

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2021-021

DATE:

From: 16 JUN 2021

To: 21 JUN 2021

VESSEL:

VECTOR

PROJECT(S):

SALISH SEA BIOPHYSICAL SURVEY

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

WaterProperties.ca

Captain: DUSTIN ELAHR First Officer: ALLAN RAMSAY
Second Officer: CHRIS STEVENES Third Officer:
Fishing Master: MIKE PETRIE Chief Engineer: STEVE BUSS
Boson

Mission Participants / Agencies:

**** Chief Scientist to tape Scientific Personnel section of their cruise plan here ****

This is accessed from your WaterProperties.ca Dashboard or from here:
<https://www.waterproperties.ca/requests/cruiseplanview.php?cruiseid=YYYY-NNN>

**** 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: W/P Garner laptop

Data acquisition program: Seasave

CTD deck unit make: HT model: HT serial number: 508

Primary CTD

Make: SBE model: 9+ serial number: 1222

Primary temperature serial number: 5013

Primary conductivity serial number: 4434

Secondary temperature serial number: 5725

Secondary conductivity serial number: 4448

Transmissometer: Wetlabs Model: C-Star serial: 983DR

Transmissometer: _____ Model: _____ serial: _____

Fluorometer: Model Seepoint Cable gain: 3X serial: 3685 ☒ S or NO pump?

Fluorometer: Model _____ Cable gain: _____ serial: _____ ☐ S or NO pump?

Oxygen sensor: SBE Model: 43 serial: 1438 ☐ S or ☒ NO pump?

PAR sensor: _____ Model: _____ serial: _____ Surface PAR? Y / N

Other sensors: Altimeter (Valport) serial: 73171 ☐ S or NO pump?

Other sensors: PH serial: 0692 ☐ S or ☒ NO pump?

Other sensors: _____ serial: _____ ☐ S or NO pump?

Other sensors: _____ serial: _____ ☐ 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: _____ serial: _____

Transmissometer: _____ Model: _____ serial: _____

Fluorometer: Model _____ Cable gain: _____ serial: _____ ☐ S or NO pump?

Fluorometer: Model _____ Cable gain: _____ serial: _____ ☐ S or NO pump?

Oxygen sensor: _____ Model: _____ serial: _____ ☐ S or NO pump?

PAR sensor: _____ Model: _____ serial: _____ Surface PAR? Y / N

Other sensors: _____ serial: _____ ☐ S or NO pump?

Other sensors: _____ serial: _____ ☐ S or NO pump?

Other sensors: _____ serial: _____ ☐ S or NO pump?

Other sensors: _____ serial: _____ ☐ 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 (typical on small launches).

Rosette Setup:

Number of bottles: 24
Manufacturer: 165
Volume of bottles (litres): 16 L

Rosette/Niskin Bottle Serial Numbers:

1: _____	2: _____	3: _____	4: _____	5: _____
6: _____	7: _____	8: _____	9: _____	10: _____
11: _____	12: _____	13: _____	14: _____	15: _____
16: _____	17: _____	18: _____	19: _____	20: _____
21: _____	22: _____	23: _____	24: _____	

Make sure to note any bottle changes or repairs during your cruise in this log book.

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):

Label Printers:

Primary Printer Kit #: 3
Secondary Printer Kit #: _____
Software Version: _____

Thermosalinograph System (SBE21/45):

Program: Seasave Version: _____
Sampling interval (seconds): 30
TSG serial number: 3411
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)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 1 of

Month			JULY		Year		2021		Vessel		VECTOR		Cruise ID		2021-021		Page		1 of	
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					
1	S1	17	00:56	BE	ROS	US	48° 39.108	123° 30.592	185		1 - 4			☒	bottle did not					
			00:59	BO			° 39.108	° 30.592			-			☐	fine - stop cast					
			01:05	EN			°	°			-			☐						
2	S1	17	01:06	BE	ROS	US	48° 39.116	123° 30.564			-			☐	fine bottle @ 20m					
			01:13	EN			° 39.115	° 30.581			-			☐	continue up cast					
3	SC04	17	02:09	BE	ROS	US	48° 43.494	123° 25.016	98	92	5 - 8	4	R	☒						
			02:12	BO			° 43.495	° 25.006			-			☐						
			02:18	EN			° 43.500	° 24.997			-			☐						
4	SC04	17	02:33	BE	NET	/	48° 43.503	123° 24.979	95		-		KY	☐						
			02:36	BO			° 43.503	° 24.979		85	-			☐						
			02:40	EN			° 43.508	° 24.982			-			☐						
5	58	17	03:45	BE	ROS	/	48° 42.997	123° 14.287	337		-			☐						
			03:56	BO			° 42.973	° 14.120		320	-		R	☒						
			04:04	EN			° 43.056	° 13.751			-			☐						
6	59	17	04:52	BE	NET	/	48° 37.835	123° 14.648	237	227	-		MB	☐						
			05:02	BO			° 38.080	° 14.854			-			☐						
			05:05	EN			° 38.203	° 14.907			-			☐						
			:				°	°			-			☐						
			:				°	°			-			☐						
Event Type: LOOP = Sea Water Loop Bottle Firing Method: Time Code:																				

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
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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

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Version: 17 Feb 2020

Depart 105 1630 16 JUN 2021 weather warm; fair winds

- ~~to~~ need to investigate using UHF radio + Seasonal program

revert to using VHF radio

DAILY SCIENCE LOG

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Page 2 of

Month <u>JUNE</u>				Year <u>2021</u>			Vessel <u>NECTOR</u>				Cruise ID <u>2021-021</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
7	59	17	05:22	BE	ROS	US	48° 37.842	123° 14.490	237		9 - 23	15	R/MB	☒	
			05:27	BO			° 37.909	° 14.448		237	-			☐	
			05:45	EN			° 38.320	° 14.611			-			☐	
8	60	17	06:36	BE	ROS	/	48° 33.907	123° 12.803	290		-		PC/MB	☒	
			06:42	BO			° 33.935	° 12.811		288	-			☐	
			06:48	EN			° 33.972	° 12.802			-			☐	
9	101	17	14:21	BE	ROS	/	48° 25.399	124° 45.116	238		-		SR	☒	
			14:25	BE			° 25.406	° 45.064		234	-			☐	
			14:31	EN			° 25.421	° 45.020			-			☐	
10	102	17	15:27	BE	ROS	US	48° 30.006	124° 44.006	258		24 - 38		SR	☒	
			15:32	BO			° 30.011	° 43.994		253	-			☐	
			15:53	EN			° 30.031	° 44.002			-			☐	
11	103	17	16:41	BE	ROS	/	48° 32.989	124° 43.014	122		-		SR	☒	
			16:44	BO			° 33.006	° 43.014		120	-			☐	
			16:46	EN			° 33.012	° 43.012			-			☐	
12	76	17	17:47	BE	ROS	/	48° 31.400	124° 30.012	91		-		SR	☒	
			17:49	BO			° 31.399	° 29.998			-			☐	
			17:51	EN			° 31.399	° 29.971			-			☐	
			:				°	°			-			☐	

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

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This page is for any notes or observations

- Stop ops - resume @ 0700 tomorrow - June 17th

845

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Page 3 of

Month June				Year 2021			Vessel Vector				Cruise ID 2021-021				
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
13	75	17	18:32	BE	ROS	US	48°28.165	124°32.808	225		39-52	14	SR	☒	
			18:36	BO			°28.156	°32.808		221	-			☐	
			18:54	EN			°28.141	°32.845			-			☐	
14	74	17	20:34	BE	ROS	/	48°25.103	124°35.668	185		-		R	☒	
			20:38	BO			°25.124	°35.740		181	-			☐	
			20:41	EN			°25.141	°35.784			-			☐	
15	73	17	23:01	BE	ROS	/	48°14.981	124°06.736	162		-		R	☒	
			23:04	BO			°14.972	°06.733		158	-			☐	
			23:08	EN			°14.953	°06.722			-			☐	
16	72	17	23:43	BE	NET	/	48°18.615	124°03.922	189		-		MB	☐	
			23:49	BO			°18.612	°03.901		179	-			☐	
			23:52	EN			°18.595	°03.909			-			☐	
17	72	18	00:04	BE	ROS	US	48°18.642	124°03.980	190		53-66	14	R	☐	
			00:08	BO			°18.659	°03.916		184	-			☐	
			00:21	EN			°18.752	°03.953			-			☐	
18	71	18	01:04	BE	ROS	/	48°22.208	123°59.377	111		-		R	☒	
			01:07	BO			°22.217	°59.304		105	-			☐	
			01:10	EN			°22.238	°59.260			-			☐	
			:				°	°			-			☐	

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fire and boat drill finish @ 13:18₃₀ - back to science

SPAR?

science server USB connection?

pH buffer solution?

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Page 4 of

Month <u>JUNE</u>				Year <u>2021</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2021-021</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
19	70	18	02:25	BE	ROS	✓	48° 19.159	123° 43.097	156		-		R	☒	
			02:28	BO			° 19.118	° 42.938		151	-			☐	
			02:31	EN			° 19.093	° 42.822			-			☐	
20	69	18	03:01	BE	ROS	US	48° 15.534	123° 43.212	176		67-78		R	☒	
			03:06	BO			° 15.463	° 43.127			-	12		☐	
			03:24	EN			° 15.218	° 42.938			-			☐	
21	AD6B	18	15:26	BE	ROS	US	48° 14.003	123° 17.990	123		79-88	10	SR	☒	
			15:29	BO			° 13.997	° 18.000		119	-			☐	
			15:41	EN			° 13.999	° 17.986			-			☐	
22	65	18	16:29	BE	ROS	US	48° 15.916	123° 9.798	127		89-98		SR	☒	
			16:32	BO			° 15.940	° 9.793		121	-			☐	
			16:43	EN			° 15.955	° 9.793			-			☐	
23	62	18	17:39	BE	ROS	US	48° 22.825	123° 02.590	149		99-109		SR	☒	
			17:43	BO			° 22.808	° 02.581		146	-			☐	
			17:56	EN			° 22.825	° 02.597			-			☐	
24	61	18	18:56	BE	ROS	✓	48° 29.116	123° 09.199	286		-		R	☒	
			19:01	BO			° 29.052	° 09.148		285	-			☐	
			19:07	EN			° 28.974	° 09.084			-			☐	
			:				°	°			-			☐	

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This page is for any notes or observations

$$100 \times \frac{9}{5} + 32$$

$$10 \times \frac{9}{5} + 32$$

$$\frac{18}{32} \\ \underline{50}$$

17 Jun 2100 - suspend science ops to assist USCG with SAR off Observatory Point

Resume @ 8h30 18 JUN 2021

11h30 min on SAR

UTC -7 = PST

31

24

28

3

31

30

31

16

167

JUN 16

1530

168

JUN 17

167.7

8:30

169

JUN 18

168.7

03

170

JUN 19

169.7

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Page 5 of

Month <u>JUNE</u>				Year <u>2021</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2021-021</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
25	57	18	21:28	BE	ROS	/	48°44.041	123°08.084	160		-		R	☒	
			21:31	BO			°44.058	°08.174		154	-			☐	
			21:34	EN			°44.090	°08.244			-			☐	
26	56	18	22:15	BE	ROS	US	48°46.379	123°01.604	215		110-123	14	R	☒	
			22:19	BO			°46.385	°01.604		211	-			☐	
			22:34	EN			°46.270	°01.498			-			☐	
27	47	18	23:24	BE	ROS	/	48°49.301	123°06.180	185		-		R	☒	
			23:28	BO			°49.302	°06.178		180	-			☐	
			23:32	EN			°49.306	°06.178			-			☐	
28	48	19	00:00	BE	ROS	/	48°51.727	123°03.150	228		-		R	☒	
			00:05	BO			°51.732	°03.148		224	-			☐	
			00:09	EN			°51.740	°03.152			-			☐	
29	49	19	00:46	BE	ROS	/	48°54.983	122°59.588	131		-		R	☒	
			00:48	BO			°54.976	°59.590		127	-			☐	
			00:51	EN			°54.970	°59.587			-			☐	
30	44	19	01:31	BE	ROS	/	48°56.789	123°06.018	120		-		R	☒	
			01:33	BO			°56.799	°06.023		115	-			☐	
			01:36	EN			°56.765	°06.018			-			☐	
			:				.	.			-			☐	

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surface PRR not working

- TSG reset + now working

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Page 6 of

Month <u>JUNE</u>				Year <u>2021</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2021-021</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							
31	45	19	02:09	BE	ROS	/	48° 53.909	123° 08.375	127		-		PC	☒ ☐	
			02:12	BO			° 53.917	° 08.389		124	-			☐ ☐	
			02:14	EN			° 53.923	° 08.396			-			☐ ☐	
32	46	19	02:43	BE	NET	/	48° 51.420	123° 10.701	175		-		MB	☐ ☐	
			02:49	BO			° 51.457	° 10.639		165	-			☐ ☐	
			02:52	EN			° 51.489	° 10.684			-			☐ ☐	
33	46	19	03:02	BE	ROS	US	48° 51.355	123° 10.724	176		124-135	12	PC	☒ ☐	
			03:06	BO			° 51.316	° 10.734		176	-			☐ ☐	
			03:20	EN			° 51.241	° 10.704			-			☐ ☐	
34	109	19	04:26	BE	ROS	/	48° 56.464	123° 21.847	195		-		PC	☒ ☐	
			04:30	BO			° 56.465	° 21.843		190	-			☐ ☐	
			04:34	EN			° 56.460	° 21.944			-			☐ ☐	
35	43	19	05:21	BE	ROS	/	49° 00.230	123° 30.101	204		-		PC	☒ ☐	
			05:25	BO			° 00.276	° 30.109		200	-			☐ ☐	
			05:29	EN			° 00.310	° 30.100			-			☐ ☐	
36	42	19	05:54	BE	NET	/	49° 01.787	123° 26.284	323		-		MB	☐ ☐	
			06:04	BO			° 01.823	° 26.126		313	-			☐ ☐	
			06:10	EN			° 01.838	° 26.078			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Page 7 of

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							Latitude	Longitude							
37	42	19	06:22	BE	ROS	US	49° 01.840	123° 26.174	322		136-152	17	PC	☐ ☐	
			06:28	BO			° 01.806	° 26.192		316	-			☐ ☐	
			06:50	EN			° 01.783	° 26.047			-			☐ ☐	
38	41	19	07:43	BE	ROS	/	49° 03.304	123° 22.302	246		/	/	SR	☒ ☐	
			07:48	BO			° 03.305	° 22.307		240	-			☐ ☐	
			07:52	EN			° 03.302	° 22.301			-			☐ ☐	
39	37	19	09:05	BE	ROS	/	49° 13.608	123° 20.689	218		/	/	SR	☒ ☐	
			09:09	BO			° 13.618	° 20.677		211	-			☐ ☐	
			09:13	EN			° 13.626	° 20.688			-			☐ ☐	
40	38	19	09:52	BE	ROS	/	49° 11.988	123° 26.344	311		/	/	SR	☐ ☐	
			09:58	BO			° 11.992	° 26.359		304	-			☐ ☐	
			10:04	EN			° 12.000	° 26.376			-			☐ ☐	
41	38	19	10:11	BE	NET		49° 12.005	123° 26.409	311		-		KY	☐ ☐	
			10:23	BO			° 12.008	° 26.425		301	-			☐ ☐	
			10:28	EN			° 12.002	° 26.422			-			☐ ☐	
42	39	19	11:11	BE	ROS	US	49° 9.796	123° 32.986	378		153-169		SR	☒ ☐	
			11:19	BO			° 9.792	° 32.990			-			☐ ☐	
			11:45	EN			° 9.790	° 33.010			-			☐ ☐	
			:				°	°			-			☐ ☐	

Event Type:

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SET = Fish Set

LOOP = Sea Water Loop
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DRF = Drifter
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Bottle Firing Method:

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

Notes:

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

DE = Deployment Time
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3

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 8 of

Month <u>June</u>				Year <u>2021</u>			Vessel <u>Vector</u>			Cruise ID <u>2021-021</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
43	40	19	12:27	BE	ROS	/	49° 8.602	123° 36.818	151		-		SR	☒	
			12:30	BO			° 8.596	° 36.808		150	-			☐	
			12:33	EN			° 8.594	° 36.805			-			☐	
44	40	19	12:39	BE	NET		49° 8.608	123° 36.815	150		-		KY	☐	
			12:44	BO			° 8.605	° 36.812		140	-			☐	
			12:47	EN			° .607	° .820			-			☐	
45	GEO1	19	14:06	BE	ROS	US	49° 15.006	123° 44.927	403		187 - 190		SR	☒	Labelled after 27
			14:14	BO			° 15.004	° 44.934			-			☐	was labelled
			14:25	EN			° 15.008	° 44.914			-			☐	
46	GEO1	19	14:30	BE	NET		49° 15.009	123° 44.918	403		-		KY	☐	
'	GEO1		14:43	BO			° 15.017	° 44.916		393	-			☐	
			14:52	EN			° 15.029	° 44.915			-			☐	
47	26	19	15:27	BE	ROS	/	49° 14.294	123° 50.810	248		-		SR	☒	
			15:31	BO			° 14.299	° 50.812		243	-			☐	
			15:36	EN			° 14.298	° 50.810			-			☐	
48	265	19	16:00	BE	ROS		49° 16.698	123° 49.499	413		-		SR	☒	
			16:08	BO			° 16.693	° 49.513		406	-			☐	
			16:16	EN			° 16.673	° 49.517			-			☐	
			:				° .	° .			-			☐	

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 9 of

Month				Year			Vessel				Cruise ID				
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
49	27	19	16:46	BE	ROS	US	49° 19.114	123° 47.966	348		170-185	16	SR	☒	
			16:52	BO			° 19.136	° 47.995		342	-			☐	
			17:17	EN			° 19.119	° 48.026			-			☐	
50	27	19	17:17	BE	EN ROS	US	49° 19.119	123° 48.026	348	3	186-186	1		☐	
51	275	19	17:57	BE	ROS	/	49° 21.797	123° 46.589	110		-		SR	☒	
			17:59	BO			° 21.794	° 46.600		106	-			☐	
			18:01	EN			° 21.793	° 46.606			-			☐	
52	28	19	18:32	BE	ROS	/	49° 24.094	123° 45.287	135		/	/	SR	☒	
			18:35	BO			° 24.092	° 45.292		131	-			☐	
			18:37	EN			° 24.088	° 45.295			-			☐	
53	28	19	18:42	BE	NET	/	49° 24.091	123° 45.293	136		-		KY	☐	
53	28	19	18:48	BO			° 24.092	° 45.295		126	-			☐	
			18:51	EN			° 24.100	° 45.380			-			☐	
54	24	19	20:29	BE	NET	/	49° 30.261	124° 06.038	429		-		R	☐	
			20:43	BO			° 30.256	° 05.948		419	-			☐	
			20:50	EN			° 30.273	° 05.918			-			☐	
55	24	19	21:01	BE			49° 30.356	124° 05.965	428		-		R	☒	
			21:09	BO			° 30.358	° 05.970		422	-			☐	
			21:20	EN			° 30.361	° 05.939			-			☐	

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Notes:

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saw Franklin off Thormanby Islands

DAILY SCIENCE LOG

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Month JUNE			Year 2021			Vessel VECTOR			Cruise ID 2021-021						
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
56	25	19	21:47	BE	ROS	—	49° 27.719	124° 07.489	293		-			☒	
			21:53	BO			° 27.728	° 07.474		285	-			☐	
			21:58	EN			° 27.716	° 07.462			-			☐	
57	2	19	22:29	BE	ROS	US	49° 24.109	124° 09.300	280		-			☒	
			22:34	BO			° 24.110	° 09.295		274	-			☐	
			22:52	EN			° 24.124	° 09.304			-			☐	
58	CPF1	19	23:24	BE	ROS	US	49° 22.012	124° 05.086	249		-			☐	
			23:29	BO			° 22.025	° 05.063		241	-			☐	
			23:36	EN			° 22.028	° 05.052			-			☐	
59	CPF1	19	23:44	BE	NET	—	49° 22.002	124° 05.107	243		-		MB	☐	
			23:50	BO			° 21.989	° 05.109		236	-			☐	
			23:56	EN			° 21.996	° 05.123			-			☐	
60	1	20	00:42	BE	ROS	—	49° 20.274	124° 11.986	245		-		R	☒	
			00:48	BO			° 20.288	° 11.866		243	-			☐	
			00:52	EN			° 20.303	° 11.759			-			☐	
61	4	20	01:44	BE	ROS	—	49° 24.478	124° 22.069	343		-		R	☒	
			01:51	BO			° 24.470	° 22.024		339	-			☐	
			01:57	EN			° 24.449	° 22.000			-			☐	
			:				°	°			-			☐	

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Notes:

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bench pause @ ~ 131 m on downcast for ~ 30 s

DAILY SCIENCE LOG

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Page 11 of

Month <u>JUNE</u>			Year <u>2021</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2021-021</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
62	3	20	02:21	BE	ROS	US	49° 26.586	124° 20.196	323		210-225	16	R	☒	
			02:27	BO			° 26.602	° 20.200			-			☐	
			02:47	EN			° 26.600	° 20.202			-			☐	
63	CPF2	20	03:37	BE	ROS	✓	49° 27.978	124° 29.984	328		-		R	☒	
			03:43	BO			° 27.986	° 30.004		323	-			☐	
			03:49	EN			° 27.996	° 29.987			-			☐	
64	CPF2	20	03:54	BE	NET	✓	49° 28.002	124° 30.000	331		-		MB	☐	
			04:06	BO			° 28.001	° 30.043		321	-			☐	
			04:12	EN			° 27.999	° 30.058			-			☐	
65	6	20	04:40	BE	ROS	US	49° 30.559	124° 27.774	197		-		R	☒	
			04:44	BO			° 30.575	° 27.798		188	-			☐	
			04:59	EN			° 30.581	° 27.864			-			☐	
66	7	20	05:39	BE	ROS	✓	49° 34.391	124° 24.182	353		-		R	☒	
			05:46	BO			° 34.396	° 24.212		348	-			☐	
			05:52	EN			° 34.390	° 24.248			-			☐	
67	8	20	06:58	BE	ROS	✓	49° 39.324	124° 33.025	341		-		SR	☒	
			07:04	BO			° 39.320	° 33.043		336	-			☐	
			07:10	EN			° 39.307	° 33.059			-			☐	
							°	°			-			☐	

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160 - 276

DAILY SCIENCE LOG

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Month June				Year 2021			Vessel Vector				Cruise ID 2021-021				
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
68	9	20	07:54	BE	ROS	US	49° 35.503	124° 38.263	173		243-254	12	SR	☒	
			07:58	BO			° 35.510	° 38.275		167	-			☐	
			08:13	EN			° 35:508	° 38.287			-			☐	
69	10	20	09:09	BE	ROS	/	49° 40.709	124° 47.304	98		-		SR	☒	
			09:11	BO			° 40.710	° 47.309		95	-			☐	
			09:13	EN			° 40.706	° 47.309			-			☐	
70	11	20	09:45	BE	ROS		49° 42.412	124° 43.429	303		-		SR	☒	
			09:51	BO			° 42.414	° 43.426		298	-			☐	
			09:57	EN			° 42.412	° 43.418			-			☐	
71	12	20	10:19	BE	NET		49° 43.609	124° 40.791	360		-		KY	☐	
			10:32	BO			° 43.606	° 40.796		350	-			☐	
			10:37	EN			° 43.607	° 40.800			-			☐	
72	12	20	10:49	BE	ROS	US	49° 43.614	124° 40.789	358		-		SR	☒	
			10:56	BO			° 43.618	° 40.802		353	-			☐	
			11:16	EN			° 43.627	° 40.862			-			☐	
73	13	20	12:57	BE	ROS	/	49° 55.310	124° 55.198	239		/	/	SR	☒	
			13:01				° 55.318	° 55.205		236	-			☐	
			13:06				° 55.316	° 55.206			-			☐	
			:				°	°			-			☐	

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 13 of

Month <u>June</u>			Year <u>2021</u>			Vessel <u>Vector</u>			Cruise ID <u>2021-021</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							
74	14	20	13:44	BE	NET		49° 53.005	124° 59.621	316		-	-	KY	☐	
			13:55	BO			° 53.012	° 59.619		306	-			☐	
			14:01	EN			° 53.013	° 59.612			-			☐	
75	14	20	14:13	BE	ROS	US	49° 53.022	124° 59.604	318		272-287	16	SR	☒	
			14:19	BO			° 53.016	° 59.602			-			☐	
			14:39	EN			° 53.014	° 59.585			-			☐	
76	21	20	16:03	BE	ROS	/	50° 01.986	125° 13.595	77		-	-	SR	☒	
			16:05	BO			° 01.988	° 13.597		72	-			☐	
			16:06	EN			° 01.992	° 13.607			-			☐	
77	15	20	17:27	BE	ROS	/	49° 51.600	125° 01.592	127		-		SR	☒	
			17:30	BO			° 51.596	° 01.586		122	-			☐	
			17:32	EN			° 51.599	° 01.588			-			☐	
78	16	20	18:28	BE	ROS	US	49° 57.670	125° 8.725	157		288-298	11	SR	☒	
			18:32	BO			° 57.624	° 8.573		155	-			☐	
			18:44	EN			° 57.592	° 8.342			-			☐	
79	17	20	19:11	BE	ROS	/	49° 58.804	125° 04.278	264		-		R	☒	
			19:16	BO			° 58.823	° 04.252		259	-			☐	
			19:21	EN			° 58.828	° 04.258			-			☐	
			:				°	°			-			☐	

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5.52
60

Page _____ of _____

Month <u>JUNE</u>			Year <u>2021</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2021-021</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							
80	Q039	20	19:48	BE	ROS	US	50° 01.867	125° 05.518	273		299-302	4	PC	☒	check lat lon
			19:54	BO			° 01.902	° 05.519		267	-			☐	of Q039
			20:02	EN			° 01.918	° 05.516			-			☐	
81	Q039	20	20:07	BE	NET	/	50° 01.908	125° 05.502	272		-	-	MB	☐	
			20:15	BO			° 01.874	° 05.498		265	-			☐	
			20:20	EN			° 01.877	° 05.499			-			☐	
82	18	20	21:00	BE	ROS	/	49° 59.170	124° 58.913	149		-		PC	☒	
			21:03	BO			° 59.161	° 58.847		145	-			☐	
			21:06	EN			° 59.144	° 58.808			-			☐	
83	19	20	21:50	BE	ROS	/	50° 01.213	124° 52.933	278		-		PC	☒	
			21:55	BO			° 01.201	° 52.954		275	-			☐	
			22:00	EN			° 01.200	° 52.927			-			☐	
84	20	21	00:53	BE	ROS	/	49° 47.158	124° 32.333	321		-			☐	
			01:01	BO			° 47.161	° 32.351		313	-			☐	
			01:07	EN			° 47.147	° 32.368			-			☐	
85	22	21	02:38	BE	ROS	US	49° 40.217	124° 16.357	356		303-306	4		☐	
			02:45	BO			° 40.210	° 16.304		349	-			☐	
			02:55	EN			° 40.217	° 16.268			-			☐	
			:				°	°			-			☐	

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Page ____ of ____

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TIE UP PAT BAY @ 0700 21 JUN 2021