

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2021-153

DATE:

From: 31 AUG 2021

To: 6 SEP 2021

VESSEL:

VECTOR

PROJECT(S):

HAB - Jervis Inlet (SUTHERLAND)

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

WaterProperties.ca

Captain: DUSTIN FLAMM First Officer: RGB
Second Officer: RACHAEL Third Officer: _____
Fishing Master: SEAN Chief Engineer: STEVE
BW

Mission Participants / Agencies:

TERRE SOUTHERLAND, MARK BELTON, CHIEF LACOSTE

**** 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: NA

Data acquisition program: NA

CTD deck unit make: _____ model: _____ serial number: _____

Primary CTD

Make: SBC model: Z5+ serial number: 1091

Primary temperature serial number: 04C-04-4799

Primary conductivity serial number: 3F-03-6376

Secondary temperature serial number: NA

Secondary conductivity serial number: NA

Transmissometer: NA Model: _____ serial: _____

Transmissometer: NA Model: _____ serial: _____

Fluorometer: Model WETLABS Cable gain: 660-EL serial: 7716 P, S or NO pump?

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

Oxygen sensor: SBC Model: 43 serial: 431483 P, S or NO pump?

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

~~Other sensors:~~ PUMP 05T serial: 05-9548 P, S or NO pump?

Other sensors: _____ serial: _____ P, S or NO pump?

Other sensors: _____ serial: _____ P, S or NO pump?

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

Transmissometer: _____ Model: _____ serial: _____

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

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

Oxygen sensor: _____ Model: _____ serial: _____ P, S or NO pump?

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

Other sensors: _____ serial: _____ P, S or NO pump?

Other sensors: _____ serial: _____ P, S or NO pump?

Other sensors: _____ serial: _____ P, S or NO pump?

Other sensors: _____ serial: _____ P, S or NO pump?

CTD calibration bottle location (height above CTD in metres): 2.5m (DEEP SALINITY SAMPLE)

This also includes the bottle location above the CTD on non-rosette casts (typical on small launches).

Rosette Setup:

Number of bottles: _____
Manufacturer: _____
Volume of bottles (litres): _____

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: Saannich Model: 310 Serial #: 1683 Used for: CRAB
2. Make: Saannich Model: 410 Serial #: 1536 Used for: CTD P. R. T. C. I.
3. Make: _____ Model: _____ Serial #: _____ Used for: _____

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

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 #: 5
Secondary Printer Kit #: NA
Software Version: _____

Thermosalinograph System (SBE21/45):

Program: NA Version: _____
Sampling interval (seconds): _____
TSG serial number: _____
Fluorometer sensor serial number: _____

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

ADCP Setup:

Computer time zone: NA 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 Saannich Inlet
Comments _____

Test Cast in Saannich Inlet or other location? ☒ Yes ☐ No
Comments _____

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

Pumps working? Yes (0011) No (0010) NA BE 25+

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

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Month			August / September			Year		2021		Vessel			VECTOR			Cruise ID			2021-153		
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/FI Cleaned	Comments				
1	SI	31	23:48	BE	CTD	MSG	48° 38.977	123° 29.957	181				-			☐ ☒	TEST STATION				
2		"	23:50	BO	BOT	MSG	"° "° "	"° "° "			176		1-	1	MB/TS	☐ ☐	DEEP SAL				
		"	23:58	EN			48° 38.981	123° 29.958					-			☐ ☐	2021-153-0001.5m				
2	SI	1	00:06	BE	BOT	MSG	48° 38.977	123° 29.977	181		50		2-6	5	MB/TS	☐ ☐	CHL & NUT				
3	SI	1	00:07	BE	BUCKET	-	48° 38.982	123° 29.973	181		0		7-	1	MB/TS	☐ ☐	CHL, NUT, SAL				
4	J17	1	15:09	BE	CTD		49° 50.664	123° 53.810	~650				-			☐ ☐	2021-153-0005m				
			15:12	BO	BOT	MSG	49° 50.664	123° 53.811	625		625		8-	1	MB/TS	☐ ☐	DEEP SAL				
			15:39	EN			49° 50.658	123° 53.892	625				9-13	5	MB/TS	☐ ☐	CHL & NUT				
5	J17	1	~15:45	BE	BOT	MSG	"° "	"° "	625		50		-			☐ ☐					
6	J17	1	~15:55	BE	BUCKET	-	"° "	"° "			0		14-	1	MB/TS	☐ ☐	CHL, NUT, SAL				
7	J16A	1	17:10	BE	CTD		49° 45.081	123° 54.539	62				-			☐ ☐	2021-153-0007.5m				
			17:15	BO	BOT	MSG	"° 45.086	"° 54.573			50		15-19	5	MB/TS	☒ ☐	CHL, NUT				
			17:22	EN			"° 45.056	"° 54.657					-			☐ ☐					
8	J16A	1	17:22	BE	BUCKET	-	49° 45.056	123° 54.657	62		0		20-	1	TS	☐ ☐	CHL, NUT, SAL				
9	J17	1	18:23	BE	GRAB		49° 50.654	123° 53.803	~620				-			☐ ☐	MUD GRAB				
			18:37	BO			"° 50.655	"° 53.809			800		-			☐ ☐	SMITH-MAC				
			18:48	EN			"° 50.658	"° 53.813					-			☐ ☐					
			:				"° "	"° "					-			☐ ☐					
			:				"° "	"° "					-			☐ ☐					
Event Type: LOOP - Sea Water Loop, Bottom Time, Maximum Depth, Minimum Depth, Maximum Temperature, Minimum Temperature, Maximum Salinity, Minimum Salinity, Maximum Turbidity, Minimum Turbidity, Maximum Chlorophyll, Minimum Chlorophyll, Maximum Nitrate, Minimum Nitrate, Maximum Silicate, Minimum Silicate, Maximum Phosphate, Minimum Phosphate, Maximum Ammonia, Minimum Ammonia, Maximum Nitrite, Minimum Nitrite, Maximum Nitrogen, Minimum Nitrogen, Maximum Oxygen, Minimum Oxygen, Maximum Carbon Dioxide, Minimum Carbon Dioxide, Maximum pH, Minimum pH, Maximum Conductivity, Minimum Conductivity, Maximum Density, Minimum Density, Maximum Sound Speed, Minimum Sound Speed, Maximum Backscatter, Minimum Backscatter, Maximum Attenuation, Minimum Attenuation, Maximum Attenuation Coefficient, Minimum Attenuation Coefficient, Maximum Attenuation Coefficient, Minimum Attenuation Coefficient, Maximum Attenuation Coefficient, Minimum Attenuation Coefficient, Maximum Attenuation Coefficient, Minimum 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Event Type:

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

LOOP = Sea Water Loop

MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

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

Time Code:

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

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

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

Notes:

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Version: 17 Feb 2020

DEPART IOS @ ~1600 LOCAL

CTD WAS TURNED ON WAY BEFORE THE CAST AND WAS ROTATED SUCH THAT THE PUMPER COULD NOT BE PULLED OUT TO TURN OFF. THE RESULT IS A VERY LARGE FEEL. ROTATED THE CTD IN THE HURRY AFTER THE CAST TO BE ABLE TO EASILY PULL PLUG IN AND OUT.

SHIP SOUNDER SPOTTY, DEPTH ~650, WENT TO 625 TO BE CONSERVATIVE.

CTD & BATHY ON-LINE COMBINED TO SAVE TIME @ SKOGKUNCHUCK (AVOID DANGEROUS WATER)

SOME /RABLE FINDING BOTTOM WITH GRAB 800 M OF LINE PAID OUT.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>September</u>			Year <u>2021</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2021-153</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
10	SI8	1	19:48	BE	CTD		49° 56.488	123° 58.457	530		-			☒ ☒	2021-153-0010. xxx
			19:58	BO	BOT	MSG	49° 56.490	123° 58.465		520	21 -	1	MB/TS	☐ ☐	DEEP SAL
			20:08	EW			49° 56.500	123° 58.418			22-26	5	MB/TS	☐ ☐	CHL, NOT
11	SI8	1	20:15	BE	BOT	MSG	49° 56.507	123° 58.404	530	50	27 -	1	MB/TS	☐ ☐	CHL, NOT, SK
12	SI8	1	20:21	BE	BURGE	-	49° 56.483	123° 58.422	530	0	-			☐ ☐	
13	SI8	1	20:27	BE	GRAB	-	49° 56.525	123° 58.451	530		-	-	TS	☐ ☐	FAILED TO
			20:36	BO			° 56.544	° 58.419		560	-			☐ ☐	CLOSE
			20:46	EW			° 56.548	° 58.385			-			☐ ☐	
14	SI8		20:54	BE	GRAB	-	49° 56.515	123° 58.388	530		-		TS	☐ ☐	REDO GRAB
			20:59	BO			° 56.509	° 58.365		559	-			☐ ☐	SUCCESS!
			21:09	EW			° 56.523	° 58.358			-			☐ ☐	
15	SI9		21:41	BE	CTD		50° 00.234	123° 57.678	~437		-		MB/TS	☒ ☒	2021-153-0015. xxx
			21:53	BO	BOT	MSG	° 00.239	° 57.719		425	28 -	1		☐ ☐	
			22:02	EW			50° 00.242	° 57.749			29-33	5	MB/TS	☐ ☐	
16	SI9		22:08	BE	BOT	MSG	50° 00.241	123° 57.755	~437	50	-			☐ ☐	
17	SI9		22:15	BE	BURGE	-	° .	° .	~437	0	34 -	1	MB/TS	☐ ☐	
18	SI9		22:24	BE	GRAB	-	50° 00.234	123° 57.624	~437		-	-	TS	☐ ☐	GRAB FAILED
			22:28	BO			50° 00.236	123° 57.634		452	-			☐ ☐	
			22:35	EW			50° 00.160	123° 57.355			-			☐ ☐	

Event Type:

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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
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RE = Recover Mooring Time

Produced by the Water Properties Group, IOS

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COT A 2ND BUCKET, SINCE DUMPED BEFORE TAKING SAL

WENT 30 M OVER SOUNDER, BOTTOM NOT OBVIOUS.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month		Year		Vessel		Cruise ID									
SEPTEMBER		2021		VECTOR		2021-153									
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							
19	J19	1	22:40	BE	CRAB	-	50° 00.295	123° 57.641	~440		-	-	JS	☐ ☐	CRAB RPO
			22:46	BO			° 00.246	° 57.631		472	-			☐ ☐	
			22:51	EN			° 00.245	° 57.626			-			☐ ☐	
20	J110	1	23:22	BE	CTD		50° 01.710	123° 52.733	~270		-			☐ ☐	2021-153-0020.yml
			23:27	BO	BOT	MSC	° 01.726	° 52.701		259	35-	1	MS/TS	☒ ☐	DEEP SAL
			23:33	EN			° 01.737	° 52.690			-			☐ ☐	
21	J110	1	23:39	BE	BOT	MSC	50° 01.732	123° 52.696	~270	5	36-40	5	MS/TS	☐ ☐	CHK, NUT
22	J110	1	23:43	BE	BUTTER		50° 01.751	123° 52.695	~270	Ø	41-	1		☐ ☐	CHK, NUT & SAL
23	J110	1	23:47	BE	CRAB	-	° 01.755	° 52.701	~300		-			☐ ☐	
		1	23:57	BO			° 01.759	° 52.665			-			☐ ☐	
		1	23:57	EN			° 01.750	° 52.665			-			☐ ☐	CRAB FAILED.
24	J110	2	00:10		CRAB		50° 01.742	123° 52.820			-			☐ ☐	
			:				° . "	° . "			-			☐ ☐	
			00:16				° . "	° . "			-			☐ ☐	CLOSED - No read
25	J111	2	00:56	BE	CTD	-	50° 03.590	123° 48.659	~530		-			☒ ☒	2021-153-0025.yml
			01:04	BO	BOT	MSC	° 03.605	° 48.669		510	42-	1	MS/TS	☐ ☐	DEEP SAL
			01:15	EN			° 03.609	° 48.676			-			☐ ☐	
26	J111	2	01:21	BE	BOT	MSC	50° 03.603	123° 48.674	530	50	43-47	5	MS/TS	☐ ☐	CHK, NUT
27	J111	2	01:26	BE	BUTTER	-	° 3.603	° 48.674	530	Ø	48-	1		☐ ☐	CHK, NUT & SAL

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 Version: 17 Feb 2020

This page is for any notes or observations

DEPTH FLUCTUATING ACOT - 270 - 380

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>September</u>			Year <u>2021</u>			Vessel <u>VICAR</u>			Cruise ID <u>2021-153</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							
28	JII	2	01:28	BC	GRAB	-	50° 3.591	123° 48.665	~530		-	-	TS	☐	
			01:35	BO			50° 3.586	123° 48.637		580	-			☐	
			01:45	EN			2057 SIGMA				-			☐	
29	JII	2	14:11	BC	CTD		50° 10.897	123° 56.157	~360		-			☐	
			14:17	BO	BOT	MSG	° 10.891	123° 56.140		290	492	1	MB/TS	☒	2021-153-0029.XML
			14:25	EN			° 10.882	° 56.118			50-54	5	MB/TS	☐	DEEP SAL
30	JII	2	14:31	BC	BOT	MSG	° 10.890	° 56.115	300	50	↓	↓		☐	CHL, NOT
31	JII	2	14:36	BC	BUCKET		° 10.887	° 56.151	300	Ø	55	1	MB/TS	☐	
32	JII	2	14:39	BC	GRAB		° 10.886	° 56.148	300		-			☐	CHL, NOT 5 SAL
			14:45	BO			° 10.882	° 56.133		~300	-			☐	
			14:49	EN			° 10.882	° 56.163			-			☐	
33	JII	2	15:20	BC	CTD		50° 9.075	123° 51.739	~321		-		MB/TS	☒	2021-153-0033.XML
			15:28	BO	BOT	MSG	° 9.063	° 51.723		317	56	1		☐	DEEP SAL
			15:34	EN			50° 09.071	123° 51.721			-			☐	
34	JII	2	15:41	BC	BOT	MSG	° 09.077	° 51.714	327	50	57-61	5	MB/TS	☐	CHL, NOT
35	JII	2	15:46	BC	BUCKET	-	° 09.081	° 51.695	327	Ø	62	1	MB/TS	☐	CHL, NOT, SAL
36	JII	2	15:49	BC	GRAB	-	50° 9.066	° 51.693	327		-			☐	
			15:57	BO			° 9.021	° 51.699	~327		-			☐	
			16:02	EN			° 9.017	° 51.692			-			☐	

Event Type:

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

LOOP = Sea Water Loop
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NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

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

Time Code:

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

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

DE = Deployment Time
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Notes:

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Month <u>September</u>				Year <u>2021</u>		Vessel <u>VECTOR</u>				Cruise ID <u>2021-153</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
37	PL-1	2	16:39	BE	BOAT	-	CLOSE TO	J13 DEPART & RECOVER	-	-	-	-	TS	☐	→
38	PL-1	2	17:40	BE	Bot	MSG	50° 11.705	123° 46.462	140	10	63-66	4		☐	
39	CHATTER BOX	2	17:50	BE	Bot	-	CHATTER BOX	FALLS	10	-	67-	1		☐	17 L NISKENS FROM BOT
40	PL-2	2	18:08	BE	Bot	MSG	50° 10.870	123° 48.437	123	10	68-71	4		☐	1 L BOTTLE FROM FALLS
41	PL-3	2	18:20	BE	Bot	MSG	50° 10.418	123° 50.201	155	10	72-75	4		☐	17 L NISKENS FROM BOT
42	J12	2	21:02	BE	CTD		50° 6.465	123° 47.724	218	-	-	-		☐	17 L NISKENS FROM BOT
			21:05	BO	Bot	MSG	° 6.460	° 47.720	218	208	76-	1	MB/TS	☒	DEEP SAL
43	J12	2	21:11	EN			° 6.458	° 47.707	-	-	-	-		☐	
43	J12	2	21:21	BE	Bot	MSG	° 6.441	° 47.688	218	50	77-81	5		☐	
44	J12	2	21:23	BE	Buckey	-	° 6.441	° 47.687	218	0	82-	1		☐	CHL, NUT
45	J12	2	21:25	BE	CRAB	-	° 6.450	° 47.691	218	-	-	-	TS	☐	CHL, NUT, SAL
			21:29	BO			° 6.463	° 47.690	218	-	-	-		☐	
			21:33	EN			° 6.471	° 47.686	-	-	-	-		☐	
46	J15A	3	00:44	BE	CTD		49° 52.261	124° 03.040	550	-	-	-	MB/TS	☒	
			00:53	BO	Bot	MSG	49° 52.257	° 03.069	-	540	83-	1		☐	DEEP SAL
			01:06	EN			° 52.271	° 03.125	-	-	-	-		☐	
47	J15A	3	01:10	BE	Bot	MSG	49° 52.239	124° 02.912	550	50	84-88	5	MB/TS	☐	CHL, NUT
48	J15A	3	01:23	BE	Buckey		° 52.236	° 02.914	550	0	89-	1	MB/TS	☐	CHL, NUT, SAL
			:				°	°	-	-	-	-		☐	

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LAUNCHED FRC; TIEP, MARK & CHER ONBOARD. HEAD INTO PRECISES LOWER INLET FOR STARTING
3 STATIONS UP THE INLET. RETURN TO VECTOR @ 1845 (UTC)

+ CHATTERBOY FALGS

TIED UP SMALL BOAT @ CHATTERBOY FALGS AND TOOK A FRESH WATER SAMPLE.

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Month <u>September</u>			Year <u>2021</u>			Vessel <u>VECAR</u>			Cruise ID <u>2021-153</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
49	JISA	3	01:28	BE	CRAB	.	49° 52.231	124° 2.899	550		-	-	TS	☐	
			01:39	BO			49° 52.209	124° 2.912		~550	-			☐	
			01:46	EN			49° 52.202	124° 2.909			-			☐	
50	JL6	3	14:58	BE	CTD		49° 47.369	123° 57.259	~355		-		MR/TS	☐	2021-153 - CTD
			15:06	BO	BOT	MSG	° 47.367	° 57.256		340	90-			☒	DEEP SAL
			15:19	EN			° 47.368	° 57.269			-			☐	
51	JL6	3	↓	BE	BOT	MSG	° ↓	° ↓	~355	50	91-95			☐	CHL, NUTS
52	JL6	3	15:25	BE	BUCKET		49° 47.367	123° 57.263	~355	Ø	96-			☐	CHL, NUTS, SAL
53	JL6	3	15:27	BE	CRAB	.	° 47.365	° 57.258	~355		-	-	TS	☐	
			15:34	BO			° 47.363	° 57.271		~355	-			☐	
			15:43	EN			° 47.360	° 57.282			-			☐	2021-153 - CTD
54	JL6B	3	16:32	BE	CTD		49° 45.548	124° 03.431	245		-			☒	DEEP, SAL
			16:36	BO	BOT	MSG	° 42.529	° 03.463		235	97-	1	MR/TS	☐	✓
			16:42	EN			° 42.529	° 03.517			-			☐	
55	JL6B	3	16:48	BE	BOT	MSG	49° 42.520	124° 03.546	~245		98-102	5	MR/TS	☐	CHL, NUTS
56	JL6B	3	16:52	BE	BUCKET		49° 42.529	124° 03.517			103-	1	MR/TS	☐	CHL, NUTS, SAL
57	JL6B	3	16:56	BE	CRAB		49° 42.510	124° 3.506	~245		-	-	TS	☐	
			17:01	BO			49° 42.480	° 3.545		~245	-			☐	
			17:05	EN			49° 42.466	° 3.559			-			☐	

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Month <u>SEPTEMBER</u>			Year <u>2021</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2021-153</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							
58	JIS	3	17:55	BE	CTD		49° 47.828	124° 2.078	~630		-			☒	2021-153-0058.xml
			18:07	BO	BOT	MSG	49° 47.820	124° 2.075		620	104-	1	MB/TS	☐	DEEP SAC
			18:22	EN			° 47.811	° 2.081	630		-			☐	
59	JIS	3	18:28	BE	BOT	MSG	° 47.816	° 2.101		50	105-109	5	MB/TS	☐	CIL, NUT
60	JIS	3	18:32	BE	BOT		49° 47.815	124° 02.108	630	Ø	110-	1	MB/TS	☐	CIL, NUT, SAC
61	JIS		19:10	BE	CRAB		° 47.824	° 02.100	~680	~	-	-	TS	☐	
			19:23	BO			° 47.797	° 02.136	~630		-			☐	
			19:38	EN			° 47.	° 02.			-			☐	
62	JIS	3	20:04	BE	CTD		49° 47.206	° 05.721	528		-		MB/TS	☐	2021-153-0062.xml
			20:12	BO	BOT	MSG	° 47.207	° 5.721		500	111-	1		☒	DEEP SAC
			20:23	EN			° 47.198	124° 05.734			-			☐	
63	JIS	3	20:28	BE	BOT	MSG	49° 47.201	124° 05.746	528	50	112-116	5	MB/TS	☐	CIL, NUT
64	JIS	3	20:32	BE	BOT		49° 47.208	124° 05.749	528	Ø	117-	1	MB/TS	☐	CIL, NUT, SAC
65	JIS	3	20:48	BE	CRAB		° 47.214	° 5.734	560		-	-	TS	☐	
			20:54	BO			° 47.210	° 5.740	~560		-			☐	
			21:01	EN			° 47.240	° 5.740			-			☐	
66	JIS	3	21:31	BE	CTD		49° 45.915	124° 09.963	310		-			☐	2021-153-0066.xml
			21:36	BO	BOT	MSG	° 45.915	° 9.965		300	118-	1	MB/TS	☐	DEEP SAC
			21:43	EN			49° 45.927	124° 09.984			-			☐	

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This page is for any notes or observations

DEPTH FLUCTUATING

DAILY SCIENCE LOG

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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/Fl Cleaned	Comments
							Latitude	Longitude							
67	JIS	3	21:48	BE	BOT	MOR	49° 45.919	124° 10.012	310	50	119 - 123	5	MB/TS	☐ ☐	CHK, NUTS
68	JIS		21:51	BE	BUCKET		49° 45.926	124° 10.024	310	0	124	1	MB/TS	☐ ☐	CHK, NUTS, SAK
69	JIS	3	22:00	BE	GRAB	-	49° 45.917	124° 10.024	310	3	-		TS	☐ ☐	
			22:04	BO			49° 45.907	124° 9.995	310		-			☐ ☐	
			22:08	EN			49° 45.908	124° 9.982			-			☐ ☐	
70	JIS	3	22:32	BE	CTD		49° 45.811	124° 14.412	327		-			☒ ☐	2021-153-0070. WML
			22:38	BO	BOT	MSG	49° 45.811	124° 14.436		317	125 -	1	MB/TS	☐ ☐	DEEP SAK
			22:46	EN			49° 45.837	124° 14.553			-			☐ ☐	
71	JIS	3	22:51	BE	BOT	MSG	49° 45.837	124° 14.472	327	50	126 - 130	5		☐ ☐	CHK, NUTS
72	JIS	3	22:55	BE	BUCKET	-	49° 45.844	124° 14.481	327	0	131 -	1	MB/TS	☐ ☐	CHK, NUTS, SAK
73	JIS	3	23:01	BE	GRAB		° 45.815	° 14.474	327		-			☐ ☐	
			23:05	BO			° 45.807	° 14.488	327		-			☐ ☐	
			23:09	EN			° 45.808	° 14.483			-			☐ ☐	
74	JIS	3	23:38	BE	CTD		49° 43.420	124° 15.548	239		-			☐ ☐	2021-153-0074. WML
			23:42	BO	BOT	MSG	49° 43.402	124° 15.568		229	132 -	1	MB/TS	☐ ☐	DEEP SAK
			23:52	EN			49° 43.391	124° 15.581			-			☐ ☐	
75	JIS	3	23:56	BE	BOT	MSG	° 43.386	124° 15.576	239	50	133 - 137	5	MB/TS	☐ ☐	CHK, NUTS
76	JIS	3	23:57	BE	BUCKET	-	° 43.386	° 15.576	239	0	138 -	1	MB/TS	☐ ☐	CHK, NUTS, SAK
			:				°	°			-			☐ ☐	

Event Type:

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Notes: _____

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Month <u>September</u>				Year <u>2021</u>		Vessel <u>VECTOR</u>				Cruise ID <u>2021-153</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
77	JF1	3	23:59	BE	GRAB		49° 43.454	124° 15.536	239		-		TS	☐	
		4	00:04	BO			43.451	15.527		239	-			☐	VERP SML
			00:07	EN			43.451	15.527			-			☐	TR/LOGGED
78	JF1	4	:	BE	GRAB		49°	124°	~240		-		TS	☐	REDO GRAB
			MISSED	BO			MISSED	MISSED		~240	-			☐	TIME, NOT CONC
			:	EN			MISSED	MISSED			-			☐	NOT CAPTURED
79	JF2	4	15:01	BE	CTD	-	49° 45.800	124° 14.424	325		-		MB/TS	☒	TIME SERIES START
			15:06	BO			49° 45.799	124° 14.426		~300	-			☐	'TIME 1' LOCAL 0800
			15:12	EN			49° 45.471	124° 14.436			-			☐	2021-153-0079 SML
80	JF2	4	15:17	BE	BOT	MOR	49° 45.793	124° 14.481	325	50	139-143	5	MB/TS	☐	CHK, NUTS
81	JF2	4	15:22	BE	BUCKET	-	49° .784	124° .463	325	0	144-	1	MB/TS	☐	" "
82	JF2	4	15:59	BE	CTD	-	49° 45.791	124° 14.430	324		-	-	MB/TS	☒	'TIME 2' LOCAL 0900
			16:05	BO			45.791	14.426		314	-			☐	2021-153-0082 SML
			16:11	EN			45.795	14.417			-			☐	
83	JF2	4	17:01	BE	CTD		49° 45.801	124° 14.420	323		-		MB/TS	☐	'TIME 3' LOCAL 1000
			17:07	BO			45.797	14.418		313	-			☐	2021-153-0083 SML
			17:13	EN			45.793	14.415			-			☐	
84	JF2	4	17:18	BE	BOT	MOR	° .794	124° 14.415	323	50	145-149	5	MB/TS	☐	CHK, NUTS
85	JF2	4	17:22	BE	BUCKET		° .789	° .412	323	0	150-		MB/TS	☐	" "

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Notes:

CHD BATTERY STATUS @ 16.6V. ~~DOWN~~ UCR-1 LARGE NUMBER OF CASTS OVER THE NEXT 24 HRS,
SO CHANGED THE BATTERIES @ END OF DAY 4. NEW BATTERY @ 18.5V

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Month			Year			Vessel			Cruise ID						
SEPTEMBER			2021			VECTOR			2021-153						
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							
86	SI-2	4	17:58	BC	CTD	-	49° 45.795	124° 14.432	328		-	-	MB/TS	☒	TIME 4' LOCAL 1100
			18:04	BO			° 45.808	° 14.458		318	-	-		☐	2021-153-0086.XMC
			18:10	EN			° 45.799	° 14.532			-	-		☐	
87	SI-2	4	19:00	BC	CTD		49° 45.807	124° 14.431	320		-	-		☐	
			19:06	BO	BOT	MSG	49° 45.799	124° 14.430		310	151-	1	MB/TS	☒	DEEP SAL 'TIMES'
			19:13	EN			° 45.806	° 14.432			-	-		☐	LOCAL 1200
88	SI-2	4	19:19	BC	BOT	MSG	49° 45.805	124° 14.420	320	58	152-156	5	MB/TS	☐	2021-153-0087.XMC
89	SI-2	4	19:23	BC	BCKET	-	49° 45.816	124° 14.425	320	Ø	157-	1	MB/TS	☐	CHK, NUT
90	SI-2	4	20:00	BC	CTD	-	49° 45.805	124° 14.414	322		-	-	MB/TS	☐	'TIME 6' LOCAL 1300
			20:05	BO			49° 45.801	124° 14.404		312	-	-		☐	2021-153-0090.XMC
			20:11	EN			49° 45.800	124° 14.411			-	-		☐	
91	SI-2	4	21:01	BC	CTD	-	49° 45.798	124° 14.425	323		-	-	MB/TS	☐	TIME 7' LOCAL
			21:07	BO			49° 45.797	124° 14.410		313	-	-		☐	1400
			21:13	EN			49° 45.801	124° 14.421			-	-		☐	2021-153-0091.XMC
92	SI-2	4	21:18	BC	BOT	MSG	49° 45.196	124° 14.420	323	50	158-162	5	MB/TS	☐	CHK, NUT
93	SI-2	4	21:21	BC	BCKET	-	49° .800	124° .429	323	Ø	163-	1	MB/TS	☐	" "
94	SI-2	4	22:00	BC	CTD	-	49° 45.791	124° 14.452	322		-	-	MB/TS	☒	'TIME 8' LOCAL
			22:06	BO			° 45.798	° 14.455		317	-	-		☐	1500
			22:11	EN			° 45.801	° 14.447			-	-		☐	2021-153-0094.XMC

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Month SEPTEMBER				Year 2021		Vessel VECTOR				Cruise ID 2021-153					
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
95	JI2	4	23:01	BE	CTD	.	49° 45.799	124° 14.420	323		X - X	X	MB/TS	☒	TIME 9 Local 1600
			23:06	BO			° 45.802	° 14.420		313	-			☐	2021-153-0025.zml
			23:12	EN			49° 45.808	124° 14.429			-			☐	
96	JI2	4	23:17	BE	BOT	MSG	49° 45.802	124° 14.428	323	50	164 - 168	5	MB/TS	☐	CHK, NUTS
97	JI2	4	23:20	BE	BUCKET	.	49° . . .	124° . . .	323	Ø	169 -	1	MB/TS	☐	" "
98	JI2	5	00:00	BE	CTD	.	49° 45.792	124° 14.444	323		-	-	MB/TS	☐	TIME 10 Local 1700
			00:05	BO			° 45.793	° 14.431		313	-			☐	2021-153-0098.zml
			00:11	EN			° 45.794	° 14.432			-			☐	
99	JI2	5	01:01	BE	CTD		49° 45.797	124° 14.423	327		-		MB/TS	☐	TIME 11 Local 1800
			01:06	BO			° 45.790	° 14.428		317	-			☐	2021-153-0099.zml
			01:10	EN			49° 45.806	124° 14.420			-			☐	
100	JI2	5	01:18	BE	BOT	MSG	49° 45.795	124° 14.427	321	50	170 - 174	5	MB/TS	☐	CHK, NUTS
101	JI2	5	01:23	BE	BUCKET		49° . . .	124° . . .	321	Ø	175 -	1	MB/TS	☐	" "
102	JI6C	5	15:00	BE	CTD		49° 46.535	123° 57.371	168		-		MB/TS	☒	TIME 1 Local 0800
			15:03	BO			49° 46.533	123° 57.379		158	-			☐	2021-153-D102.zml
			15:06	EN			49° 46.533	123° 57.379			-			☐	
103	JI6C	5	15:12	BE	BOT	MSG	49° 46.533	123° 57.382	168	50	176 - 180	5	MB/TS	☐	CHK, NUTS
104	JI6C	5	15:16	BE	BUCKET	.	° 46.537	° .392		Ø	181 -	1	MB/TS	☐	CHK, NUTS
			:				° .	° .			-			☐	

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month			Year			Vessel			Cruise ID						
SEPTEMBER			2021			VECTOR			2021-153						
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
105	JIGC	5	16:01	BC	CTD	-	49° 46.541	123° 57.384	168		-	-	MB	☒	'TIME 2' LOCAL 0900
			16:04	Bo			° 46.544	° 57.389		158	-			☐	2021-153-0105.xmc
			16:07	EN			° 46.546	° 57.384			-			☐	
106	JIGC	5	17:00	BC	CTD	-	49° 46.552	123° 57.313	168 ¹⁷⁰		-	-	MB	☐	'TIME 3' LOCAL 1000
			17:03	Bo			° 46.570	° 57.368		168	-			☐	2021-153-0106.xmc
			17:06	EN		+	49° 46.592	123° 57.355	178	50	-			☐	
107	JIGC	5	17:12	BC	BOT	MSG	49° 46.625	123° 57.333	178		182-186	5	MB	☐	CHK, NUTS
108	JIGC	5	17:17	BC	BUCKET	-	49° .667	123° 57.333	178		187-	1	MB	☐	" "
109	JIGC	5	18:02	BC	CTD	-	49° 46.559	123° 57.377	165		-		MB	☒	DOUBLE SPIN
			18:05	Bo			° 46.572	° 57.371		155	-			☐	2021-153-0109.xmc
			18:08	EN			° 46.570	° 57.366			-			☐	SPIN CAME OUT
110	JIGC	5	19:01	BC	CTD	-	49° 46.528	123° 57.352	155		-		MB	☐	OF WATER 'TIME 4' LOCAL 1100
			19:05	Bo	BOT	MSG	° 46.551	° 57.331		145	188-	1		☐	TIME 5' LOCAL 1200
			19:11	EN			° 46.630	° 57.320			-			☐	TRIP SPL
														☐	2021-153-0110.xmc
111	JIGC	5	19:14	BC	BOT	MSG	49° 46.640	123° 57.325	155	50	189-193	5	MB	☐	CHK, NUTS
112	JIGC	5	19:17	BC	BUCKET	-	49° 46.683	123° 57.303	155	0	194-	1	MB	☐	" "
113	JIGC	5	20:00	BC	CTD	-	49° 46.535	123° 57.387	166		-		MB	☒	'TIME 6' LOCAL 1300
			20:03	Bo			° 46.564	° 57.393		156	-			☐	2021-153-0113.xmc
			20:06	EN			° 46.578	° 57.375			-			☐	

This page is for any notes or observations

OBSERVED CONSISTENT CURRENT $\sim 10\text{m}$

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>SEPTEMBER</u>				Year <u>2021</u>		Vessel <u>VECTOR</u>				Cruise ID <u>2021-153</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
114	JIGC	5	21:01	BC	CTD	-	49° 46.540	123° 57.393	168		-	-	MB	☐	'TIME 7' 1400 Local
			21:04	BO			° 46.543	° 57.361			-			☐	2021-153-0114.xml
			21:07	CU			° 46.541	° 57.343			-			☐	
115	JIGC	5	21:12	BC	BOT	MSC	49° .541	123° 57.282	168	50	195-199	5		☐	CHK, NUTS
116	JIGC	5	21:16	BC	BUCKET	-	49° 46.551	123° 57.246	168	0	200-	1		☐	..
117	JIGC	5	21:59	BC	CTD	-	49° 46.539	123° 57.365	167		-	-	MB	☒	'TIME 8' 1500
			22:02	BO			° 46.538	° 57.349		157	-			☐	LOCAL
			22:05	CU			° 46.536	° 57.333			-			☐	2021-153-0117.xml
118	JIGC	5	23:01	BC	CTD	-	49° 46.537	123° 57.369	157		-	-	MB	☐	'TIME 9' 1600
			23:03	BO			° 46.535	° 57.360		147	-			☐	LOCAL
			23:06	CU			° 46.528	° 57.355			-			☐	2021-153-0118.xml
119	JIGC	5	23:09	BC	BOT	MSC	49° 46.513	123° 57.344	157	50	201-205	5	MB	☐	CHK, NUTS
120	JIGC	5	:	BC	BUCKET	-	49° 46.	123° 57.		0	206-	1	MB	☐	CHK, NUTS
121	JIGC	5	23:59	BC	CTD		49° 46.542	123° 57.394	162		-	-	MB	☒	'TIME 10' 1700
		6	00:01	BO			° 46.536	° 57.393		152	-			☐	LOCAL
		6	00:04	CU			° 46.531	° 57.394			-			☐	2021-153-0121.xml
122	JIGC	6	00:59	BC	CTD	-	49° 46.538	123° 57.387	159		-	-	MB	☒	'TIME 11' 1800
			01:00	BO			° 46.538	° 57.386		149	-			☐	LOCAL
			01:06	CU			° 46.530	° 57.346			-			☐	

Event Type:

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

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

Bottle Firing Method:

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

Notes:

Time Code:

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

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

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 17 Feb 2020

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Machine running from previous cast or bumped into "On" position.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER				Year 2021			Vessel VECTOR				Cruise ID 2021-153				
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
123	JIGC	6	1:11	BE	BOT	MOR	49° 46.514	123° 57.326	159	50	207-211	5	MS	☐ ☐	CHK FOUNT
124	JIGC	6	01:15	BE	BUCKET	-	49° 46.507	123° 57.270	159	8	212	1	MS	☐ ☐	CHK, NOT PHIB
125	JIG	6	01:21	BE	GRAB	-	49° 46.507	123° 57.405	159	~159	-	-	TS	☐ ☐	
			01:24	BE			46.599	57.388			-			☐ ☐	
			01:27	BE			46.614	57.345			-			☐ ☐	
← END			:04		CRUISE		°	°			-			☐ ☐	→
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SAIL BACK TO IOS