DAILY SCIENCE LOG BOOK

MISSION NUMBER: 2023-019

DATE: From: May 16, 2023 To: May 25, 2023

VESSEL: JP Tully

PROJECT(S): La Perouse Plankton Monitoring Program

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

35 Page Logbook

WaterProperties.ca

Captain: Z. Chmara First Officer: A. Butt

Second Officer: S. Durrieu de Madron Third Officer: M. Collings

Fishing Master: — ha — Chief Engineer: M. Lemoine

Mission Participants / Agencies:

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

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

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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 <u>completed by the CTD Technician</u> setting up the equipment, the <u>Watch Leader on board</u>, and the <u>Chief Scientist MUST verify that all relevant sections are completed prior to leaving the vessel</u>. *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: 0424

Primary CTD

Make: SBE model: 9+ serial number: 0550

Primary temperature serial number: 2663

Primary conductivity serial number: 2280

Secondary temperature serial number: 2106

Secondary conductivity serial number: 2754

Transmissometer: Wetlabs Model: ~~Sea~~ C-Star serial: 1883

Transmissometer: Wet labs Model: C-Star serial: 1185

Fluorometer: Model ~~Sea~~ SeaPoint Cable gain: 3x serial: 3640 **P**, (**S**) or **NO** pump?

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

Oxygen sensor: SBE Model: 43 serial: 3791 (**P**) **S** or **NO** pump?

PAR sensor: Biospherical Model: _____ serial: 70613 **Surface PAR? Y / N**

Other sensors: Altimeter serial: 37171 **P, S** or **NO** pump?

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

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

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

Secondary CTD

Make: _____ model: _____ serial number: _____

Primary temperature serial number: _____

Primary conductivity serial number: _____

Secondary temperature serial number: _____

Secondary conductivity serial number: _____

Transmissometer: _____ Model: _____ serial: _____

Transmissometer: _____ Model: _____ serial: _____

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

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

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

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

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

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

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

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

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

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

Rosette Setup:
Number of bottles: 24
Manufacturer: 105
Volume of bottles (litres): 10

Rosette/Niskin Bottle Serial Numbers:

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

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

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

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

Salinometer:
Make: _____ Model: _____ Serial Number: _____
Comments on performance during cruise (comments should also be reflected in the post-cruise report):
_____

Label Printers:
Primary Printer Kit #: _____
Secondary Printer Kit #: _____
Software Version: _____

Thermosalinograph System (SBE21/45):
Program: _____ Version: _____
Sampling interval (seconds): 5
TSG serial number: 0789
Fluorometer sensor serial number: 1656
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: _____ Exit points: _____
Name: _____ Exit points: _____
Name: _____ Exit points: _____
Work File: _____
Comments on performance during cruise (comments should also be reflected in the post-cruise report):
_____
_____

CTD Test Cast Information

Test Cast along side? Yes No
Comments _____

Test Cast in Saanich Inlet or other location? Yes No
Comments _____

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

Pumps working? Yes (0011) No (0010)

Secondary Temp – Primary Temp: _____
(Average from the mixed region)

Secondary Salinity – Primary Salinity: _____
(Average from the mixed region)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month May **Year** 2023 **Vessel** Tully **Cruise ID** 2023-019

Event Number	Station / Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
1	SIØS	17	02:22	BE	ROS	US	48° 39.192	123° 29.889	172		1 -	1	BM	☑☑	
			02:27	BO			48° 39.180	123° 29.875		169	-			☐☐	
			02:31	EN			48° 39.176	123° 29.867			-			☐☐	
2	SI05	17	02:39	BE	UVP	UN	48° 39.193	123° 29.5301	170		-			☐☐	
			02:46	BO	"		48° 39.153	123° 29.844		160	/	/	AS, FL	☐☐	e-bridge
			02:50	EN			48° 39.194	123° 29.829			-			☐☐	
3	LB01	17	14:12	BE	Ros	US	48° 40.377	124° 59.555	34		2 - 6	5	MB	☑☐	UHF Radio
			14:13	BO			48° 40.374	124° 59.563		24	-			☐☐	
			14:19	EN			48° 40.370	124° 59.586			-			☐☐	
4	LB02	17	15:02	BE	Ros	US	48° 39.610	125° 2.450	55		7 - 11	5	MB	☑☐	
			15:04	BO			48° 39.020	125° 2.470		46	-			☐☐	
			15:11	EN			48° 39.030	125° 2.510			-			☐☐	
5	LB03	17	15:45	BE	Ros	US	48° 37.400	125° 5.700	93		12 -	1	MB	☑☐	
			15:46	BO			48° 37.420	125° 5.710		83	-			☐☐	
			15:50	EN			48° 37.450	125° 5.~~760~~			-			☐☐	
6	LB04	17	16:17	BE	Ros	US	48° 35.690	125° 8.730	112		13 - A	7	MB	☑☐	
		"	16:19	BO			48° 35.690	125° 8.750		102	-			☐☐	
			16:30	EN			48° 35.710	125° 8.736			-			☐☐	
			:				° .	° .			-			☐☐	

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
____ = _____

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Notes: _____

Produced by the Water Properties Group, IOS

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Version: 17 Feb 2020

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month MAY | **Year** 2023 | **Vessel** JP TULLY | **Cruise ID** 2023-019

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7	E1	17	17:13	BE	CTD	-	48°31.703	125°3.778	117		—	-	MR	☑☐	
			17:14	BO			48°31.710	125°3.787		105	-			☐☐	
			17:17	EN			48°31.710	125°3.800			-			☐☐	
8	E1	17	17:23	BE	NET	-	48°31.708	125°3.819	117		—	-	AS	☐☐	BONGO
			17:27	BO			48°31.683	125°3.802		112	-			☐☐	
			17:29	EN			48°31.673	125°3.788			-			☐☐	
9	LB05	17	18:19	BE	ROS	-	48°34.040	125°12.020	103		-		MR	☑☐	
			18:21	BO			48°34.037	125°12.037		94	-			☐☐	
			18:25	EN			48°34.045	125°12.000			-			☐☐	
10	LB06	17	19:05	BE	ROS		48°32.21	125°15.43	115		21-28	8	MG	☑☐	
			19:10	BO			48°32.20	125°15.43		105	-			☐☐	
			19:26	EN			48°32.17	125°15.46			-			☐☐	
11	C1	17	20:47	BE	ROS		48°28.869	125°15.226	152		-	—	SM	☑☐	
			20:50	BO			48°28849	125°15.168			-			☐☐	
			20:53	EN			48°28.837	125°15.109			-			☐☐	
12	C1	17	21:08	BE	NET	✓	48°28.776	125°15.013	153		—	✓	MG	☐☐	BONGO
		—	21:13	BO			48°28.743	125°15.038		145	-			☐☐	
			21:17	EN			48°28.665	125°15.074			-			☐☐	
			:				° .	° .			-			☐☐	

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Ocean Sciences Division, Institute of Ocean Sciences

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13	C2	17	21:59	BE	ROS	US	48° 26.168	125° 9.276	159		-		SR	☑ ☐	stop at 81m for ship repositioning
			22:05	BO			48° 26.127	125° 9.349		151	-			☐ ☐	
			22:09	EN			48° 26.133	125° 9.353			-			☐ ☐	
14	C2	17	22:16	BE	NET	/	48° 26.126	125° 9.421	159		- /	/	MG	☐ ☐	BONGO VNH
			22:22	BO	"		48° 26.136	125° 9.442		149	-			☐ ☐	
			22:26	EN			48° 26.153	125° 9.448			-			☐ ☐	
15	C3	17	23:32	BE	ROS	US	48° 23.568	125° 20.715	121		-		SR	☑ ☐	
			23:35	BO			48° 23.586	125° 20.72		111	-			☐ ☐	
			23:37	EN			48° 23.556	125° 20.726			-			☐ ☐	
16	C3	17	23:44	BE	NET	/	48° 23.545	125° 20.752	121		- /	/	MG	☐ ☐	Bongo VNH
			23:49	BO			48° 23.565	125° 20.74		115	-			☐ ☐	
			23:52	EN			48° 23.569	125° 20.732			-			☐ ☐	
17	LB07	18	00:48	BE	ROS	US	48° 28.642	125° 22.218	155	145	29 -	1	CI	☑ ☐	
			00:51	BO			48° 28.644	125° 22.224		145	-			☐ ☐	
			00:57	EN			48° 28.658	° .			-			☐ ☐	
18	LB07	18	01:06	BE	NET	/	48° 28.672	125° 22.246	155		/	/	MG	☐ ☐	BONGO VNH
			01:13	BO			48° 28.683	125° 22.258		150	-			☐ ☐	
			01:15	EN			48° 28.687	125° 22.259			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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19	B8	18	02:20	BE	ROS	US	48° 34.471	125° 29.907	113		30 -	1	CI	☑ ☐	
			02:23	BO			48° 34.486	125° 29.909		103	-			☐ ☐	
			02:28	EN			48° 34.518	125° 29.923			-			☐ ☐	
20	B8	18	02:38	BE	NET	/	48° 34.552	125° 29.937	111		/	/	MG	☐ ☐	BONGO VNH
			02:43	BO			48° 34.577	125° 29.959		105	-			☐ ☐	
			02:45	EN			48° 34.591	125° 29.971			-			☐ ☐	
21	B7	18	03:27	BE	ROS	US	48° 32.056	125° 35.329	79		/	/	CI	☑ ☐	
			03:29	BO			48° 32.051	125° 35.337		69	-			☐ ☐	
			03:31	EN			48° 32.049	125° 35.344			-			☐ ☐	
22	B7	18	03:38	BE	NET	/	48° 32.04	125° 35.391	79		/	/	MG	☐ ☐	BONGO VNH
			03:41	BO			48° 32.053	125° 35.388		75	-			☐ ☐	
			03:43	EN			48° 32.059	125° 35.393			-			☐ ☐	
23	LB08	18	04:47	BE	ROS	US	48° 25.272	125° 28.674	146		31 - 46	16	CI	☐ ☐	Swapped Niskin 1
			04:51	BO			48° 25.29	125° 28.69		143	-			☐ ☐	for new Niskin 1 off
			05:12	EN			48° 25.352	125° 28.792			-			☐ ☐	spare rosette
24	LB08	18	05:27	BE	NET	✓	48° 25.34	125° 28.77	155		-		MG	☐ ☐	BONGO
			05:30	BO			48° 25.34	125° 28.80		150	-			☐ ☐	
			05:40	EN			48° 25.358	125° 28.822			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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25	LB09	18	06:26	BE	ROS	US	48° 22.074	125° 34.815	151		47-55	9	CI	☑ ☐	
			06:30	BO			48° 22.084	125° 34.818		141	-			☐ ☐	
			06:48	EN			48° 22.102	125° 34.896			-			☐ ☐	
26	LB10	18	07:41	BE	Ros	US	48° 18.532	125° 41.425	155		56	1	MB	☑ ☐	
			07:43	BO	"		48° 18.528	125° 41.424		146	-			☐ ☐	
			07:48	EN			48° 18.535	125° 41.415			-			☐ ☐	
27	LB11	18	08:30	BE	Ros	US	48° 15.285	125° 47.755	205		57-68	12	MB	☑ ☐	
			08:33	BO			48° .	125° .		196	~~57-68~~	~~X~~		☐ ☐	
			08:51	EN			48° .	125° .			-			☐ ☐	
28	LB11	18	09:00	BE	Net		48° 15.284	125° 47.741			-			☐ ☐	Bongo
			09:05	BO			48° 15.279	125° 47.756			-			☐ ☐	
			09:08	EN			48° 15.273	125° 47.767			-			☐ ☐	
29	LB12	18	09:41	BE	Ros	US	48° 12.895	125° 51.939	506		69-86	18	MB	☑ ☐	
			09:49	BO			48° 12.922	125° 51.961		18	-			☐ ☐	
			10:17	EN			48° 12.924	125° 51.957			-			☐ ☐	
30	LB13	18	10:51	BE	Ros	US	48° 10.553	125° 56.147	915		87-88	2	MB	☑ ☐	
			11:08	BO			48° 10.599	125° 56.123			-			☐ ☐	
			11:25	EN			48° 10.627	125° 56.150			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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This page is for any notes or observations

~ 700m SPIKES IN O_2, SQUOKED.

DAILY SCIENCE LOG — Ocean Sciences Division, Institute of Ocean Sciences

Month MAY **Year** 2023 **Vessel** JP TULLY **Cruise ID** 2023-019

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31	LB14	18	11:56	BE	ROS	US	48° 8.498	125° 55.983	1173		89 - 109	21	MS	☑ ☐	
~~32~~			12:16	BO			48° 8.605	126° 55.964		1166	-			☐ ☐	
			12:56	EN			48° 8.720	126° 55.995			-			☐ ☐	
32	LB15	18	13:55	BE	ROS	US	48° 4.199	126° 8.426	1540		110 - 111	2	MS	☑ ☐	
			14:20	BO	"		48° 4.160	126° 8.427		1548	-			☐ ☐	
			14:45	EN			48° 4.147	126° 8.487			-			☐ ☐	
33	LB16	18	15:39	BE	ROS	US	48° 0.536	126° 17.046	1800		112 - 113	2	MS	☐ ☐	
			16:11	BO			48° 0.558	126° 16.980		1799	-			☐ ☐	
			16:47	EN			48° 0.564	126° 17.097			-			☐ ☐	
34	LB16	18	16:52	BE	NET	-	48° 0.528	126° 17.053	1786		-	-	SK	☐ ☐	BONGO 200
			16:57	BO			48° 0.482	126° 17.09		250	-			☐ ☐	
			17:03	EN			48° 0.453	126° 17.113			-			☐ ☐	
35	LB16	18	17:10	BE	NET	-	48° 0.459	126° 17.086	1783		-	-	SK	☐ ☐	BONGO 120
			17:34	BO			48° 0.416	126° 17.016		120	-			☐ ☐	
			17:57	EN			48° 0.364	126° 17.259			-			☐ ☐	
36	LC12	18	20:19	BE	ROS	-	48° 14.96	126° 40.13	2515		—	/	MG	☐ ☐	TEST PYLON DUMMIED
			20:56	BO			48° 14.94	126° 39.93		2005	-			☐ ☐	STOP@1854 FOR 5MIN
			21:29	EN			48° 14.947	126° 40.063			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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SQUEAK @ 400nm ↑ SURFACE, OR SPECK @ 600nm, MORE SPECKS ↓, SQUEAK @ 700nm ↓

880m big spike O_2

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37	LC12	18	21:44	BE	NET	/	48° 14.926	126° 40.177	2513		-	/	MG	☐☐	BONGO UNH
			21:53	BO			48° 14.915	126° 40.348		250	-			☐☐	
			21:59	EN			48° 14.904	126° 40.395			-			☐☐	
38	LC12	18	22:26	BE	NET	UN	48° 14.975	126° 40.018	2519		/	/	MG	☐☐	MPS
			23:11	BO	"		48° 14.967	126° 39.992		2000	-			☐☐	
			23:48	EN			48° 14.982	126° 39.997			-			☐☐	pylon swapped
39	LC11	19	01:12	BE	ROS	US	48° 19.06	126° 26.768	1420		114 - 132	19	CI	☑☐	
			01:38	BO			48° 19.013	126° 26.795	1447	1465	-			☐☐	880m oxygen, salinity + temperature spikes
			02:32	EN			48° 18.888	126° 27.005	1533		-			☐☐	bottle 6 didn't shut
40	LC10	19	03:27	BE	ROS	-	48° 22.418	126° 20.259	1242		/	/	CI	☑☐	swapped retested
			03:49	BO			48° 22.418	126° 20.291		1243	-			☐☐	⇒ notes
			04:16	EN			48° 22.422	126° 20.23			-			☐☐	
41	LC09	19	05:03	BE	ROS	US	48° 25.927	126° 13.728	615		/	/	CI	☑☐	forgot to reconnect pylon after testing at last station
			05:14	BO			48° 25.935	126° 13.759			-			☐☐	fluorescence spike on upcast at 240m
			05:36	EN			48° 25.938	126° 13.775			-			☐☐	
42	LC09	19	05:49	BE	ROS	US	48° 25.935	126° 13.755	617		133 - 156	24	CI	☑☐	redid station LC09
		"	06:02	BO			48° 25.942	126° 13.837		613	-			☐☐	fluorometer spikes on
			06:36	EN			48° 25.956	126° 13.984	632		-			☐☐	upcast 372m - 150m
			:				° .	° .			-			☐☐	possibly struck something

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new SN676

Swapped carosels out (2) in (6) bottle 6 doesn't fire still ush.

Confirmed - solenoid #6 on new carosel does not work.

Dummied off carosel for LC10 to test noise

- spike in salinity at 920m

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month May | **Year** 2023 | **Vessel** JP Tully | **Cruise ID** 2023-019

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
43	LC09	19	06:56	BE	NET		48° 25.928	126° 13.776	632	250	-			☐☐	
			07:03	BO			48° 25.942	126° 13.728			-			☐☐	
			07:07	EN			48° 25.941	126° 13.668			-			☐☐	
44	A2	19	08:04	BE	ROS	-	48° 22.691	126° 3.810	357		-	-	MB	☑☐	
			08:09	BO	"		48° 22.711	126° 3.794		345	-			☐☐	
			08:16	EN			48° 22.709	126° 3.750			-			☐☐	
45	A2	19	08:24	BE	NET	-	48° 22.685	126° 3.838	353	250	-		SK	☐☐	
			08:27	BO			48° 22.687	126° 3.862			-			☐☐	
			08:33	EN			48° 22.677	126° 3.864			-			☐☐	
46	LC08	A	09:28	BE	ROS		48° 29.505	126° 3.867	199		157-168	12	MR	☐☐	SKIP 6
			09:31	BO			48° 29.507	126° 7.038		190	-			☐☐	FIRED 6 SHOT IN SEQUENCE
			09:45	EN			48° 29.480	126° 7.054			-			☐☐	
47	LC08	A	09:58	BE	NET		48° 29.461	126° 07.058	-	-	-	-	SK	☐☐	BOTTLE FIRING?
			10:02	BO			48° 29.454	126° 07.066			-			☐☐	
			10:05	EN			48° 29.448	126° 07.077			-			☐☐	
48	LC07	19	10:50	BE	ROS		48° 32.999	126° 0.542	128		-	-	MB	☑☐	
	"		10:53	BO			48° 33.001	126° 0.552		119	-			☐☐	
			10:55	EN			48° 33.009	126° 0.567			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

DAILY SCIENCE LOG — Ocean Sciences Division, Institute of Ocean Sciences

Month MAY **Year** 2023 **Vessel** JP TULLY **Cruise ID** 2023-019

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
49	LC06	19	11:40	BE	NET	-	48°36.466	125°54.242	92		-	-	SK	☐☐	BONGO
			11:41	BO			48°36.477	125°54.255		87	-			☐☐	
			11:43	GN			48°36.496	125°54.256			-			☐☐	
50	LC06	19	11:53	BE	ROS	US	48°36.548	125°54.179	92		169-178	10	MB	☑☐	NO BOTTLES
			11:55	BO			48°36.553	125°54.200		83	-			☐☐	
			12:05	GN			48°36.573	125°54.177			-			☐☐	
51	LC05	19	12:52	BE	ROS	-	48°39.924	125°47.419	63		-	-	MB	☑☐	
			12:53	BO			48°39.926	125°47.422		54	-			☐☐	
			12:54	GN			48°39.919	125°47.426			-			☐☐	
52	LC05	19	13:01	BE	NET	-	48°39.876	125°47.355	63		-	-	MB	☐☐	
			13:02	BO			48°39.863	125°47.327		53	-			☐☐	
			13:03	GN			48°39.853	125°47.306			-			☐☐	
53	LC04	19	13:48	BE	ROS	US	48°43.368	125°40.802	164		179-196	19	MB	☑☐	
			13:51	BO			48°43.362	125°40.818		155	-			☐☐	
			14:07	GN			48°43.244	125°40.946			-			☐☐	
54	LC04	19	14:18	BE	NET	-	48°43.3756	125°40.8907	165	155	-	-	SK	☐☐	
			14:21	BO			48°43.3985	125°40.8997			-			☐☐	
			14:24	EN			48°43.4153	125°40.9091			-			☐☐	
			:				° .	° .			-			☐☐	

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DAILY SCIENCE LOG — Ocean Sciences Division, Institute of Ocean Sciences

Month MAY **Year** 2023 **Vessel** JP TULLY **Cruise ID** 2023-019

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
55	LC03	19	15:12	BE	Ros	-	48° 46.967	125° 34.196	133		—	-	MB	☑ ☐	
			15:14	BO			48° 46.977	125° 34.193		123	-			☐ ☐	
			15:16	EN			48° 46.976	125° 34.269			-			☐ ☐	
56	LC02	19	15:46	BE	Ros	US	48° 48.654	125° 30.962	109		197-208	12	MB	☑ ☐	TEST 6 [illegible] 6
			15:48	BO	"		48° 48.650	125° 30.974		99	-			☐ ☐	
			16:00	EN			48° 48.660	125° 31.066			-			☐ ☐	
57	LC01	19	16:34	BE	Ros	US	48° 50.429	125° 27.755	95		209-216	8	MB	☑ ☐	SKIP BOTTLE 6
			16:35	BO			48° 50.422	125° 27.760		85	-			☐ ☐	
			16:45	EN			48° 50.413	125° 27.818			-			☐ ☐	
58	LD01	19	18:21	BE	Ros	US	49° 0.105	125° 43.721	35		217-221	5	MB	☑ ☐	
			18:22	BO			49° 0.112	125° 43.705		25	-			☐ ☐	
59	LD02	19	18:28	EN			49° 0.168	125° 43.587			-			☐ ☐	
			19:09	BE	ROS	US	48° 58.5	125° 46.982	42		222-226	7	CJ	☑ ☐	Skip bottle 6
			19:11	BO			48° 58.504	125° 46.971		33	-			☐ ☐	
			19:20	EN			48° 58.493	125° 46.943		33	-			☐ ☐	
60	LD02/01	19	19:30	BE	NET		48° 58.48	125° 46.913	43		/	/	FL/MG	☐ ☐	BONGO VNH
			19:31	BO			48° 58.479	125° 46.914		38	-			☐ ☐	
			19:32	EN			48° 58.48	125° 46.915			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month May **Year** 2023 **Vessel** Tully **Cruise ID** 2023-019

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
61	LD03	19	20:09	BE	ROS	US	48° 56.769	125° 50.24	48		/	/	FL	☑ ☐	→
			20:11	BO			48° 56.777	125° 50.239		38	-			☐ ☐	
			20:14	EN			48° 56.782	125° 50.228			-			☐ ☐	new Pyl sn 11/12/B (14) BONGO
62	LD04	19	21:04	BE	NET		48° 53.211	125° 56.901	62		/	/	MG	☐ ☐	
			21:06	BO	"		48° 53 226	125° 56.902		58	-			☐ ☐	
			21:08	EN			48° 53.233	125° 56.913			-			☐ ☐	
63	LD04	19	21:21	BE	ROS	US	48° 53.216	125° 56.921	63		227 - 231	5	CI	☑ ☐	
			21:22	BO			48° 53.216	125° 56.928		54	-			☐ ☐	
			21:31	EN			48° 53.239	125° 56.954		54	-			☐ ☐	
64	LD05	19	22:24	BE	ROS	/	48° 49.74	126° 3.619	91		/	/	CI	☑ ☐	
			22:27	BO			48° 49.75	126° 3.609		81	-			☐ ☐	
			22:28	EN			48° 49.75	126° 3.602		81	-			☐ ☐	
65	LD06	19	23:19	BE	ROS	US	48° 46.203	126° 10.125	137		232 - 239	8	CI	☑ ☐	
			23:22	BO			48° 46.181	126° 10.126		128	-			☐ ☐	
			23:39	EN			48° 46.21	126° 10.15			-			☐ ☐	
66	LD07	20	00:42	BE	ROS	/	48° 47.648	126° 16.783	486		/	/	CI	☑ ☐	
			00:51	BO			48° 42.643	126° 16.812		469	-			☐ ☐	
			00:59	EN			48° 42.68	126° 16.786		469	-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

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This page is for any notes or observations

Running UHF radio interference check – click-click-click during test to see if there are spikes

Running UHF radio interference check – click-click-click during test to see if there are spikes

DAILY SCIENCE LOG — Ocean Sciences Division, Institute of Ocean Sciences

Month MAY **Year** 2023 **Vessel** JP Tully **Cruise ID** 2023-019

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information: Latitude	Positional Information: Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
67	LD08	20	01:47	BE	ROS	US	48° 39.157	126° 23.4	770		240 - 258	19	CI	☑ ☐	O_2 spike at 650m fluor. data dies chirp at 700m
			02:00	BO			48° 39.191	126° 23.387		767	-			☐ ☐	
			02:41	EN			48° 39.177	126° 23.41		767	-			☐ ☐	
68	LD09	20	03:50	BE	ROS	/	48° 35.624	126° 29.943	1065		-		CI (FL)	☑ ☐	O_2 spike @ 800m
			4:09	BO	"		48° 35.598	126° 29.972		1069	-			☐ ☐	O_2 + Salinity spike @ 950m
			4:28	EN			48° 35.644	126° 29.966			-			☐ ☐	fluor. spike @ 360m
69	LD09	20	4:36	BE	NET	/	48° 35.627	126° 29.937	1066		/	/	MG	☐ ☐	
			4:44	BO			48° 35.626	126° 29.951		250	-			☐ ☐	
			4:49	EN			48° 35.626	126° 29.977			-			☐ ☐	
70	LD10	20	5:39	BE	ROS	/	48° 32.182	126° 36.679	1472		/	/	CI/AL	☑ ☐	Fluor. spike @ 170m, O2 downcast -220 2nd spike @ 280m
			6:05	BO			48° 32.219	126° 36.727		1472	-			☐ ☐	- 330
			6:30	EN			48° 32.228	126° 36.806			-			☐ ☐	Fluor. spike @ 600m on upcast - 280m
71	LD11	20	07:18	BE	ROS	US	48° 28.815	126° 42.875	1602		259 - 279	21	MB	☒ ☐	
			07:46	BO			48° 28.836	126° 42.898		1605	-			☐ ☐	
			08:41	EN			48° 28.888	126° 43.028			-			☐ ☐	
72	LD11	20	08:52	BE	NET	-	48° 28.846	126° 43.113	1579		-	-	SK	☐ ☐	Bongo 250
			08:57	BO			48° 28.856	126° 43.132		250	-			☐ ☐	
			09:01	EN			48° 28.845	126° 43.152			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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event 67: right after UHF radio call from LARS to bridge to indicate slight lead aft

event 67: another chirp after using UHF radio (closet & LARS)

Event 68 - Whom @ 10 m to do bubble purge, oil spotted on water surface, needed to bring CTD back on board to inspect for cause of oil slick.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month MAY **Year** 2023-018 **Vessel** JP TULCY **Cruise ID** 2023-019

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
73	LD11	20	9:11	BC	NET	–	48° 28.869	126° 43.087	1573		–	–	SK	☐☐	Bottom 1200
			9:36	BO			48° 28.796	126° 43.197		1200	-			☐☐	
			9:56	EN			48° 28.910	126° 43.087			-			☐☐	
74	LG09	20	13:30	BC	ROS	US	48° 51.139	127° 19.393	2055		280-250	11	MB	☑☐	Soak 1000m ↓
			14:04	BO			48° 51.139	127° 19.413			-			☐☐	
			14:51	EN			48° 51.151	127° 19.454			-			☐☐	
75	LG09	20	19:58	BC	NET	–	48° 51.159	127° 19.438	2055		-	–	SK	☐☐	Bottom 250
			15:07	BO			48° 51.140	127° 19.432		250	-			☐☐	
			15:11	EN			48° 51.162	127° 19.401			-			☐☐	
76	LG09	20	15:21	BC	NET	–	48° 51.121	127° 19.444	2055		–	–	SK	☐☐	Bottom 1200
			15:58	BO			48° 51.156	127° 19.452		1200	-			☐☐	
			16:19	EN			48° 51.146	127° 19.418			-			☐☐	
77	LG08	20	17:06	BC	ROS	-	48° 55.245	127° 13.226	2060		-	-	MB	☑☐	
			17:41	BO			48° 55.284	127° 13.266		2073	-			☐☐	
			18:15	EN			48° 55.290	127° 13.284			-			☐☐	
78	LG07	20	19:08	BE	ROS	–	48° 59.447	127° 7.132	1759		/	/	CI/FL	☑☐	
			19:39	BO			48° 59.478	127° 7.216		1761	-			☐☐	Fluor. Spike @~1200m on upcast
			20:10	EN			48° 59.471	127° 7.399			-			☐☐	
			:				° .	° .			-			☐☐	

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DAILY SCIENCE LOG — Ocean Sciences Division, Institute of Ocean Sciences

Month May **Year** 2023 **Vessel** JP Tully **Cruise ID** 2023-019

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information: Latitude	Positional Information: Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
79	LG07	20	20:23	BE	NET	/	48°59.516	127° 7.359	1753	250	/	/	MG	☐☐	Bongo VNH
			20:34	BO			48°59.546	127° 7.417		250	-			☐☐	
			20:39	EN			48°59.574	127° 7.437			-			☐☐	
80	LG06	20	21:45	BE	ROS	US	48° 3.479	127° 1.171	972		291 - 313	23	CI	☑☐	
			22:03	BO	"		49° 3.492	127° 1.136			-			☐☐	O2 spike @ 900 on upcast
			23:01	EN			49° 3.673	127° 1.287			-			☐☐	
81	LG05	20	23:54	BE	ROS	UN	49° 7.441	126°55.332	277		/	/		☑☐	
			23:59	BO			49° 7.446	126°55.345		266	-			☐☐	
		21	00:04	EN			49° 7.442	126°55.384			-			☐☐	
82	LG04	21	00:52	BE	ROS	US	49°11.252	126°49.351	145		314 - 325	12	CI/FL	☑☐	
			00:55	BO			49°11.249	126° 49.343		135	-			☐☐	
			01:14	EN			49°11.247	126°49.354			-			☐☐	
83	LG04	21	01:34	BE	NET	/	49°11.278	126 °49.338	145		/	/	MG	☐☐	Bongo VNH
			01:43	BO			49° 11.3	126 °49.328		135	-			☐☐	
			01:46	EN			49°11.312	126° 49.333			-			☐☐	
84	LG03	21	02:35	BE	ROS	UN	49°14.997	126°43.647	125		/	/	CI/FL	☑☐	
		"	02:37	BO			49°14.98	126°43.671		114	-			☐☐	
			02:41	EN			49°14.99	126°43.658			-			☐☐	
			:				° .	° .			-			☐☐	

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 17 Feb 2020

Sander power off ~L0ϕ6] due to an
Back on ~L0ϕ3 unplug to re-organize rack

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month May **Year** 2023 **Vessel** JP Tully **Cruise ID** 2023-019

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
85	LG02	21	03:28	BE	ROS	US	49° 18.647	126° 37.982	99		326-341	16	CI/FL	☑ ☐	
			03:31	BO			49° 18.64	126° 37.966		89	-			☐ ☐	
			03:45	EN			49° 18.643	126° 37.983			-			☐ ☐	
86	LG02	21	03:59	BE	NET	/	49° 18.671	126° 38.048	99		/	/	MG	☐ ☐	Bongo VMH
			04:02	BO			49° 18.675	126° 38.042			-			☐ ☐	
			04:04	EN			49° 18.682	126° 38.049			-			☐ ☐	
87	LG01	21	04:38	BE	ROS	US	49° 20.478	126° 34.946	54		342-349	8	CI/FL	☑ ☐	
			04:41	BO			49° 20.478	126° 34.963		45	-			☐ ☐	
			04:50	EN			49° 20.479	126° 34.968			-			☐ ☐	
88	LOOP88	21	05:39	BE	LOOP	—	49° 22.55	126° 43.32	55	4.5	50-88	—	MG	☐ ☐	1SAL 2 CHL
89	LBP8	21	13:54	BE	ROS	US	49° 48.717	128° 16.729	2070		350-358	9	MG	☑ ☐	WHF
			14:29	BO			49° 48.637	128° 16.838		2052	-			☐ ☐	RADIO
			15:15	EN			49° 48.691	128° 16.792			-			☐ ☐	
90	LBP8	21	15:23	BE	NET	—	49° 48.657	128° 16.854	2069		-	-	SK	☐ ☐	250m Bongo
			15:32	BO			49° 48.663	128° 16.854		250	-			☐ ☐	
			15:36	EN			49° 48.668	128° 16.851			-			☐ ☐	
91	LBP8	21	15:45	BE	NET	—	49° 48.64	128° 16.852	2070		-	-	S/C	☐ ☐	120m Bongo
			16:23	BO			49° 48.706	128° 16.817		170	-			☐ ☐	
			16:43	EN			49° 48.658	128° 16.852			-			☐ ☐	

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92	LBP7	21	17:30	BE	R.S	US	49° 52.335	128° 11.170	2176		359 - 382	24	MB	☑ ☐	VHF
			18:07	BO			49° 52.352	128° 11.173		2210	-			☐ ☐	
			19:16	EN			49° 52.375	128° 11.294			-			☐ ☐	
93	LBP7	21	19:30	BE	NET	/	49° 52.362	128° 11.231	2186		/	/	MG	☐ ☐	
			19:40	BO	"		49° 52.384	128° 11.254		250	-			☐ ☐	
			19:45	EN			49° 52.374	128° 11.273			-			☐ ☐	
94	LBP6	21	21:09	BE	ROS	/	49° 56.163	128° 5.48	849		/	/	CI	☑ ☐	VHF, started archive
			21:25	BO			49° 56.169	128° 5.498		858	-			☐ ☐	at ~10m on downcast
			21:40	EN			49° 56.166	128° 5.529			-			☐ ☐	
95	LBP5	21	22:33	BE	ROS	US	49° 59.886	128° 0.007	1281		383 - 404	22	CI/FL	☑ ☐	
			22:57	BO			49° 59.846	128° 0.005		1255	-			☐ ☐	
			23:53	EN			49° 59.801	128° 0.092			-			☐ ☐	
96	LBP5	22	00:02	BE	NET	/	49° 59.795	128° 0.128	1198		/	/	MG	☐ ☐	
			00:11	BO			49° 59.795	128° 0.164		250	-			☐ ☐	
			00:17	EN			49° 59.818	128° 0.202			-			☐ ☐	
97	LBP4	22	01:10	BE	ROS	/	50° 1.32	127° 58.09	1057		/	/	CI	☑ ☐	
			01:30	BO			50° 1.29	127° 58.113		1092	-			☐ ☐	
			01:51	EN			50° 1.309	127° 58.11		1092	-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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WaterProperties.ca
Version: 17 Feb 2020

DAILY SCIENCE LOG — Ocean Sciences Division, Institute of Ocean Sciences

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98	LBP3	22	02:24	BE	ROS	US	50° 3.18	127° 55.158	165		405-421	17	CI/FL	☑☐	
			02:29	BO			50° 3.182	127° 55.14		157	-			☐☐	
			02:50	EN			50° 3.133	127° 55.067			-			☐☐	
99	LBP3	22	03:06	BE	NET	/	50° 3.164	127° 55.138	165		/	/	MG	☐☐	Bongo VVH
			03:12	BO	"		50° 3.162	127° 55.163		155	-			☐☐	
			03:15	EN			50° 3.173	127° 55.152			-			☐☐	
100	LBP2	22	03:37	BE	ROS	/	50° 3.965	127° 54.101	99		/	/	CI	☑☐	
			03:39	BO			50° 3.959	127° 54.092		89	-			☐☐	
			03:41	EN			50° 3.958	127° 54.09			-			☐☐	
101	LBP2	22	03:47	BE	NET	/	50° 3.958	127° 54.083	98		/	/	MG	☐☐	Bongo VVH
			03:50	BO			50° 3.951	127° 54.08		88	-			☐☐	
			03:52	EN			50° 3.95	127° 54.085			-			☐☐	
102	LBP1	22	04:16	BE	ROS	/	50° 4.784	127° 52.731	53		/	/	CI	☑☐	
			04:18	BO			50° 4.791	127° 52.724		41	-			☐☐	
			04:19	EN			50° 4.795	127° 52.717			-			☐☐	
103	LOOP103	22	04:39	BE	LOOP	/	50° 5.261	127° 56.304	178	4.5	5103	/	MG	☐☐	1 loop sal, 2 chl
104	CPC2	22	10:03	BE	ROS	—	50° 42.995	128° 39.995	128		-	-	MG	☑☐	VHF
			10:06	BO			50° 43.000	128° 39.787		118	-			☐☐	
			10:08	EN			50° 42.975	128° 39.809			-			☐☐	

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WaterProperties.ca
Version: 17 Feb 2020

DAILY SCIENCE LOG — Ocean Sciences Division, Institute of Ocean Sciences

Month May **Year** 2023 **Vessel** JP Tully **Cruise ID** 2023-019

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105	CLC2	22	10:15	BE	NET	-	50° 43.005	128° 39.800	127		--	-	SK	☐☐	Bongo
			10:20	BO			50° 43.031	128° 39.776		118	-			☐☐	
			10:22	EN			50° 43.03	128° 39.770			-			☐☐	
106	LQ03	22	12:08	BE	ROS	-	50° 39.640	129° 1.920	1250	-	-	-	MB	☑☐	VARIABLE SOUNDER
			12:28	BO	"		50° 39.628	129° 1.995		1258	-			☐☐	~200m VHF
			12:49	EN			50° 39.612	129° 1.947			-			☐☐	SPIKE @ BOTTOM ↑
107	LQ03	22	12:58	BE	NET	-	50° 39.610	129° 1.998	1246		-		KS	☐☐	Bongo
			13:07	BO			50° 39.637	129° 2.074		250	-			☐☐	
			13:12	EN			50° 39.628	129° 2.222			-			☐☐	
108	CS00	22	17:08	BE	ROS	US	50° 27.697	129° 54.914	2182		422 - 445	24	MB	☑☐	
			17:46	BO			50° 27.714	129° 54.918		2188	-			☐☐	
			18:54	EN			50° 27.74	129° 54.97			-			☐☐	
109	CS00	22	19:05	BE	NET	/	50° 27.784	129° 55.018	2183		/	/	MG	☐☐	Bongo VNH
			19:12	BO			50° 27.852	129° 55.047		250	-			☐☐	
			19:17	EN			50° 27.897	129° 55.08			-			☐☐	
110	CS00	22	19:29	BE	NET	/	50° 27.849	129° 54.974	2183		/	/	MG	☐☐	Bongo VNH
			20:12	BO			50° 27.904	129° 54.997		1200	-			☐☐	
			20:33	EN			50° 27.89	129° 55.011			-			☐☐	
			:				° .	° .			-			☐☐	

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SQUEAK 1040 ↑ , FL sp.kcv ↑ , USB STICK IN COMPUTER

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month May **Year** 2023 **Vessel** JP Tully **Cruise ID** 2023-019

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
111	CS01	22	22:03	BE	ROS	/	50 ° 35. 039	129 ° 41 . 517	2109		/	/	CI	☑ ☐	
			22:41	BO			50 ° 35. 126	129 ° 41 . 557		2108	-			☐ ☐	
			23:17	EN			50° 35. 085	129° 41. 555			-			☐ ☐	see back →
112	CS01	22	23:24	BE	NET	/	50 °35. 086	129° 41 . 569	2106		/	/	MG	☐ ☐	
			23:34	BO			50 °35 . 142	129° 41 . 541		250	-			☐ ☐	
			23:39	EN			50°35. 148	129°41 . 53			-			☐ ☐	
113	CS01	22	23:46	DE	DRF	/	50 °35. 205	129° 41 . 414	2106		1495	/	JN	☐ ☐	#1495
114	CS02	23	00 :59	BE	ROS	US	50 °41 . 273	129 ° 27 . 982	1909		444 - 467	24	CI	☑ ☐	bottle 23 vent cap
			01 :32	BO			50 ° 41. 249	129 ° 29. 1		1909	-			☐ ☐	was loose
			02:31	EN			50 °41 . 298	129 ° 28. 15			-			☐ ☐	
115	CS02	23	02:44	BE	NET	/	50° 41. 267	129° 28 : 159	1909		/	/		☐ ☐	
			03:00	BO			50 ° 41. 315	129 ° 28 . 433		250	-			☐ ☐	
			03: 04	EN			50 ° 41. 324	129 ° 28. 456			-			☐ ☐	
116	CS02	23	03 : 12	DE	DRF	/	50 ° 41. 325	129 ° 28. 29	1901		1493	/		☐ ☐	#1493
117	CS 03	23	04 : 14	BE	ROS	/	50 ° 45. 512	129 ° 20 . 048	243		/	/	CI/FL	☑ ☐	
			04: 19	BO			50 °45 . 502	129 ° 20 . 056		236	-			☐ ☐	
			04: 24	EN			50 °45 . 481	129 ° 20 . 076			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 17 Feb 2020

Flushed 2ndary cell / DO2 flowro with fresh warm water post cast.

EVENT 114

BOT 1 SAMPLE 444 CHANGED TO 9444 FOR OXY NUT F NUT C > CHANGED ON LABEL, SHEET, LOG + E-LOG
445 " " 9445 FOR OXY NUT F NUT C

DAILY SCIENCE LOG — Ocean Sciences Division, Institute of Ocean Sciences

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118	CSØ3	23	04:31	BE	NET	/	50° 45.454	129° 20.125	248		/	/	MG	☐☐	
			04:40	BO			50° 45.45	129° 20.178		238	-			☐☐	
			04:44	EN			50° 45.464	129° 20.202			-			☐☐	
119	CSØ3	23	04:51	DE	DRF		50° 45.56	129° 20.211	252		-	/	CI	☐☐	1492
120	CSØ4	23	05:42	BE	ROS	US	50° 49.304	129° 13.059	97		468 - 478	11	FL	☑☐	
			05:44	BO			50° 49.318	129° 13.102		88	-			☐☐	
			06:02	EN			50° 49.428	129° 13.398			-			☐☐	
121	UNDERWAY	23	09:09	BC	LOOP	-	50° 55.041	129° 50.706	1984	5	5121	1	MB	☐☐	1×SAL, 2×CHL.
122	NEWDAS	23	09:54	BE	ROS	US	50° 56.322	129° 58.726	2117		-		MB	☑☐	
			10:29	BO			50° 56.357	129° 58.811		225	-			☐☐	
			11:04	EN			50° 56.397	129° 58.813			-			☐☐	
123	NEWDAS	23	11:13	BE	NET	-	50° 56.409	129° 58.781	720		-		SC	☐☐	NET FAILED
			11:21	BO			50° 56.427	129° 58.797		250	-			☐☐	PROCESSED SAMPLES
			11:27	EN			50° 56.407	129° 58.880			-			☐☐	ANYWAYS
124	CS3B	23	13:50	BE	ROS	-	50° 59.987	129° 26.983	221	-	-	-	MB	☑☐	
			13:54	BO			50° 59.976	129° 26.981		211	-			☐☐	
			13:58	EN			50° 59.988	129° 27.010			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	

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DAILY SCIENCE LOG

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Month MAY **Year** 2023 **Vessel** JP TULLY **Cruise ID** 2023-019

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125	CS3B	23	14:08	BE	NET	-	50° 59.999	129° 26.997	72		-	-	SK	☐☐	Bongo (NCN NET)
			14:16	BO			50° 59.996	129° 27.051		210	-			☐☐	
			14:20	EN			50° 59.995	129° 27.013			-			☐☐	
126	CS05	23	16:24	BE	ROS	-	50° 56.009	129° 0.302	62		479	1	MB	☑☐	Bottle for PS
			16:26	BO			50° 56.022	129° 0.311		52	-			☐☐	@ 30 m.
			16:31	EN			50° 56.055	129° 0.328			-			☐☐	
127	CS05	23	16:40	BE	NET		50° 56.146	129° 0.278	63		-	-	SK	☐☐	Bongo
			16:42	BO			50° 56.174	129° 0.274		53	-			☐☐	
			16:43	EN			50° 56.192	129° 0.304			-			☐☐	
128	CS1B	23	18:20	BE	ROS	-	50° 53.062	128° 40.038	72		480 -	1	MB	☑☐	SAMPLE FOR PC
			18:23	BO			50° 53.073	128° 40.047		65	-			☐☐	
			18:27	EN			50° 53.081	128° 40.050			-			☐☐	
129	CS1B	23	18:35	BE	NET	-	50° 53.124	128° 40.035	73		—	—	MB	☐☐	bongo
			18:38	BO			50° 53.168	128° 40.027		63	-			☐☐	
			18:39	EN			50° 53.191	128° 40.038			-			☐☐	
130	CS06	23	20:11	BE	ROS	US	51° 0.073	128° 51.668	64		481 - 492	12	CI	☑☐	;
	"		20:13	BO			51° 0.074	128° 51.662		58	-			☐☐	
			20:31	EN			51° 0.064	128° 51.683			-			☐☐	
			:				° .	° .			-			☐☐	

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Month May | **Year** 2023 | **Vessel** JP Tully | **Cruise ID** 2023-019

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
131	CS06	23	20:45	BE	NET	/	51 ° 0.078	128 ° 51.639	63		/	/	FL	☐☐	bongo
			20:49	BO			51 ° 0.104	128 ° 51.609		53	-			☐☐	
			20:50	EN			51 ° 0.111	128 ° 51.593		53	-			☐☐	
132	CS07	23	21:47	BE	ROS	/	51 ° 4.503	128 ° 43.857	65		/	/	CI	☑☐	
			21:49	BO	"		51 ° 4.507	128 ° 43.852		55	-			☐☐	
			21:50	EN			51 ° 4.512	128 ° 43.846			-			☐☐	
133	CS07	23	22:01	BE	NET	/	51 ° 4.519	128 ° 43.789	66		/	/	MG, FL	☐☐	bongo
			22:04	BO			51 ° 4.521	128 ° 43.779		56	-			☐☐	
			22:05	EN			51 ° 4.522	128 ° 43.784			-			☐☐	
134	CS08	23	23:00	BE	ROS	/	51 ° 8.553	128 ° 35.903	146		/	/	CI	☑☐	
			23:03	BO			51 ° 8.549	128 ° 35.903		135	-			☐☐	
			23:06	EN			51 ° 8.545	128 ° 35.898		135	-			☐☐	
135	CS08	23	23:18	BE	NET	/	51 ° 08.552	128 ° 35.928	145		/	/	MG	☐☐	bongo
			23:19	BO			51 ° 08.546	128 ° 35.922		135	-			☐☐	
			23:22	EN			51 ° 08.538	128 ° 35.924			-			☐☐	
136	CS09	24	00:11	BE	ROS	US	51 ° 12.469	128 ° 27.895	196		493 - 514	22	CI	☑☐	swapped SCF3640
			00:17	BO			51 ° 12.451	128 ° 27.886			-			☐☐	for SCF 4108; stopped
			00:42	EN			51 ° 12.43	128 ° 27.933			-			☐☐	winch payout at 55m
			:				° .	° .			-			☐☐	for 2 min for wire adjust

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Month May **Year** 2023 **Vessel** JP Tully **Cruise ID** 2023-019

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
137	CS09	24	00:53	BE	NET	/	51°12.435	128°28.002	196		-	/	MG	☐☐	
			00:59	BO			51°12.435	128°27.996		186	-			☐☐	
			01:02	EN			51°12.429	127°27.999			-			☐☐	
138	CS10	24	01:54	BE	ROS	/	51°16.491	128°19.981	80		/	/	CI	☑☐	gain cable snapped still 3x "
			01:56	BO	"		51°16.486	128°19.986		70	-			☐☐	
			01:58	EN			51°16.487	128°19.996			-			☐☐	
139	CS10	24	02:07	BE	NET	/	51°16.478	128°19.985	82		/	/	MG	☐☐	bongo
			02:11	BO			51°16.475	128°19.995		70	-			☐☐	"
			02:13	EN			51°16.478	128°20.002			-			☐☐	
140	SS5	24	03:52	BE	ROS	US	51°27.948	128°30.106	200		515 - 519	5	CI	☑☐	
			03:56	BO			51°27.933	128°30.119		192	-			☐☐	
			04:05	EN			51°27.92	128°30.173			-			☐☐	
141	SS5	24	04:16	BE	NET	/	51°27.938	128°29.873	201		/	/	MG	☐☐	bongo
			04:27	BO			51°27.795	128°29.93		190	-			☐☐	
			04:30	EN			51°27.74	128°29.938			-			☐☐	
142	LOOP142	24	05:34	BE	LOOP	/	51°26.312	128°12.892	131	4.5	5142	/	MG	☐☐	1 sal, 2 chl
143	SS7	24	07:15	BE	ROS		51°24.739	127°47.606	124		-	-	MB	☑☐	loop
			07:16	BO			51°24.739	127°47.604			-			☐☐	
			07:19	EN			51°24.745	127°47.600			-			☐☐	

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Month May | **Year** 2023 | **Vessel** JP Tully | **Cruise ID** 2023-019

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information: Latitude	Positional Information: Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
144	SS7	24	07:24	BE	NET	-	51° 24.724	127° 47.574	123		-	-	SK	☐☐	
			07:28	BO			51° 24.713	127° 47.580		114	-			☐☐	
			07:31	EN			51° 24.711	127° 47.578			-			☐☐	
145	SS6	24	08:34	BE	ROS	-	51° 20.008	128° 0.012	179		-	-	MB	☑☐	
			08:38	BO	"		51° 19.998	128° 0.028		170	-			☐☐	
			08:41	EN			51° 19.985	128° 0.018			-			☐☐	
146	SS7	24	08:48	BE	NET	-	51° 19.992	128° 0.081	179		-		SK	☐☐	
			08:56	BO			51° 20.000	128° 0.093		169	-			☐☐	
			08:59	EN			51° 20.007	128° 0.080			-			☐☐	
147	CPE1	24	11:13	BE	ROS	-	51° 0.001	127° 50.000	143		-	-	MB	☐☐	
			11:16	BO			51° 0.003	127° 50.016		135	-			☐☐	
			11:19	EN			50° 59.981	127° 50.001			-			☐☐	
148	CPE1	24	11:26	BE	NET	-	51° 0.011	127° 50.007	142		-	-	SK	☐☐	
			11:30	BO			51° 0.035	127° 49.986		134	-			☐☐	
			11:34	EN			51° 0.064	127° 50.042			-			☐☐	
149	CPE1	24	11:42	BE	DRF	-	50° 55.894	127° 49.863	~150	0	-	-	MB	☐☐	SPARGE BWS
150	JSD1	24	19:12	BE	ROS	US	50° 30.436	126° 28.342	367		520-534	15	CI	☑☐	DEPLOY #1496 #1494
			19:19	BO			50° 30.433	126° 28.421		362	-			☐☐	
			19:43	EN			50° 30.436	126° 28.617			-			☐☐	

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150: had to bring Rosette back on board after 10m soak to clean oil
150: fluor was high on downcast 220 to 360 → coupled w transmissivity

DAILY SCIENCE LOG

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151	JS01	24	20:09	BE	NET	/	50°30.428	126°28.009	361		/	/	MG	☐☐	Bongo
			20:22	BO			50°30.392	126°27.71		350	-			☐☐	
			20:28	EN			50°30.383	126°27.634			-			☐☐	
152	LOOP 152	24	21:36	BE	LOOP	/	50°29.115	126°15.867	370	4.5	5152	/	MG	☐☐	loop: 1sal, 2ch
153	GEO1	25	13:04	BE	ROS	US	49°15.00	123°41.979	404		535 - 543	9	MB	☑☐	
			13:11	BO			49°14.991	123°45.002		393	-			☐☐	
			13:33	EN			49°14.982	123°44.983		393	-			☐☐	
154	GEO1	25	13:43	BE	NET	/	49°14.974	123°44.972	404		/	/	MG	☐☐	Bongo
			1 :	BO			49°14.972	123°44.988		250	-			☐☐	
			:	EN			49°14.975	123°44.99			-			☐☐	
155	GEO1	25	14:19	BE	NET	UN	49°14.982	123°44.001	404	394	-		SK	☐☐	MPS
			14:32	BO			49°14.987	123°44.999			-			☐☐	
			14:41	EN			49°14.984	123°45.001			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	

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