

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2019-069

DATE:

VESSEL:

PROJECT(S):

From: July 31 / 19 To: Aug 12 / 19
J.P. Tully
Mooring + Chatham Sound

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: Tully laptop

Data acquisition program: Seasave

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

Primary CTD

Make: SBE model: 9+ serial number: 506

Primary temperature serial number: 2023

Primary conductivity serial number: 1763

Secondary temperature serial number: 5013

Secondary conductivity serial number: 3394

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

Transmissometer: Wetlabs Model: C-Star s/n: 1883D6

Fluorometer: Model Seapoint Cable gain: _____ s/n: 3640 P, S or NO pump?

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

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

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

Other sensors: Attweller s/n: 62355 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?

Transmissometers released in data. New (530nm green) transmissometer data labelled C-Star. Old (670nm red) labelled C-Star 2. Did not change back until after end of cruise.

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)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>July</u>			Year <u>2019</u>			Vessel <u>Tully</u>			Cruise ID <u>2019-069</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
1	LOOP 1	31	02:40	BE	LOOP		48° 22.362	124° 13.448	190	190 5m	-	1	SR	☐	1st Loop
2	MOR A1-58	31	15:10	RE	MOR		48° 31.090	126° 11.220			-		LR	☐	Recovery
3	A1-58	31	15:29	BE	ROS		48° 30.920	126° 11.060	420				SR	☐	
			15:37	BO			° 30.940	° 11.040		415				☐	
			15:44	EN			° .940	° 11.030			-			☐	
4	A1-59	31	16:26	DE	MOR		48° 32.330	126° 11.710	485		-			☐	
5	A1-58	31	16:34	BE	ROS	US	48° 32.340	126° 11.690	492		1 - 1	3	SR	☒	bot 1-2 ferr
			16:43	BO			° 32.340	° 11.690		493	-			☐	blanks
			16:55	EN			° 32.340	° 11.690			-			☐	
6	Esterian-A	31	21:14	RE	MOR		49° 15.990	126° 34.450	101		-			☐	
7	EO1-58	31	21:02				49° 17.377	126° 36.231			-			☐	
8	EO1	31	22:32	BE	ROS		49° 17.380	126° 36.290	103				SR	☒	
			22:35	BO			° 17.380	° 36.290		98	-			☐	
			22:36	EN			° 17.380	° 36.280			-			☐	
9	EF04-0	01	15:20	RE	MOR		49° 3.849	126° 9.095	96		-			☐	
10	EF-02	01	16:20	BE			49° 5.020	125° 10.320			-		SR	☒	
			16:22				° 5.000	° 10.320		64	-			☐	
			16:23				° 5.000	° 10.310			-			☐	
			:				° .	° .			-			☐	

Event Type:

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Bottle Firing Method:

US = Up / Stop (default)
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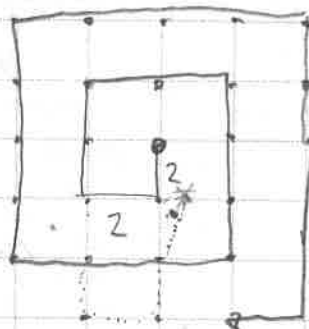
Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

July 31, 2019 Search For A1-57 & A1-58

This page is for any notes or observations

Start at deployment location and do expanding square on 2 km grid



1200 UTC	Dunking transducer	180C	no response
	"	1A28	no response
2km South	"	180C	986, 984, 982, 980..., 973, 968
1220 UTC	"	1A28	no response
	"	180C	991, 984✓

start going west and ranges increase, turn to east

1240	2km south 1km east	1A28	- no response
		180C	544, 538, 560 568 / 566
1250		180C	458 CPA
1257	- 4 km south	180C	1757 - blister transducer
1300	- 4 km south	180C	1947 1966
1320	-	1A28	No response
1320	6km south	1A28	- no response
		180C	3864 3879
1333	6km south 2Woot	1A28	- no response
1352	- 2W	1A28	-
1403	2W	1A28	
1420	suspected site of A1-58	180C	434, 435, 434... 430
	back off a bit	180C	473, 472, 473
1445	" " " " more	180C	448, released

DAILY SCIENCE LOG

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Month <u>August</u>				Year <u>2019</u>			Vessel <u>Tully</u>			Cruise ID <u>2019-069</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
11	EFF03	01	16:45	BE	ROS	US	49° 4.270	125° 9.420	119		2 - 9	8	SR	☒	
			16:48	BO			° 4.260	° 9.410		114	-			☐	
			16:57	EN			° 4.260	° 9.400			-			☐	
12	EFF04	01	17:23	BE	ROS	—	49° 3.140	125° 8.560	52		-		SR	☒	
			17:25	BO			° 3.140	° 8.560		47	-			☐	
			17:26	EN			° 3.140	° 8.560			-			☐	
13	EFF05	01	17:50	BE	ROS	US	49° 2.530	125° 9.200			10 - 18		SR	☒	Logged while
			17:54	BO			° 2.540	° 9.200			-			☐	coming up
			18:07	EN			° 2.530	° 9.180			-			☐	through the
14	EFF06	01	18:35	BE	ROS	—	49° 1.830	125° 9.170	161		—	—	SR	☒	water line
			18:39	BO			° 1.830	° 9.170		156	-			☐	Same as EFF05
			18:42	EN			° 1.830	° 9.160			-			☐	
15	EFF07	01	19:06	BE	ROS	US	49° 1.300	125° 9.400	123		19 - 26	8	SR	☒	Same as EFF05
			19:09	BO			° 1.310	° 9.400		119	-			☐	
			19:18	EN			° 1.300	° 9.400			-			☐	
16	EFF08	01	19:41	BE	ROS	—	49° 00.680	125° 10.220	89		—	—	SR	☒	Same as EFF05
			19:42	BO			° 00.680	° 10.210		84	-			☐	
			19:44	EN			° 00.680	° 10.220			-			☐	
			:				° .	° .			-			☐	

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

July 31, 2019 Estevan-A mooring recovery

This page is for any notes or observations

2103 - On Station

- send 161541

- range 201 203

- relocate

2112 range 207 206 205

2114 release 145206

2138 F01-58 mooring recovery

- on station

- send 089F

520 518 511

- relocate

2146

989 988 - mooring has been moved

- relocate

2155

421 419 418 419 419

2200

171 164 154

2202

224 226

received @ Estevan

- On Surface

actual

- $49^{\circ} 17.4' N$ $126^{\circ} 36.3' W$

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>August</u>				Year <u>2019</u>			Vessel <u>TULLY</u>			Cruise ID <u>2019-069</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							
17	EFF09	01	20:04	BE	ROS	US	49°00.130	125°10.820			27-31	5	SR	☒	Same as EFF-05
			20:06	BO			°00.130	°10.820			-			☐	
			20:12	EN			°00.130	°10.810			-			☐	
18	EFF-10	01	20:29	BE	ROS	/	48°59.850	125°11.210	102		/	/	SR	☒	
			20:32	BO			°59.850	°11.210		97	-			☐	
			20:35	EN			°59.850	°11.210			-			☐	
19	EFF-11	01	20:56	BE	ROS	US	48°59.120	125°11.050			32-37	6	SR	☒	
			20:59	BO			°59.110	°11.050			-			☐	
			21:00	EN			°59.090	°11.020			-			☐	
20	Brooks-A	02	16:46	RE			50°13.970	128°02.730			-			☐	
21	Brooks-B	02	16:55	DE			50°13.972	128°02.713			-			☐	
22	BPI-58	02	19:14	RE			50°03.540	127°53.540			-		CP	☐	
23	BPI	02	19:42	BE	ROS		50°3.586	127°53.629	110		-		LP	☒	NOTE: I forgot to turn off
			19:44	BO			50°3.587	127°53.627		100	-			☐	pump. So I re communicated to
			19:46	EN			50°3.590	127°53.630			-			☐	turn it off. while still in water
24		03	01:06	DE	DRF		50°40.357	128°41.4580			-		SP/DS	☐	SCT 1043 0500-0510
25	SCOTT-1		03:13	RE			50°47.4707	128°48.3056			-			☐	300434062947850
26			:				°	°			-			☐	
			:				°	°			-			☐	

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The great A1-57 Search part 2!

0415	Aug 1 st	4 km west of A1-57 - No response :C
0430	"	4 km west, 2 km south of A1-57 - no response
0445	"	4 km west, 4 km " " " " "
0505	"	4 km west + 6 km south of A1-57 - no response
0520	"	4 km west + 8 km south of A1-57 - no response
0535	"	4 km west + 10 km south of A1-57 - no response
0555	"	2 km west + 10 km south of A1-57 - no response
0617	"	10 km south of A1-57 - no response
0634	"	2 km East + 10 km south of A1-57 - no response.
0650	"	4 km East + 10 km south of A1-57 - no response.
0715	"	2 km East + 8 km South of A1-57 - no response
0728	"	4 km East + 8 km South of A1-57 - no response
0748	"	4 km East + 6 km South of A1-57 - no response.
0800	"	4 km East + 4 km South of A1-57 - no response. Time called. Phooey. Steaming to E Ringham.

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Month <u>August</u>			Year <u>2019</u>			Vessel <u>Tully</u>			Cruise ID <u>2019-069</u>						
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26	SCOTT-1	03	02:14	BE	ROS	-	50°47.490	128°48.180	111		-	-		☐	
			02:16	BO			°47.490	°48.180			-			☐	
			02:18	EN			°47.500	°48.180			-			☐	
27	SCOTT-2	03	02:20	DE	DRF		50°47.500	128°48.180			-			☐	SET 1041 OSKER 779
28	SCIT4	03	03:04	DE	DRF		50°46.793	128°55.679	96		-		SR	☐	OSKER 0780 SET 1035
29	CSO4	03	04:21	DE	DRF		50°48.873	129°14.239			-			☐	OSKER 0781 SET 1044
30	CI08	03	07:22	BE	ROS	US	50°53.080	129°49.860	2082		38-59		SR	☒	Pause @ 370m
			08:02	BO			°53.220	°49.910		2027	-			☐	to fix the
			08:53	EN			°53.290	°50.040			-			☐	wire angle
31	CI07	03	09:56	BE	ROS	/	50°56.290	129°48.600	1623		-		SR	☒	Touched the
			10:29	BO			°56.310	°48.770		1623	-			☐	bottom!
			10:56	EN			°56.310	°48.880			-			☐	
32	CI06	03	12:11	BE	ROS	-	51°2.010	129°38.000	839		-		SR	☒	
			12:26	BO			°01.920	°38.050		834	-			☐	
			12:38	EN			°01.860	°38.040			-			☐	
33	SCOTT-2C		14:30	RE	MOR		51°07.7193	129°28.3500	287		-		DS	☐	
34	SCOTT-2		15:13	BE	MVD GRAB		51°07.6843	129°28.4896	287		-		CW	☐	
			15:21	BO			51°07.6839	129°28.4898			-			☐	
			15:27	EN			51°07.6842	129°28.4892			-			☐	

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Notes:

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

Aug 1, 2019 EF04-0 mooring recovery

This page is for any notes or observations

1507 UTC - Pass over station
- send 169C 133 134 135 137 140
- lose contact + dunking transducer
- 174 173 ... 194

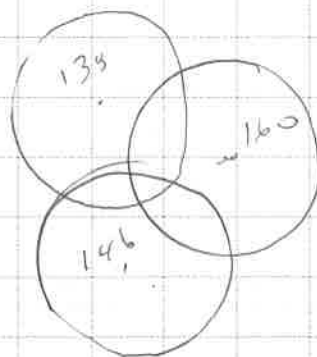
1519 - Send 169C+1655 206 208 received & Executed
1520 - on surface

Aug 2, 2019 BP1-58 mooring recovery

1512 - near station 153, 146, 133
- send OBB5

Captain Concerned with wind/current combination.
We will go to Brookes to retrieve and try again
later today. As weather is slated to calm down. ‡

- Dunking Tx @ 137, 138 Moved 159, 160



DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>AUGUST</u>			Year <u>2019</u>			Vessel <u>TULLY</u>			Cruise ID <u>2019-069</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
35	SCOTT2	03	15:36	BE	ROS	US	51° 7.680	129° 78.490	287		60-74	15	SP	☒	
			:42	BO			° 7.680	° 28.490		284.5	-			☐	
			:57	EN			° 7.680	° 28.490			-			☐	
36	Scott2-4	03	:	DE	MOR		° .	° .			-			☐	
37	HAKI-4	03	22:50	RE	MOR		51° 42.700	128° 14.155	141		-			☐	
38	HAKI	03	23:24	BE	ROS	US	51° 42.700	128° 14.120	145		75-87	13	SP	☒	
			:26	BO			51° 42.700	128° 14.110		142	-			☐	
			:36	EN			51° 42.700	128° 14.120			-			☐	
39	HAKI-4	03	:	DE	MOR		° .	° .			-			☐	
40	MS01	04	05:39	BE	NET	—	52° 07.988	128° 50.355	213		—	—	SR	☐	bongo
			05:47	BO			52° 07.989	128° 50.353		200	-			☐	
			05:51	EN			52° 07.990	128° 50.347			-			☐	
41	MS01	04	06:07	BE	ROS	US	52° 7.990	128° 50.340	215		88-100		SR	☒	
			06:13	BO			° 7.990	° 50.350		210	-			☐	
			06:24	EN			° 7.990	° 50.360			-			☐	
42	MS01	04	06:28	DE	DRF		52° 7.990	128° 50.360		214	-			☐	SCTs 1030, 1042, 1050 OSKER 782
43	MS02	04	08:39	BE	ROS	—	51° 59.960	129° 14.250	183		—	—	SR	☒	
			08:42	BO			° 59.960	° 14.260		178	-			☐	
			08:45	EN			° 59.970	° 14.280			-			☐	

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Produced by the Water Properties Group, IOS

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Version: 20 April 2016

Aug 2, 2019 Brooks-A Mooring recovery

This page is for any notes or observations

- numerous trollers situated around mooring location
- Find gap of opportunity

1604 send command: enable 167271, range: 548, 553, 560, 566
1635 new spot; range: 207, 208, 209, 210
1636 release 147733: sent & received
1637 mooring spotted

1646 Mooring On Deck

Aug 3 2019 BPI-58 Mooring recovery Part II

1904 - Send OBBS 287 285 287
- deck crew getting prepared
1914 - Send OBBS + OBSS 291 290 received & executed
- on surface

Aug 3 2019 HAKI-C Mooring recovery

2241 Approaching station - Send 1B3D 238 229 lost
- dunking 209 207
2248 - 279 279
2250 - Send 1B3D + 1BSS 287 288 received & executed
on surface

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							Latitude	Longitude							
44	MS03	04	11:09	BE	ROS	/	51°48.660	129°41.204	303		/	/	SR	☒	
			11:14	BO			°48.655	°41.188		298	-			☐	
			11:19	EN			°48.649	°41.209			-			☐	
45	MS4	04	12:55	BE	NET	-	51°41.406	129°57.518	359		-	-		☐	bongo
			13:04	BO			51°41.378	129°57.553		250	-	-	SK	☐	
			13:09	EN			51°41.358	129°57.571			-			☐	
46	MS4	04	13:28	BE	ROS	US	51°41.360	129°57.630	359		101-116	17	SR	☒	
			13:35	BO			°41.320	°57.630		357	-			☐	
			13:53	EN			°41.190	°57.650			-			☐	
47	MS5B	04	14:45	BE	ROS		51°35.950	130°6.160	572		-	-	SP	☒	
			14:55	BO			°35.890	°6.330		573	-			☐	
			15:05	EN			°35.830	°6.480			-			☐	
48	MS6B	04	15:54	BE	ROS		51°32.930	130°15.050	921		-	-	SP	☒	
			16:10	BO			°32.920	°15.140		929	-			☐	
			16:25	EN			°32.910	°15.160			-			☐	
49	MS7B	04	17:44	BE	ROS		51°28.090	130°30.210	1621		-	-	SP	☒	
			18:11	BO			°28.200	°30.290		1611	-			☐	
			18:37	EN			°28.350	°30.460			-			☐	
			:				°	°			-			☐	

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

Aug 2, 2019 Scott 1-C Mooring recovery

This page is for any notes or observations

0126 - Approaching station ^{Send 16B0} 388 355 lose contact

0133 - 16B0 → 314 255 252

0136 16B0 + 1655 248 247 received & executed
- on surface

Aug 3, 2019 Scott 2-C Mooring recovery

1349 - On station Send 1B3E no response → dunking transducer
1350 - 1043 - off location (datum issue with gpx file?)

1403 - send 1B3E 333, 332, 332
340

1415 - 356 359

1417 - 361 360 received & executed
- Sent 1B3E + 1B55
- on surface

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month			Year		Vessel		Cruise ID								
AUGUST			2019		JP TULLY		2019-069								
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
50	MS08B	04	19:43	BE	WGT		° 23.954	° 42.110	2008		-	-		☐ ☐	Initial position using - Computer showing previous
			19:52	BO			51° 23.950	130° 42.110		250	-			☐ ☐	
			19:57	EN			51° 23.955	130° 42.145			-			☐ ☐	
51	MS08B	04	20:10	BE	ROS	VS	51° 23.980	130° 42.185	2010		117-137	21	SP	☒ ☐	
			20:45	BO			° 24.089	° 42.227		1992	-			☐ ☐	
			20:32	EN			° 24.151	° 42.175			-			☐ ☐	
52	MT11B	04	23:43	BE	ROS		51° 42.040	130° 33.280	1002		1	21	SP	☒ ☐	2 bottles for Cindy - for dep. 5. and sea water
			00:00	BO			° 42.030	° 33.320		1000	-			☐ ☐	
			00:17	EN			° 42.030	° 33.310			-			☐ ☐	
53	MT10	05	02:23	BE	ROS	/	51° 58.090	130° 29.640	435		-		SP	☒ ☐	
			02:30	BO			° 58.070	° 29.630		430	-			☐ ☐	
			02:37	EN			° 58.070	° 29.620			-			☐ ☐	
54	MT09	05	04:40	BE	ROS	/	52° 07.753	130° 17.200	446		-		SP	☒ ☐	
			04:48	BO			° 07.560	° 17.180		443	-			☐ ☐	
			04:56	EN			° 07.500	° 17.140			-			☐ ☐	
55	MT08B	05	06:05	BE	NET	/	52° 13.953	130° 11.486	498		-	-	SP	☐ ☐	
			06:13	BO			52° 13.957	130° 11.466		250	-			☐ ☐	
			06:17	EN			52° 13.965	130° 11.452			-			☐ ☐	
			:				°	°			-			☐ ☐	

Event Type:

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 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

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Notes:

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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

Produced by the Water Properties Group, IOS

WaterProperties.ca

Version: 20 April 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>August</u>			Year <u>2019</u>			Vessel <u>Tully</u>			Cruise ID <u>2019-069</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
56	MT08B	05	06:41	BE	ROS	US	52°13.980	130°11.450	502		158-174	17	SR	☒	
			06:50	BO			°13.980	°11.450		477	-			☐	
			07:12	EN			°13.960	°11.490			-			☐	
57	MT07B	05	08:28	BE	ROS	/	52°24.100	130°08.420	328		/	/	SR	☒	
			08:33	BO			°24.140	°08.340		323	-			☐	
			08:38	EN			°24.200	°08.330			-			☐	
58	LOOP 2	05	09:11	BE	LOOP		52°24.945	130°15.232	341	35	/	/	SR	☐	
59	JUAN1-B	05	14:40	RE	MOR		52°30.9429	131°24.2847			-		DS	☐	
60	JUAN1	05	14:53	BE	ROS	-	52°31.090	131°23.830	367		-	-	SP	☒	
			14:59	BO			°31.090	°23.840		364	-			☐	
			15:06	EN			°31.084	°23.860			-			☐	
61	JUAN1	05	15:12	BE	NET	-	52°31.080	131°23.855	367		-			☐	
			15:22	BO			52°31.059	131°23.842		250	-			☐	
			15:27	EN			52°31.053	131°23.833			-			☐	
62	JUAN2	05	15:54	BE	ROS	US	52°31.230	131°25.890	222		175-189	15	SP	☒	
			15:58	BO			°31.230	°25.900		218	-			☐	
			16:11	EN			°31.230	°25.900			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	

Event Type:

BOT = Bottle cast (no CTD)
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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

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

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Produced by the Water Properties Group, IOS

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Version: 20 April 2016

Aug 5, 2019 Juan I-B Mooring Recon

This page is for any notes or observations

1354 - on station
- send IB3F 453 454 457
- relocate to "pythagorize"

1400 - 481

1405 - 395

1409 - 483 481 480

1412 - Send IB3F + IB55 - 478 + no respons
- Send IB3F + IB55^{err} - 477 + 476 received & executed
- on surface

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>August</u>			Year <u>2019</u>			Vessel <u>Tully</u>			Cruise ID <u>2019-069</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
63	JPS1	5	18:01	BE	NET		52°36.268	131°40.269	135		-			☐ ☐	
			:	BO			° m. 1 S 5 E 2.			125	-			☐ ☐	N/A
			18:09	EN			52°36.276	131°40.259			-			☐ ☐	
64	JPS1	5	18:18	BE	ROS	US	52°36.260	131°40.160	136		190-201	12	SP	☒ ☐	Altitude 98 below 12m
			18:21	BO			°36.280	°40.170		134	-			☐ ☐	
			18:29	EN			°36.300	°40.190			-			☐ ☐	
65	JPS2	5	18:56	BE	ROS	—	52°35.010	131°37.240	273		-		4P	☒ ☐	
			19:06	BO			52°35.032	131°37.272		271	-			☐ ☐	
			:	EN			52°35.052	131°37.290			-			☐ ☐	
66	JPS3	5	20:04	BE	ROS	—	52°33.210	131°29.940	325		—	—	SP	☒ ☐	Altitude 98 below 10m
			20:10	BO			°33.230	°29.960		320	-			☐ ☐	
			20:16	EN			°33.240	°29.940			-			☐ ☐	
67	JPS5	5	21:33	BE	ROS	—	52°31.430	131°18.960	242		—	—	SP	☒ ☐	
			21:37	BO			°31.420	°18.980		240	-			☐ ☐	
			21:41	EN			°31.420	°18.990			-			☐ ☐	
68	JPS6	5	22:27	BE	ROS	—	52°32.180	131°10.950	172		—	—	SP	☒ ☐	
			22:30	BO			°32.200	°10.920		169	-			☐ ☐	
			22:33	EN			°32.200	°10.910			-			☐ ☐	
			:				°	°			-			☐ ☐	

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 — =

Bottle Firing Method:

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 DN = Down / No stop

Notes:

Time Code:

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Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 20 April 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>August</u>				Year <u>2019</u>			Vessel <u>Tully</u>			Cruise ID <u>2017-069</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
69	JP57	05	23:08	BE	NET		52°33.940	131°06.220	135		-			☐ ☐	
			23:09	BO			52°33.937	131°06.234		125	-			☐ ☐	
			23:11	EN			52°33.940	131°06.239			-			☐ ☐	
70	JP57	05	23:22	BE	ROS	US	52°33.930	131°06.230	135		202-212	11	SP	☒ ☐	
			23:24	BO			°33.940	°06.230		131	-			☐ ☐	
			23:33	EN			°33.960	°06.200			-			☐ ☐	
71	MT05	06	05:12	BE	ROS		52°40.738	129°59.663		.	213-226	14	SR	☒ ☐	
			05:16	BO			°40.730	°59.670			-			☐ ☐	
			05:35	EN			°40.729	°59.642			-			☐ ☐	
72	MT05	06	05:38	DE	DRF		52°40.748	129°59.622	263		-		RH	☐ ☐	SCT 1037 Osker 0783 C/D 300234066031180
73	LOOP3	06	06:17	BE	LOOP		52°45.643	130°01.041	263		-			☐ ☐	
74	MT04	06	06:56	BE	ROS		52°49.080	130°01.810	261		-		SR	☒ ☐	
			07:01	BO			°49.070	°01.820		256	-			☐ ☐	
			07:06	EN			°49.070	°01.810			-			☐ ☐	
75	MT04	06	07:09	BE	DRF		52°49.140	°01.850	259	.	-		RH	☐ ☐	Drifter #'s →
76	MT03	06	08:14	BE	ROS		52°55.670	130°08.210	244		-		SR	☒ ☐	
			08:19	BO			°55.700	°08.240		240	-			☐ ☐	
			08:22	EN			°55.700	°08.240			-			☐ ☐	
77	MT03	06	08:25	BE	DRF		52°55.710	130°08.224			-		RH	☐ ☐	Drifters →

Event Type:

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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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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

MT-04 Drifter #'s

SCT's
1026, 1047 + 300234066037140

Code Davis

MT03 Drifters

SCT 1028 Osker 0745 CODE/Davis 300234066039160

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>August</u>			Year <u>2019</u>			Vessel <u>Tully</u>			Cruise ID <u>2019-069</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/Fl Cleaned	Comments
							Latitude	Longitude							
78	MT02	06	09:24	BE	ROS	/	53°01.957	130°14.797	218		-		SR	☒	
			09:28	BO			°02.030	°14.840		213	-			☐	
			09:32	EN			°02.083	°14.857			-			☐	
79	SRN1-B	06	:	RE	MOR		°	°			-			☐	
80	SRN	06	14:42	BE	ROS	US	53°6.540	130°23.280	205		-	24	SP	☒	- cast aborted
			:45	BO			°6.540	°23.280		201	-			☐	on upcast after
			:51	EN			°6.540	°23.280			-			☐	bot#3 (150m)
81	SRN1-3	6	16:23	DE	MOR		53°6.5612	130°23.3074			-			☐	due to hydraulic
82	W007	6	18:13	BE	ROS	-	53°15.490	130°40.760	191		-	24	SP	☒	leak.-CTD
			18:16	BO			°15.450	°40.740		188	-			☐	brought on deck
			18:21	EN			°15.420	°40.750			-			☐	for CARS servicing
83	JVAN2-1	5	16:48	DE	MOR		52°31.216	131°25.872	221		-		DS	☐	→
84	HECS1	6	19:33	BE	ROS	-	53°23.513	130°45.354	187		-		SP	☒	
			19:36	BO			°23.512	°45.362		183.5	-			☐	
			19:39	EN			°23.512	°45.358			-			☐	
85	HECS1	6	19:45	DE	DRF		53°23.653	130°45.408			-		SP/CH	☐	Set 1033 & 1040 Davis
86	HECS2	6	20:53	BE	ROS		53°31.860	130°43.050	186		-		SP	☒	# 300234066037170
			20:57	BO			°31.860	°43.080		182	-			☐	
			21:00	EN			°31.880	°43.100			-			☐	

Event Type:

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=

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

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

Aug 06, 2019

Hull Transducer

1318 Enabled Release S/N 736 by Sending 16B2. Received Range of 338,336 Moved
to new position 266,266
to 3rd Position 345,343

- wait For 1400

1348 - Enabled 733 sending 16B3 321,318

1404 - 296

1410 Send Release For 733 16B3+1655 295295 No "executed"

- on surface

- Event 80

Aug 6/19 - Leak detected on LARS crane on upward cast ~ 150m. CTD brought to
SP service and on deck immediately. All bottles tripped so fluid from leak
would not get into bottles. No samples taken at SPV.
- Leak fixed and test cast to 10m was performed to evaluate leak
repair.

Aug 6/19 - Event 82

SP

- all bottles tripped to avoid hydraulic fluid entering - No samples taken
- Leak from crane appeared again on upcast.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>August</u>			Year <u>2019</u>			Vessel <u>Tully</u>			Cruise ID <u>2019-069</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
87	HECS2	6	21:03	DE	DRF		53°31.882	130°43.093			-		DS/LP	☐ ☐	→
88	HECS3	6	22:21	BE	ROS	—	53°41.833	130°42.913	140		—	—	SP	☒ ☐	Seasave crashed Restarted seasave
			22:23	BO			°41.840	°42.920		137	-			☐ ☐	
			22:26	EN			°41.840	°42.930			-			☐ ☐	
89	HECS4	6	23:34	BE	ROS	US	53°48.220	130°49.430	115		240-251	12	SP	☒ ☐	
			23:36	BO			°48.220	°49.440		112	-			☐ ☐	
			23:45	EN			°48.210	°49.470			-			☐ ☐	
90	HECS5	7	01:36	BE	ROS	—	53°56.164	131°0.276	89		—	—	SP	☒ ☐	
			01:38	BO			°56.165	°0.244		85	-			☐ ☐	
			01:39	EN			°56.170	°0.230			-			☐ ☐	
91	HECS6	07	03:52	BE	ROS	/	54°07.530	131°02.380	102		/	/	SR	☒ ☐	
			03:54	BO			°07.530	°02.380		108	-			☐ ☐	
			03:56	EN			°07.530	°02.380			-			☐ ☐	
92	HECS7	07	05:12	BE	ROS	US	54°13.640	131°01.970			252-263	12	SR	☐ ☐	
			05:15	BO			°13.630	°01.980			-			☐ ☐	
			05:25	EN			°13.650	°01.930			-			☐ ☐	
93	HECS8	07	07:17	BE	ROS	US	54°23.250	131°05.580	121		264-275	12	SR	☒ ☐	
			07:21	BO			°23.270	°05.590		117	-			☐ ☐	
			07:30	EN			°23.280	°05.590			-			☐ ☐	

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 *

87

SCT = 1038

CODE/DAVIS = 3002 34066 924920

OSKer = 0784

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>August</u>			Year <u>2019</u>			Vessel <u>Tully</u>			Cruise ID <u>2019-069</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
94	LOOP 4	07	08:12	BE	LOOP		54° 22.111	130° 59.942	57		5094-5094		SR	☐	
95	CH 14	07	09:34	BE	ROS	US	54° 20.460	130° 49.657	134		276-288	13	SR	☒	
			09:37	BO			° 20.450	° 49.656		130	-			☐	
			09:47	EN			° 20.408	° 49.625			-			☐	
96	CH 15	07	10:42	BE	ROS	US	54° 18.240	130° 42.490	190		289-297	9	SR	☐	
			10:46	BO			° 18.220	° 42.440		186	-			☐	
			10:57	EN			° 18.180	° 42.410			-			☐	
97	CH 13	07	11:43	BE	ROS	US	54° 23.110	130° 38.950	157		298-306	9	SR	☒	
			11:47	BO			° 23.120	° 38.870		154	-			☐	
			11:57	EN			° 23.180	° 38.850			-			☐	
98	CH 10	07	12:31	BE	ROS	US	54° 26.842	130° 39.167	88		307-314	8	SR	☒	
			12:33	BO			° 26.833	° 39.162		83	-			☐	
			12:41	EN			° 26.808	° 39.168			-			☐	
99	CH 4	07	13:32	BE	ROS	US	54° 32.480	130° 43.520	92		315-322	8	SR	☒	
			13:35	BO			° 32.480	° 43.520		88	-			☐	
			13:42	EN			° 32.510	° 43.450			-			☐	
100	CH 5	07	14:19	BE	ROS	US	54° 33.680	130° 37.630	144		323-335	13	SP	☒	
			14:22	BO			° 33.680	° 37.650		140	-			☐	
			14:32	EN			° 33.710	° 37.630			-			☐	

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 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

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 MR = Messenger Release Time
 RE = Recover Mooring Time

Produced by the Water Properties Group, IOS

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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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/FI Cleaned	Comments
							Latitude	Longitude							
101	CH06	07	15:07	BE	ROS	—	54°34.944	130°32.038	251		336-347	10	SP	☒	cast aborted
			:	BO			°	°		1.5	-			☐	due to SAR
			:	EN			°	°			-			☐	call →
102	CH07	07	17:29	BE	ROS	VS	54°31.580	130°30.930	90		348-355	8	SP	☒	
			17:31	BO			°31.608	°30.966		85	-			☐	
			17:38	EN			°31.614	°30.980			-			☐	
103	CHAT3-1	07	:	DE	MOR		54°31.638	130°32.476		163	-			☐	
104	Chat 3	07	18:26	BE	ROS	US	54°31.588	130°32.591	162		369-381	13	SP	☒	
			18:29	BO			°31.588	°32.588		157	-			☐	
			18:39	EN			°31.588	°32.588			-			☐	
105	CH08	07	19:18	BE	ROS	US	54°31.220	130°35.020	137		356-368	13	SP	☒	
			19:20	BO			°31.217	°35.032		133	-			☐	
			19:30	EN			°31.226	°35.026			-			☐	
106	CH11	07	20:17	BE	ROS	US	54°26.970	130°33.020	130		382-392	11	SP	☒	
			20:19	BO			°26.980	°33.030		126	-			☐	
			20:26	EN			°26.980	°33.050			-			☐	
107	CH12	07	21:24	BE	ROS	US	54°23.700	130°33.910	143		393-405	13	SP	☒	
			21:26	BO			°23.690	°33.870		135	-			☐	
			21:37	EN			°23.680	°33.850			-			☐	

Event Type:

BOT = Bottle cast (no CTD)
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Produced by the Water Properties Group, IOS

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Notes:

event 101.

CTD deployed to the surface only. Before downcast SAR call came in, and CTD brought on deck. File contains a few mins of surface CTD data. No bottles fired.

No samples for IDs #336-347

DAILY SCIENCE LOG

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Month AUGUST				Year 2019		Vessel TULLY				Cruise ID 2019-069					
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
							Latitude	Longitude							
108	CHATZ-A	07	23:30	RE	MOR		°	°			-			☐	
109	CHATZ	07	23:49	BE	ROS	US	54°15.780	130°46.410	192		427-441	15	SP	☒	* see note →
			23:52	BO			54°15.780	130°46.410		188	-			☐	
			00:04	EN			°15.780	°46.410			-			☐	
110	CHATZ-2	08	:	DE	MOR		54°15.800	130°46.710	196		-			☐	
111	CH16	08	02:06	BE	ROS	US	54°19.820	130°37.500	215		413-426	14	SR	☒	
			02:11	BO			°19.830	°37.510		210	-			☐	
			02:24	EN			°19.860	°37.520			-			☐	
112	CH17	08	03:16	BE	ROS	US	54°20.390	130°33.210	93		406-412	7	SR	☒	
			03:18	BO			°20.400	°33.220		88	-			☐	
			03:27	EN			°20.410	°33.240			-			☐	
113	CH18	08	04:32	BE	ROS	US	54°16.470	130°29.280	41		467-472	6	SR	☒	
			04:33	BO			°16.470	°29.290		36	-			☐	
			04:39	EN			°16.500	°29.310			-			☐	
114	CH19	08	05:27	BE	ROS	US	54°15.244	130°35.652	89		457-466	10	SR	☒	
			05:29	BO			°15.246	°35.651		84	-			☐	
			05:37	EN			°15.268	°35.693			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	

Event Type:

BOT = Bottle cast (no CTD)
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Bottle Firing Method:

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Notes:

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Aug 7/2019 CHAT2-A Recovery

2251	sent	16EE;	range	627;	
2254	"	"	"	308 263, 248, 234, 227	(still transiting)
2257	"	"	"	254, 256, 259	
2300	"	"	"	232, 228, 230, 226	
2304	sent	release	code	262, ⊕ response	
			1655		

Event 109. a lot of near surface flocculant at CTD site CHAT2
SJP

DAILY SCIENCE LOG

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Month <u>August</u>			Year <u>2019</u>			Vessel <u>Tully</u>			Cruise ID <u>2019-069</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
115	CH20	08	06:42	BE	ROS	US	54°13.660	130°43.850	158		492-501	10	SR	☒	
			06:45	BO			°13.660	°43.860		153	-			☐	
			06:58	EN			°13.660	°43.900			-			☐	
116	CH21	08	07:40	BE	ROS	US	54°11.820	130°39.389	124		502-514	13	SR	☒	
			07:43	BO			°11.820	°39.364		120	-			☐	
			07:53	EN			°11.830	°39.300			-			☐	
117	CH22	08	08:36	BE	ROS	US	54°10.001	130°34.908	130		515-522	8	SR	☒	
			08:40	BO			°10.000	°34.919		125	-			☐	
			08:48	EN			°9.990	°34.930			-			☐	
118	CH24	08	09:18	BE	ROS	US	54°7.580	130°34.220	90		523-528	6	SR	☒	
			09:21	BO			°7.580	°34.230		86	-			☐	
			09:26	EN			°7.610	°34.300			-			☐	
119	CH25	08	10:14	BE	ROS	US	54°8.840	130°26.330	117		529-541	13	SR	☒	
			10:16	BO			°8.850	°26.360		112	-			☐	
			10:25	EN			°8.890	°26.480			-			☐	
120	CH26	08	11:07	BE	ROS	US	54°8.810	130°21.380	63		542-549	8	SR	☒	
			11:09	BO			°8.810	°21.400		58	-			☐	
			11:16	EN			°8.800	°21.400			-			☐	
			:				°	°			-			☐	

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Month <u>August</u>				Year <u>2019</u>		Vessel <u>Tully</u>				Cruise ID <u>2019-069</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/Fl Cleaned	Comments
121	CHAT1	08	13:41	BE	ROS		54°12.110	130°27.300	117		-	-	SR	☐ ☐	
			13:43	BO			°12.100	°27.300		112	-			☐ ☐	
			13:48	EN			°12.100	°27.310			-			☐ ☐	
122	CHAT1-A		:	RE	MOR		°	°			-			☐ ☐	
123	CHAT1	08	15:28	BE	ROS	US	54°12.095	130°27.365	116		474-491	18	SP	☒ ☐	
			15:30	BO			°12.096	°27.365		110	-			☐ ☐	
			15:38	EN			°12.097	°27.365			-			☐ ☐	
124	PRHR74	08	16:41	BE	ROS	US	54°13.510	130°21.090	40		558-568	11	SP	☒ ☐	
			16:42	BO			°13.507	°21.089		36.5	-			☐ ☐	
			16:47	EN			°13.507	°21.090			-			☐ ☐	
125	CH23	08	17:31	BE	ROS	US	54°11.430	130°23.450	102		550-557	8	SP	☒ ☐	
			17:33	BO			°11.430	°23.440		97.5	-			☐ ☐	
			17:40	EN			°11.430	°23.440			-			☐ ☐	
126	CHAT1-2	08	18:35	DE	MOR		54°12.058	130°20.086	122		-		DS	☐ ☐	
127	CH27	08	20:02	BE	ROS	US	54°6.600	130°16.510	48		569-579	11	SP	☐ ☐	
			20:03	BO			°6.570	°16.510		44	-			☐ ☐	
			20:09	EN			°6.560	°16.540			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Aug 8, 2019 CHATI-A mooring recovery

This page is for any notes or observations

1340 - Rosette underway Send 16ED through hull transducer - no response

1353 - dunking transducer - no response, one range of 1323

1400 - move closer to location - no response

1405 - pinger receiver - nothing heard

1407 - go 1 km west

1414 - 1023 1023 1020 1003

- move to another location

1424 - 1372 1374 1377

- move to southern crossing of Rang

1437 - no response

1445 - 249 through hull transducer 139 119 148 169

1451 - 255 234 217 206 199

1454 - Send 16ED + 165S 202 no response

- dunking transducer 16ED + 165S 222 220 - on surface one ball only

08-Aug/19

1940 - Rhib launched for Skeena R. sampling Sophie/Allison Oliver/Lindsay Marzetti

2320 - Rhib returns

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Month <u>AUGUST</u>			Year <u>2019</u>		Vessel <u>TULLY</u>		Cruise ID <u>2019-069</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							
128	MP55	08	21:03	BE	ROS	US	54° 4.180	130° 15.980	106		580-591	13	SP	☒	
			21:05	BO			° 4.190	° 15.980		102.5	-			☐	
			21:14	EN			° 4.190	° 15.910			-			☐	
129	CH29	08	21:47	BE	ROS	US	54° 1.930	130° 14.070	85		592-600	9	SP	☒	- strong current at station
			21:49	BO			° 1.980	° 14.080		80	-			☐	
			21:56	EN			° 2.010	° 14.120			-			☐	
130	OGCH50	08	22:41	BE	ROS	US	53° 59.450	130° 12.480	133		601-611	11	SP	☒	
			22:44	BO			° 59.440	° 12.460			-			☐	
			22:53	EN			° 59.440	° 12.460			-			☐	
131	OGCH46	08	23:33	BE	ROS	US	53° 55.484	130° 13.115	150		622-635	14	SP	☒	
			23:36	BO			° 55.482	° 13.104		146	-			☐	
			23:45	EN			° 55.484	° 13.141			-			☐	102
132	OGCH46	08	23:47	DE	DRF		53° 55.484	130° 13.141			-		DS/LP	☐	1029 : 1045 SET
133	OGCH43	09	00:43	BE	ROS	US	53° 54.040	130° 15.810	358		-	-	SP	☒	
			00:50	BO			° 54.070	° 15.830		352	-			☐	
			00:56	EN			° 54.080	° 15.850			-			☐	
134	GRC43	09	01:47	BE	ROS	US	53° 54.290	130° 8.620	89		612-621	10	SP	☒	
			01:49	BO			° 54.300	° 8.640		86	-			☐	
			02:00	EN			° 54.290	° 8.620			-			☐	

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Month <u>August</u>			Year <u>2019</u>			Vessel <u>Tully</u>			Cruise ID <u>2019-069</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
135	GRC38	09	02:55	BE	ROS	/	53°50.860	130°01.800	169		-	1	SR	☒ ☐	Bottle #1
			02:58	BO			°50.860	°01.800		164	-			☐ ☐	tripped for
			03:02	EN			°50.840	°01.790			-			☐ ☐	Skena sample
136	GRC23	09	05:03	BE	ROS	/	53°39.472	129°45.439	126		-	1	SR	☒ ☐	same as GRC38↑
			05:06	BO			°39.456	°45.422		123	-			☐ ☐	
			05:09	EN			°39.445	°45.403			-			☐ ☐	
137	GRC06	09	06:58	BE	ROS	/	53°26.640	129°26.870	343		-		SR	☒ ☐	
			07:04	BO			°26.640	°26.850		339	-			☐ ☐	
			07:09	EN			°26.640	°26.860			-			☐ ☐	
138	GRC00	09	07:53	BE	ROS	/	53°22.560	129°20.460	240		-		SR	☒ ☐	
			07:58	BO			°22.550	°20.450		235	-			☐ ☐	
			08:02	EN			°22.540	°20.440			-			☐ ☐	
139	DOUG45	09	08:51	BE	ROS	/	53°22.220	129°11.630	460		-	1	SR	☒ ☐	Bottle 1 for
			08:59	BO			°22.190	°11.590		456	-			☐ ☐	Skena sample
			09:08	EN			°22.210	°11.570			-			☐ ☐	+ Drifters →
140	DOUG45	09	09:12	DE	DRF	/	53°22.260	°11.700	436	surf	-		RH	☐ ☐	
141	LP48	09	10:11	BE	ROS	/	53°17.180	129°17.130	548		-		SR	☒ ☐	
			10:21	BO			°17.210	°17.170		543	-			☐ ☐	
			10:30	EN			°17.260	°17.200			-			☐ ☐	

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Drifters # 0816 0790 SCT 1027, 1049

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Month <u>August</u>			Year <u>2019</u>			Vessel <u>Tully</u>			Cruise ID <u>2019-069</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/Fl Cleaned	Comments
142	MKY1	09	11:40	BE	ROS	/	53° 17.802	129° 6.823	510		/	/	SR	☒	
			11:48	BO			° 17.806	° 6.833		500	-			☐	
			11:57	EN			° 17.826	° 6.850			-			☐	
143	GRC1-1	09	14:38	DE	MOR		53° 32.741	129° 37.010	95		-			☐	
144	GRC1	09	14:55	BE	ROS		53° 32.420	129° 36.460	115		-	1	SP	☒	1 bottle tipped for skipper sample at surface
			14:57	BO			° 32.430	° 36.480		111	-			☐	
			14:59	EN			° 32.460	° 36.520			-			☐	
145	PRC1	09	18:16	BE	ROS		53° 17.920	128° 53.360	452		-	2	SP	☒	bottle 1 & 2 tipped for skipper samples at surface
			18:24	BO			° 17.920	° 53.350		449	-			☐	
			18:31	EN			° 17.920	° 53.350			-			☐	
146	PRC1-1	09	20:04	DE	MOR		53° 17.887	128° 53.373	452		-		DS	☐	
147	PRC	09	20:	DE	DRF		53° 17.	128° 53.			-			☐	Drifter 105 →
148	MILB1	10	04:05	DE	DRF		52° 17.454	128° 31.803			-			☐	Drifter 105 →
149	CPE1	10	13:50	BE	ROS	/	50° 59.990	127° 50.060	140		/	/	SR	☒	pause @ 80m
			13:56	BO			51° 00.050	° 50.000		135	-			☐	for wire angle
			13:58	EN			° 00.060	° 49.970			-			☐	adjustment
150	CPE1	10	14:01	DE	DRF		51° 00.075	127° 49.860	156	0	-		RH	☐	1032 1034
151	LBA-1		:	RE	MOR		° .	° .			-			☐	
			:				° .	° .			-			☐	

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SCT# 1024, 1025

SCT# 1023, 1036, 1046

Osker: 0786

Osker 0789

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Month <u>August</u>			Year <u>2019</u>			Vessel <u>Tulip</u>			Cruise ID <u>2019-069</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							
152	LBA*	10	19:26	BE	ROS	—	50°56.230	127°41.280	330		—	—	SP	☒	-station for LBA-1 remains
			19:31	BO			°56.228	°41.278		339	-			☐	
			19:37	EN			°56.228	°41.278			-			☐	
153	LBA	10	20:07	BE	ROS	—	50°54.011	127°38.441	449		—	—	SP	☒	actual mooring LBA-2 station
			20:15	BO			°54.006	°38.431		445	-			☐	
			20:23	EN			°54.005	°38.430			-			☐	
154	LBA-2	10	:	DE	MOR		°	°			-			☐	
155	LBB-1	10	:	RE	MOR		°	°			-			☐	
156	LBB	10	22:57	BE	ROS	—	50°50.540	127°43.010	345		-		SP	☒	
			23:04	BO			°50.540	°43.010		342	-			☐	
			23:10	EN			°50.540	°43.010			-			☐	
157	LBB-2		:	DE	MOR		°	°			-			☐	
158	QCS3	11	02:04	BE	ROS		50°43.770	127°15.030	216		—	—	SR2	☒	
			02:08	BO			°43.760	°15.040		214	-			☐	
			02:14	EN			°43.770	°15.030			-			☐	
159	QCS3	11	02:23	BE	NET		50°43.767	127°15.022	215		-		CW	☐	
			02:30	BO			°43.768	°15.001		205	-			☐	
			02:34	EN			°43.767	°14.988			-			☐	
160	LOOP5	11	03:40				50°41.767	127°57.653			-			☐	

Event Type:

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NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

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

Time Code:

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Notes:

Aug 10, 2019 LBAI Mooring remains

1450 - Send 1A2C 390 388

1454 - 384 384

1457 - 424 420 415 411

1501 - 398 387

15102 Send 1A2C + 1A55

received & Executed

1513 - 1A2C + 1A55

received & executed

- 1A2C + 1A55

received & executed - probably tangled

- 465 460

1524 - 389 435 432 425 416 412 405 397 386 382 379 375 371 369 368 366 362

1527 - 362 359 359 358 359 359 362 365

✓ - Send 1A2C + 1A55 387 389 received & executed

- Set up for drag

Commence drag

1600 - on bottom

1724 - start hauling back in

1810 - Surface tangled on cable @ 500m out damaged cable

1900 - untangled dragging cable all back on winch

- glass sponge on final hook

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>August</u>			Year <u>2019</u>		Vessel <u>Tully</u>			Cruise ID <u>2019-069</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
161	QCS1	11	04:32	BE	ROS	/	50°46.000	126°46.322	158		/	/	SR	☒	
			04:35	BO			°40.015	°46.297		153	-			☐	
			04:38	EN			°40.022	°46.284			-			☐	
162	QCS1	11	04:47	BE	NET		50°40.019	126°46.285	158		-			☐	
			04:51	BO			°40.021	°46.280		148	-		CW	☐	
			04:54	EN			°40.017	°46.270			-			☐	
163	QCS1	11	04:59	DE	DRF		50°40.008	126°46.243	150	Ø	-		SR	☐	#1048
164	JS1	11	06:26	BE			50°32.960	126°46.160	459		/	/	SR	☒	pause @ 80m
			06:36	BO			°32.980	°46.190		454	-			☐	for wire angle
			06:44	EN			°32.990	°46.170			-			☐	correction
165	JS8.5	11	10:04	BE	ROS		50°24.490	125°56.700	135		/	/	SR	☒	
			10:06	BO			°24.510	°56.750		132	-			☐	
			10:08	EN			°24.520	°56.750			-			☐	
166	NORTH AJAX	11	18:45	RE	MOR		49°43.730	124°46.390	265		-		SP	☐	Viking buoy →
167	NORTH AJAX	11	19:45	DE	MOR		49°43.730	124°46.390	265		-		SP	☐	→
168	NORTH AJAX	11	20:04	BE	ROS	/	49°43.454	124°46.032	255		/	/	SP	☒	
			20:09	BO			°43.450	°46.060		250	-			☐	
			20:13	EN			°43.450	°46.080			-			☐	
			:				°	°			-			☐	

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Aug 10, 2019 LBB-1 Mooring recover

This page is for any notes or observations

2207 - approaching station

- send 1A2A 888 ... 785 ... 510 482

2211 - 381 370 369 370 372 379

2216 - 385 385 relocate

2218 - 391 ... 403

2220 - 453

2221 - Send 1A2A + 1A55 477 478 executed

- on Surface

Event 166

- Recovery of North Ajax buoy at North Ajax station

Event 167

- Deployment of West Flakai labelled Viking buoy at North Ajax station. Anchor was not moved

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page ____ of ____

Month <u>August</u>			Year <u>2019</u>			Vessel <u>Tully</u>			Cruise ID <u>2019-069</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/Fl Cleaned	Comments
169	CPF2	11	22:48	BE	ROS	US	49°28.080	124°30.190			636-646	11	SR	☒	
			22:56	BO			°28.080	°30.210			-			☐	
			23:13	EN			°28.070	°30.220			-			☐	
170	CPF2	11	23:23	BE	NET		49°28.58	124°30.52	352	250	-		CW,TF	☐	
			23:33	BO			49°28.006	124°30.502			-			☐	
			23:36	EN			49°28.04	124°30.66			-			☐	
171	LOOP6	11	23:48		LOOP		49°27.808	124°29.964			5171-		SR	☐	2chl + 1sal
			:				°	°			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	
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			:				°	°			-			☐	
			:				°	°			-			☐	

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