

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2020-069
Book #1

DATE:

From:

July 15 2020

To:

Aug 11 2020

VESSEL:

JP Tully

PROJECT(S):

mooring

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

WaterProperties.ca

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

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

Data logging computer: WP #102

Data acquisition program: Seasave

CTD deck unit make: SBE model: 11+ serial number: 0425

Primary CTD

Make: SBE model: 9+ serial number: 0443

Primary temperature serial number: 4700

Primary conductivity serial number: 3531

Secondary temperature serial number: 4888

Secondary conductivity serial number: 4513

Transmissometer: _____ Model: _____ s/n: _____

Transmissometer: _____ Model: _____ s/n: _____

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: 3791 P, S or NO pump?

PAR sensor: Biospherical Model: BP2350 s/n: 70613 Surface PAR? Y / N

Other sensors: SPAR Biospherical s/n: 20518 P, S or NO pump?

Other sensors: Attometer s/n: 61355 P, S or NO pump?

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

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

Secondary CTD

Make: _____ model: _____ serial number: _____

Primary temperature serial number: _____

Primary conductivity serial number: _____

Secondary temperature serial number: _____

Secondary conductivity serial number: _____

Transmissometer: _____ Model: _____ s/n: _____

Transmissometer: _____ Model: _____ s/n: _____

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

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

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

PAR sensor: _____ Model: _____ s/n: _____ Surface PAR? Y / N

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

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

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

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

CTD calibration bottle location (height above CTD in metres): _____

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

Rosette Setup:

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

Winches:

1. Make: _____ Model: _____ Serial #: _____ Used for: _____
2. Make: _____ Model: _____ Serial #: _____ Used for: _____
3. Make: _____ Model: _____ Serial #: _____ Used for: _____

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

Salinometer:

Make: _____ Model: _____ Serial Number: _____

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

Oxygen Kit(s):

Make: _____ Model: _____ Kit Number: _____
Make: _____ Model: _____ Kit Number: _____

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

Thermosalinograph System (SBE21):

Program: _____ Version: _____

Sampling interval (seconds): _____

Fluorometer sensor serial number: _____

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: _____

Name: _____

Name: _____

Work File: _____

Exit points:

Exit points:

Exit points:

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:

Scientific Equipment Used During Cruise

This sheet allows you to enter all of the equipment used while on board. Please use the separate CTD sheet for entry for SBE 9/16/19/25.

Other CTD units:

RBR Serial Number: _____ Sensors: _____

Others: _____

Plankton Nets:

Bongo #1 Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____
Bongo #2 Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____
Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____
Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____

Multinet ☐ BIONESS ☐ Neuston ☐ Others: _____

Trawl Gear:

Midwater Trawls: SOG ☐ Highseas ☐ Pelagic ☐ Other: _____

Bottom Trawls: Atlantic Western IIA ☐ Yankee 36 Hard & Soft Bottom ☐ Other: _____

American Shrimp Trawl ☐

Notes: _____

Trawl Doors: USA Jet ☐ Tyburon ☐ _____

Sounders : Wesmar 380 ☐ Others: _____

Acoustics:

Echosounder #1 _____ Frequencies (KHz): 12 ☐ 18 ☐ 38 ☐ 70 ☐ 120 ☐ 200 ☐

Others: _____

Echosounder #2 _____ Frequencies (KHz): 12 ☐ 18 ☐ 38 ☐ 70 ☐ 120 ☐ 200 ☐

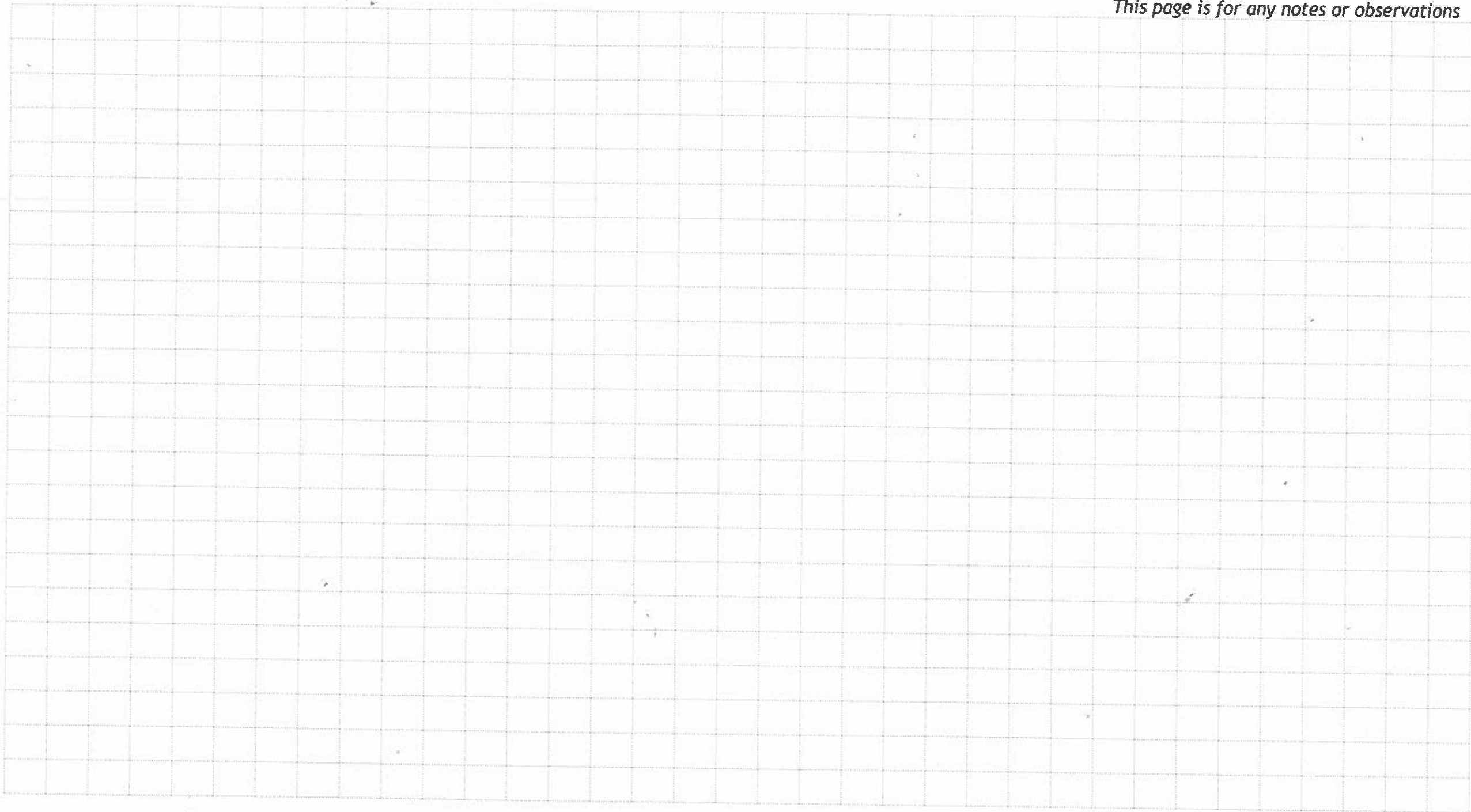
Others: _____

Software & Notes: _____

Other Gear in Operation:

1. _____
2. _____
3. _____
4. _____
5. _____

This page is for any notes or observations



DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

book #1
Page 1 of 25

Month JULY			Year 2020			Vessel JP TULLY			Cruise ID 2020-069						
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	Tms/FI Cleaned	Comments
1	SAANICH INLET	16	21:55	BE	ROS	US	48° 39.610	123° 30.810	188			24	SP	☒	TEST CAST
			21:59	BO			° 38.980	° 30.500		183				☐	-all bottles tripped
			22:04	EN			° 38.920	° 30.470						☐	no samples taken
2	HARD STRAIT	17	01:45	RE	MOR		48° 29.732	123°					CC	☐	
3	HARD STRAIT	17	02:36	DE	MOR		48° 29.7100	123° 11.600	226				CC	☐	
4	A1-59	17	16:43	RE	MOR		48° 32.199	126° 11.431	448				CC	☐	
5	A1	17	17:01	BE	ROS	US	48° 32.220	126° 11.430	456		1-3	3	SP	☒	
			17:09	BO			° 32.266	° 11.392		455				☐	
			17:18	EN			° 32.273	° 11.360						☐	
6	A1-60	17	:	DE	MOR		48° 32.316	126° 11.714						☐	
7	E01-59	18	00:59	RE	MOR		49° 17.400	126° 36.310						☐	
8	E01	18	01:35	BE	ROS	US	49° 17.294	126° 36.082	100		4-6	3	SP	☒	
			01:36	BO			° 17.298	° 36.078		95				☐	
			01:40	EN			° 17.299	° 36.078						☐	
9	E01-60	18	02:15	DE	MOR		49° 17.433	126° 36.341	101				CC	☐	
10	BPI	18	14:10	BE	ROS	US	50° 3.600	127° 53.420	104		7-17	11	SP	☒	
			14:12	BO			° 3.600	° 53.420		100				☐	
			14:23	EN			° 3.640	° 53.360						☐	
11	BPI	18	14:49	BO	GRAB		50° 3.613	127° 53.444	103				CW	☐	

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)
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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

25
Haro Strait Mooring Recovery
Jul 17, 2

This page is for any notes or observations

0057 on station A 44 R 407H

Send enable no response, send enable, no response
move location Forward, shut off sounder, no response

0108 bow thrusters off

try A6 R 40338 no response Switch to Rubber Boat

0136 - Rubber boat away

0140 - Contact made with

0145 - Successful release Confirmation

0156 - No sign, ranges not decreasing

- try other release

0159 - Release confirmed, ranges decreasing

0202 - On Surface

0220 - On deck

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

book #1
Page 2 of 25

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							Latitude	Longitude							
12	BROOKS-B	18	:	RE	MOR		50° 13.9725	128° 2.7133	88		-		CC	☐	
13	BROOKS	18	17:13	BE	ROS	—	50° 13.930	128° 2.600	88		— - —	—	SP	☒	
			:15	BO			° 13.930	128° 2.600		84	-			☐	
			:17	EN			° 13.930	° 2.60			-			☐	
14	BROOKS-C	18	17:25	DE	MOR		50° 13.972	128° 02.722	90		-		CC	☐	
15	SCT 1	18	22:23	BE	R S	—	50° 43.140	128° 33.910	84		— - —	—	SP	☐	
			22:24	BO			° 43.120	° 33.890			-			☐	
			22:26	EN			° 43.100	° 33.900			-			☐	
16	SCT 1	18	22:17	DE	DRF		50° 43.93	128° 34.000	97		-		DS	☐	SCT = 1147 OSKER = 407
17	TS 15	18	23:12	BE	R	—	50° 46.7	128° 29.590	86		— - —	—	SP	☒	
			23:14	BO			° 46.770	° 29.590		82	-			☐	
			23:16	EN			° 46.770	° 29.600			-			☐	
18	10657	19	00:43	BE	ROS	—	5° 5.9	128° 29.920	76		— - —	—	SP	☒	
			:45	BO			°	°		72	-			☐	
			:46	EN			° 54.910	° 29.940			-			☐	
19	GBS-04	19	01:28	BE	GRAB	—	50° 5.	°			-			☐	1 large rock
			01:30	BO			50° 57.2903	128° 23.7878		60	—			☒	in grab
			01:31	EN			50°	° 856			-			☐	
			:				°	°			-			☐	

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

July 17, 2020 - Final search for AI-57

1500 UTC - approaching AI - Search for AI-57

send alternating 1A28 + 1ASS enable & release, no response

1530 - 8 miles to go 125m depth, no responses

1545 - 5.8 miles to go 150m depth, no responses

1600 - 3.5 miles 178m depth no responses

1615 - 1.5 miles to go 205m depth no responses

1630 - call off search ranges to AI-59 1279 963 867 as we approach

AI-59 Recovery

1631 - Send 1A29 584 589 592

1632 - Send 1A29 + 1ASS 596 596 received & Executed

1636 - On Surface

Brooks recovery

1650 - send ENABLE; positive response; range @ ~309m slant

1651 - send RELEASE; positive response

1654 - on surface

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

hook#1

Page 3 of 25

Month <u>July</u>			Year <u>2020</u>			Vessel <u>JP Tully</u>			Cruise ID <u>2020-069</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							
20	GBS-04	19	01:39	BE	ROS	US	50° 57.280	128° 23.780	60		18-23	6	SP	☒	
			01:40	BO			57.270	23.780		56	-			☐	
			01:47	EN			57.250	23.750			-			☐	
21		19	04:14	BE	UGT	/	51° 00.094	127° 50.004	142		-		CW	☐	
			04:20	BO			51° 00.054	127° 49.990		130	-			☐	
			04:22	EN			51° 00.050	127° 49.974			-			☐	
22	CPE1	19	05:05	BE	ROS	US	51° 0.130	127° 49.880	144		-			☐	
			05:0	BO			51° 0.080	127° 49.85			24-32	9	CH	☐	large difference →
			05:22	EN			51° 0.060	127° 49.780			-			☐	
23	CPE1	19	05:30	BE	DRF	-	51° 0.060	127° 49.780			-			☐	
24	GG07	19	07:11	BE	ROS	/	51° 8.148	127° 48.264	73		-		CH	☒	sponge bobs 1148, 1149, 1145 + 0 scars 0410+ 0414
			07:15	BO			51° 8.142	127° 48.234			-			☐	
			07:17	EN			51° 8.129	127° 48.235			-			☐	
25	11291-F	19	08:41	BE	ROS	/	51° 5.370	127° 59.780	136		-		CH	☒	
			8:47	BO			51° 5.380	127° 59.790			-			☐	
			08:50	EN			51° 5.390	127° 59.820			-			☐	
26	QCS004	19	10:15	BE	ROS	/	51° 2.350	128° 12.270	160		-		CH	☒	
			10:21	BO			51° 2.350	128° 12.350		155	-			☐	
			10:25	EN			51° 2.350	128° 12.390			-			☐	

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

E01-59 Mooring Recover

0030 On Station Send 1A20 228, 229, 232 219

Wait For deck crew

0048 150

0051 206

0055 Send 1A20 + 1A55 217 no received or execute
-no contact

Send again 265

Switch to dunking transducer

0059 264 264

received & execute

0000 on Surface

EVENT 22 operator forgot to turn on pump first time. Kept event # in write file

23

1148 on

1449 on

1445 on

0346

0414 on

0410 on

Event

26

Don ~ 8.3 ml/l at 10m. Wow

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

hook #1
Page 4 of 25

Month JULY			Year 2020			Vessel JP TULLY			Cruise ID 2020-069						
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
27	LBA	19	18:39	BE	ROS	US	50°55.100	127°40.00	436		33-35	3	SP	☒	
			18:47	BO			°55.100	°39.870		435	-			☐	
			18:55	EN			°55.100	°39.750			-			☐	
28	LBA	Recovering			mooring									☐	
		20	01:38	RE			50°50.525	127°42.968	345		-			☐	
29	LBB	20	1:58	BE	ROS	US	50°50.54	127°43.190	342		36-38	3	CH	☒	
			2:08	BO			°50.52	°43.180		341	-			☐	
			2:16	EN			°50.49	°43.180			-			☐	
30	CS 10	20	06:24	BE	ROS	✓	51°16.36	128°19.90	80		✓	✓	CH	☒	
			06:30	BO			°16.35	°19.89		76	-			☐	
			06:32	EN			°16.35	°19.88			-			☐	
31	CS 09	20	07:31	BE	ROS	US	51°12.420	128°27.943	195		39-53	15	CH	☒	
			:	BO			°	°			-			☐	
			07:57	EN			51°12.397	128°28.061			-			☐	
32	CS 08	20	08:55	BE	ROS	✓	51°08.501	128°35.929	144		✓	✓	CH	☐	
			08:59	BO			°08.496	°35.965		141	-			☐	
			09:03	EN			°	°			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	

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Notes:

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

LBA-2 Mooring Recovery July 19, 2020

This page is for any notes or observations

1400 - On station

- Send 16EE no reply

- Ship changing orientation & briefing deck crew

1430 - dunking transducer - no reply

- ping receiver - No signal - noisy - long cable for hydrophone is intermittent

- head for NW sending 16EE

1454 1782 1746 1613 1587 1373 ranges decreasing

1500 - 1222 746 693 637 606 548 528 517

1505 - 498 484 480 473 469 466 464 464 465

- return to CPA

CPA at 464 m in 430 m of water

1516 - 592 594

1517 - Send 16EE + 16SS

received & executed

599 601

- ranges not decreasing

1518 - Send 16EE + 16SS

received & Executed

- 609 612

1526 - 468 462 460 460 460 462

- Set up for Drag

1600 - start drag - 1 1/2 loops

1643 - Hauling In

1730 - Unsuccessful

- winch counter shiv Frozen at ~750 m out

- winch counter restarted on way in ~1800 m out

- resurvey mooring position - Service spooling shiv.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

book #1
Page 5 of 25

Month				Year			Vessel				Cruise ID				
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33	CS07	20	10:03	BE	ROS	/	51° 4.420	128° 44.060	65		/	/	CH	☒ ☐	Something weird at bottom
			10:05	BO			° 4.410	° 44.090		61	-			☐ ☐	
			10:07	EN			° 4.410	° 44.110			-			☐ ☐	
34	CS06	20	11:11	BE	ROS	US	50° 59.986	128° 50.086	65		54-65	12	CH	☐ ☐	
			11:16	BO			° 59.938	° 50.124		60	-			☐ ☐	
			11:26	EN			° 59.970	° 50.237			-			☐ ☐	
35	CS05	20	12:34	BE	ROS	/	50° 55.960	127° 0.090	62		/	/	CH	☒ ☐	
			12:37	BO			° 55.970	° 0.110			-			☐ ☐	
			12:40	EN			° 56.000	° 0.140			-			☐ ☐	
36	CS05	20	12:46		DRF		50° 56.051	129° 0.334			-	-		☐ ☐	→
37	CS04	20	14:05	BE	ROS	-	50° 49.200	129° 12.870	97		- - -	-	SP	☒ ☐	
			:07	BO			° 49.250	° 12.830		94	-			☐ ☐	
			:09	EN			° 49.250	° 12.860			-			☐ ☐	
38	SCOTT3	20	15:25	BE	ROS	-	50° 50.480	129° 28.500	234		- - -	-	SP	☒ ☐	
			15:30	BO			° 50.490	° 28.500		233	-			☐ ☐	
			:34	EN			° 50.490	° 28.540			-			☐ ☐	
39	C106	20	20:07	BE	ROS	US	51° 2:030	129° 37.780	841		68-83	16	SP	☒ ☐	
			:21	BO			° 1.980	° 37.760		844	-			☐ ☐	
			:51	EN			° 1.890	° 37.770			-			☐ ☐	

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LBA-2 Mooring recovery Cont'd July 19, 2020

1747 MOB 386 497m

1751 - intermittent numbers minimum 462

1754 - 524 527 517 509

1757 483 479 477 473 470 468 468 466 464 463 463 463 462 465

1805 497 495 491 489 487 480 478 476 475 474 472 471 474 479 466 464 463 464 466

1815 484 481 479 470 466 465 464 463 463 463 463 464 465 466 - Break For CTD, lunch & wind service

1931 - Drag: Take II

2037 - Haul In

2110 - Unsuccessful

2130 468 466 465 464 464 465 466

Third drag attempt

2144 - Start

2400 - unsuccessful

EVENT 33 sudden with variability at bottom

EVENT 36 SCT 1146 + 1150

DAILY SCIENCE LOG

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hook #1
Page 6 of 25

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40	C107	20	21:57	BE	ROS	-	50° 56.420	129° 48.310	1528		-	-	SP	☒	
			:23	BO			° 56.380	° 48.250		1568	-			☐	
			:46	EN			° 56.320	° 48.220			-			☐	
	C17		23:00	BE	NET		50° 56.26	129° 48.185	158		-		SP	☐	
			23:08	BO			° 56.264	° 48.175		250m	-			☐	
			23:12	EN			° 56.265	° 48.18			-			☐	
42	C108	20	23:51	BE	ROS	US	50° 53.299	129° .	2068		84-106	2	SP	☒	
			00:25	BO			° 53.270	° 52.24		2091	-			☐	
			01:18	EN			° 53.280	° 52.475			-			☐	
43		21	03:23	BE		US	° 34.990	129° 41.51	2092		107-130	24	CH	☒	
			04:04	BO			° .873	° 41.4		2119	-			☐	slur near 13 at 25m →
			0 :	EN			° .2	° 4 .4			-			☐	
44	C	21	06:39	BE		-	50° 41.330	2 ° .	1895		-	-	CH	☐	orig net dec TRN
			07:11	BO			° .200	° .		1913	-			☐	→
			07:42	EN			° .	° .			-			☐	
			:	BE	ROS	-	° .410	° .	248		-	-	CH	☒	
			08:49	BO			° .	° .		251	-			☐	
			:	N			° .	° .			-			☐	
			:				° .	° .			-			☐	

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

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LBB-2 Mooring Search July 20, 2020

Sounding heading NW from Christie Passage up Goletas Channel

0051 Send 16ED - no response

0119 - 1261 1247 1252

0125 - 840 759 677 612 538 494 456 436 420 406 400 (396) 398 402

0130 - 476

0138 - 573 received & executed

0141 - Surface

EVENT 43 Large chlorophyll mat at ~ 25m. Fluorescence ~ 13.
Also shows on transmission traces

EVENT 44 - fired bottle 1+2 for practice. NO SAMPLES

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY			Year 2020			Vessel JP TULLY			Cruise ID 2020-069						
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
46	C1056	21	11:55	BE	ROS	/	51° 13.190	129° 16.040	285		/	/	CH	☒	
			12:02	BO			° 13.140	° 16.100			-			☐	
			12:07	EN			51° 13.120	129° 16.110			-			☐	
47	C1056	21	12:15	BE	DRIFTER		51° 13.049S	129° 16.344S	287		/		CH	☐	→ next page
48	Scott2-4	21	14:13	RE	MOR		51° 07.679	129° 28.527	287		-			☐	
49	Scott2	21	15:13	BE	ROS	VS	51° 7.426	129° 28.426	285		146-163	18	SP	☒	
			15:18	BO			° 7.429	° 28.500		284	-			☐	
			15:37	EN			° 7.415	° 28.690			-			☐	
50	Scott2-5	21	:	DE			°	°			-			☐	
51	C104	21	19:34	BE	ROS	VS	51° 19.130	129° 2.980	259		131-145+164	16	SP	☒	
			19:40	BO			° 19.130	° 2.960		255	-			☐	
			19:59	EN			° 19.110	° 2.930			-			☐	
52	C1036	21	21:22	BE	ROS	-	51° 22.993	128° 44.918	226		- - -	-	SP	☒	
			21:26	BO			° 22.969	° 44.904		223	-			☐	
			21:29	EN			° 22.960	° 44.902			-			☐	
53	C102	21	22:48	BE	ROS	-	51° 27.920	128° 29.980	200		- - -	-	SP	☒	
			:52	BO			° 27.860	° 29.990		197	-			☐	
			:56	EN			° 27.840	° 30.000			-			☐	
			:				°	°			-			☐	

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

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

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

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

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

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

Produced by the Water Properties Group, IOS

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EVENT 47 SCT 1153; OCKER C432

Change in schedule

SCOT2 146-163

C104 = 131-146

SCOT2-4 Mooring Recovery July 21, 2020

1330 - near site (4.5 cables) send OBIS - no response
- inch closer

1342 - SOS 486 422 360 340 329 325 322 319 313 308 307 308 309

1413 - Send OBIS + OBSS

443 442 - Received & Executed

1414 - On Surface

Event 51: duplicate sample # for bottle 16, show changed ~~the~~ bottle 16 (146) to next available sample ID (164) SP

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

hook#1
Page 8 of 25

Month		Year		Vessel		Cruise ID		Page		of				
JULY		2020		JP TULLY		2020-069		8		25				
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
54	HAKI-4	22	01:06	RE	MOR	AR	51°42.6917 128°14.1352	142		-			☐	
55	HAKI	22	01:45	BE	ROS	US	51°42.570 128°14.380	140		165-179	15	SP	☒	
			01:47	BO			°42.550 °14.420		136	-			☐	
			02:00	EN			°42.530 °14.500			-			☐	
56	HAKI-5	22	02:49	DE	MOR		51°42.733 128°14.171	137		-		CC	☐	
57	CI01	22	04:08	BE	ROS	US	51°35.722 128°18.113	154		180-193	14	CH	☒	big signal →
			:	BO			° °		152	-			☐	
			:	FN			° °			-			☐	
58	MS01	22	08:40	BE	ROS ^{NET}	-	52°07.961 128°50.112	215		-			☐	
			08:48	BO			52°07.926 128°50.036		200	-		CW	☐	bongo VNH
			08:51	EN			52°08.002 128°50.046			-			☐	
59	MS01	22	09:27	BE	ROS		52°08.080 128°50.090	214		194-208	15	CH	☒	→
			09:31	BO			52°08.090 128°50.080		211	-			☐	
			09:48	EN			°08.090 °50.200			-			☐	
60	MS02	22	11:58	BE	ROS		52°0.026 129°14.084	180		-	-	CH	☒	
			12:03	BO			°0.044 °14.099		176	-			☐	
			12:07	FN			°0.042 °14.116			-			☐	
			:				° °			-			☐	
			:				° °			-			☐	
			:				° °			-			☐	
Event Type: LOOP = Sea Water Loop Bottle Firing Method: Time Code:														

Event Type:

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

LOOP = Sea Water Loop

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

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Notes:

Time Code:

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Produced by the Water Properties Group, IOS

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HAKI-4 Mooring Recovery July 22, 2020

0055 - Approaching station

- Send 09E4 - 307 238 202

0059 - 169

- Back off

0105 - 317

0106 - Send 09E4 + 0955 272 270

- On surface

EVENT 57 - Sig signal in chla & trans missing ~ upper 20 m.
amazing signal at 5m on upcast.

Froster the downcast, higher chla, high DO. Wow.

EVENT 59 problems with NMEA feed. Had to reboot. Hope CAN file is correct

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

hook#1
Page 9 of 25

Month JULY				Year 2020		Vessel J P TULLY		Cruise ID 2020-069							
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
61	MS03	22	14:19	BE	ROS	—	51°48.780	129°41.330	298		—	—	SP	☒	
			14:25	BO			°48.788	°41.414		295	—			☐	
			14:30	EN			°48.700	°41.550			—			☐	
62	MS04	22	15:57	BE	NET		51°41.559	129°57.385			—		SP	☐	
			16:06	BO			°41.558	°57.543			—			☐	
			16:11	EN			°41.548	°57.623			—			☐	
63	MS04	22	16:31	BE	ROS	US	51°41.550	129°57.450	355		209-226	18	SP	☒	
			16:37	BO			°41.590	°57.490		352	—			☐	
			16:56	EN			°41.604	°57.620			—			☐	
64	MS05b	22	17:56	BE	ROS	—	51°36.050	130°05.890	542		—	—	SP	☒	
			18:05	BO			°36.040	°05.950		540	—			☐	
			18:14	EN			°36.030	°5.920			—			☐	
65	MS06b	22	19:18	BE	ROS	—	51°32.870	130°15.000	928		—	—	SP	☒	
			19:34	BO			°32.870	°15.060		937	—			☐	
			19:50	EN			°32.830	°15.160			—			☐	
66	MS07b	22	21:13	BE	ROS	—	51°27.980	130°29.930	1596		—	—	SP	☒	
			21:39	BO			°27.960	°30.140		1626	—			☐	
			22:05	EN			°28.020	°30.140			—			☐	
			:				°	°			—			☐	

Event Type:

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SET = Fish Set

LOOP = Sea Water Loop
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DRF = Drifter
— =

Bottle Firing Method:

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DN = Down / No stop

Time Code:

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

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

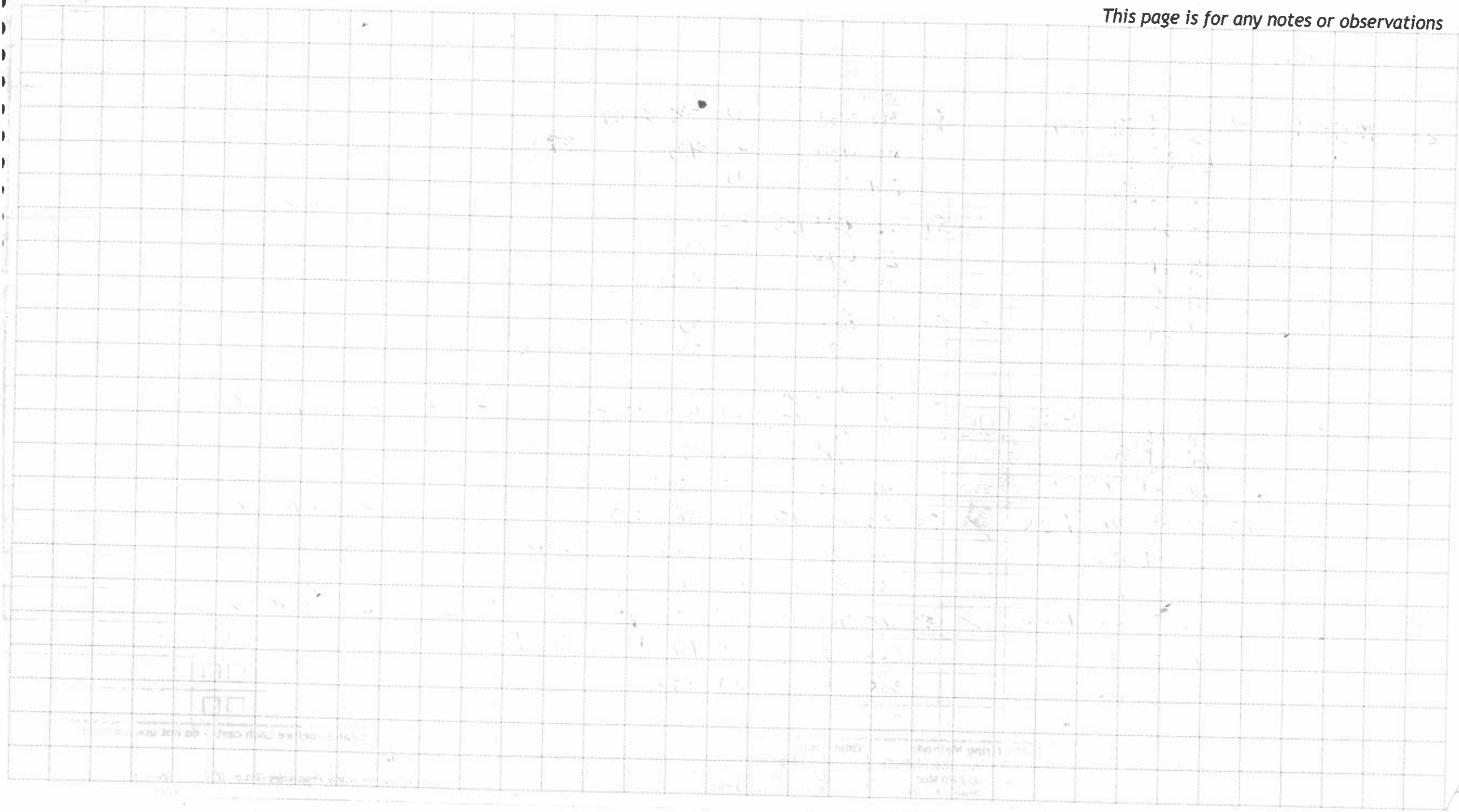
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes:

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This page is for any notes or observations



DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

hook #1
Page 10 of 25

Ocean Sciences Division, Institute of Ocean Sciences																					
Month		JULY		Year		2020		Vessel		JP TULLY		Cruise ID			2020-069			Page		10 of 25	
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	Tms/FI Cleaned	Comments						
							Latitude	Longitude													
67	MS08b		23:18	BE	NET		51°24.348	130°42.579	2002		-		SP	☐							
			23:27	BO			51°24.480	1°		250	-			☐							
			23:32	EN			51°24.525	130°42.715			-			☐							
68	MS08b	22	:	BE	ROS	US	51°24.484	130°			227-249	23	SP	☒							
		23	00:26	BO			51°24.474	130°42.665		2026	-			☐	Altitude not ready 110						
			01:15	EN			51°24.431	130°			-			☐							
69	MT11B	23	03:24	BE	NET	-	51°41.887	130°33.430	1000		-			☐							
			03:35	BO			°4.887	130°3.		250	-			☐							
			03:40	N			1°41.883	130°33.638			-			☐							
70	1B	23	0:		ROS		°4.915	130°			250-270	21	CH	☒							
			04:13				°4.826	°33.851		1003	-			☐	NOTES →						
			04:50				°41.880	°			-			☐							
71	MT10	23	06:58	BE	ROS	/	5°58.50	130°29.360	433		-		CH	☒							
			:				°58.10	°		430	-			☐							
			07:16	EN			°	°29.340			-			☐							
72			:	BE			°	°			-			☐							
			08:58	BO			°	°		434	-			☒							
			0:	EN			°	°			-			☐							
			:				°	°			-			☐							
			:				°	°			-			☐							
			:				°	°			-			☐							
			:				°	°			-			☐							
			:				°	°			-			☐							
			:				°	°			-			☐							
			:				°	°			-			☐							
			:				°	°			-			☐							
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			:				°	°			-			☐							
			:				°	°			-			☐							
			:				°	°			-										

Event Type:

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Bottle Firing Method:

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Notes:

Time Code:

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Version: 20 April 2016

- EVENT 70 Reversal in T gradient at 50cm + 120-150m. Also starcorin S. double diff? Also at 300m
- EVENT 70 Station is mis named in H&T file. Should be MT 11 B
- EVENT 71 nice chla DO relationship - approx 10 m was called MS 11 B 'wrong name
- EVENT 72 . Nephoid layer for Cindy

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

hook#1
Page 11 of 25

Month <u>July</u>			Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-069</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
73	MT08B	23	09:59	BE	ROS	/	52° 14.000	130° 11.550	498		/	/	CH	☒	→
			10:08	BO			° 14.030	° 11.580		496	-			☐	
			10:17	EN			° 14.050	° 11.600			-			☐	
74	MT07B	23	11:31	BC	ROS	/	52° 24.01	130° 08.360	331.7		/	/	CW	☒	Deck press 0.2
			11:38	BO			° 23.99	° 08.36		328	-			☐	
			11:44	EN			° 23.95	° 08.36			-			☐	
75	MT06B	23	12:58	BE	ROS	-	52° 33.342	130° 03.078	282		/	/	CW	☒	
			13:03	BO			° 33.301	° 03.052		279	-			☐	
			13:09	EN			° 33.264	° 03.025			-			☐	
76	MT05	23	14:09	BE	NET	-	52° 40.495	129° 59.277	263				SP	☐	
			:17	BO			° 40.492	° 59.257		250	-			☐	
			:22	N			° 40.487	° 59.262			-			☐	
77	MT05	23	14:41	BE	ROS	VS	52° 40.610	129° 59.0	262		271-286	16	SP	☒	
			14:46	BO			° 40.600	° 59.3		260	-			☐	
			15:00				° 40.560	° 59.380			-			☐	
78	MT04	23	16:13	BE	ROS	-	52° 49.160	130° 1.1	257		-	-	SP	☒	
			16:18	BO			° 49.160	° 1.15		254	-			☐	
			16:22	EN			° 49.130	° 1.1			-			☐	
			:				°	°			-			☐	

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Notes:

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

EVENT 73

last 3 stations are at DO peak at ~ 125 m.
big signal on ~~the~~ Beam transmission at ~ 400 m. Deep water is murky

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 12 of 25

book #1

Month JULY			Year 2020			Vessel JP TULLY			Cruise ID 2020-069						
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
79	MT03	23	17:19	BE	ROS	—	52° 55.463	130° 7.878	241		—	—	SP	☒	
			17:23	BO			° 55.446	° 7.830		240	-			☐	
			17:27	EN			° 55.450	° 7.788			-			☐	
80	MT02	23	18:22	BE	ROS	—	53° 1.810	130° 15.000	214		—	—	SP	☒	
			18:26	BO			° 1.830	° 15.010		210	-			☐	
			18:31	EN			° 1.860	° 15.040			-			☐	
81	SRN1-3	23	19:16	RE	MOR		53° 6.561	130° 23.307	203		-		CC	☐	
82	SRN1	23	20:08	BE	NET	US	53° 6.707	130° 23.419	202		287-	15	SP	☐	
			20:16	BO			° 6.699	° 23.470		192	-			☐	
			20:18	EN			° 6.699	° 23.470			-			☐	
83	SRN1	23	20:35	BE	ROS	US	53° 6.688	130° 23.369	202		287-301		SP	☒	
			20:38	BO			° 6.709	° 23.342		200	-			☐	
			:50	EN			° 6.730	° 23.220			-			☐	
84	SRN1-4	23	22:01	DE	MOR		53° 06.601	130° 23.366	204		-			☐	
85	Lastook	24	01:08	RE	MOR		° .	° .	76		-			☐	
86	Laskeek	24	01:31	BE	ROS	—	53° 44.710	130° 52.010	76		—	—	SP	☒	
			:32	BO			° 44.680	° 51.990		73	-			☐	
			:34	EN			° 44.	° 51.			-			☐	
87	Laskeek	24	:	DE	MOR		° .	° .			-			☐	

Event Type:

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LOOP = Sea Water Loop
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 DN = Down / No stop

Notes:

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Produced by the Water Properties Group, IOS

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 Version: 20 April 2016

SRN1-3-Mooring Recovery July 23, 2020

1916 - Send 1800 363,363

1916 - Send 1800 + 1855 364,364

1917 - on surface

Laskeek-1 Mooring Recovery July 23/2020

0106 - send 271001 > 336,335

0108 - send 247733 > released

0110 - on surface

This page is for any notes or observations

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 13 of 25

hook#1

Month			Year			Vessel				Cruise ID					
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
88	JPS7	24	03:28	BE	NET	—	52°33.879	131°05.698	131		-			☐ ☐	
			03:33	BO			52°33.841	131°05.699		120	—		CW	☐ ☐	
			03:35	EN			52°33.831	131°05.707			-			☒ ☐	
89	JPS		0:	BE	ROS		52°33.782	131°05.926	132		302-315	14	CH	☒ ☐	RBR on/off
			04:10	BO			°33.769	°05.898		129	-			☐ ☐	
			04:27	EN			°33.708	°05.789			-			☐ ☐	
90	JPS6	24	05:09	BE	ROS		52°32.100	131°10.560	170		—	—	CH	☒ ☐	RBR on/off
			0:	BO			°32.090	°10.570		168	-			☐ ☐	
			05:17	EN			°32.070	°10.580			-			☐ ☐	
91	J		:	BE	ROS		52°31.360	131°18.660	248		—	—	CH	☒ ☐	RBR on/off
			:	BO			°31.320	°18.650		247	-			☐ ☐	
			06:14	EN			°31.270	°18.710			-			☐ ☐	
92	JPS4	24	06:42	BE	T		52°31.081	131°23.497	360 280		-			☐ ☐	
			:56	0			52°31.089	131°23.577		250	—	—	CW	☐ ☐	
			07:00	EN			52°31.099	131°23.617			-			☐ ☐	
9	JPS		07:14	BE	ROS		52°31.160	131°23.550	361		316-333	18	CH	☒ ☐	RBR on/off
			07:21	BO			°31.770	°23.640		359	-			☐ ☐	
			:4	N			°31.120	°23.610			-			☐ ☐	
			:				°	°			-			☐ ☐	

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: 20 April 2016

EVENT 89 - Weird signal at bottom. Transmissivity has parabolic profile
starting at JP57 - Fluorescence traces are very jagged.
NET tow at JP57 shows filamentous brown algae,
so jagged trace is probably correct.

Event 89 - RBR strapped to Rosette Frame
plus more

EVENT 93 Amazing TSS, O staircases

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

hook #1
Page 14 of 25

Month <u>July</u>			Year <u>2020</u>			Vessel <u>JPTully</u>			Cruise ID <u>2020-069</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
94	JPS3	24	08:30	BE	ROS	/	52°33.260	131°29.740	323		/	/	CH	☒	RBR ON/off
			08:37	BO			°33.250	°29.750		321	-			☐	
			08:43	EN			°	°			-			☐	
95	JPS2	24	:	BE	ROS	/	°	°	256.		/	/	CH	☐	RBR ON/off
			09:33	BO			52°34.970	131°37.230		273	-			☐	5' off the bottom
			09:39	EN			°34.990	°37.250			-			☐	
96	JPS1	24	10:06		NET		52°36.237	131°40.110	143		-			☐	bongo VNH
			10:10				52°36.266	131°40.096		133	/		CW	☐	
			10:12				52°36.272	131°40.097			-			☐	
97	JPS1	24	10:29	BE	ROS		52°36.280	131°40.140	140		334-347	14	CH	☒	RBR ON
			10:33	BO			52°36.280	131°40.160		137	-			☐	
			:	EN			°36.268	°40.187			-			☐	
98	JPN1	24	11:30	BE	NET		52°38.996	131°40.448	75		-			☐	bongo VNH
			11:32	BO			52°39.003	131°40.458		65	-		CW	☐	
			11:33	EN			52°39.005	131°40.465			-			☐	
99	JPN1	24	11:47	BE	ROS	/	52°38.940	131°40.370	75		-		CH	☒	RBR ON/off
			11:50	BO			°38.950	°40.414		70	-			☐	
			11:54	EN			°38.940	°40.440			-			☐	
			:				°	°			-			☐	

Event Type:

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Bottle Firing Method:

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Notes:

Time Code:

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

EVENT 95

clearly depth sounder was not seeing the bottom
Definitely used wrong station name in test file should be JPS2
Confirmed by Stepha Page

EVENT 97

Stepha Page: I stopped using RBR/Hakai program.
It went strange.

EVENT 99 - Almost well mixed

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

hook #1
Page 15 of 25

Month <u>July</u>			Year <u>2020</u>			Vessel <u>JP Tully</u>			Cruise ID <u>2020-069</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
100	JPN 2	24	12:31	BE	NET	/	52°42.002	131°44.748	128		/	/		☐	
			12:36	BO			52°42.023	131°44.761		118	-		CW	☐	bio VNH
			12:38	EN			52°42.037	131°44.755			-			☐	
101	JPN 2	24	12:59	BE	ROS	/	52°42.010	131°44.690	117		/	/	CH	☒	RBR/MOKK
			13:04	BO			52°42.040	131°44.650		121	-			☐	
			13:07	EN			52°42.050	131°44.690			-			☐	
102	JPN 3		14:00	BE	NET		52°44.341	131°47.551			-			☐	
			14:04	BO			52°44.334	131°47.548			-			☐	
			:06	EN			°44.324	°47.540			-			☐	
103	JPN 3	24	14:29	BE	ROS	US	52°44.340	131°47.530	130		348-361	14	SP	☒	RBR
			:32	BO			°44.330	°47.530		122	-			☐	
			:46	EN			°44.321	°47.545			-			☐	
104	JPN 4	24	15:27	BE	ROS	-	52°46.730	131°42.800	211		-	-	SP	☒	RBR
			:30	BO			°46.720	°42.900		210	-			☐	
			:34	EN			°46.720	°42.900			-			☐	
105	JPC 1	24	16:17	BE	ROS	-	52°44.300	131°42.440	220		-	-	SP	☒	no RBR
			:21	BO			°44.290	°42.430		218	-			☐	
			:25	EN			°44.300	°42.440			-			☐	→
			:				°	°			-			☐	

Event Type:

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SET = Fish Set

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DRF = Drifter

Bottle Firing Method:

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Notes:

Time Code:

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

EVENT 101 A 9+ fluorescence signal may or may not be red.
water is very still in here

- crane leaking hydraulic fluid on upcast. Stopped at 4m to trip all bottles?
pump off.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

book #1
Page 16 of 25

Month JULY			Year 2020			Vessel JP TULLY			Cruise ID 2020-069						
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
106	JPC1	24	16:42	BE	NET		52°44.309	131°42.384	227		-		SP	☐	
			16:49	BO			°44.303	°42.370		211	-			☐	
			16:52	EN			°44.301	°42.366			-			☐	
107	JUAN2-1	24	19:56	RE	MOR		52°31.216	131°25.872	221		-			☐	
108	JUAN2	24	20:43	BE	ROS	US	52°31.070	131°25.730	224		362-364	3	SP	☒	
			20:47	BO			°31.050	°25.710		222	-			☐	
			20:53	EN			°31.040	°25.720			-			☐	
109	JUAN2-2	24	19:56	DE	MOR		°	°			-			☐	
110	BR3	24	23:48	BE	ROS	-	52°28.616	131°7.217	80		-	-	SP	☒	→
			:49	BO			°	°		77	-			☐	
			:51	EN			°	°			-			☐	
111	HSC1	25	02:11	BE	ROS	/	52°09.420	130°58.961	160/173		/	/	CH	☒	RBR ON/OFF
			02:16	BO			°	°		166	-			☐	
			02:20	EN			°	°			-			☐	
112	HSC1.5	25	03:05	BE	ROS	/	52°09.529	131°03.202	46		/	/		☒	RBR ON/OFF
			03:07	BO			°09.530	°03.188		43	-			☐	
			03:08	EN			°09.526	°03.181			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	

Event Type:

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ROS = CTD in Rosette
SET = Fish Set

LOOP = Sea Water Loop

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

Bottle Firing Method:

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Notes:

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

Juan 2-1 Mooring Recovery July 24, 2020

1947 - approaching station Sent 163F 1242 892 712

1956 - send 163F + 1655

- on surface

Received & Executed

EVENT 100 lot of chl-a

111 - Jagged fluorescence - hmn. link between jagged flow +
 does filamentous from algae. or oxygen levels?
 have chl-a?

EVENT 112 well mixed but DO < 6 ml/l

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

hook#1
Page 17 of 25

Month			Year			Vessel			Cruise ID						
July			2020			Tully			2020-069						
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
113	HE2	25	05:50	BE	ROS	/	51°47.893	131°00.025	1450	1674	/	1	CH	☒	→
			06:23	BO			°47.621	°00.564	1728		-			☐	
			06:51	EN			°47.544	°00.848			-			☐	
114	SUN2	25	08:38	BE	ROS	—	51°54.798	131°18.170	1855	(ab)	/	1	CW	☒	1853 m on sunale
			09:00	BO			°54.674	°18.316	1886		-			☐	(1860 m)
			09:29	EN			°54.608	°18.215			-			☐	
115	HG7	25	10:49	BE	ROS	/	52°3.750	131°28.740	854		/	1	CH	☒	
			11:06	BO			°3.727	°28.794		865	-			☐	
			11:21	EN			°3.700	°28.800			-			☐	
116	HG8A	25	12:17	BE		/	52°6.170	131°6.170	145		/	1	CH	☒	
			12:21	BO			°6.180	°17.870		144	-			☐	
			12:24	EN			°6.150	°17.890			-			☐	
117	Gowgaia	25	14:14	RE	MOR		52°23.617	131°42.788	715		-		CC	☐	
118	Gowgaia	25	15:34	BE	ROS	—	52°23.670	131°42.740	715		—	—	SP	☒	
			15:46	BO			°23.680	°42.600		710	-			☐	
			15:58	EN			°23.670	°42.630			-			☐	
119	Gowgaia	25	16:12	DE	MOR		52°23.600	131°42.822	762		-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	

Event Type:

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 DRF = Drifter
 — =

Bottle Firing Method:

US = Up / Stop (default)
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Notes:

Time Code:

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

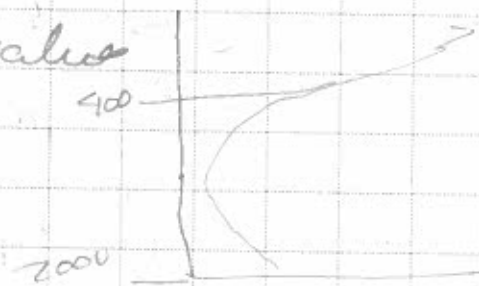
DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 20 April 2016

EVENT 117 - forgot to turn pump on → Back to surface, pumps on, wait, the back down.
Depth increased by ~300m during downcast.
Altimetry showed 8m when we stopped.

Run 2 - small O₂ reversal @ 180m and then stepwise shifts to lower values.
The OMZ seems thicker and deeper here?



EVENT 116 nice subsurface chl-a + O₂ maximum ~20m

Gowgia Mooring Recovery 25/07/2020

1458 - send 205433 ; response received ; send range 810, 811, 811 (almost directly on top)
local time [0805 - move away ; send range 939, 939, 942, 944
0807 - send release 224463 ; positive response ; ranges decreasing
0814 - on surface

Event 118 : vent bottle 1 missing. Added new vent. sf

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 18 of 25

book #1

Month			Year			Vessel			Cruise ID						Page	
JULY			2020			JP TULLY			2020-069						18 of 25	
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								
120	GOWG-1	25	16:54	BE	ROS	—	52° 24.090	131° 37.930	88		—	—	SP	☒		
			:56	BO			° 24.090	° 37.900		86	-			☐		
			:57	EN			° 24.090	° 37.890			-			☐		
121	GOWG-2	25	18:14	BE	ROS	—	52° 22.940	131° 55.200	2078		—	—	SP	☒		
			:52	BO			° 22.970	° 55.170		2104	-			☐		
			19:24	EN			° 23.000	° 55.190			-			☐		
122	HG-4	25	22:47	BE	ROS	US	52° 33.040	132° 41.830	2908		365-384	20	SP	☒		
			23:38	BO			° 33.040	° 41.730		2959	-			☐		
			00:44	EN			° 33.050	° 41.720			-			☐		
123	HG-3	26	:	BE	ROS	/	52° 39.030	132° 26.810	1899		—	1	CH	☒		
			2:41	BO			° 39.060	° 26.830		1919	-			☐		
			3:12	EN			° 39.000	° 26.820			-			☐		
124	HG-2	26	4:06	BE	ROS	/	52° 43.210	132° 18.030	1578		—	1	CW	☒	test fire d	
			4:36	BO			° 43.270	° 17.920		1637	-			☐	bot 17	
			5:03	EN			° 43.230	° 17.970			-			☐		
125	HG-1	26	5:45	BE	ROS	US	52° 45.568	132° 13.604	1012		385-400	16	CH	☒		
			06:04	BO			° 45.574	° 13.579		1041	-			☐		
			:	EN			°	°			-			☐		
			:				°	°			-			☐		
			:				°	°			-			☐		
Event Type: LOOP = Sea Water Loop ROS = Bottle cast (no CTD) Bottle Firing Method: Time Code: CTD Transducer status: F																

Event Type:

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 FET = Fish Set

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 DRF = Drifter
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Bottle Firing Method:

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Notes:

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Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 20 April 2016

Event 127 - replaced batt 17 tubing with spring ^{prior to cast}
will test fire on cast at surface

HG2 - slowly drifting into deeper water

HG1 - mis read water depth 400 fathoms not 400 m. $\Rightarrow$ missing some standard depth

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 19 of 25

hook#1

Month <u>July</u>			Year <u>2020</u>			Vessel <u>T. L. L.</u>			Cruise ID <u>2020-069</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
126	NEWK	26	07:52	BE	ROS	US	52°52.902	132°19.337	164		401-402	2	CH	☒	→
			07:56	BO			°52.920	°19.260		162	-			☐	
			07:59	EN			°	°			-			☐	
127	QC11	26	09:43	BE	ROS	/	53°03.960	132°35.580	198		/	/	CH	☒	
			09:48	BO			°	°		194	-			☐	
			09:52	EN			°04.000	132°35.650			-			☐	
128	NCO3	26	11:12	BE	ROS	/	53°2.530	132°53.050	1084		/	/	CH	☒	
			11:33	BO			°2.520	°52.910		1135	-			☐	
			11:50	EN			°2.502	°52.799			-			☐	
129	NCO2	26	12:47	BE	ROS	—	53°6.770	132°43.92	682		—	—	CH	☒	
			13:01	BO			°6.80	°43.95		684	-			☐	0.41 ml/L cat
			13:13	EN			°6.80	°44.00			-			☐	
130	Catwright	26	14:11	RE	MOR		53°7.745	132°39.366	197		-			☐	
131	CARTWRIGHT	26	14:46	BO	NBT		53°08.041	132°39.544	180	170	-		SP	☐	
132	CARTWRIGHT	26	15:08	BO	Gob		53°08.038	132°39.781	230		-			☐	
133	CARTWRIGHT	26	15:25	BE	ROS	/	53°7.900	132°39.910	253		—	—	SP	☐	
			15:30	BO			°7.900	°39.840		252	-			☐	
			15:35	EN			°7.900	°39.840			-			☐	
134	CARTWRIGHT	26	15:51	DE	MOR		53°07.7955	132°39.7380	214		-			☐	

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 DRF = Drifter
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Bottle Firing Method:

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Notes:

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Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 20 April 2016

EVENT 126 Had to restart Seavac Aquidata.
Final batch 3. Did not use.

I think the date stamp for NMEA feed was wrong for Event 126.
It seems to say 01 Jan 1988 as I look at it before turning on the
deck unit for event 127. or maybe that happened with the playback ??

EVENT 127 started deck unit early to see if have a time problem. Seems ok

Cartwright Mearns Recovery - July 26, 2020

1410 - Enable 35630 167726
- 663

1411 - Release Sent 150322
- positive Response

Grabs (132) rocky substrate - one rock ~8"; one small sponge collected.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

book #1
Page 20 of 25

Month			Year			Vessel			Cruise ID						
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
135	QC108	26	16:21	BE	ROS	—	53° 8.970	132° 39.050	169		—	—	DS	☒ ☒	
			:	BO			° 9.000	° 39.000		168	-			☐ ☐	
			16:40	EN			° 8.990	132° 39.010			-			☐ ☐	
136	ND03	26	20:07	BE	ROS	—	53° 27.170	133° 18.020	1433		—	—	SP	☒ ☐	
			20:34	BO			° 27.350	° 17.880		1406	-			☐ ☐	
			20:57	EN			° 27.370	° 17.620			-			☐ ☐	
137	ND02	26	21:49	BE	ROS	—	53° 31.330	133° 9.000	489				LP	☒ ☐	
			21:59	BO			° 31.350	° 8.930		486	-			☐ ☐	
			22:08	EN			° 31.340	° 8.930			-			☐ ☐	
138	Q101	26	22:35	BE	ROS	—	53° 32.120	133° 5.700	193				LP	☒ ☐	
			22:40	BO			° 32.120	° 5.710		194	-			☐ ☐	
			22:43	EN			° 32.140	° 5.710			-			☐ ☐	
139	PORT LOUIS	27	00:36	RE	MOR	✓	° .	° .	210				OS/CC	☐ ☐	see notes →
			:				° .	° .			-			☐ ☐	
140	Port Louis	27	03:52	DE	MOR	✓	° .	° .			-			☐ ☐	
141	Q21	27	06:37	BE	ROS	US	53° 53.440	133° 49.520	1116		403-423	21	CU	☒ ☐	→
			6:57	BO			° 53.420	° 49.610		1120	-			☐ ☐	
			07:35	EN			° 53.290	° 49.760			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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

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

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

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

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

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

Produced by the Water Properties Group, IOS

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Port Louis Recovery July 26/2020

This page is for any notes or observations

- 0036 - send 161646, ranges 343, 343
0038 - send release 145240
0040 - nothing on surface
0042 - send 167176; ranges 363, 362
0044 - send release 147661
0046 - no visual; ranges remain the same & growing as we drift - note that only get 7 pings (horizontal?)
0058 - go back to location to attempt communication & determine if releases horizontal
0100 ~~0100~~ - above location ranges of 208, 208, 209 (15 pings each = vertical)
0105 - drift to ~ 275m slant range, send release on both
0108 - no changes in ranges
0120 - get in position to drag for mooring
~ 0300 - NO luck. Redeploy new mooring 200 m from 2019 location. seems to be very rocky bottom
↳ ranged above 2019 location 210, 211. Has not moved.
↳ will have to drag/try releasing again 2021

EVENT 141 - large jelly left tentril all over rosette

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 21 of 23

Month JULY			Year 20			Vessel JP TUL			Cruise ID 2020-069						
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
		2	:	BE	ROS	/	53° 56.998	133° 35.712	518		/	/	CH	☒	
			:				° 57.052	° 35.692		518	-			☐	
			:	EN			° 57.624	° 35.651			-			☐	
		2	09:45	BE	NET	/	53° 57.818	133° 30.546	220		-			☐	
			09:53	BO			53° 57.897	133° 29.550		210	-		CW	☐	
			09:56	EN			53° 57.936	133° 29.547			-			☐	
			10:07	BE	OS	/	53° 57.749	133° 29.634	237		/	/	CH	☒	
			10:12	O			° 57.776	° 29.620	230	2	-			☐	
			10:17	EN			° 57.799	° 29.612			-			☐	
	Q		10:57	BE	RO	/	53° 58.980	133° 23.080	70		/		CH	☒	
			11:00	BO			° 58.970	° 23.110	71	66	-			☐	
			11:02	N			° 58.970	° 23.10			-			☐	
146	Q		11:43	B	ROS	US	54° 0.660	133° 16.354	58		424-433	10	CH	☒	
			11:46	B			° 0.655	° 16.354	59	55	-			☐	
			11:54	N			° 0.632	° 16.369			-			☐	
17	XS	27	14:17	BE	ROS	US	54° 19.170	133° 2.250	475		434-451	18	SP	☒	
			14:25	BO			° 19.120	° 2.270		472	-			☐	
			14:46	EN			° 19.070	° 2.280			-			☐	
			:				°	°			-			☐	

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

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45

This page is for any notes or observations

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 22 of 25

hook #1

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
148	DIX4	27	16:31	BE	ROS	US	54° 27.808	132° 43.806	373		452-467	16	SP	☐	
			16:37	BO			° 27.836	° 43.930		372	-			☐	
			16:53	EN			° 27.815	° 44.087			-			☐	
149	MASON S3	27	18:12	BE	ROS	—	54° 29.380	132° 27.090	365		— — —	—	SP	☒	
			18:18	BO			° 29.360	° 27.130		363	-			☐	
			18:25	EN			° 29.380	° 27.160			-			☐	
150	MASON S3	27	18:36	BE	NET		54° 29.393	132° 27.273	365		-		SP	☐	
			18:45	BO			° 29.379	° 27.231		250	-			☐	
			18:49	EN			° 29.375	° 27.220			-			☐	
151	DIX3	27	19:43	BE	ROS	US	54° 28.600	132° 18.150	361		468-485	18	SP	☒	
			19:49	BO			° 28.600	° 18.230		358	-			☐	→
			20:07	EN			° 28.690	° 18.390			-			☐	
152	MA03	27	22:07	BE	ROS	—	54° 11.245	132° 13.901	104		— — —	—	SP	☒	→
			22:10	BO			54° 11.250	° 13.860		99	-			☐	
			:12	EN			° 11.240	° 13.840			-			☐	
153	MA02	27	23:19	BE	ROS	—	54° 11.220	131° 57.860	102		— — —	—	SP	☒	
			23:21	BO			° 11.210	° 57.850		99	-			☐	
			23:22	EN			° 11.210	° 57.810			-			☐	
			:				°	°			-			☐	

Type:
 BT = Bottle cast (no CTD)
 D = Standalone CTD
 = CTD in Rosette
 = 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

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- winch operator went down instead of up at b-S. Touched bottom.
- downcast stopped at 55m briefly to correct for large Aft lead.
- PAR re-installed before event #154 S.P. (22:50 27 Jul/20)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 23 of 23

book #1

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	
154	DIX2	28	01:08	BE	ROS	US	54°23.370	131°56.520	276		486-502	17	SP	☒		
			01:12	BO			°25.360	°56.480		272	-			☐		
			01:27	EN			°25.330	°56.360			-			☐		
155	MA01	28	03:01	BE	ROS	/	54°14.983	131°40.496	125		/	/	CH	☒		
			03:05	BO			°14.964	°40.458	125	121	-			☐		
			03:08	EN			°14.977	°40.427			-			☐		
156		28	04:34	BE	ROS		54°25.650	131°30.890	267		503-520	18	CH	☒		
			04:40	BO			°25.640	°30.910		264	-			☐		
			05:01	EN			°25.580	°31.060			-			☐		
157	HECS8	28	06:54		NGT		54°23.182	131°05.573	118		-			☐		
			06:58				54°23.193	131°05.645		108	-	-	CW	☐		
			07:00				54°23.206	131°05.677			-			☐		
158	HECS8	28	07:18	BE	ROS		54°23.132	131°05.086	108		521-533	13	CH	☒		
			07:22	BO			°23.130	°05.150		105	-			☐		
			07:32	EN			°23.170	°05.300			-			☐		
159	HECS9	28	08:31	BE	ROS	/	54°31.000	131°06.110	156		/	/	CH	☒		
			08:36	BO			°31.020	°06.180		153	-			☐		
			08:39	EN			°31.030	°06.190			-			☐		
			:				°	°			-			☐		

Event Type:

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

LOOP = Sea Water Loop
MOR = Mooring
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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

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RE = Recover Mooring Time

Notes:

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25

Leach's storm-petrel

This page is for any notes or observations

EVENT 159 A 10m high T inversion at 15-25m.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 24 of 25

book #1

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
160	CH14	28	10:34	BE	ROS	US	54° 20.450	130° 49.830	132		534-547	13	CH	☒	
			10:39	BO			° 20.470	° 49.870	132	128	-			☐	
			10:51	EN			° 20.540	° 49.920			-			☐	
161	Brown	28	11:26		GRAD		54° 17.496	130° 41.294	208		-			☐	
		28	11:31	BO			54° 17.496	130° 41.294	208		-			☐	
162	CH15	28	12:03	BE	ROS	US	54° 18.260	130° 42.680	186		548-557	10	CH	☒	
			12:08	BO			° 18.280	° 42.660	187	184	-			☐	
			12:23	EN			° 18.290	° 42.640			-			☐	
163	CH20	28	13:04	BE	ROS	US	54° 13.530	130° 43.740	155		558-586	9	CH	☒	
			13:08	BO			° 13.510	° 43.770		151	-			☐	
			13:19	EN			° 13.470	° 43.820			-			☐	
164	CHAT1-2	28	14:33	RE	MOR		54° 12.058	130° 20.086	122		-			☐	
165	CHAT1	28	15:08	BE	ROS	US	54° 12.050	130° 27.140	121		614-634	21	SP	☒	
			15:10	BO			° 12.050	° 27.140		116	-			☐	
			15:21	EN			° 12.090	° 27.170			-			☐	
166	MP55	28	16:39	BE	ROS		54° 4.235	130° 16.108	109		643-656		DS	☐	
			16:45	BO			° .	° .		105	-	14		☐	
			:55				° .	° .			-			☐	
			:				° .	° .			-			☐	

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

DE = Deployment Time
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EVENT 163 Vent on bottle 3 not closed
several others a bit leaky.

Grabs - mud + minor sand; bottle starts tube worms; layers of dead *Macoma balthica*.
- full grab! - blue gray; no smell.

CHAT-2 Mooring Recovery

1429 - Send 2B8D 145 145

- move off

1431 - 331

1433 Send 2B8D + 2B55 Received & Executed

1434 - On Surface

EVENT 165 ~~Sample~~ skipped sample #s will appear later

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 25 of 25

hook#1

Month JULY				Year 2020		Vessel P L		Cruise ID 2020-069							
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/Fl Cleaned	Comments
167	CH27	28	17:19	BE	ROS	US	54° 6.600	130° 16.507	52		657-666	10	SP	☒	
			17:20	BO			° 6.611	° 16.506		48	-			☐	
			17:26	EN			° 6.624	° 16.560			-			☐	
168	PR474	29	02:31	BE	ROS	US	54° 13.650	130° 20.920	44		667-676	10	CH	☒	
			02:35	BO			° 13.630	° 20.960		39	-			☐	
			02:44	EN			° 13.594	° 20.996			-			☐	
169	Canpotex	29	03:01	BO	Grab		54° 13.123	130° 21.19	55	55	-			☐	
170	CH 23	29	03:32	BE	ROS	US	54° 11.524	130° 23.197	99		635-642	8	CH	☒	
			03:35	BO			° 11.522	° 23.226		94	-			☐	
			03:45	EN			° 11.501	° 23.285			-			☐	
171	CH 26	29	04:23	BE	ROS	US	54° 8.750	130° 21.3	64		677-684	8	CH	☒	
			:	BO			°	°			-			☐	
			04:34	EN			° 8.740	° 21.460			511-512		CH	☐	
172	CH 25	29	05:02	BE	ROS	US	54° 8.801	130° 26.350	118		598-613	16	CH	☒	
			05:06	BO			° 8.790	° 26.390	118	114	-			☐	
			5:18	EN			° 8.766	° 26.545			-			☐	
173	CH 24	29	06:06	BE	ROS	US	54° 7.660	130° 34.030	93		590-597	8	CH	☒	
			06:08	BO			° 7.660	° 35.050			-			☐	
			06:19	EN			° 7.670	° 35.130			-			☐	

Event Type:

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Bottle Firing Method:

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

Notes:

Time Code:

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 RE = Recover Mooring Time

Produced by the Water Properties Group, IOS

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EVENT 170 fired satellite 2 way to son ~5s wait

End of book #1
2020-069