14	Paul	☑ ☐	
			18:22	BO			48° 46.391	123° 01.598		211	-			☐ ☐	
			18:39	EN			48° 46.373	123° 01.600			-			☐ ☐	
34	57	2	19:18	BE	ROS	—	48° 43.960	123° 08.225	164		-	—	RC	☑ ☐	
			19:20	BO			° 43.950	° 08.237		162	-			☐ ☐	
			19:23	EN			° 43.946	° 08.231			-			☐ ☐	
35	58	2	19:54	BE	ROS	—	48° 43.057	123° 14.394	336		-	—	RC	☑ ☐	
			19:58	BO			° 43.064	° 14.400		330	-			☐ ☐	
			20:02	EN			° 43.076	° 14.411			-			☐ ☐	
36	47	2	22:01	BE	ROS	—	48° 49.304	123° 06.128	185		-	—	RC	☑ ☐	
			22:04	BO			° 49.302	° 06.125		181	-			☐ ☐	
			22:07	EN			° 49.302	° 06.121			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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37	48	2	22:38	BE	ROS	/	48° 51.691	123° 03.202	227		-	/	RC	☑ ☐	
			22:42	BO			° 51.691	° 03.199		224	-			☐ ☐	
			22:45	EN			° 51.686	° 03.190			-			☐ ☐	
38	49	2	23:20	BE	ROS	/	48° 54.996	122° 59.584	132		-	/	RC	☑ ☐	
			23:22	BO			° 54.997	° 59.584		128	-			☐ ☐	
			23:24	EN			° 59.994	° 59.586			-			☐ ☐	
39	44	3	00:33	BE	ROS	/	48° 56.810	123° 06.030	120		-	/	RC	☑ ☐	
			00:35	BO			° 56.807	° 06.036		117	-			☐ ☐	
			00:37	EN			° 56.804	° 06.036			-			☐ ☐	
40	45	3	01:05	BE	ROS	/	48° 53.922	123° 08.436	128		-	/	RC	☑ ☐	
			01:08	BO			° 53.926	° 08.419		125	-			☐ ☐	
			01:10	EN			° 53.926	° 08.411			-			☐ ☐	
41	46	3	01:34	BE	NET	/	48° 51.421	123° 10.817	176		-	/	KY	☐ ☐	1834 bad
			01:40	BO			° 51.446	° 10.794		166	-			☐ ☐	
			01:43	EN			° 51.449	° 10.792			-			☐ ☐	
42	46	3	01:52	BE	ROS	US	48° 51.437	123° 10.811	176		128-139	12	RC	☑ ☐	
			01:55	BO			° 51.424	° 10.817		174	-			☐ ☐	
			02:07	EN			° 51.428	° 10.817			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

- skip station 50 - too many crab pot floats in vicinity of station

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCT **Year** 2019 **Vessel** VECTOR **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
43	109	3	03:10	BE	ROS	—	48 °56.497	123 °21.800	196		-	—	PC	☑ ☐	
			03:13	BO			°56.503	°21.762		192	-			☐ ☐	
			03:16	EN			°56.489	°21.758			-			☐ ☐	
44	43	3	04:06	BE	ROS	/	49 °00.212	123 °30.060	200		-	—	PC	☑ ☐	
			04:10	BO			°00.203	°30.050		201	-			☐ ☐	
			04:13	EN			°00.196	°30.054			-			☐ ☐	
45	42	3	04:39	BE	NET	—	49 °01.792	123 °26.129	318		-	—	KY	☐ ☐	2139 local
			04:49	BO			°01.785	°26.111		308	-			☐ ☐	
			04:54	EN			°01.776	°26.124			-			☐ ☐	
46	42	3	05:03	BE	ROS	US	49 °01.810	123 °26.158	318		140-156	17	PC	☑ ☐	
			05:09	BO			°01.788	°26.146		315	-			☐ ☐	
			05:27	EN			°01.798	°26.186			-			☐ ☐	
47	41	3	06:06	BE	ROS	—	49 °03.296	123 °22.322	242		-	—	PC	☑ ☐	
			06:10	BO			°03.293	°22.315		240	-			☐ ☐	
			06:14	EN			°03.298	°22.333			-			☐ ☐	
48	108	3	06:36	BE	ROS	—	49 °04.334	123 °19.166	93		-	—	PC	☑ ☐	
			06:41	BO			°04.337	°19.199		94	-			☐ ☐	
			06:43	EN			°04.332	°19.237			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

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Month OCT **Year** 2019 **Vessel** VECTOR **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
49	37	3	08:02	BE	ROS	—	49° 13.553	123° 20.684	210	21-	—	—	H.M	☑ ☐	
			08:06	BO			49° 13.564	123° 20.654		207	-			☐ ☐	
			08:10	EN			49° 13.582	123° 20.618			-			☐ ☐	
50	38	3	08:50	BE	ROS	—	49° 12.047	123° 26.326	304		—	—	H.M.	☑ ☐	
			08:56	BO			° 12.036	° 26.281		301	-			☐ ☐	
			09:01	EN			° 12.058	° 26.227			-			☐ ☐	
51	38	3	09:17	BE	NET	—	49° 11.992	123° 26.342	304		—	—	NN/PC	☐ ☐	SCORE NET
			09:27	BO			49° 12.013	123° 26.240		291	-			☐ ☐	
			09:32	EN			49° 12.035	123° 26.172			-			☐ ☐	
52	39	3	10:36	BE	ROS	U.S	49° 09.967	123° 33.076	370		157-173	17	PAUL C	☑ ☐	
			10:37	BO			49° 09.986	123° 33.092		369	-			☐ ☐	
			10:58	EN			49° 10.060	123° 33.127			-			☐ ☐	
53	40	3	11:43	BE	ROS	—	49° 08.670	123° 36.835	140		—	—	H.M	☐ ☐	
			11:46	BO			° 08.660	° 36.872		144	-			☐ ☐	
			11:49	EN			° 08.642	° 36.875			-			☐ ☐	
54	40	3	12:11	BE	NET	—	49° 08.642	123° 36.875	139		—	—	NN/P.C.	☐ ☐	SCORE NET
			12:15	BO			49° 08.610	123° 36.839		130	-			☐ ☐	
			12:20	EN			49° 08.632	123° 36.977			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

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Ocean Sciences Division, Institute of Ocean Sciences

Month OCT **Year** 2019 **Vessel** VECTOR **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
55	Geo1	3	13:36	BE	NET	—	49° 15.005	123° 44.916	403		—	—	NN/PC	☐☐	SCORE NET
			13:49	BO			49° 15.013	123° 44.918		390	-			☐☐	
			13:55	EN			49° 15.010	123° 44.932			-			☐☐	
56	Geo1	3	14:09	BE	ROS	—	49° 15.026	123° 44.942	405		174 - 177	4	H.M	☑☐	
			14:17	BO			° 15.037	° 44.959		400	-			☐☐	
			14:27	EN			° 15.047	° 44.960			-			☐☐	
57	26	3	15:06	BE	ROS	—	49° 14.366	123° 50.804	262		—		H.M	☑☐	
			15:11	BO			° 14.357	° 50.855		254	-			☐☐	
			15:16	EN			° 14.322	° 50.762			-			☐☐	
58	265	3	15:49	BE	ROS	—	49° 16.820	123° 49.638	410		—	—	H.M.	☑☐	
			15:57	BO			° 16.816	° 49.636		407	-			☐☐	
			16:04	EN			° 16.916	° 49.639			-			☐☐	
59	27	3	16:37	BE	ROS	U.S	49° 19.127	123° 48.029	345		178 - 194	17		☑☐	
			16:43	BO			° 19.133	° 48.024		343	-			☐☐	
			:	EN			° .	° .			-			☐☐	
60	275	3	17:41	BE	ROS	—	49° 21.820	123° 46.553	106		—	—	H.M	☐☑	
			17:44	BO			° 21.816	° 46.556		104	-			☐☐	
			17:46	EN			° 21.818	° 46.543			-			☐☐	
			:				° .	° .			-			☐☐	

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCT | **Year** 2019 | **Vessel** VECTOR | **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
61	28	3	18:11	BE	ROS	—	49° 24.070	123° 45.295	136		—	—	HM	☑☐	
			18:14	BO			49° 24.091	123° 45.278		133	-			☐☐	
			18:16	EN			49° 24.077	123° 45.289			-			☐☐	
62	28	3	18:31	BE	NET	—	49° 24.038	123° 45.268	136		—	—	NN	☐☐	SCORE NET
			18:35	BO			49° 24.015	123° 45.285		126	-			☐☐	windy conditions
			18:37	EN			49° 24.003	123° 45.274			-			☐☐	
63	24	3	20:19	BE	NET	—	49° 30.230	124° 05.647	417		-	—	KY	☐☐	local 1319
			20:32	BO			° 30.249	° 05.606		393	-			☐☐	depth shoaling
			20:38	EN			° 30.242	° 05.598			-			☐☐	
64	24	3	20:49	BE	ROS	US	49° 30.203	124° 05.665	417		195 - 190	4	PC	☑☐	30.3 6.0
			20:58	BO			° 30.248	° 05.558		415	-			☐☐	
			21:09	EN			° 30.224	° 05.486			-			☐☐	
65	22	3	22:33	BE	ROS	US	49° 40.195	124° 16.314	350		199 - 202	4	PC	☑☐	
			22:40	BO			° 40.193	° 16.308		347	-			☐☐	
			22:49	EN			° 40.196	° 16.302			-			☐☐	
66	22	3	22:55	BE	NET	—	49° 40.196	124° 16.301	350		-	—	KY	☐☐	
			23:07	BO			° 40.191	° 16.283		340	-			☐☐	16:07 local
			23:13	EN			° 40.197	° 16.280			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

during cast - for 417 to 404 - adjust bottom depth for net cast to 393

- adjust cruise track to avoid windy (+30 knots) weather in SOG - proceed north through Malaspina Str. to stn 22

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCT | **Year** 2019 | **Vessel** VECTOR | **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
67	20	4	00:38	BE	ROS	—	49° 47.198	124° 32.335	311		-	—	RE	☑ ☐	
			00:43	BO			° 47.195	° 32.336		310	-			☐ ☐	
			00:48	EN			° 47.186	° 32.328			-			☐ ☐	
68	19	4	02:45	BE	ROS	—	50° 01.222	124° 52.955	272		-	—	RE	☑ ☐	bottom depth
			02:51	BO			° 01.295	° 53.014		282	-			☐ ☐	jumpy
			02:56	EN			° 01.300	° 52.946			-			☐ ☐	sand waves?
69	18	4	03:35	BE	ROS	—	49° 59.202	124° 58.933	149		-	—	RE	☑ ☐	
			03:37	BO			° 59.200	° 58.938		145	-			☐ ☐	
			03:40	EN			° 59.198	° 58.952			-			☐ ☐	
70	QU39	4	04:17	BE	NET	—	50° 01.840	125° 06.007	274		-	—	KY	☐ ☐	
			04:27	BO			° 01.834	° 05.993		273	-			☐ ☐	21:27 local time
			04:31	EN			° 01.851	° 05.991			-			☐ ☐	
71	QU39	4	04:40	BE	ROS	US	50° 01.842	125° 05.990	274		214-217	4	RE	☑ ☐	QU39 longitude
			04:45	BO			° 01.829	° 06.012		269	-			☐ ☐	125 05.93
			04:52	EN			° 01.844	° 06.008			-			☐ ☐	
72	17	4	05:21	BE	ROS	—	49° 58.788	125° 04.327	265		-	—	RE	☑ ☐	
			05:25	BO			° 58.777	° 04.327		263	-			☐ ☐	
			05:29	EN			° 58.777	° 04.337			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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note order of bottles: station 16 printed prior to QU39, although QU39 sampled first

check position of QU39 — upd @ 50 01.840 / 125 05.520 — bridge has 50 01.840 / 125 06.000

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73	16	4	06:00	BE	ROS	US	49° 57.732	125° 08.738	156		203 - 213	11	RE	☑ ☐	
			06:03	BO			°57.726	°08.706			-			☐ ☐	
			06:14	EN			°57.718	°08.664			-			☐ ☐	
74	15	4	07:12	BE	ROS	—	49° 51.600	125° 01.648	125		—	—	H.M.	☑ ☐	
			07:15	BO			°51.600	°01.648		121	-			☐ ☐	
			07:17	EN			°51.604	°01.637			-			☐ ☐	
75	14	4	07:42	BE	NET	—	49° 53.000	124° 59.655	313		—	—	NN	☐ ☐	SCORE NET
			07:52	BO			49° 53.001	124° 59.663		303	-			☐ ☐	
			07:57	EN			49° 52.994	124° 59.643			-			☐ ☐	
76	14	4	08:12	BE	ROS	U.S.	49° 53.026	124° 59.646	313		218 - 232	15	PAUL C.	☑ ☐	
			08:18	BO			49° 53.026	124° 59.678			-			☐ ☐	
			08:38	EN			49° 53.026	124° 59.683			-			☐ ☐	
77	13	4	09:14	BE	ROS	—	49° 55.291	124° 55.274	230		—	—	H.M.	☒ ☐	
			09:19	BO			°55.296	°55.301		227	-			☐ ☐	
			09:23	EN			°55.297	°55.307			-			☐ ☐	
78	12	4	11:15	BG	NET	—	49° 43.612	124° 40.957	351		—	—	NN	☐ ☐	SCORE NET
			11:27	BO			49° 43.623	124° 40.792		342	-			☐ ☐	
			11:33	EN			49° 43.643	124° 40.772			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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79	12	4	11:45	BE	ROS	U.S.	49° 43.676	124° 40.798	352		233-248	16	H.M.	☑☐	
			11:51	BO			° 43.687	° 40.805			-			☐☐	
			12:11	EN			° 43.696	° 40.800			-			☐☐	
80	11	4	12:50	BE	ROS	—	49° 42.395	124° 43.403	297		—	—	H.M	☐☑	
			12:55	BO			49° 42.394	124° 43.400		294	-			☐☐	
			13:01	EN			49° 42.378	124° 43.392			--			☐☐	
81	10	4	13:38	BE	ROS	—	49° 40.699	124° 47.324	93		—	—	PAUL C.	☑☐	
			13:40	BO			49° 40.700	124° 47.335		89	-			☐☐	
			13:42	EN			49° 40.703	124° 47.345			-			☐☐	
82	9	4	14:50	BE	ROS	U.S.	49° 35.489	124° 39.312	168		249-260	12	H.M	☑☐	
			14:53	BO			° 35.507	° 39.320		163	-			☐☐	
			15:08	EN			° 35.519	° 39.369			-			☐☐	
83	8	4	15:49	BE	ROS	—	49° 39.305	124° 32.989	336		—	—	PAUL C.	☑☐	pH cap left on.
			15:55	BO			° 39.311	° 32.989		334	-			☐☐	
			16:01	EN			° 39.312	° 22.984			-			☐☐	
84	7	4	17:00	RE	ROS	—	49° 34.416	124° 24.248	350		—	—	H.M	☑☐	pH OFF
			17:06	BO			° 34.391	° 24.221		347	-			☐☐	
			17:12	EN			° 34.376	° 24.205			-			☐☐	
			:				° .	° .			-			☐☐	

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month Oct **Year** 2019 **Vessel** VECTOR **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
85	6	4	17:50	BE	ROS	U.S.	49° 30.605	124° 27.784	192		261 - 273	13	H M	☑ ☐	
			17:54	BO			° 30.616	° 27.761			-			☐ ☐	
			18:10	EN			° 30.606	° 27.904			-			☐ ☐	
86	5	4	18:40	BE	ROS	—	49° 27.969	124° 30.374	328		—	—	H.M.	☑ ☐	
			18:46	BO			° 27.878	° 30.361		326	-			☐ ☐	
			18:51	EN			° 27.886	° 30.356			-			☐ ☐	
87	CPF2	4	18:55	BE	NET	—	49° 27.870	124° 30.351	328		-	—	KY	☐ ☐	
			19:06	BO			° 27.885	° 30.386		318	-			☐ ☐	1206 local
			19:12	EN			° 27.857	° 30.417			-			☐ ☐	
88	BS17	4	20:25	BE	NET	—	49° 28.845	124° 46.001	55		-	—	KY	☐ ☐	
			20:27	BO			° 28.857	° 46.019		45	-			☐ ☐	1327 local
			20:29	EN			° 28.865	° 46.027			-			☐ ☐	
89	BS17	4	20:36	BE	ROS	US	49° 28.866	124° 46.042	55		274 - 281	8	RC	☑ ☐	
			20:37	BO			° 28.872	° 46.040		51	-			☐ ☐	
			20:44	EN			° 28.888	° 46.040			-			☐ ☐	
90	4	4	22:43	BE	ROS	—	49° 24.475	124° 22.117	341		-	—	RC	☑ ☐	
			22:49	BO			° 24.482	° 22.115			-			☐ ☐	altimeter problems
			22:54	EN			° 24.496	° 22.108			-			☐ ☐	out ~ 7m off bottom
			:				° .	° .			-			☐ ☐	

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SET = Fish Set
LOOP = Sea Water Loop
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DRF = Drifter
____ = _____

Bottle Firing Method:
US = Up / Stop (default)
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Time Code:
BE = Beginning Time of Cast
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CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCT **Year** 2019 **Vessel** VECTOR **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
91	3	4	23:18	BE	ROS	US	49 °26.606	124 °20.218	320		282-297	16	R	☑ ☐	
			23:23	BO			°26.581	°20.234		319	-			☐ ☐	
			23:40	EN			°26.585	°20.238			-			☐ ☐	
92	1	5	00:43	BE	ROS	—	49 °20.302	124 °12.120	245		-	—	R	☑ ☐	
			00:47	BO			°20.328	°12.089		243	-			☐ ☐	
			00:51	EN			°20.346	°12.073			-			☐ ☐	
93	CPF1	5	01:31	BE	NET	—	49 °22.001	124 °05.007	244		-	—	KY	☐ ☐	
			01:40	BO			°21.950	°05.003		234	-			☐ ☐	1840 local
			01:44	EN			°21.951	°04.981			-			☐ ☐	
94	CPF1	5	01:51	BE	ROS	US	49 °21.971	124 °04.975	242		313-316	4	R	☑ ☐	Nobili #1 profile
			01:56	BO			°21.977	°04.967		241	-			☐ ☐	stn 2
			02:02	EN			°21.986	°04.932			-			☐ ☐	
95	2	5	02:33	BE	ROS	US	49 °24.154	124 °09.356	276		298-312	15	R	☑ ☐	
			02:38	BO			°24.131	°09.364		272	-			☐ ☐	
			02:54	EN			°24.124	°09.343			-			☐ ☐	
96	25	5	03:28	BE	ROS	—	49 °27.686	124 °07.502	290		-	—	R	☑ ☐	
			03:33	BO			°27.674	°07.505		297	-			☐ ☐	
			03:32	EN			°27.698	°07.492			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCT | **Year** 2019 | **Vessel** VECTOR | **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
97	VAN 1	5	07:28	BE	NET	/	49 ° 18 . 872	123 ° 15 . 934	115		/	/	NN	☐☐	SCORE NET
			07:32	BO			49 ° 18 . 873	123 ° 15 . 928		105	-			☐☐	
			07:34	EN			49 ° 18 . 874	123 ° 15 . 929			-			☐☐	
98	VAN 1	5	07:45	BE	ROS	US	49 ° 18 . 871	123 ° 15 . 902	115		317 - 327	11	HM	☑☐	
			07:47	BO			° 18 . 869	° 15 . 898		109	-			☐☐	
			07:58	EN			° 18 . 874	° 15 . 878			-			☐☐	
99	VAN 0	5	08:31	BE	ROS	/	49 ° 17 . 867	123 ° 13 . 700	47		/	/	H.M	☐☑	ΔS = 0.009
			08:32	BO			° 17 . 869	° 13 . 692		41	-			☐☐	
			08:34	EN			° 17 . 870	° 13 . 693			-			☐☐	
100	VAN 2	5	09:00	BE	ROS	/	49 ° 19 . 499	123 ° 13 . 855	65		/	/	H.M.	☑☐	
			09:02	BO			° 19 . 496	° 13 . 864		64	-			☐☐	
			09:03	EN			° 19 . 498	° 13 . 860			-			☐☐	
101	VAN 3	5	09:44	BE	ROS	/	49 ° 18 . 904	123 ° 09 . 965	37		/	/	PAUL C.	☑☐	
			:46	BO			° 18 . 911	° 9 . 965		35	-			☐☐	
			:47	EN			° 18 . 919	° 9 . 965			-			☐☐	
102	VAN 4	5	11:27	BE	ROS	US	49 ° 17 . 836	123 ° 05 . 830	58		328 - 335	8	H.M.	☑☐	
			11:29	BO			° 17 . 838	° 05 . 836		55	-			☐☐	
			11:36	EN			° 17 . 879	° 05 . 822			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCT | **Year** 2019 | **Vessel** VECTOR | **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
103	VAN 6	5	12:26	BE	NET	/	49° 17 . 887	122° 58 . 869	65		/	/	NN	☐☐	SCORE NET
			12:28	BO			49° 17 . 891	122° 58 . 877		55	-			☐☐	
			12:31	EN			49° 17 . 899	122° 58 . 895			-			☐☐	
104	VAN 6	5	12:40	BE	ROS	US	49° 17 . 916	122° 58 . 915	62		336 - 343	8	H.M.	☑☐	
			12:41				° 17 . 921	° 58 . 914			-			☐☐	
			12:44				° 17 . 917	° 58 . 867			-			☐☐	
105	IND 0	5	13:49	BE	ROS	U.S.	49° 18 . 270	122° 56 . 357	31		344 - 349	6	H.M.	☑☐	
			13:50	BO			° 18 . 268	° 56 . 354		27	-			☐☐	
			13:55	EN			° 18 . 259	° 56 . 346			-			☐☐	
106	IND 2	5	14:34	BE	ROS	U.S	49° 21 . 014	122° 54 . 158	153		350 - 361	12	H.M	☑☐	SEE OVER
			14:38	BO			° 21 . 008	° 54 . 179		143	-			☐☐	
			14:52	EN			° 20 . 978	° 54 . 144			-			☐☐	
107	IND 4	5	15:34	BE	NET	/	49° 23 . 275	122° 52 . 485	220		/	/	NN	☐☐	SCORE NET
			15:40	BO			49° 23 . 276	122° 52 . 482		210	-			☐☐	
			15:44	EN			49° 23 . 273	122° 52 . 482			-			☐☐	
108	IND 4	5	15:56	BE	ROS	US	49° 23 . 264	122° 52 . 478	220		362 - 375	14	H.M	☑☐	
			16:01	BO			° 23 . 267	° 52 . 481		214	-			☐☐	
			16:18	EN			° 23 . 273	° 52 . 478			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

SOUNDER SHOWED 146m CHICKENED OUT @ 143m - WENT TO 149 (ALTIMETER LOOKED OK) FIRED @ 143

DAILY SCIENCE LOG

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Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
109	IND 8	5	17:14	BE	ROS	US	49° 26.473	122° 52.552	39		376 - 391	6	H.M	☑ ☐	
			17:16	BO			° 26.466	° 52.548		33	-			☐ ☐	
			17:21	EN			° 26.456	° 52.536			-			☐ ☐	
110	IND 7	5	18:05	BE	ROS	U.S.	49° 27.427	122° 52.618	76		382 - 389	8	H.M.	☑ ☐	
			18:07	BO			° 27.426	° 52.619		73	-			☐ ☐	
			18:15	EN			° 27.436	° 52.630			-			☐ ☐	
111	IND 6	5	18:39	BE	ROS	—	49° 26.406	122° 51.610	102		—	—	H.M	☑ ☐	
			18:41	BO			° 26.407	° 51.614		95	-			☐ ☐	
			18:43	EN			° 26.400	° 51.616			-			☐ ☐	
112	IND5	5	19:06	BE	ROS	—	49° 24.692	122° 52.309	207		-	—	R	☑ ☐	
			19:10	BO			° 24.689	° 52.308		203	-			☐ ☐	
			19:13	EN			° 24.685	° 52.307			-			☐ ☐	
113	IND3	5	19:46	BE	ROS	—	49° 22.193	122° 52.866	198		-	—	R	☑ ☐	
			19:49	BO			° 22.187	° 52.867		192	-			☐ ☐	
			19:52	EN			° 22.187	° 52.860			-			☐ ☐	
114	IND2	5	20:10	BE	ROS	—	49° 20.998	122° 54.136	162		-	—	R	☑ ☐	
			20:13	BO			° 20.992	° 54.170		156	-			☐ ☐	
			20:16	EN			° 20.993	° 54.172			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

decision to go for 1915 slate @ second service rather than 1330
- add ctd + net @ IND2
- ctd @ IND1 and VAN7

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCT **Year** 2019 **Vessel** VECTOR **Cruise ID** 2019-062

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
115	IND2	5	20:20	BE	NET	—	49° 20.992	122° 54.167	154		-	—	KY	☐☐	
			20:25	BO			° 20.998	° 54.157		144	-			☐☐	1325 local
			20:28	EN			° 20.987	° 54.149			-			☐☐	ethanol sample
116	IND1	5	20:48	BE	ROS	—	49° 19.854	122° 54.120	70		-	—	RC	☑☐	
			20:49	BO			° 19.854	° 54.119		65	-			☐☐	
			20:51	EN			° 19.854	° 54.116			-			☐☐	
117	VAN7	5	21:45	BE	ROS	—	49° 17.420	122° 54.380	18		-	—	RC	☑☐	
			21:47	BO			° 17.419	° 54.385		14	-			☐☐	
			21:48	EN			° 17 419	° 54.388			-			☐☐	
118	VAN5	6	02:29	BE	ROS	US	49° 17.714	123° 03.256	36		390-395	6	RC	☑☐	
			02:30	BO			° 17.708	° 03.241		32	-			☐☐	
			02:35	EN			° 17.716	° 03.204			-			☐☐	
119	G1-01	6	11:17	BE	ROS	/	48° 45.784	123° 20.476	66		/	/	H.M.	☑☐	
			11:18	BO			° 45.772	° 20.474		62	-			☐☐	
			11:20	EN			° 45.766	° 20.478			-			☐☐	
120	G1-01	6	11:26	BE	NET	/	48° 45.764	123° 20.494	66		/	—	NN	☐☐	SCORE NET
			11:28	BO			° 45.758	° 20.494		55	-			☐☐	0426 LOCAL
			11:29	EN			° 45.757	° 20.493			-			☐☐	
			:				° .	° .			-			☐☐	

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anchor off Admiralty Point 1500 → 1830

weigh anchor 1830

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121	SC 04	6	12:43	BE	NET	✓	48° 43.503	123° 25.000	193		✓	✓	NN	☐☐	SCORS NET
			12:46	BO			48° 43.503	123° 24.995		83	-			☐☐	
			12:48	EN			48° 43.501	123° 24.995			-			☐☐	
122	SC 04	6	12:57	BE	ROS	✓	48° 43.500	123° 25.020	93		✓	✓	H.M.	☐☑	
			12:59	BO			° 43.498	° 25.014		90	-			☐☐	
			13:01	EN			° 43.501	° 25.014			-			☐☐	
123	S1	6	15:02	BE	GRAB	—	48° 39.134	123° 30.592	182		-	✓	HM	☐☐	grab did not
			15:06	BO			° 39.115	° 30.582		182	-			☐☐	trip - redo
			15:11	EN			° 39.091	° 30.578			-			☐☐	
124	S1	6	15:19	BE	GRAB	—	48° 39.088	123° 30.623	182		-	✓	HM	☐☐	no mud ↓
			15:22	BO			° 39.092	° 30.611		182	-			☐☐	no trip ↙
			15:28	EN			° 39.111	° 30.574			-			☐☐	
125	S1	6	15:49	BE	GRAB		48° 39.368	123° 29.707	123		-			☐☐	reposition to
			15:51	BO			° 39.371	° 29.728		123	-		HM	☐☐	get from bottom
			15:55	EN			° 39.364	° 29.732			-			☐☐	- no trip →
			:				° .	° .			-			☐☐	no mud
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	

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GRAB = SMYTH/MAC

Bottle Firing Method:
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