

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2020-028

DATE:

From: 16 JUNE 2020

To: 22 JUNE 2020

VESSEL:

JOHN P TULLY

PROJECT(S):

SOG / JdF WATER PROPERTIES
SURVEY

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

WaterProperties.ca

Captain: VICTOR GRONMYR First Officer: SIMON CLARKE
Second Officer: ALISTAIR BUTT Third Officer: OLIVER ATEAH
Fishing Master: _____ Chief Engineer: STUART BURSAW

Mission Participants / Agencies:

DFG - IOS

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

1st Leg Scientific Personnel:

Chief Scientist: MARIE ROBERT 06-18 A

Name	Watch	Cabin	Name	Watch	Cabin
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<u>HAYLEIGH SHANNON</u>	<u>12-24</u>	<u>C</u>			
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<u>GLENN COOPER</u>	<u>12-24</u>	<u>D</u>			
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<u>SCOTT ROSE</u>	<u>00-12</u>	<u>E</u>			
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<u>MOIRA GALBRAITH</u>	<u>00-12</u>	<u>F</u>			
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<u>JULIAN SMITH</u>	<u>00-12</u>	<u>G</u>			
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<u>KENNY SCOZZAFAVA</u>	<u>12-24</u>	<u>H</u>			
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2nd Leg Scientific Personnel:

Chief Scientist: _____

Name	Watch	Cabin	Name	Watch	Cabin
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**** 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: 880E model: 11+ serial number: 0425

Primary CTD

Make: 880E 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: Wetlabs Model: C-Star s/n: 1185DR

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

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

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

Oxygen sensor: SPBE Model: 43 s/n: 3791 P S or NO pump?

PAR sensor: Biospherical Model: QSP2350 s/n: 7043 Surface PAR? Y N

Other sensors: pH s/n: 0692 P, S or NO pump?

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

Other sensors: Altimeter s/n: 62355 P, S or NO pump?

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

Secondary CTD

Make: _____ model: _____ serial number: _____

Primary temperature serial number: _____

Primary conductivity serial number: _____

Secondary temperature serial number: _____

Secondary conductivity serial number: _____

Transmissometer: _____ Model: _____ s/n: _____

Transmissometer: _____ Model: _____ s/n: _____

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

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

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

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

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

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

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

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

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

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>June</u>			Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-028</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
01	SE	18	01:46	BE	ROS	us	48°39.550	123°30.040	175		1-4	4	SR	☐ ☐	Trans not cleaned
			01:49	BO			°39.550	°30.040		130	-			☐ ☐	
			01:56	EN			°39.550	°30.040			-			☐ ☐	
02	24	18	11:14	BE	ROS	✓	49°30.320	124°5.900			-			☐ ☐	Pause @ 150 to test
			11:21	BO			°30.330	°5.910		420	-		SR	☒ ☐	Salinity alignment
			11:30	EN			°30.320	°5.820			-			☐ ☐	
03	24	18	11:49	BE	NET	✓	49°30.154	124°5.677	425		-		MG	☐ ☐	
			12:03	BO			°30.129	°5.658		415	-			☐ ☐	
			12:10	EN			°30.120	°5.650			-			☐ ☐	
04	22	18	13:51	BE	NET	✓	49°40.191	124°16.372	355		-		MG	☐ ☐	
			14:03	BO			°40.186	°16.349		345	-			☐ ☐	
			14:09	EN			°40.179	°16.349			-			☐ ☐	
05	22	18	14:17	BE	NET	✓	49°40.174	124°16.332			-			☐ ☐	
			14:19	BO			°40.175	°16.325			-			☐ ☐	
			14:24	EN			°40.176	°16.315			-			☐ ☐	
06	22	18	14:33	BE	ROS	us	49°40.190	124°16.290			5-8	4	SR	☒ ☐	
			14:39	BO			°40.172	°16.279		346	-			☐ ☐	
			14:47	EN			°40.151	°16.255			-			☐ ☐	
07	Loop 07	18	:		Loop		49°50.244	124°34.5258	206	4.5	-		MG	☐ ☐	CTD service

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
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Bottle Firing Method:

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

Notes:

Time Code:

BE = Beginning Time of Cast
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CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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Produced by the Water Properties Group, IOS

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The primary pump was replaced after cost 06. SR

DAILY SCIENCE LOG

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Month			June		Year		2020		Vessel		Tully		Cruise ID		2020-028		Page 2 of 2	
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			
08	19	18	18:29	BE	ROS	US	50° 0.940	124° 52.626	262		9 - 9	1	SR	☒	Paused @ 152m			
			18:37	BO			° 0.930	° 52.580		257	-			☐	to reset sounder			
			18:43	EN			° 0.910	° 52.530			-			☐				
09	18	18	19:45	BE	ROS		49° 59.260	124° 58.860	140		-	/	GC	☒				
			19:48	BO			49° 59.260	124° 58.850		135	-			☐				
			19:51	EN			49° 59.260	124° 58.810			-			☐				
10	Qu-39	18	20:38	BE	NET		50° 01.857	125° 05.855	274		-		GC/HS/KS	☐	Miscommunication			
			20:46	BO			50° 01.88	125° 05.90		169	-	/		☐	+ went only to 169			
			20:50	EN			50° 01.88	125° 05.91			-			☐	instead of 269			
11	Qu-39	18	21:30	BE	ROS		50° 01.840	125° 05.930	271		10 - 13	4	GC	☒				
			21:35	BO			50° 01.830	125° 05.920		265	-			☐				
			21:45	EN			50° 01.860	125° 05.930			-			☐				
12	17	18	22:28	BE	ROS		49° 58.840	125° 04.340	262		-	/	GC	☒				
			22:33	BO			49° 58.850	125° 04.340		28	-			☐				
			22:38	EN			49° 58.850	125° 04.340			-			☐				
13	16	18	23:29	BE	ROS		49° 57.704	125° 08.790	155		14 - 23	10	GC	☒				
			23:33	BO			49° 57.710	125° 08.820			-			☐				
			23:49	EN			49°	125°			-			☐				
14	16		23:49				49° 57.710	125° 08.86	155		- 24	1	GC	☐				
Event Type: LOOP = Sea Water Loop Bottle Firing Method: Firing F																		

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Produced by the Water Properties Group, IOS

WaterProperties.ca
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Problems with A frame, sample hanging while pump reset for about 30 mins.

Event 13, station 16: the computer self-rebooted @ surface at the end.
File 0014 was to close Mission 11.

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15	12	19	5:10	BE	NET		49° 43.641	124° 40.905	358		-	/	GC	☐ ☐	Lost ~15 mins due
			5:22	BO			49° 43.642	124° 40.931		353	-			☐ ☐	to ship troubles.
			5:31	EN			49° 43.671	124° 40.972			-			☐ ☐	→
16	12	19	5:42	BE	ROS.	US	49° 43.720	124° 40.940	359		25-40	16	GC	☒ ☐	
			5:51	BO			49° 43.730	124° 40.890		349	-			☐ ☐	
			6:14	EN			49° 43.690	124° 40.860			-			☐ ☐	
17	11	19	07:08	BE	ROS	/	49° 42.390	124° 43.260	299		-	/	SR	☐ ☐	Trans not clean
			07:13	BO			° 42.393	° 43.245		297	-			☐ ☐	
			07:18	EN			° 42.396	° 43.236	1		-			☐ ☐	
18	10	19	07:50	BE	ROS	/	49° 40.680	124° 47.300	93		-	/	SR	☒ ☐	
			07:53	BO			° 40.650	° 47.230		88	-			☐ ☐	
			07:54	EN			° 40.650	° 47.220			-			☐ ☐	
19	9	19	08:56	BE	ROS	US	49° 35.460	124° 38.210	171		41-52	12	SR	☒ ☐	
			09:00	BO			° 35.460	° 38.210		166	-			☐ ☐	
			09:13	EN			° 35.440	° 38.220			-			☐ ☐	
20	8	19	09:56	BE	ROS	/	49° 39.220	124° 33.090	334		-	/	SR	☒ ☐	
			10:02	BO			° 39.220	° 33.110		330	-			☐ ☐	
			10:06	EN			° 39.230	° 33.140			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Produced by the Water Properties Group, IOS

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Lost several stations

Station 13 cancelled, Deck unit not talking to Campbell.

Cleaning all cables

- Windows automatic update on initial computer.
- Error message: Data acquisition Controller Failed to initialize water sampling or pump control.

First at 18:10

- All connectors cleaned and connected, Found 4 loose connectors, same error message.
- Checked pylon with replacement pylon, same error message.
- by passed termination via direct connection with cheater sea cable from deck unit to Fish.
- Swaped CTD to rule out using cheater sea cable.
- • Swaped pumps, same error.
- Tested different deck unit, same error.
- Tried to test dif. computer NOT CONFIGURED or GPS gone.
- Woke up Scott from sleep.
- Tried new pylon cable with fresh Pylon and original CTD unit.
- Tried very old computer - seems to work!

In summary: The windows update did something to the computer which caused the error. The backup computer was not fully configured + ∴ easier to re-establish connection with an old computer that Scott Rose had

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Month <u>June</u>				Year <u>2020</u>		Vessel <u>Tully</u>			Cruise ID						
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21	7	19	11:22	BE	ROS	/	49° 34.360	124° 24.330	353		/	/	SR	☒	
			11:29	BO			° 34.380	° 24.330		345	-			☐	
			11:34	EN			° 34.400	° 24.350			-			☐	
22	6	19	12:25	BE	ROS	US	49° 30.740	124° 27.600	194		53-65		SR	☒	
			12:29	BO			° 30.740	° 27.620		187	-			☐	
			12:43	EN			° 30.740	° 27.590			-			☐	
23	CPF2	19	13:15	BE	ROS	/	49° 28.020	124° 29.990	322	322	/	/	SR	☒	
			13:21	BO			49° 28.03	124° 29.96	328	328	-			☐	
			13:25	EN			49° 28.04	124° 29.96			-			☐	
24	CPF2	19	13:35	BE	NET		49° 28.04	124° 29.94	328		-		MG	☐	
			13:45	BO			° 28.018	° 29.925		320	-			☐	
			13:52	EN			° 27.967	° 29.882			-			☐	
25	3	19	14:56	BE	ROS	US	49° 26.657	124° 20.398	324		66-81	16	SR	☒	
			15:02	BO			° 26.664	° 20.365		319	-			☐	
			15:20	EN			° 26.690	° 20.442			-			☐	
26	4	19	16:05	BE	ROS	/	48° 24.580	124° 22.140	346		/	/	SR	☒	
			16:09	BO			° 24.560	° 22.140		341	-			☐	
			16:14	EN			° 24.550	° 22.150			-			☐	
			:				°	°			-			☐	

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Month June				Year 2020		Vessel Tully				Cruise ID 2020-028					
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
27	1	19	17:22	BE	ROS	/	49° 20.365	124° 12.178	249		/	/	SR	☒	
			17:26	BO			° 20.369	° 12.186		241	-			☐	
			17:30	EN			° 20.363	° 12.206			-			☐	
28	2	19	18:13	BE	ROS	US	49° 24.070	124° 9.410	278		82-96	15	SR	☐	
			18:17	BO			° 24.080	° 9.420		273	-			☐	
			18:34	EN			° 24.100	° 9.460			-			☐	
29	25	19	19:25	BE	ROS	/	49° 27.820	124° 07.320	289		-		GC	☒	
			19:31	BO			49° 27.830	124° 07.360		276	-			☐	
			19:37	EN			° 27.830	° 07.370			-			☐	
30	CPFI	19	20:37	BE	NET		49° 22.095	124° 05.230	248		-		HS	☐	
			20:45	BO			° 22.085	° 05.200		243	-			☐	
			20:51	EN			° 22.077	° 05.174			-			☐	
31	CPFI	19	21:05	BE	ROS	/	49° 22.064	124° 05.137	247		-		GC	☒	
			21:10	BO			49° 22.070	124° 05.171		240	-			☐	
			21:15	EN			° 22.075	° 05.196			-			☐	
32	28	19	23:08	BE	NET	/	49° 24.060	123° 45.505	135		-		HS	☐	
			23:12	BO			° 24.056	° 45.493		129	-			☐	
			23:16	EN			° 24.049	° 45.486			-			☐	
			:				°	°			-			☐	

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Month <u>June</u>				Year <u>2020</u>		Vessel <u>Tully</u>				Cruise ID <u>2020-028</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	Tms/FI Cleaned	Comments
33	28	19	23:27	BE	ROS		49° 24.036	123° 45.455	137		-	/	GC	☒	(-0.1/-0.2) ⇒
			23:31	BO			49° 24.035	123° 45.448		128	-			☐	Pressure Test
			23:34	EN			49° 24.032	123° 45.433			-			☐	cast for Germaine
34	27.5	20	00:17	BE	ROS	-	49° 21.91	123° 46.62	113		-	-	HR	☒	1.8 @ surf beg.
			00:20	BO			49° 21.91	123° 46.62		108	-	(1)		☐	5 off bottom
			00:22	EN			49° 21.91	123° 46.62			-			☐	Close 1 Niskin JUST TO CHECK
35	27	20	00:54	BE	ROS	US	49° 19.110	123° 48.020	350		97-112	16	GC	☒	
			01:01	BO			49° 19.090	123° 47.970		341	-			☐	
			01:26	EN			49° 19.050	123° 48.020			-			☐	
36	26.5	20	02:08	BE	ROS		49° 16.840	123° 49.380	424		-	/	GC	☒	
			02:15	BO			49° 16.820	123° 49.330		402	-			☐	
			02:22	EN			49° 16.820	123° 49.270			-			☐	
37	26	20	03:00	BE	ROS	-	49° 14.320	123° 50.820	258		-		GC	☒	
			03:06	BO			49° 14.330	123° 50.820		254	-			☐	
			03:10	EN			49° 14.330	123° 50.830			-			☐	
38	GEO1	20	03:50	BE	NET		49° 14.971	123° 44.831	406	428	-		HS	☐	Depth changed over
			04:04	BO			49° 14.955	123° 44.844		417	-			☐	cast from 406 → 428
			04:13	EN			49° 14.980	123° 44.887			-			☐	Mud grab so
			:				°	°			-			☐	radio →

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P65/

-0.3db.
-0.1/-0.2 when silver collar @ surface.
pressure offset. Changed configure file
2020-028 start.xmlcon

-1.7db @ CTD surface

Testing to determine
File names changed from.
Use this con file

pressure offset from -2.60 to -0.80.
to 2020-028 start - new Poffset.xmlcon.

Measured from pressure sensor to rig = 162 cm

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Month <u>June</u>			Year <u>2020</u>			Vessel <u>Tolly</u>			Cruise ID <u>2020-028</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							
39	GEO1	20	04:28	BE	NET		49° 15.000	123° 44.889	406		-		HS	☐	
			04:43	BO			49° 15.014	123° 44.908		395	-			☐	
			04:51	EN			49° 15.029	123° 44.893			-			☐	
40	GEO1	20	05:06	BE	ROS		49° 15.020	123° 44.910	406		113 - 116	4	GC	☒	
			05:13	BO			49° 15.030	123° 44.860		393	-			☐	
			05:25	EN			49° 15.020	123° 44.890			-			☐	
41	GEO1	20	05:33	BE	NET		49° 15.010	123° 44.920	406		-		HS	☐	
			05:36	BO			49° 15.020	123° 44.900		100	-			☐	
			05:39	EN			49° 15.020	123° 44.890			-			☐	
42	40	20	07:01	BE	NET		49° 08.659	123° 36.908	136		-		MG	☐	
			07:06	BO			° 08.687	° 36.854		126	-			☐	
			07:08	EN			° 08.707	° 36.834			-			☐	
43	40	20	07:19	BE	ROS		49° 8.720	123° 36.740	159		-		SR	☒	
			07:21	BO			° 8.720	° 36.720		153	-			☐	
			07:24	EN			° 8.720	° 36.690			-			☐	
44	39	20	07:56	BE	ROS	US	49° 9.847	123° 32.946	378		117 - 133		SR	☒	
			08:03	BO			° 9.869	° 32.915			-			☐	
			08:22	EN			° 9.908	° 32.849			-			☐	
			:				°	°			-			☐	

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DRF = Drifter
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Bottle Firing Method:

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

Notes:

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DAILY SCIENCE LOG

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Month <u>June</u>				Year <u>2020</u>		Vessel <u>Tully</u>			Cruise ID <u>2020-028</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
45	38	20	09:06	BE	ROS	/	49° 12.102	123° 26.417	307		/	/	SR	☒	
			09:11	BO			° 12.079	° 26.423		301	-			☐	
			09:15	EN			° 12.076	° 26.428			-			☐	
46	38	20	09:22	BE	NET		49° 12.054	123° 26.292	310		/	/	MB	☐	
			09:28	BO			° 12.094	° 26.220		305	-			☐	
			09:32	EN			° 12.138	° 26.188			-			☐	
47	37	20	10:07	BE	ROS	/	49° 13.676	123° 20.666	216		/	/	SR	☒	
			10:10	BO			° 13.710	° 20.626		210	-			☐	
			10:13	EN			° 13.715	° 20.603			-			☐	
48	41	20	11:30	BE	ROS	/	49° 3.254	123° 22.361	248		/	/	SR	☒	
			11:34	BO			° 3.268	° 22.361		242	-			☐	
			11:37	EN			° 3.276	° 22.366			-			☐	
49	42	20	12:06	BE	NET		49° 1.686	123° 26.260	325		/	/	MB	☐	
			12:12	BO			° 1.611	° 26.312		315	-			☐	
			12:16	EN			° 1.562	° 26.389			-			☐	
50	42	20	12:27	BE	ROS	US	49° 1.550	123° 26.540	328		134 - 150		SR	☒	
			12:33	BO			° 1.570	° 26.530		322	-			☐	
			12:52	EN			° 1.590	° 26.500			-			☐	
			:				° .	° .			-			☐	

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Month June			Year 2020			Vessel Tully			Cruise ID 2020-028						
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
51	43	20	13:33	BE	ROS	/	49° 0.200	123° 30.040	202		-	/	SR	☒	
			13:37	BO			° 0.200	° 30.060		178	-			☐	
			13:39	EN			° 0.200	° 30.070			-			☐	
52	109	20	14:29	BE	ROS	/	48° 56.370	123° 21.570	196		-	/	SR	☒	
			14:32	BO			° 56.340	° 21.470		190	-			☐	
			14:35	EN			° 56.320	° 21.410			-			☐	
53	46	20	15:29	BE	NET		48° 51.427	123° 10.492	170		-			☐	
			15:32	BO			° 51.407	° 10.463		165	-			☐	
			15:34	EN			° 51.392	° 10.451			-			☐	
54	46	20	15:42	BE	ROS	US	48° 51.378	123° 10.465	172		151-162		SR	☒	
			15:45	BO			° 51.370	° 10.469		167	-			☐	
			15:58	EN			° 51.465	° 10.400			-			☐	
55	45	20	16:29	BE	ROS	/	48° 53.770	123° 8.310	129		-	/	SR	☒	
			16:31	BO			° 53.740	° 8.270		125	-			☐	
			16:32	EN			° 53.710	° 8.220			-			☐	
56	44	20	17:13	BE	ROS	/	48° 56.730	123° 5.942	119		-	/	SR	☒	
			17:15	BO			° 56.725	° 5.939		113	-			☐	
			17:17	EN			° 56.725	° 5.929			-			☐	
57	LOOP 57	20	17:29	BE	LOOP	UN	48° 56.74	123° 03.881	113	4.8	-		MG	☐	

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Month <u>June</u>			Year <u>2020</u>		Vessel <u>Tully</u>			Cruise ID <u>2020-028</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
58	50	20	18:11	BE	ROS	/	48° 57.621	122° 56.165	26		/	/	SR	☒	
			18:11	BO			° 57.614	° 56.170			-			☐	
			18:12	EN			° 57.613	° 56.166			-			☐	
59	49	20	18:50	BE	ROS	/	48° 54.980	122° 59.40	130		/	/	BC	☒	
			18:54	BO			° 54.990	° 59.400		124	-			☐	
			18:56	EN			° 55.000	° 59.350			-			☐	
60	48	20	19:45	BE	ROS	/	48° 51.850	123° 03.300	210		/	/	GC	☒	
			19:49	BO			° 51.840	° 03.290		203	-			☐	
			19:52	EN			° 51.840	° 03.290			-			☐	
61	47	20	20:33	BE	ROS	/	48° 49.423	123° 06.216	188		/	/	GC	☒	
			20:37	BO			° 49.417	° 06.212		182	-			☐	
			20:41	EN			° 49.415	° 06.216			-			☐	
62	56	20	21:46	BE	ROS	US	48° 46.424	123° 01.910	190		163-176	X4	GC	☒	
			21:50	BO			48° 46.526	° 01.89		174	-	12		☐	
			22:04	EN			48° 46.94	123° 01.51			-			☐	
63	57	20	23:05	BE	ROS	/	48° 44.09	123° 07.80	160		/	/	MR	☒	SWITCH COMPASS
			23:08	BO			48° 44.10	123° 07.61	154	150	-			☐	t to UR →
			23:11	EN			48° 44.12	123° 07.41			-			☐	@ surface waiting
			:				°	°			-			☐	for deep-sea

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This page is for any notes or observations

p10.5/18.5

FUZZY FLUO SIGNAL

DAILY SCIENCE LOG

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Month <u>JUN</u>				Year <u>2020</u>		Vessel <u>TULLY</u>				Cruise ID <u>2020-028</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
64	57	20	23:18	BE	NET		48° 44.21	123° 06.83	135		/	/	HS	☐ ☐	Mini-B
			23:20	BO			48° 44.24	123° 06.73		50	-			☐ ☐	
			23:20	EN			48° 44.25	123° 06.68			-			☐ ☐	
65	58	21	00:17	BE	ROS	/	48° 42.98	123° 14.15	330		/	/	GC	☒ ☐	Fuzzy Fluo
			00:23	BO			48° 43.03	123° 13.92		322	-			☐ ☐	
			00:30	EN			48° 43.06	123° 13.65			-			☐ ☐	
66	G101	21	01:19	BE	NET	/	48° 45.88	123° 20.61	66		/	/	HS GC KS	☐ ☐	
			01:20	BO			48° 45.88	123° 20.61		60	-			☐ ☐	
			01:20	EN			48° 45.87	123° 20.60			-			☐ ☐	
67	G101	21	01:31	BE	ROS	/	48° 45.846	123° 20.585	67		-		GC	☒ ☐	
			01:34	BO			48° 45.840	123° 20.580		62	-			☐ ☐	
			01:36	EN			48° 45.840	123° 20.580			-			☐ ☐	
68	SC04	21	02:15	BE	NET	/	48° 43.415	123° 25.134	98		-		HS	☐ ☐	
			02:17	BO			48° 43.417	123° 25.131		93	-			☐ ☐	
			02:18	EN			48° 43.420	123° 25.130			-			☐ ☐	
69	SC04	21	02:32	BE	ROS		48° 43.450	123° 25.130	100		177-180	4	GC	☒ ☐	Cleaned all transducer connectors
			02:34	BO			48° 43.450	123° 25.130		95	-			☐ ☐	
			02:39	EN			48° 43.460	123° 25.130			-			☐ ☐	
			:				.	.			-			☐ ☐	

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Notes:

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Month June				Year 2020		Vessel Tully		Cruise ID 2020-02							
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
70	59	21	04:16	BE	NET	✓	48° 37.779	123° 14.611	231		-	-	HS	☐	Redo →
			04:19	BO			48° 37.785	123° 1.619		225	-			☐	
			04:21	EN			48° 37.800	123° 14.646			-			☐	↓
71	59	21	04:31	BE	NET	✓	48° 37.86	° 14.9	228		-	-	HS GC KS	☐	
			04:39	BO			48° 37.90	123° 14.71		223	-			☐	
			04:43	EN			4° 37.92	123° 14.72			-			☐	
72	59	21	05:00	BE	ROS	US	48° 37.820	123° 14.880	216		181-195	15	GC	☒	
			05:05	BO			48° 37.880	123° 14.880		207	-			☐	
			05:22	EN			48° 37.860	123° 14.880			-			☐	
73	60	21	06:06	BE	ROS	✓	48° 33.770	123° 13.150	307		-		GC	☒	learned Fluoro
			06:12	BO			48° 33.700	123° 13.180		294	-			☐	connectors still
			06:21	EN			48° 36.660	123° 3.350			-			☐	very foggy
74	61	21	07:16	BE	ROS	✓	48° 29.240	123° 9.120	224		-		SR	☒	
			07:20	BO			° 29.250	° 9.110		221	-			☐	
			07:23	EN			° 29.250	° 9.090			-			☐	
75	62	21	08:29	BE	ROS	US	48° 22.790	123° 2.790	151		196-206		SR	☒	FLU cable
			08:31	BO			° 22.800	° 2.740		146	-			☐	Service →
			08:42	EN			° 22.850	° 2.720			-			☐	Strange profile
			:				°	°			-			☐	

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Notes:

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We just experienced the most bomber COVID solstice vivid super rainbow.

P125/185

Net Event 70 was performed with very fast winch speeds ~ 1.5 m/s $\downarrow \uparrow$. It was determined that the winch was in high gear. Cast was redone. Glenn verified that winch readout was correct.

The Fluorometer cable was reseated due to a "Fuzzy" signal. It seemed better after. SRZ

From 100m - 75 m the up cast seemed odd, maybe a blockage? SRZ

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Month <u>June</u>				Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-028</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
76	63	21	10:07	BE	ROS	US	48° 14.690	122° 58.410	151		207-210	4	SR	☒	
			10:09	BO			° 14.690	° 58.440		146	-			☐	
			10:15	EN			° 14.730	° 58.470			-			☐	
77	63	21	10:22	BE	NET	-	48° 14.79	122° 58.66	151		-		MG	☐	Bowco
			10:26	BO			48° 14.82	122° 58.68		145	-			☐	
			10:28	EN			48° 14.845	122° 58.693			-			☐	mile
78	64	21	11:22	BE	ROS	/	48° 13.210	123° 5.940	115		-		SR	☒	1/4 North of
			11:24	BO			° 13.220	° 5.999		109	-			☐	64.
			11:25	EN			° 13.230	° 6.000			-			☐	
79	65	21	12:03	BE	ROS	US	48° 15.890	123° 10.025	130		211-220		SR	☒	
			12:06	BO			° 15.860	° 10.050		125	-			☐	
			12:15	EN			° 15.890	° 10.180			-			☐	
80	66	21	13:03	BE	ROS	/	48° 19.110	123° 14.420	107		-		SR	☒	
			13:05	BO			° 19.090	° 14.510		102	-			☐	
			13:09	EN			° 19.000	° 14.580			-			☐	
81	67	21	13:50	BE	ROS	/	48° 22.486	123° 17.988	112		-		SR	☐	
			13:52	BO			° 22.474	° 18.012		107	-			☐	
			13:54	EN			° 22.476	° 18.047			-			☐	
			:				°	°			-			☐	

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Month				Year		Vessel		Cruise ID							
June				2020		Tully		2020-028							
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
82	104	21	14:18	BE	ROS	/	48° 20.070	123° 18.121	84		/	/	SR	☒ ☐	Pause @ 70m
			14:22	BO			° 20.084	° 18.223		79	-			☐ ☐	for wire angle
			14:23	EN			° 20.084	° 18.253			-			☐ ☐	Cable change →
83	LOOP 83	21	14:38	BE	LOOP	/	48° 18.41	123° 18.45	98	4.5	/	/	MG	☐ ☐	1 SAL 2 CHL
84	ADCP	21	15:08	BE	ROS	US	48° 14.449	123° 18.317	110		221-230	10	SR	☒ ☐	
			15:10	BO			° 14.450	° 18.404		104	-			☐ ☐	
			15:19	EN			° 14.466	° 18.900			-			☐ ☐	
85	105	21	15:53	BE	ROS	/	48° 11.070	123° 19.290	89		/	/	SR	☒ ☐	Trans <u>NOT</u> clean
			15:54	BO			° 11.060	° 19.320		84	-			☐ ☐	
			15:56	EN			° 11.040	° 19.430			-			☐ ☐	
86	68	21	17:25	BE	ROS	/	48° 12.110	123° 43.350	137		/	/	SR	☒ ☐	
			17:27	BO			° 12.110	° 43.460		130	-			☐ ☐	
			17:29	EN			° 12.100	° 43.470			-			☐ ☐	
87	69	21	18:04	BE	ROS	US	48° 15.640	123° 43.620	179		231-242	12	SR	☒ ☐	Using computer
			18:07	BO			° 15.700	° 43.850		174	-			☐ ☐	#102 again
			18:27	EN			° 16.150	° 44.090			-			☐ ☐	Long pause at the
88	70	21	19:18	BE	ROS	US	48° 19.290	123° 43.590	146		243 -	1	GL	☒ ☐	bottom due to
			19:23	BO			° 19.342	° 43.592		133	-			☐ ☐	wire angle
			19:27	EN			° 19.330	° 43.550			-			☐ ☐	Pause @ 83 for wire

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* Swapped the Flowmeter 3x cable out for a new 3x cable. SR

Loop Sample taken 2xCHL, 1 Sol. (5088 sample ID#)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>JUNE</u>				Year <u>2020</u>		Vessel <u>TULLY</u>				Cruise ID <u>2020-028</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							
89	70	21	19:39	BE	NET	/	48° 19.28	123° 43.21	143		/	/	MG/HIS	☐	MINI BONGO
			19:41	BO			48° 19.29	123° 43.16		50	-			☐	
			19:42	EN			48° 19.30	123° 43.13			-			☐	
90	71	21	21:15	BE	ROS	/	48° 22.200	123° 59.430	111		/	/	GC	☒	
			21:17	BO			° 22.190	° 59.380		106	-			☐	
			21:19	EN			° 22.170	° 59.320			-			☐	
91	72	21	21:59	BE	NET	/	48° 18.485	124° 03.792	189				HS	☐	
			22:05	BO			° 18.445	° 03.703		185	-			☐	
			22:08	EN			° 18.396	° 03.645			-			☐	
92	72	21	22:21	BE	ROS	US	48° 18.529	124° 03.375	191		244-257	14	GC	☒	
			22:25	BO			° 18.310	° 03.288		184	-			☐	
			22:40	EN			° 18.043	° 02.818			-			☐	
93	73	21	23:17	BE	ROS	/	48° 14.940	124° 06.502	165		/	/	GC	☒	
			23:21	BO			° 14.970	° 06.410		158	-			☐	
			23:24	EN			° 14.980	° 06.340			-			☐	
94	SB 13	22	03:37	DE	MOR	DN	48° 29.8341	125° 01.0188	101.04		/	/	GC	☐	
95	SB 1	22	04:17	DE	MOR	DN	48° 3.6830	125° 00.1107	55.28		/	/	GC	☐	
96	SB 4	22	04:39	DE	MOR	DN	48° 33.8949	124° 59.0508	55.29		/	/	GC	☐	
97	SB 7	22	05:05	DE	MOR	DN	48° 35.5820	124° 57.9208	61.31		/	/	GC	☐	

Event Type:

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Notes:

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Month June				Year 2020			Vessel Tully			Cruise ID 2020-028					
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
98	SB 9	22	05:22	DE	MOR	DN	48°37.2652	124°57.1968	63.87	/	/	/	GC	☐	
99	SB 6	22	06:02	DE	MOR	DN	48°34.9208	124°55.1516	68.40	/	/	/	GC	☐	
100	SB 5	22	06:33	DE	MOR	DN	48°33.1836	124°56.1081	71.77	/	/	/	GC	☐	
101	103	22	07:45	BE	ROS	/	48°33.067	124°42.941	121		-		SR	☒	
			07:47	BO			°33.052	°42.947		116	-			☐	
			07:49	EN			°33.048	°42.965			-			☐	
102	102	22	08:23	BE	ROS	US	48°29.966	124°44.084	261		258-271		SR	☐	The station name
			08:30	BO			°29.910	°44.063		255	-			☐	and event # are
			08:45	EN			°29.897	°44.191			-			☐	the same! →
103	101	22	09:48	BE	ROS	/	48°25.480	124°44.980	243		/	/	SR	☒	
			09:52	BO			°25.540	°44.980		237	-			☐	
			09:55	EN			°25.590	°44.831			-			☐	
104	74	22	10:48	BE	ROS	/	48°25.110	124°35.470	193		/	/	SR	☒	
			10:50	BO			°25.110	°35.480		188	-			☐	
			10:52	EN			°25.120	°35.510			-			☐	
105	75	22	11:33	BE	ROS	US	48°28.483	124°33.083	221		272-285	14	SR	☒	
			11:36	BO			°28.512	°33.090		215	-			☐	
			11:51	EN			°28.657	°33.053			-			☐	
			:				°	°			-			☐	

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Notes:

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Stopped @ 203 for wire angle correction. SR

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Month June			Year 2020			Vessel Tully			Cruise ID 2020-028						
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	76	22	12:39	RE	ROS	✓	48°31.500	124°30.010	82		-		SR	☒	
			12:41	BO			°31.510	°30.000		77	-			☐	
			12:42	EN			°31.510	°30.000			-			☐	
107	Port Renfrew	22	15:24	RS	MOR		48°30.3440	124°31.1948	165		-		GC	☐	TRIANGULATION → Tully position, not Tully 2
			15:41	RE			48°30.3551	124°31.2582			-			☐	Serial #:
108	Port Renfrew	22	15:58	DE	MOR		48°30.3037	124°30.9814	164		-		GC	☐	Serial #: 75754 A=54 RC=42987 →
109	Swiftsure 2	22	17:37	RS	MOR		48°31.0426	124°56.3076	71		-		GC	☐	TRIANGULATION → Tully position, not Tully 2
			17:56	RE			48°30.9501	124°56.1591	74		-			☐	
110	Swiftsure 2	22	18:06	DE	MOR		48°30.9209	124°56.1404	75		-		GC	☐	Serial coding →
111	Swiftsure 2	22	19:20	RS	MOR		48°33.2360	125°00.4056	43		-		GC/HS	☐	
			19:23	RE			48°33.2922	125°00.3752	45		-		GC/HS	☐	
112	Swiftsure 2	22	19:43	DE	MOR	UN	48°33.1122	125°00.4428	38.71		-		GC/HS	☐	Serial coding →
113	la Perouse	23	19:31	RS	MOR		48°23.1420	125°48.0933	150.36		-		GC/HS	☐	See notes on next notes page.
			19:33	RE	MOR		48°23.1426	125°48.0927	150		-		GC/HS	☐	
114	la Perouse	23	19:58	DE	MOR	DN	48°23.0851	125°48.3264	150.77		-		GC/HS	☐	See notes on next notes page.
			:				°	°			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	

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RS RELEASE MOORING TIME

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~ 1355 22 JUNE UTC

STOP BOTH SOUNDERS + ADCP FOR MOORING WORK

RESTARTED 2007 UTC

ev. 107 $\Rightarrow$ Triangulation: lat1: $48^{\circ}30.344'$ lon1: $124^{\circ}31.144'$; lat2: lon2: lat3: lon3:

$\rightarrow$ UTC Start: : UTC End: 15:24

$\rightarrow$ Position from TULLY, not TULLY 1

$\rightarrow$ Mooring released after first transducer reading.

$\rightarrow$ Deployment Serial Coding for Mooring event 108

Release
Serial # $\Rightarrow$ 75755

A $\Rightarrow$ 55

R $\Rightarrow$ 42987

ev. 109 $\Rightarrow$ Triangulation: lat1: $48^{\circ}31.054'$ lon1: $124^{\circ}36.290'$; lat2: lon2: lat3: lon3:

UTC Start: 17:35 UTC End: 17:37

$\rightarrow$ Position from Tully, not Tully 1

$\rightarrow$ Mooring released after 1st transducer reading.

Deployment Serial Coding for mooring event 109

A₁ = 4, Release1 = 45236

A₂ = 3, Release2 = 45235

Serial # = 78003

Transducer from Tully 1

Wire Angle = 161°

Battery = 67%

Voltage = 11.5

Depth = 165m

Transducer from Tully 1

Wire Angle = 172°

Battery =

Voltage = 11.5

Depth = 71m

Range = 103

Range = 140 $\Rightarrow$ Release

Swift Sure 2. Event III Transducer from Tully

Wire Angle = T.H 4

Battery = 11.6

Voltage =

Depth = 38

Range = 51.6

NEW Swift Sure 2 Event III

Serial #: 78001

#1 Access code: 1

Release code: 45233

Serial #: 78002

#2 Access code: 2

Release code: 45234

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La Perouse Mooring

Transducer From Tully event 113

Wire Angle Tilt 2°

Battery = 36%

Depth =

Range = 155m To Tully

Volt = 11.3

* First release Failed. repositioned and try again.

* Second release Failed.

* Third release success ✓

Event
#114

Release #1 SN : 77842 La Perouse mooring

Access code : 42

Release code : 45074

Release #2 SN : 77843

Access code : 43

Release code : 45075

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