

# DAILY SCIENCE LOG BOOK

MISSION  
NUMBER

2019-78

DATE:

From: 3 July 2019

To: 23 July 2019

VESSEL:

Sir Wilfrid Laurier

PROJECT(S):

Canada's Three Oceans (CSO) +

Distributed Biological Observatory (DBO)

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

Book 1/2

WaterProperties.ca

# DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month			Year			Vessel			Cruise ID						
JUL			2019			SWL			2019-78						
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							
1	Vic Harbour	4	02:22	BE	ADCP		48° 24.281	123° 26.862	30		-		SZ/SAD	<input type="checkbox"/>	ADCP008
2	"	4	02:22	BE	ROS	UN	48° 24.281	123° 26.862	30		-		SZ/SAD	<input type="checkbox"/>	
			:	BO			.	.	25	25	-			<input type="checkbox"/>	
			02:35	EN			48° 24.283	123° 26.885			1-23			<input checked="" type="checkbox"/>	
			:				.	.			-			<input type="checkbox"/>	
	Cruise under way @ 1815. went outside harbour and had													<input type="checkbox"/>	test
	ADCP + CTD casts													<input type="checkbox"/>	
			:				.	.			-			<input type="checkbox"/>	
3	NPO1	4	15:05	BE	ADCP		48° 50.277	126° 08.292	109		-		SZ/SAD	<input type="checkbox"/>	
			:	EN			.	.			-			<input type="checkbox"/>	File closed 1610 but out of water earlier
4	"	"	15:11	BE	ROS	US	48° 50.285	126° 8.3	109		1-7	7	SZ/SAD	<input checked="" type="checkbox"/>	
			15:20	BO			48° 50.26A	126° 8.291		101	-			<input type="checkbox"/>	Alt:80
			15:30	EN			48° 50.255	126° 8.286			-			<input type="checkbox"/>	
5	"		15:43	BE	NET		48° 50.250	126° 8.285	104	97	-		GN	<input type="checkbox"/>	Planner / net
6	UCTD1	4	21:00	DE	UCTD		49° 12.8	127° 18.3			-		SZ/SAD	<input type="checkbox"/>	
<del>7</del>	<del>NPO2</del>		:	<del>BE</del>	<del>ADCP</del>		.	.			-			<input type="checkbox"/>	not doing ADCP in N Pacific
<del>7</del>			:	<del>EN</del>	<del>ROS</del>		.	.			-			<input type="checkbox"/>	
7	NPO2	5	1:09	BE	ROS		49° 28.842	128° 8.0A1	2357	1000	8			<input type="checkbox"/>	
			1:23	BO			49° 28.894	128° 7.954			-			<input type="checkbox"/>	

**Event Type:** BOT = Bottle cast (no CTD) CTD = Standalone CTD ROS = CTD in Rosette SET = Fish Set  
 LOOP = Sea Water Loop MOR = Mooring NET = Plankton Net Haul DRF = Drifter =  
**Bottle Firing Method:** US = Up / Stop (default) UN = Up / No stop DN = Down / No stop  
**Time Code:** BE = Beginning Time of Cast BO = Bottom Time of Cast EN = End Time of Cast  
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**CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products**  
 Notes:

→ during the initial 3 min soot  
Vic Harbour casts: CTD computer unit froze, noticed as pressure remained @ 11 db after coming back @ surface before starting descent. SZ restarted the CTD central unit and it fixed the problem.

→ Ros cast NPO1 is oxygen comparison cast

← Lots of whales! ~20 Humpback whales For last 30 min

4 July 2345 UTC 49 23.340 127 51.139

1503

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7	NPO2	5	01:55	EN	ROS		49° 28.891	128° 7.968			-			<input type="checkbox"/>		
8	NPO2	5	02:05	BO	NET		49° 28.87	128° 7.9		100	-			<input type="checkbox"/>		
9	UCTD2	5	8:50	DE	UCTD		50° 0.88	129° 53.90			-	S	SZ	<input type="checkbox"/>		
10	NPO3	5	15:04	BE	ROS	US	50° 29.344	131° 36.851	2160	1000	31-42	13	SZ/SAG	<input type="checkbox"/>	→	
			15:21	BO			50° 29.334	131° 36.862	1031?			-			<input type="checkbox"/>	
			15:53	EN			50° 29.378	131° 36.760				-			<input type="checkbox"/>	
11	NPO3	5	16:03	BO	NET		50° 29.34	131° 36.79		100	-		GN	<input type="checkbox"/>		
12	UCTD3	5	21:01	BE	UCTD		50° 51.05	132° 59.47			-		SZ/SAG	<input type="checkbox"/>		
13	NPO4	6	01:04	BE	ROS	US	51° 7.729	134° 7.682	2930	1000	45-58	14	SZ/SAG	<input type="checkbox"/>		
			01:24	BO			51° 7.734	134° 7.675				-			<input type="checkbox"/>	
			:	EN			51° 7.	134° 7.				-			<input type="checkbox"/>	
14	NPO4	6	01:57	BO	NET		51° 7.7	134° 7.69			-			<input type="checkbox"/>		
<del>15</del>	<del>NPO4</del>	<del>6</del>	<del>:</del>	<del>DE</del>	<del>DRF</del>		<del>.</del>	<del>.</del>			<del>-</del>			<input type="checkbox"/>	<del>SNALZ60019CA019</del>	
16	NPO4	6	00:20		ARGO		51° 08.00	134° 09.2			-			<input type="checkbox"/>	mea 300234067576736	
17	UCTDA		8:58		UCTD		51° 36.48	134° 7.69			-		SZ	<input type="checkbox"/>		
18	NPO5	6	15:00	BE	ROS		51° 59.537	138° 4.160	3572	1000	59-73		SZ/SAG	<input type="checkbox"/>		
			15:20	BO			51° 59.531	138° 4.212				-			<input type="checkbox"/>	
			15:47	EN			51° 59.570	138° 4.200				-			<input type="checkbox"/>	
19	NPO5	6	16:00	BO	NET		51° 59.570	138° 4.206		100	-		GN	<input type="checkbox"/>		

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Notes: \_\_\_\_\_

NPO3 ROS : Bottom depth variable. 2000-2300 m We are btw sea mounts so  
likely they are affecting reads.  
Oxygen compensation : 1 min per 1 bottle stop.

⇒ ARGO 1.

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20	NP05	6	16:48	DE	ARGO	ARGO2	51° 59.63	138° 09.78			-		JN	<input type="checkbox"/>	SNAL2600/CA020 300234067534330
21	UCTD5	6	20:59	DE	UCTD		52° 14.71	139° 23.50	3636		-			<input type="checkbox"/>	
22	NP06	7	01:05	BE	ROS	US	52° 28.140	140° 40.721			-			<input type="checkbox"/>	
			01:25	BO			52° 28.128	140° 40.720	3625	1000	74 - 87	14	SZ/SAR	<input type="checkbox"/>	Oxy comparison Cast w/ 1 min stops
			01:53	EN			52° 28.138	140° 40.696			-			<input type="checkbox"/>	
23	NP06	7	01:55	BE	NET		52° 28.13	140° 40.69			-			<input type="checkbox"/>	
24	UCTD6	7	08:57	DE	UCTD		52° 50.02	142° 53.98	3789		-		SZ	<input type="checkbox"/>	
25	NP07	7	15:00	BE	ROS	US	53° 6.319	144° 51.029	3920	200A	88 - 104	16(12)	SAR/SZ	<input type="checkbox"/>	Oxy cast 1 min stop/bottle
			15:33	BO			53° 6.227	144° 51.104			-			<input type="checkbox"/>	
			:	EN			.	.			-			<input type="checkbox"/>	
26	NP07	7	16:21	BE	NET		53° 6.09	144° 51.00	3908		-		GN	<input type="checkbox"/>	ARGO3
27	NP07	7	16:43	DE	ARGO	ARGO3	53° 06.23	144° 51.59	3911		-		JN	<input type="checkbox"/>	SNAL2600/CA023 300234010465530
28	UCTD7	7	20:59	DE	UCTD		53° 17.405	146° 16.416	3948		-		SZ	<input type="checkbox"/>	
29	NP08	8	00:44	BE	ROS		53° 25.470	147° 28.962	4069		-			<input type="checkbox"/>	
			01:27	BO		US	.	.		LOWD	105 - 118	14	SZ/SAR	<input type="checkbox"/>	
			01:27	EN			53° 25.468	147° 28.957			-			<input type="checkbox"/>	
30	NP08	8	01:27	BE	NET		53° 25.46	147° 28.97			-		GN	<input type="checkbox"/>	
31	NP08	8	01:50		ARGO	ARGO4	53° 25.67	147° 29.82			-		JN	<input type="checkbox"/>	ARGO4
			Ship drifted off for 6 min?												

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 Produced by the Water Properties Group, IOS    WaterProperties.ca    Version: 20 April 2016

⇒ ARG02

Ros event 22 see that there is a large difference btw  $T_1$  and  $T_2 \sim 0.2^\circ\text{C}$

Likely a pump isn't working as well as it should? No, see that at surface soak there is the same difference. Need to check con file.

$T_2$  colder than  $T_1$

ARG03

ARG04

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32	NP09	8	15:02	BE	ROS		53° 47.924	151° 33.269	4290	1000	119 - 132	14	SAQ/SZ	<input type="checkbox"/>	<input type="checkbox"/>	Oxy cast stop im/bottle
			15:22	BO			53° 47.984	151° 33.400			-			<input type="checkbox"/>	<input type="checkbox"/>	
			15:56	EN			53° 48.094	151° 33.569			-			<input type="checkbox"/>	<input type="checkbox"/>	
33	NP09		16:02	BE	NET		53° 48.0955	151° 33.5824	3658		-	6	GN	<input type="checkbox"/>	<input type="checkbox"/>	
34	NP09		15:45		ARGO	ARGOS	53° 48.38	151° 39.78	ARGO		needs satellite		w/track	<input type="checkbox"/>	<input type="checkbox"/>	to activate
			:				.	.			-			<input type="checkbox"/>	<input type="checkbox"/>	
35	UCTD 8	8	08:57	DE	UCTD		53° 38.90	149° 41.37	3000+		-			<input type="checkbox"/>	<input type="checkbox"/>	} forgot to get base in earlier
36	Env Can	8	19:15		DRF	DE	53° 47.03	151° 20.45	4330		SN JOGORN			<input type="checkbox"/>	<input type="checkbox"/>	
			:				.	.			-			<input type="checkbox"/>	<input type="checkbox"/>	
37	UCTD 9		20:56	DE	UCTD		53° 53.63	152° 58.37	4864		-		SZ/SAQ	<input type="checkbox"/>	<input type="checkbox"/>	
38	NP10	9	00:44	BE	ROS		53° 57.475	154° 7.433	4509		133 - 146	14	SAQ/SZ	<input type="checkbox"/>	<input type="checkbox"/>	
			01:02	BO			53° 57.475	154° 7.505	4509		-			<input type="checkbox"/>	<input type="checkbox"/>	
			01:27	EN			53° 57.494	154° 7.520	4509		-			<input type="checkbox"/>	<input type="checkbox"/>	
39		9	01:28		NET		53° 57.50	154° 7.533			-			<input type="checkbox"/>	<input type="checkbox"/>	
40	UCTD 10	9	08:57		UCTD		54° 03.25	156° 22.79	4800		-			<input type="checkbox"/>	<input type="checkbox"/>	
41	Env Can	9	14:32	DE	DRF		54° 05.3	158° 09.73	4911		Environment Canada Buoy SN	JOSKEW		<input type="checkbox"/>	<input type="checkbox"/>	Lib 0041 empty
42	NP11	9	15:01	BE	ROS		54° 5.286	158° 15.697	4927		147 - 161	14(5)	SAQ/SZ	<input type="checkbox"/>	<input type="checkbox"/>	
			15:19	BO			54° 5.220	158° 15.902	4959		-			<input type="checkbox"/>	<input type="checkbox"/>	
43			15:53	EN	V		54° 5.206	158° 16.230	4916		-			<input type="checkbox"/>	<input type="checkbox"/>	

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**Notes:**

← ARGOS

} Computer Froze at 16 db but unfroze on its own at 5 cbar.



→ UCTD SN 323 is attached to Rosette frame w/ sensor intake very close to primary T/C intake.

UCTD given its own event # since the # is used in the filename and I don't want it to be confused w/ the ~~ctd-cast~~ filename.

10 July updated com file - same sensors but corrections to T<sub>1</sub>C<sub>3</sub> entry + SPAR units.

had rounded off coeffs... gave 0.2°C diff btw sensors

Ros Event 50 Jelly sucked into primary T, C, O<sub>2</sub> plumbing at bottom of cast. All of upcast is bad for these parameters. Plumbing flushed well ~~sa~~ after Rosette back on deck.

Niskin 3 and 23 swapped before SLIP-1. Niskin 3 typically leaks ~~sa~~ and has chip in Niskin bottom.

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52	SHP-1/DB01.1	14	1:41	BE	CAM		62° 0.68	175° 3.44			-			<input type="checkbox"/>	<input type="checkbox"/>	<i>OK</i>
53	"		1:30	BE	C-OPS		62° 0.67	175° 3.57			-			<input type="checkbox"/>	<input type="checkbox"/>	
54	"		2:03	BO	TUDIS		62° 0.80	175° 3.52			-			<input type="checkbox"/>	<input type="checkbox"/>	
55	"		2:41	BO	HAPS*2	x3	62° 0.76	175° 3.46			-			<input type="checkbox"/>	<input type="checkbox"/>	
56	SHP-2/DB01.2	14	4:00	BE	ADCP		62° 3.029	175° 12.57			-			<input type="checkbox"/>	<input type="checkbox"/>	—
			6:16	EN			62° 3.200	175° 11.959			-			<input type="checkbox"/>	<input type="checkbox"/>	
57	"		4:04	BE	ROS	US	62° 3.023	175° 12.584	83		192-210	19	SAQ	<input type="checkbox"/>	<input type="checkbox"/>	→
			4:10	BO			62° 3.031	175° 12.553		76	-			<input type="checkbox"/>	<input type="checkbox"/>	ALT 4.8
			4:21	EN			62° 3.031	175° 12.548			-			<input type="checkbox"/>	<input type="checkbox"/>	
58	"		4:26	BE	CAM		62° 3.01	175° 12.52			-			<input type="checkbox"/>	<input type="checkbox"/>	
59	"		4:47		<del>COPS</del>		62° 3.17	175° 12.49			-			<input type="checkbox"/>	<input type="checkbox"/>	
60	"		5:03		NET		62° 3.19	175° 12.18			-			<input type="checkbox"/>	<input type="checkbox"/>	Net scrapped side of ship & picked up barnacles
61	"		5:28		TUD*5		62° 3.17	175° 12.05			-			<input type="checkbox"/>	<input type="checkbox"/>	
62	"		5:59	BE	HAPS*2		62° 3.17	175° 11.95			-			<input type="checkbox"/>	<input type="checkbox"/>	
63	SHP-2b/DB01.3	14	07:50	BE	CTD	-	62° 12.978	174° 52.442	77		—		SZ	<input type="checkbox"/>	<input type="checkbox"/>	CTD only
			:	BO			62° 12.952	174° 52.358		72	-			<input type="checkbox"/>	<input type="checkbox"/>	→ comment
			:	EN			62° 12.948	174° 52.279			(and ALT=5)			<input type="checkbox"/>	<input type="checkbox"/>	
64	SHP-3/DB01.4	14	09:31	BE	ADCP		62° 23.316	174° 34.093	70	72	-		SZ	<input type="checkbox"/>	<input type="checkbox"/>	
			11:43	EN			62° 23.2820	174° 33.720	73		-			<input type="checkbox"/>	<input type="checkbox"/>	

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Event 57: ROS : PAR cleaned after cast - had some wire grease on it.

→ NET was re-deployed for proper sample.

Event 63 ROS : ① Down @  $0.5 \text{ m/s}$  , up fast  $\sim 1.3 \text{ m/s}$  , 1 min wait at surface  
② Jelly tendrils sucked into each TC duct...

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65	<del>SLIP-3/</del> DRO1.4	14	09:36	BE	ROS	US	62° 23.317	174° 34.083	73		211 - 225	15	SZ	<input checked="" type="checkbox"/>	→
			09:41	BO			62° 23.308	174° 34.064		68	-			<input type="checkbox"/>	
			09:59	EN			62° 23.300	174° 34.028			-			<input type="checkbox"/>	
<del>66</del>			10:00	BE	<del>CAM</del>		62° 23.29	174° 34.00		67	-		LC	<input type="checkbox"/>	
<del>67</del>			:		<del>COPS</del>		.	.			-			<input type="checkbox"/>	
66	"	0	10:29		NET		62° 23.21	174° 33.75			-		GN	<input type="checkbox"/>	Cancelled
67	"		10:36		MUDS	5	62° 23.20	174° 33.67			-		JG/KC	<input type="checkbox"/>	
68	"		11:23		HABS	2	62° 23.28	174° 33.72			-		JG/KC	<input type="checkbox"/>	
69	SLIP-3B/ DRO1.5	14	13:16	BE	CTD		62° 28.13	174° 4.90			-			<input type="checkbox"/>	
			13:22	BO		-	62° 28.150	174° 4.908	65	64.4 (A1+3.7)	-		SZ	<input type="checkbox"/>	→
			13:28	EN			62° 28.144	174° 4.902			-			<input type="checkbox"/>	
70	SLIP-5/ DRO1.6	14	15:10	BE	ADCP		62° 33.5341	173° 33.1482			-			<input type="checkbox"/>	
			16:55	EN			62° 33.5658	173° 33.0097			-			<input type="checkbox"/>	
71	"	14	15:13	BE	ROS	US	62° 33.542	173° 33.134	67		226 - 240	15	SZ	<input type="checkbox"/>	Commit →
			15:20	BO			62° 33.552	173° 33.110		62	ALT 3:3			<input type="checkbox"/>	
			15:34	EN			62° 33.562	173° 33.115			-			<input type="checkbox"/>	
72	"		15:32		CAM		62° 33.56	173° 33.11			-		LC	<input type="checkbox"/>	
73	"		15:43		COPS		62° 33.55	173° 33.12			-		KF	<input type="checkbox"/>	
74	"		16:00		NET		62° 33.57	173° 33.12			-		GN	<input type="checkbox"/>	

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Event 65 ROS: Swapped Nrskin 7 + 21 before cast. Nrskin 7 had leak on SLIP 2 + has chipped bottom.

Event 69: CTD

Up + down @ 0.5 m/s, 1 min at bottom + surface

Event 71 ROS: Jelly (the whole deal) landed in the pylon and covered bottles etc. TC ducts flushed well + Rosette rinsed after sampling.

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75	SLIP-5/ DB01.6		16:07		MWDS		62° 33.55	173° 33.10			-			<input type="checkbox"/>	
76			16:30		HARS*2		62° 33.54	173° 33.03			-			<input type="checkbox"/>	
77	SLIP-5b/ DB01.7	14	18:24	BE	CTD	-	62° 47.100	173° 29.855	70		-	-	SZ	<input type="checkbox"/>	→
			18:30	BO			62° 47.096	173° 29.855		65.4	-			<input type="checkbox"/>	
			18:34	EN			62° 47.098	173° 29.851		(Alt 3.5)	-			<input type="checkbox"/>	
78	SLIP-4/ DB01.8		20:12	BE	ADCP		63° 1.777	173° 27.61			-		SAO	<input type="checkbox"/>	
			22:20	EN			63° 1.752	173° 27.482			-			<input type="checkbox"/>	
79			20:15	BE	ROS		63° 1.776	173° 27.598	72		-		SAO	<input type="checkbox"/>	
			20:22	BO			63° 1.784	173° 27.584		66.8	-			<input type="checkbox"/>	
			20:42	EN			63° 1.787	173° 27.587			-			<input type="checkbox"/>	
80			20:37	BE	CAM		63° 1.78	173° 27.60			-		LC	<input type="checkbox"/>	
81			20:58		COBS		63° 1.79	173° 27.53			-		KF	<input type="checkbox"/>	
82			21:14		NET		63° 1.79	173° 27.51			-		GN	<input type="checkbox"/>	
83			21:23		MWDS		63° 1.77	173° 27.48			-		JG/LC	<input type="checkbox"/>	
84			21:50		HARS*2		63° 1.76	173° 27.50			-		JG/LC	<input type="checkbox"/>	
85	SLIP-4b/ DB01.9	15	00:35	BE	CTD		63° 16.783	173° 4.782	70.2	64.5	-		SAO	<input type="checkbox"/>	CTD only/calm
			00:40	BO			63° 16.764	173° 4.825			-			<input type="checkbox"/>	
			00:45	EN			63° 16.77	173° 4.861			-			<input type="checkbox"/>	
86	SLIP-4c/ DB01.10		03:30	BE	CTD		63° 36.282	173° 35.25A	55		-		SAO	<input type="checkbox"/>	

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— Event 77 CTD up + down at 0.5 m/s w/ 1 min at bottom and return at top.

— Event 79 Ros: water coming out side of ship close to rosette while sitting @ surface for surface nistims.  
Lots of jelly fishes during cast and 2 giant ones floating on top of rosette while sitting @ surface before firing surface nistims.

→ event 85: 0.5 m/sec up + down, 1 min @ bottom + surface

→ event 80: PAR sensor was left w/o cap b/w last cast and this one.  
took a while to get ship in position (passed over it). so deck unit was on longer than usually before deployment. ~ 20 min longer.

# DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

43

Month <u>JUL</u>			Year <u>2019</u>			Vessel <u>SWL</u>			Cruise ID <u>2019-78</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
86	<u>SLIP-4c/DBO1.10</u>	<u>15</u>	<u>03:35</u>	<u>BO</u>	<u>CTD</u>		<u>63° 36.283</u>	<u>172° 35.245</u>	<u>55</u>	<u>49.1</u>	-			<input type="checkbox"/>	
			<u>03:40</u>	<u>EN</u>			<u>63° 36.274</u>	<u>172° 35.239</u>			-			<input type="checkbox"/>	
87	<u>BCL-6a</u>	<u>15</u>	<u>06:11</u>	<u>BE</u>	<u>ROS</u>	<u>US</u>	<u>63° 55.177</u>	<u>172° 5.803</u>	<u>54</u>		-			<input type="checkbox"/>	
			<u>06:18</u>	<u>BO</u>			<u>63° 55.174</u>	<u>172° 5.734</u>		<u>49.5</u>	<u>265-275</u>	<u>11</u>	<u>SAC</u>	<input type="checkbox"/>	
			<u>06:24</u>	<u>EN</u>			<u>63° 55.183</u>	<u>172° 5.694</u>			-			<input type="checkbox"/>	
88	<u>BCL-6b</u>	<u>15</u>	<u>09:28</u>	<u>BE</u>	<u>CTD</u>	<u>-</u>	<u>64° 17.549</u>	<u>171° 29.554</u>	<u>49</u>		<u>-</u>	<u>0</u>	<u>SZ</u>	<input type="checkbox"/>	<u>Big change in SURFACE T</u>
			<u>09:35</u>	<u>BO</u>			<u>64° 17.586</u>	<u>171° 29.480</u>		<u>45</u>	-			<input type="checkbox"/>	<u>From last cast 12 → 20c</u>
			<u>09:37</u>	<u>EN</u>			<u>64° 17.602</u>	<u>171° 29.461</u>		<u>alt = 2.6</u>	-			<input type="checkbox"/>	<u>Anadyr water!</u>
89	<u>DBO 2.0 BCL-6c</u>	<u>15</u>	<u>14:00</u>	<u>BE</u>	<u>ADCP</u>		<u>64° 40.325</u>	<u>170° 38.574</u>			-			<input type="checkbox"/>	
			<u>15:22</u>	<u>EN</u>			<u>64° 40.510</u>	<u>170° 38.338</u>			-			<input type="checkbox"/>	
90	<u>11</u>		<u>14:01</u>	<u>BE</u>	<u>ROS</u>	<u>US</u>	<u>64° 40.325</u>	<u>170° 38.574</u>	<u>48</u>	<u>43</u>	<u>276-286</u>	<u>11</u>	<u>SZ</u>	<input type="checkbox"/>	
			<u>:08</u>	<u>BO</u>			<u>64° 40.327</u>	<u>170° 38.573</u>		<u>+4.4 alt</u>	-			<input type="checkbox"/>	
			<u>:15</u>	<u>EN</u>			<u>64° 40.338</u>	<u>170° 38.560</u>			-			<input type="checkbox"/>	
91			<u>14:12</u>	<u>BE</u>	<u>CAM</u>		<u>64° 40.333</u>	<u>170° 38.566</u>			-			<input type="checkbox"/>	
92			<u>14:30</u>	<u>BE</u>	<u>C-OPS</u>		<u>64° 40.356</u>	<u>170° 38.553</u>			-			<input type="checkbox"/>	
93			<u>14:54</u>	<u>BE</u>	<u>NET</u>		<u>64° 40.521</u>	<u>170° 38.567</u>			-			<input type="checkbox"/>	
94			<u>15:01</u>	<u>BO</u>	<u>MUDx5</u>		<u>64° 40.518</u>	<u>170° 38.493</u>			-			<input type="checkbox"/>	
95	<u>DBO 2.0a</u>	<u>15</u>	<u>16:29</u>	<u>BE</u>	<u>CTD</u>	<u>-</u>	<u>64° 40.238</u>	<u>170° 15.847</u>	<u>49</u>	<u>44.7</u>	<u>-</u>	<u>-</u>	<u>SZ</u>	<input type="checkbox"/>	<u>Down + up</u>
			<u>16:35</u>	<u>BO</u>			<u>64° 40.241</u>	<u>170° 15.833</u>		<u>alt = 39</u>	-			<input type="checkbox"/>	<u>alt 0.5 m/s</u>
			<u>16:39</u>	<u>EN</u>			<u>64° 40.250</u>	<u>170° 15.833</u>			-			<input type="checkbox"/>	<u>1 min @ bottom + top</u>

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Notes: \_\_\_\_\_

→ stopped @ 78db up coast by bridge for ~2 min

Event 88 CTD Before cast, lengthened lanyard <sup>on</sup> top end cap. on <sup>new</sup> Niskin 7  
 water column completely mixed top to bottom.  
 Bridge reports strong current, ~1.5 knt, to NNE. Also strong 20 knt wind.  
 TSG shows sharp transition from 12°C to 2°C water about 30 min before cast.

# DAILY SCIENCE LOG

## Ocean Sciences Division, Institute of Ocean Sciences

Month			Year			Vessel				Cruise ID						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments	
96	UTBS-5 DBO 2.1	15	17:57	BE	ADCP		64°40.296	169°55.350	48					<input type="checkbox"/>	<input type="checkbox"/>	First start didn't look good maybe due to
			18:50	EN			64°40.368	169°54.400						<input type="checkbox"/>	<input type="checkbox"/>	starting power late. Restarted after CTD.
97	"	15	17:42	BE	ROS	US	64°40.258	169°55.429	48		287-298	12	SE	<input type="checkbox"/>	<input type="checkbox"/>	
			17:46	BO			64°40.265	169°55.398		43 at 4.3	-			<input type="checkbox"/>	<input type="checkbox"/>	
			17:57	EN			64°40.296	169°55.350			-			<input type="checkbox"/>	<input type="checkbox"/>	
98	"		17:52		CAM		64°40.297	169°55.350			-		LC	<input type="checkbox"/>	<input type="checkbox"/>	
99	"		18:00		C-OPS		64°40.386	169°55.267			-		KE	<input type="checkbox"/>	<input type="checkbox"/>	
100	"		18:15		NET		64°40.387	169°55.199			-		GU	<input type="checkbox"/>	<input type="checkbox"/>	
101	"		18:20		MUDx5		64°40.39	169°55.16			-		JG/LC	<input type="checkbox"/>	<input type="checkbox"/>	
102	DBO2.1a		20:17	BE	CTD		64°40.478	169°28.054	45.5		-		SAC	<input type="checkbox"/>	<input type="checkbox"/>	
103			20:22	BO			64°40.505	169°28.046		40	-			<input type="checkbox"/>	<input type="checkbox"/>	Att + 5.1
104			20:26	EN			64°40.511	169°28.040			-			<input type="checkbox"/>	<input type="checkbox"/>	
103	UTBS-2 DBO 2.2	15	21:38	BE	ADCP		64°40.834	169°5.807			-		SAC	<input type="checkbox"/>	<input type="checkbox"/>	
			22:38	EN			64°40.964	169°5.393			-			<input type="checkbox"/>	<input type="checkbox"/>	
104	"		21:40	BE	ROS		64°40.836	169°5.791	45.7		299-310	12	SAC	<input type="checkbox"/>	<input type="checkbox"/>	
			*21:45	BO			64°40.841	169°5.780		40.1	-			<input type="checkbox"/>	<input type="checkbox"/>	
			21:52	EN			64°40.840	169°5.762			-			<input type="checkbox"/>	<input type="checkbox"/>	
105	"		21:51		CAM		64°40.840	169°5.76			-			<input type="checkbox"/>	<input type="checkbox"/>	
106	"		22:07		C-OPS		64°40.97	169°5.57			-			<input type="checkbox"/>	<input type="checkbox"/>	

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Notes: \_\_\_\_\_

→ event 96: pulled out of water for a while before I noticed & stopped data acquisition  
↳ file name of good file = 087

→ event 103: "ADCP in water" wasn't radioed so started data acquisition soon after it was deployed in water

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Ocean Sciences Division, Institute of Ocean Sciences

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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
107		15	22:15		NET		64° 40.97	169° 5.51			-		GN	<input type="checkbox"/>	
108			22:21		MUD <sup>BS</sup>		64° 40.96	169° 5.44			-		JG/LC	<input type="checkbox"/>	
109	DB02-2a	16	00:14	BE	CTD		64° 40.477	168° 35.770	48.7		<del>    </del>		SAG	<input type="checkbox"/>	up + down 1 min stop @ bottom
			00:19	BO			64° 40.483	168° 35.737		39.0	-			<input type="checkbox"/>	calm / sunny surface
			00:23	EN			64° 40.496	168° 35.716			AD 4.3			<input type="checkbox"/>	~18 knt winds near surface
110	WTBS-2a/ DB02-3	16	01:37	BE	ADCP		64° 40.138	168° 14.030	38.3		-		SAG	<input type="checkbox"/>	
			02:39	EN			64° 40.261	168° 13.579			-			<input type="checkbox"/>	
111			01:39	BE	ROS		64° 40.141	168° 14.016	38.3		311-320		SAG	<input type="checkbox"/>	
			01:45	BO			64° 40.140	168° 13.967		33.2	-			<input type="checkbox"/>	
			01:51	EN			64° 40.166	168° 13.952			-			<input type="checkbox"/>	
112			01:50		CAT		64° 40.16	168° 13.95			-		LC	<input type="checkbox"/>	
113			02:03		C-OPS		64° 40.23	168° 13.89			-		KF	<input type="checkbox"/>	
114			02:15		NET		64° 40.32	168° 13.77			-		GN	<input type="checkbox"/>	
115			02:23		MUD <sup>BS</sup>		64° 40.33	168° 13.74			-		JG/LC	<input type="checkbox"/>	
116	DB02-6	16	5:17	BE	CTD		65° 0.163	168° 39.289	48.1		<del>    </del>		SAG	<input type="checkbox"/>	up + down cast @ e. side, 1 min stop
			5:21	BO			65° 0.167	168° 39.270		43.2	AD 4.5			<input type="checkbox"/>	@ bottom + surface Sunny, 14 knt winds
			5:25	EN			65° 0.170	168° 39.266			-			<input type="checkbox"/>	
117	DB02-5 WTBS-1	16	6:58	BE	ADCP		64° 59.396	169° 8.172	49		-		SAG	<input type="checkbox"/>	
			8:44	EN			64° 59.421	169° 8.236			-			<input type="checkbox"/>	

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# DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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118	<u>UTBS-1/DB02.5</u>	16	7:04	BE	ROS	US	64° 59.384	169° 08.118	49	44	321-343	23	SAQ/SZ	<input type="checkbox"/> <input type="checkbox"/>	Large Fluorescence peak ~ 30µg/m3
			7:19	BO			64° 59.392	169° 08.104		alt	4.5-			<input type="checkbox"/> <input type="checkbox"/>	
			7:41	EN			64° 59.390	169° 07.997			-			<input type="checkbox"/> <input type="checkbox"/>	
119	"		7:46	BE	CAM		64° 59.36	169° 08.09			-			<input type="checkbox"/> <input type="checkbox"/>	
120	"		8:02	BE	C-OPS		64° 59.38	169° 07.62			-			<input type="checkbox"/> <input type="checkbox"/>	
121	"		8:18	EN	NET		64° 59.39	169° 08.30			-			<input type="checkbox"/> <input type="checkbox"/>	
122	"		8:27	BO	MUDS		64° 59.40	169° 08.18			-			<input type="checkbox"/> <input type="checkbox"/>	(FAKE) DATA
123	<u>DB02.Aa</u>	16	9:50	BE	CTD	-	64° 58.517	169° 29.048	49	45.2	-	-	SZ	<input type="checkbox"/> <input type="checkbox"/>	spike @ bottom due to slowing
			9:58	BO			64° 58.530	169° 29.016		alt	e 3.6			<input type="checkbox"/> <input type="checkbox"/>	CTD - not on upcast.
			10:01	EN			64° 58.529	169° 28.972			-			<input type="checkbox"/> <input type="checkbox"/>	
124	<u>UTBS-4/DB02.4</u>	16	11:18	BE	ADCP		64° 57.638	169° 53.170			-			<input type="checkbox"/> <input type="checkbox"/>	
			12:36	EN			64° 57.643	169° 52.925			-			<input type="checkbox"/> <input type="checkbox"/>	
125	"	16	11:21	BE	ROS	US	64° 57.638	169° 53.170	49	44	344-353	10	SZ	<input type="checkbox"/> <input type="checkbox"/>	
			11:31	BO			64° 57.670	169° 53.165		alt	4.5-			<input type="checkbox"/> <input type="checkbox"/>	
			11:37	EN			64° 57.697	169° 53.107			-			<input type="checkbox"/> <input type="checkbox"/>	
126	"		11:40	? BE	CAM		64° 57.73	169° 53.00			-			<input type="checkbox"/> <input type="checkbox"/>	
127	"		12:05	BE	NET		64° 57.65	169° 53.21			-			<input type="checkbox"/> <input type="checkbox"/>	
128	"		12:16	BO	MUDS		64° 57.66	169° 53.09			-			<input type="checkbox"/> <input type="checkbox"/>	

SEE BOOK 2 FOR THE FURTHER ADVENTURES OF SWL AT SEA!

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Produced by the Water Properties Group, IOS  
 WaterProperties.ca  
 Version: 20 April 2016