DAILY SCIENCE LOG BOOK

MISSION NUMBER 2020-083 Book #2

DATE: From: 6 Oct 2020 To: 20 Oct 2020

VESSEL: J.P. Tully

PROJECT(S):

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER **Year** 2020 **Vessel** J.P. TULLY **Cruise ID** 2020083

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
169	DOUG05d	15	15:23	BE	ROS	/	53° 54.65	128° 43.16	238		/	/	MG	☑ ☐	
			15:28	BO			° 54.66	° 43.17		232	-			☐ ☐	
			15:32	EN			° 54.67	° 43.16			-			☐ ☐	
170	DOUG05e	15	15:58	BE	ROS	/	53° 54.55	128° 42.80	217		/	/	MG	☑ ☐	FRC LAUNCH 1550
			16:02	BO			° 54.55	° 42.86		219	-			☐ ☐	SOFT BOTTOM? SOUNDER JA
			16:07	EN			° 54.55	° 42.86			-			☐ ☐	
171	KIT1	15	16:40	BE	ROS	US	53° 55.920	128° 41.700	215		568-582	15	SP	☑ ☐	
			16:43	BO			° 55.890	° 41.710		210	-			☐ ☐	
			16:57	EN			° 55.840	° 41.680			-			☐ ☐	
172	DOUG02a	15	17:59	BE	ROS	/	53° 57.89	128° 41.81	166		/	X	MG	☑ ☐	RBR ON
			18:02	BO			° 57.89	° 41.80		161	-			☐ ☐	
			18:06	EN			° 57.88	° 41.80			-			☐ ☐	RBR OFF
173	DOUG02b	15	18:24	BE	ROS	/	53° 57.86	128° 41.40	176		/	/	MG	☑ ☐	RBR ON
			18:27	BO			° 57.87	° 41.39		171	-			☐ ☐	
			18:30	EN			° 57.86	° 41.39			-			☐ ☐	RBR OFF FRC BACK
174	DOUG02	15	19:16	BE	ROS	US	53° 57.81	128° 40.91	181		583-584	2	MG	☑ ☐	RBR ON
			19:19	BO			° 57.80	° 40.91		176	-			☐ ☐	
			19:24	EN			° 57.80	° 50.91			-			☐ ☐	RBR OFF
			:				° .	° .			-			☐ ☐	

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Notes: _____

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Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER **Year** 2020 **Vessel** JP TULLY **Cruise ID** 2020-083

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175	DOUG02d	15	19:52	BE	ROS	/	53° 57.73	128° 40.39	180		/	/	MG	☑ ☐	RBR ON ANDERSON RD
			19:55	BO			° 57.73	° 40.39		175	-			☐ ☐	
			19:58	EN			° 57.73	° 40.39			-			☐ ☐	RBR OFF
176	Doug02B	15	20:12	BE	ROS		53° 57.70	128° 40.03	182	18	/	/	DS	☑ ☐	RBR on
			20:19	BO			° 57.69	° 40.05		175	-			☐ ☐	
			20:21	EN			° 57.69	° 40.05			-			☐ ☐	RBR OFF
177	Doug01f	15	20:48	BE	ROS		53° 57.620	128° 39.550	113		/	/	DS	☑ ☐	RBR ON
			20:45	BO			° 57.630	° 39.550		108	-			☐ ☐	
			20:47	EN			° 57.630	° 39.550			-			☐ ☐	RBR OFF
178	Doug04	5	21:16	BE	ROS		53° 55.576	128° 42.47	2		/	/	HB	☑ ☐	RBR ON
			21:22	BO			° 55.580	° 42.751		217	-			☐ ☐	
			21:33	EN			° 55.592	° 42.218			-			☐ ☐	RBR OFF RBR ON
179	Doug08a	15	22:08	BE	ROS		53° 52.528	128° 47.113	218		/	/	HB	☑ ☐	Depart route
			22:14	BO			° 52.525	° 47.114		213	-			☐ ☐	1.4 m/s to avoid
			22:17	EN			° 52.520	° 47.112			-			☐ ☐	debris in water
180	Doug8b	15	22:33	BE	ROS		53° 52.380	128° 46.820	285		/	/	HB	☑ ☐	
			22:38	BO			° 52.380	° 46.860		279	-			☐ ☐	
			22:42	EN			° 52.370	° 46.860			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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181	DougO8c	15	22:56	BE	ROS		53° 52.223	128° 46.534	300		-		HB	☑ ☐	
			23:02	BO			° 52.206	° 46.566		295	-			☐ ☐	
			23:07	EN			° 52.207	° 46.576			-			☐ ☐	
182	DougO8	15	23:18	BE	ROS		53° 52.060	128° 46.140	303		-		HB	☑ ☐	
			23:24	BO			° 52.060	° 46.130		296	-			☐ ☐	
			23:29	EN			° 52.062	° 46.140			-			☐ ☐	
183	DougO8e	15	23:41	BE	ROS		53° 51.910	128° 45.752	300		-		HB	☑ ☐	
			23:47	BO			° 51.920	° 45.750		294	-			☐ ☐	
			23:52	EN			° 51.930	° 45.740			-			☐ ☐	
184	DougO8f	16	00:04	BE	ROS		53° 51.773	128° 45.385	191		-		HB	☑ ☐	Apparent disagreement between sonde pressure on step slope
			00:08	BO			° 51.780	° 45.394	198	206	-			☐ ☐	
			00:12	EN			° 51.782	° 45.397			-			☐ ☐	
185	DougO2F	16	00:59	BE	ROS		53° 47.378	128° 48.095	256		-		DS	☑ ☐	
			01:05	DO			53° 47.390	128° 48.132		259	-			☐ ☐	
			01:10	EN			53° 47.390	128° 48.130			-			☐ ☐	
186	DougO2E	16	01:23	BE	ROS		53° 47.630	128° 48.832	326		-		HB	☑ ☐	
			01:29	BO			° 47.622	° 48.850		320	-			☐ ☐	
			01:34	EN			° 47.616	° 48.848			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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187	DougRD	16	01:49	BE	ROS		53° 47.910	128° 49.620	359		-		HB	☑ ☐	
			01:57	BO			° 47.910	° 49.640		354	-			☐ ☐	
			02:03	EN			53° 47.910	128° 49.640			-			☐ ☐	
188	Doug 12	16	02:16	BE	ROS		53° 48.170	128° 50.430	354		—	/	SR	☑ ☐	
			02:25	BO			53° 48.180	128° 50.430		348	-			☐ ☐	
			02:30	EN			53° 48.190	128° 50.430			-			☐ ☐	
189	Doug 12	16	02:37	BE	NET		53° 48.184	128° 50.432	354		-		SR	☐ ☐	Bongo UNH
			02:50	BO			53° 48.175	128° 50.395		349	-			☐ ☐	
			02:55	EN			53° 48.163	128° 50.389			-			☐ ☐	
190	Doug 12b	16	03:11	BE	ROS		53° 48.450	128° 51.140	346		-	/	SR	☑ ☐	
			03:18	BO			53° 48.450	128° 51.160		340	-			☐ ☐	
			03:23	EN			53° 48.440	128° 51.160			-			☐ ☐	
191	Doug 12a	16	03:43	BE	ROS		53° 48.744	128° 51.952	286		-		SR	☑ ☐	
			03:51	BO			53° 48.766	128° 51.934		296	-			☐ ☐	
			03:56	EN			53° 48.780	128° 51.930			-			☐ ☐	
192	Doug 16	16	04:24	BE	ROS		53° 46.710	128° 54.760	385		585	1	SR	☑ ☐	
			04:33	BO			53° 46.780	128° 54.770		380	-			☐ ☐	
			04:39	EN			53° 46.790	128° 54.770			-			☐ ☐	
193	Doug 16	16	04:46		DRF		53° 46.733	128° 54.795			-		SR	☐ ☐	2 Drifters →

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Drifters # 1199, 1201

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194	FOC1a	16	05:24	BE	ROS		53°44.521	129° 2.409	293		-	/	SR	☒☐	
			05:29	BO			53°44.540	129° 2.378		312	-			☐☐	
			05:34	EN			53°44.546	129° 2.378			-			☐☐	
195	FOC1b	16	05:45	BE	ROS		53°44.320	129° 2.150	372		-	/	SR	☒☐	Computer Crash ⇒
			06:01	BO			53°44.340	129° 2.120		354	-			☐☐	
			06:07	EN			53°44.340	129° 2.100			-			☐☐	
196	FOC1	16	06:17	BE	ROS		53°44.090	129° 1.860	371		586 - 598	13	SR	☒☐	Raining hard
			06:26	BO			53°44.110	129° 1.830		366	-			☐☐	
			06:42	EN			53°44.140	129° 1.820			-			☐☐	
197	FOC1d	16	07:48	BE	ROS		53°43.950	129° 1.530	377		-	/	SJ	☑☐	
			07:56	BO			53°43.950	129° 1.530		371	-			☐☐	
			08:02	EN			53°43.952	129° 1.500			-			☐☐	
198	FOC1e	16	08:20	BE	ROS		53°43.750	129° 1.210	243		-	/	SJ	☐☐	
			08:26	BO			53°43.741	129° 1.211	252	247	-			☐☐	
			08:30	EN			53°43.738	129° 1.223			-			☐☐	
199	Doug26	16	09:19	BE	ROS		53°40.470	129° 7.378	403		599 -	1	SR	☒☐	
			09:29	BO			53°40.483	129° 7.360		391	-			☐☐	
			09:36	EN			53°40.489	129° 7.375			-			☐☐	
			:				° .	° .			-			☐☐	

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→ Computer crash on Seasame start → reboot.
New file Foc15 – 1955

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200	Doug 29	16	10:07	BE	ROS		53° 39.110	129° 11.360	377		-	—	SR	☒☐	
			10:16	BO			53° 39.140	129° 11.390		377	-			☐☐	
			10:29	EN			53° 39.160	129° 11.400			-			☐☐	
201	Doug 31	16	10:44	BE	ROS		53° 36.690	129° 12.650	312		600 -	1	SR	☒☐	
			10:53	BO			53° 36.700	129° 12.620		306	-			☐☐	
			10:59	EN			53° 36.716	129° 12.616			-			☐☐	
202	Doug 32	16	11:17	BE	ROS		53° 35.640	129° 12.780	246		-	—	SR	☒☐	
			11:23	BO			53° 35.670	129° 12.720		240	-			☐☐	
			11:27	EN			53° 35.670	129° 12.710			-			☐☐	
203	Doug 36	16	12:02	DE	ROS		53° 31.170	129° 12.379	352		-	✓	SR	☒☐	delayed start — navigation
			12:16	BO			53° 31.156	129° 12.334		346	-			☐☐	
			12:22	EN			53° 31.121	129° 12.314			-			☐☐	
204	KSK1	16	12:50	BE	ROS		53° 28.536	129° 12.620	379		-	✓	SR	☒☐	~3 cables off; suspected mooring site
			12:59	BO			53° 28.440	129° 12.620		374	-			☐☐	
			13:05	EN			53° 28.390	129° 12.650			-			☐☐	
205	Doug 40	16	13:48	BE	ROS	US	53° 26.750	129° 12.500	396		601 -	1	SR	☒☐	
			13:56	BO			53° 26.740	129° 12.490		390	-			☐☐	
			14:04	EN			53° 26.72	129° 12.45			-			☐☐	
206	LOOP 206	16	14:16	BE	Loop		53° 25.18	129° 12.16	397	415	5206	✓	MG	☐☐	CSAL 2CHL

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207	DOUG 45	16	14:40	BE	ROS	US	53° 22.26	129° 11.75	461		602-607	6	MG	☑ ☐	
			14:48	BO			°22.28	° 11.75		454	-			☐ ☐	
			15:00	EN			°22.27	° 11.78			-			☐ ☐	
208	DOUG 45	16	15:09	BE	NET	/	53° 22.270	129° 11.766	461		-		MG	☐ ☐	BONGO
			15:23	BO			° 22.300	° 11.736		456.	-			☐ ☐	
			15:35	EN			° 22.319	° 11.777			-			☐ ☐	
209	DOUG 45	16	15:49	BE	BOAT	/	53° 22.37	129° 11.83	459	0	/	/	SP	☐ ☐	LAUNCH →
210	WHA9	16	16:26	BE	ROS	/	53° 18.659	129° 10.97	476		-		MG	☑ ☐	
			16:34	BO			° 18.67	° 10.96		471	-			☐ ☐	
			16:42	EN			° 18.67	° 10.93			-			☐ ☐	
211	WC58	16	17:32	BE	ROS	/	53° 13.28	129° 07.35	502		/	/	MG	☑ ☐	
			17:41	BO			° 13.29	° 07.41		498	-			☐ ☐	WHALE BREACHING
			17:49	EN			° 13.28	° 07.43			-			☐ ☐	
212	WHA3	16	18:36	BE	ROS	/	53° 8.400	129° 7.32	548		/	/	MG	☑ ☐	→
			18:46	BO			° 8.390	° 7.380		546!	-			☐ ☐	48 WHALES
			18:56	EN			° 08.42	° 07.35			-			☐ ☐	
213	WC68	16	19:32	BE	ROS	/	53° 05.06	129° 09.51	572		-		MG	☑ ☐	DOWN CAST
214			19:45	BO			° 05.07	° 09.38			-			☐ ☐	UPCAST →
			19:56	EN			° .	° .			-			☐ ☐	STOP @ 68↑ ~ 30 SECS

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

EVENT 209 DOUG 45 WRIGHT SOUND DAVE SPEAR GLENN COOPER MAUKE BLANKEN

EVENT 212
→ downcast stopped at 19m (~1min) to correct inboard lead.

EVENT 213 → DOWN CAST SHOULD BE ENTIRE
REBOOT PROGRAM ON START OF UP, WENT BACK DOWN TO 5 OFF + STARTED NEW FILE FOR UP CAST → 214
↑ WENT ABOUT 25M THEN NOTHING

DAILY SCIENCE LOG

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215	WC69	16	20:23	BE	ROS	✓	53° 05.27	129° 11.48	179		✓	—	MG	☑ ☐	
			20:27	BO			° 05.27	° 11.48		194	-			☐ ☐	SOUNDER 196@ BOTTOM
			20:30	EN			° 05.28	° 11.46			-			☐ ☐	
216	SC69	16	21:22	BE	ROS	—	53° 04.86	129° 19.36	692		-		MG	☑ ☐	STOP@49½ N 3MIN
			21:36	BO			° 64.87	° 19.33		686	-			☐ ☐	
			21:47	EN			° 04.81	° 19.24			-			☐ ☐	REBOOT COMPUTER
217	CMP1	16	22:35	BE	ROS	—	53° 0.443	129° 15.522	370		-		DS	☑ ☐	interesting steps in T&S&O
			22:43	BO			53° 0.407	129° 15.520		364	-			☐ ☐	
			22:49	EN			53° 0.348	129° 15.469			-			☐ ☐	
218	CAM2	16	23:34	BE	ROS	—	52° 54.910	129° 15.690	240		-		DS	☐ ☐	
			23:42				52° 54.77	129° 15.74		238	-			☐ ☐	
			23:46	EN			52° 54.74	129° 15.77			-			☐ ☐	
219	HB01	17	01:18	BE	ROS	—	52° 54.841	129° 39.656	206		-		HB	☑ ☐	
			01:24	BO			52° 54.856	129° 39.740		200	-			☐ ☐	
			01:30	EN			52° 54.850	129° 39.790			-			☐ ☐	
220	HEC1	17	02:35	BE	ROS		52° 49.150	129° 50.830	150		-	✓	SR	☑ ☐	
			02:41	BO			52° 45.130	125° 50.900		142	-			☐ ☐	
			02:44	EN			52° 49.220	125° 50.790			-			☐ ☐	
221	HEC1	17	02:48	DE	DMP		52° 49.214	129° 50.766	132		-			☐ ☐	1197

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Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

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

Month October **Year** 2020 **Vessel** Tully **Cruise ID** 2020-083

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
222	HB02	17	03:53	BE	ROS		52° 47.070	130° 1.690	262		-	/	SR	☒☐	
			04:01	BO			52° 47.120	130° 1.730		255	-			☐☐	
			04:05	EN			52° 47.140	130° 1.780			-			☐☐	
223	HB02	17	04:08	DE	DRF		52° 47.165	130° 1.739	262		-			☐☐	1193
224	HB03	17	05:04	BE	ROS		52° 44.940	130° 10.780	264		-	/	SR	☒☐	
			05:11	BO			52° 44.970	130° 10.980		259	-			☐☐	
			05:15	EN			52° 44.000	130° 10.930			-			☐☐	
225	HB03	17	05:18	DE	DRF		52° 45.018	130° 10.960		262	-			☐☐	1194
226	HB04	17	06:08	BE	ROS		52° 43.010	130° 20.693	204		-	/	SR	☒☐	
			06:15	BO			52° 43.068	130° 20.776		197	-			☐☐	
			06:18	EN			52° 43.111	130° 20.815			-			☐☐	
227	HB04	17	06:21	DE	DRF		52° 43.143	130° 20.866	200		-			☐☐	1198 1207
228	HB05	17	07:30	BE	ROS		52° 40.940	130° 31.670	147		-	/	SR	☒☐	
			07:36	BO			52° 40.970	130° 31.670		142	-			☐☐	
			07:39	EN			52° 40.970	130° 31.680			-			☐☐	
229	HB05	17	07:47	DE	DRF		52° 40.935	130° 31.804	148		-			☐☐	1198
230	HB06	17	08:39	BE	ROS		52° 38.720	130° 42.430	134		-	/	SR	☒☐	
			08:46	BO			52° 38.720	130° 42.440		130	-			☐☐	
			08:49	EN			52° 38.720	130° 42.460			-			☐☐	

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

Month October **Year** 2020 **Vessel** Tully **Cruise ID** 2020-083

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
231	HB06	17	09:55	DE	DRF		52° 39.721	130° 42.490	131		-		SR	☐☐	SCTW 1205
232	HB07	17	09:50	BE	ROS		52° 36.270	130° 53.250	102		-		SR	☐☐	
			09:55	BO			52° 36.270	130° 53.260		97	-			☐☐	
			09:58	EN			52° 36.260	130° 53.260			-			☐☐	
233	JPS7	17	11:05	BE	ROS	VS	52° 33.920	131° 5.830	133		609-622	14	SR	☐☐	
			11:09	BO			52° 33.880	131° 5.870		129	-			☐☐	
			11:19	EN			52° 33.890	131° 5.880			-			☐☐	
234	JPS7	17	11:48	BE	NET		52° 33.860	131° 5.922	134		-		SR	☐☐	Bongo UNH
			11:54	BO			52° 33.879	131° 5.933		129	-			☐☐	
			11:56	EN			52° 33.890	131° 5.943			-			☐☐	
235	JPS6	17	12:32	BE	ROS		52° 32.080	131° 10.530	173		-		SR	☐☐	
			12:39	BO			52° 32.090	131° 10.550		167	-			☐☐	
			12:42	EN			52° 32.080	131° 10.560			-			☐☐	
236	JPS5	17	13:34	BE	ROS		52° 31.380	131° 18.670	244		-		SR	☐☐	
			13:41	BO			52° 31.350	131° 18.680		240	-			☐☐	
			13:45	EN			52° 31.370	131° 18.680			-			☐☐	
237	JPS4	17	14:17	BE			52° 31.080	131° 23.580	362		623-640	18	GC	☐☐	Config change -0
			14:25	BO			° 31.050	° 23.610		358	-			☐☐	
			14:45	EN			° 31.090	° 23.530			-			☐☐	

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

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

Month OCTOBER | **Year** 2020 | **Vessel** JP TULLY | **Cruise ID** 2020-083

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
238	JPS4	17	15:00	BE	NET		52° 31.08	131° 23.647	363		-			☐☐	
			15:10	BO			°31.085	131° 23.643		358	-			☐☐	
			15:12	EN			52° 31.106	131° 23.622			-			☐☐	
239	JUAN2	17	15:40	BE	ROS		52° 31.530	131° 26.200	209		-		HB	☑☐	
			15:46	BO			52° 31.520	131° 26.190		203	641 - 656	16		☐☐	
			16:00	EN			52° 31.500	131° 26.240	211		-			☐☐	
240	JPS3	17	16:41	BE	ROS		52° 33.320	131° 29.890	318		-		HB	☑☐	Dense layer at ~120-140m on sounder. CTD timeout kicked in early, then returned to normal
			16:47	BO			52° 33.330	131° 29.870		312	-			☐☐	
			16:52	EN			52° 33.340	131° 29.850	307		-			☐☐	
241	JPS2	17	17:30	BE	ROS		52° 34.970	131° 37.250	251		-		HB	☑☐	
			17:37	BO			52° 35.000	131° 37.310	249	244	-			☐☐	
			17:41	EN			52° 35.010	131° 37.350	252		-			☐☐	
242	JPS1	17	18:06	BE	ROS		52° 36.280	131° 40.080	151		657 - 670	14	HB	☑☐	
			18:10	BO			52° 36.289	131° 40.062	151	142	-			☐☐	
			18:20	EN			52° 36.290	131° 40.062	148		-			☐☐	
243	JPS1	17	18:25	BE	NET		52° 36.290	131° 40.062	150	1	-			☐☐	
			18:31	BO			°36.290	°46.061			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER **Year** 2020 **Vessel** JP TULLY **Cruise ID** 2020-083

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
244	JPN3	17	19:43	BE	ROS	VS	52° 44.390	131° 47.610	143		-		HB	☑ ☐	Interesting stepped
			19:47	BO			52° 44.360	131° 47.620	141	150	682 - 695	14		☐ ☐	salinity profile
			19:57	EN			52° 44.360	131° 47.620	141		-			☐ ☐	in upper 20m ↑
245	JPN3	17	20:05	BB	NET		52° 44.371	131° 47.674	161		-			☐ ☐	Sounder and
			20:11	BO			52° 44.370	131° 47.688			-			☐ ☐	altimeter disagree
			20:14	EN			52° 44.371	131° 47.690			-			☐ ☐	- using altimeter
246	JPN1	17	21:20	BE	ROS	—	52° 38.980	131° 40.380	78		—	—	SP	☑ ☐	File 244-1 is
			21:22	BO			°38.990	°40.390		73	-			☐ ☐	meaningless, stopped
			21:23	EN			°39.000	°40.380			-			☐ ☐	acquisition too early
247	JPS1	17	21:50		Launch ° Doug Anderson						-			☐ ☐	→
248	JPS1	17	22:13	BE	ROS	—	52° 36.270	131° 40.150	141		696 - 698	3	SP	☑ ☐	
			22:16	BO			°36.280	°40.160		136	-			☐ ☐	
			22:20	EN			°36.280	°40.160			-			☐ ☐	
249	JPS1	17	22:35	BE	ROS	—	52° 36.280	131° 40.160	140		—	—	SP	☐ ☐	
			22:37	BO			°36.280	°40.160		136	-			☐ ☐	
			22:38	EN			°36.280	°40.160			-			☐ ☐	
250	JPS1	17	23:01	BE	ROS	—	52° 36.280	131° 40.160	140		—	—	SP	☐ ☐	
			23:03	BO			° .	° .		135	-			☐ ☐	
			23:06	EN			° .	° .			-			☐ ☐	

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Notes: _____

This page is for any notes or observations

247 launch D. Anderson w/ Cooper & Galbraith to conduct JPS1 cross channel CTD survey.

248 start of falling tide CTD survey. CTDs at JPS1 every 30min. Nutrient samples at top of hour. Until low tide at 2100 (local)

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 Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
251	JPS1	17	23:36	BE	ROS	/	52° 36.294	131° 40.160	140		-	N/A	DS	☐☐	
			23:40	BO			52° 36.295	131° 40.170		134	-			☐☐	
			23:42	EN			52° 36.300	131° 40.170			-			☐☐	
252	JPS1	18	00:00	BE	ROS	/	52° 36.280	131° 40.170	139		-	/	DS	☐☐	Longitude not displaying at start
			00:03	BO			52° 36.280	131° 40.170		134	-			☐☐	
			00:05	EN			52° 36.280	131° 40.170			-			☐☐	
253	JPS1	18	00:29	BE	ROS	/	52° 36.290	131° 40.180	139		-	/	HB	☐☐	
			00:33	BO			52° 36.290	131° 40.180	141	135	-			☐☐	
			00:35	EN			52° 36.290	131° 40.180	139		-			☐☐	
254	JPS1	18	01:02	BE	ROS	/	52° 36.290	131° 40.180	138		-	/	HB	☐☐	No Lat/lon on
			01:05	BO			52° 36.290	131° 40.180	141	131	-			☐☐	NMEA, using
			01:07	EN			52° 36.290	131° 40.180	138		-			☐☐	previous
255	JPS1	18	01:40	BE	ROS		52° 36.293	131° 40.180	138		-	/		☐☐	
			01:44	BO			52° 36.290	131° 40.180		131	-			☐☐	
			01:47	EN			52° 36.290	131° 40.180			-			☐☐	
256	JPS1	18	02:02	BE	ROS		52° 36.290	131° 40.180	137		-	/	SS	☐☐	
			02:06	BO			52° 36.290	131° 40.180	135	130	-			☐☐	
			02:08	EN			52° 36.290	131° 40.180			-			☐☐	
			:				° .	° .			-			☐☐	

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WaterProperties.ca
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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2020 **Vessel** JP Tully **Cruise ID** 2020-083

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257	JPS1	18	02:30	BE	ROS		52° 36.300	131° 40.170	137		-	/	SS	☐☐	
			02:34	BO			52° 36.290	131° 40.180		131	-			☐☐	
			02:36	EN			52° 36.290	131° 40.180	138		-			☐☐	
258	JPS1	18	03:00	BE	ROS		52° 36.290	131° 40.180			-	/		☐☐	NMEA s/ow
			03:04	BO			52° 36.290	131° 40.180		129	-			☐☐	
			03:06	EN			52° 36.290	131° 40.180			-			☐☐	
259	JPS1	18	03:30	BE	ROS		52° 36.295	131° 40.177	136		-	/	SS	☐☐	→
			03:34	BO			52° 36.295	131° 40.177		126	-			☐☐	
			03:36	EN			52° 36.295	131° 40.173			-			☐☐	
260	JPS1	18	04:00	BE	ROS		52° 36.290	131° 40.180	136		699 - 701	3	SS	☐☐	
			04:04	BO			52° 36.290	131° 40.180		129	-			☐☐	
			04:08	EN			52° 36.290	131° 40.180			-			☐☐	
261	JPN1	18	04:35	BE	ROS		52° 39.060	131° 40.330	68		671 - 681	11	SS	☐☐	
			04:40	BO			52° 39.060	131° 40.300		59	-			☐☐	
			04:46	EN			52° 39.060	131° 40.310			-			☐☐	
262	JPN1	18	05:09	BE	NET		52° 39.053	131° 40.318	71		-	/		☐☐	Bongo UNH
			05:11	BO			52° 39.053	131° 40.318		65	-			☐☐	
			05:12	EN			52° 39.054	131° 40.318			-			☐☐	
			:				° .	° .			-			☐☐	

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rebooted computer prior to cast → for slow NMEA feed
"seems" okay now.

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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
263	JPN2	18	05:45	BE	ROS		52° 42.050	131° 44.820	130		-	/	SF	☑ ☐	When pressure sensor on rosette read 135m
			05:50	BO			52° 42.060	131° 44.840		135	-			☐ ☐	the depth sounder said 132m.
			05:51	EN			52° 42.070	131° 44.860			-			☐ ☐	
264	JPN2	18	05:59	BE	NET		52° 42.043	131° 44.845	136		-	/	SF	☑ ☐	
			06:03	BO			52° 42.042	131° 44.871		131	-			☐ ☐	
			06:06	EN			52° 42.053	131° 44.892			-			☐ ☐	
265	JPN4	18	07:06	BE	ROS		52° 46.658	131° 43.000	201		-	/	RH	☑ ☐	
			07:12	BO			52° 46.680	131° 42.980		197	-			☐ ☐	
			07:16	EN			52° 46670	131° 42.960			-			☐ ☐	
266	LSK1	18	08:18	BE	ROS		52° 49.490	131° 30.830	158		-	/	SF	☑ ☐	Bridge called
			08:23	BO			52° 49.490	131° 30.820		20	-			☐ ☐	All-Stop at 20m. Aborted cast and
			08:24	EN			52° 49.490	131° 30.810			-			☐ ☐	re-started.
267	LSK1	18	08:25	BE	ROS		52° 49.500	131° 30.780	163		-			☐ ☐	
			08:27	BO			52° 49.490	131° 30.770		158	-			☐ ☐	
			08:31	EN			52° 49.500	131° 30.790			-			☐ ☐	
268	LSK1	18	08:43	BE	NET		52° 49.507	131° 30.752	~~164~~ 147		-			☐ ☐	
			08:51	BO			52° 49.502	131° 30.629		~~159~~ 142	-			☐ ☐	w25 Mts wire
			08:54	EN			52° 49.496	131° 30.642			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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DAILY SCIENCE LOG

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Month October **Year** 2020 **Vessel** Tully **Cruise ID** 2020-083 Page #1 of _____

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
269	LI 1	18	10:09	BE	ROS		52° 43.810	131° 22.550	218		-	/	SL	☐☐	
			10:15	BO			52° 43.000	131° 22.520		212	-			☐☐	
			10:19	EN			52° 43.810	131° 22.510			-			☐☐	
270	LOOP270	18	23:38	BE	LOOP	/	51° 45.95	128° 28.16	147	4.5	5270	/	MG	☐☐	1 SAL 2CHL
271	HAK1	19	00:40	BE	ROS	US	51° 42.870	128° 14.630	139		-		DS	☑☐	
			00:45	BO			° 42.870	° 14.620		133	-			☐☐	
			00:56	EN			° 42.820	° 14.570			-			☐☐	
272	HAK1	19	01:03	BE	NET	/	51° 42.796	128° 14.514	139		/	/	MG	☐☐	BONGO
			01:09	BO			° 42.757	° 14.560		134	140-			☐☐	
			01:12	EN			° 42.751	° 14.682			-			☐☐	
273	FZH08	19	02:49	BE	ROS	/	51° 45.560	127° 56.640	382		-	/	SJ	☑☐	
			02:56	BO			51° 45.570	127° 56.610		376	-			☐☐	
			03:02	EN			51° 45.560	127° 56.590			-			☐☐	
274	FZH07	19	03:39	BE	ROS	/	51° 42.250	127° 56.150	335		-		RH	☑☐	
			03:46	BO			51° 42.210	127° 56.120		326	-			☐☐	
			03:52	EN			51° 42.160	127° 56.110			-			☐☐	
275	KC10	19	04:30	BE	ROS		51° 39.040	127° 57.100	345		717-730	/	SM	☐☐	[illegible]
			04:39	BO			51° 39.120	127° 57.030		300	-			☐☐	
			04:55	EN			51° 39.120	127° 57.040			-			☐☐	

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Time Code:
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Notes: _____

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hook broke

Bottle 9 New line re attached after ~~coming off~~ during recocking

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2020 **Vessel** Tully **Cruise ID** 2020-083 Page 42 of _____

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
276	FZH 13	19	05:45	BE	ROS		51°34.380	127°51.140	229		-	/	SJ	☑☐	
			05:50	BO			51°34.420	127°51.150		218	-			☐☐	
			05:54	EN			51°34.440	127°51.160			-			☐☐	
277	UBC 7	19	06:38	BE	ROS		51°30.060	127°49.050	161		-	/	RH	☑☐	
			06:43	BO			51°30.060	127°49.030		157	-			☐☐	
			06:46	EN			51°30.050	127°49.020			-			☐☐	
278	11291-F	19	09:38	BE	ROS		51°5.420	127°59.710	137		-	/	SJ	☑☐	
			09:41	BO			51°5.390	127°59.690		132	-			☐☐	
			09:44	EN			51°5.350	127°59.650			-			☐☐	
279	CPE 1	19	10:39	BE	ROS		51°0.190	127°50.210	144		-	/	RH	☑☐	
			10:44	BO			51°0.230	127°50.220		138	-			☐☐	→
			10:51	EN			51°0.230	127°50.220			-			☐☐	
280	CPE 1	19	10:58	BE	NET		51°0.232	127°50.290	144		-	/	SJ	☑☐	
			11:05	BO			51°0.237	127°50.287		139	-			☐☐	
281			11:07	EN			51°0.240	127°50.301			-			☐☐	
281	QCS9	19	12:33	BE	ROS		50°58.240	127°31.480	174		-	/	SJ	☑☐	Logs in the
			12:38	BO			50°58.220	127°31.530		168	-			☐☐	water
			12:41	EN			50°58.230	127°31.530			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

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Bridge called all-stop at the bottom, lasted 4 minutes

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2020 **Vessel** SP Tully **Cruise ID** 2020-083 Page 43 of _____

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
282	QCS8	19	13:30	BE	ROS		50° 56.657	127° 35.092	170		-	/	SL	☑ ☐	
			13:35	BO			50° 56.634	127° 35.112		164	-			☐ ☐	
			13:38	EN			50° 56.632	127° 35.107			-			☐ ☐	
283	LBA	19	14:13	BE	ROS	—	50° 53.840	127° 38.040	445		—	—	SP	☑ ☐	
			14:20	BO			°53.870	°38.020		440	-			☐ ☐	
			14:28	EN			°53.850	°38.030			-			☐ ☐	
284	LAUNCH		15:13				50° 51.471	127° 32.015	D. ANDERSON					☐ ☐	→
285	QCS3	19	16:45	BE	ROS	—	50° 43.770	127° 15.060	214		—	—	SP	☑ ☐	
			16:48	BO			°43.770	° 15.050		209	-			☐ ☐	
			16:52	EN			°43.780	° 15.040			-			☐ ☐	
286	QCS1	19	18:49	BE	ROS	—	50° 40.160	126° 46.280	155		—	—	SP	☑ ☐	
			18:52	BO			°40.190	° 46.250		147	-			☐ ☐	
			:	EN			° .	° .			-			☐ ☐	DECK UNIT STILL RUNNING
287	QCS1.5	19	19:53	BE	ROS	/	50° 42.76	126° 55.46	147		-	—	MG	☑ ☐	
			19:55	BO			° 42.75	° 55.47		142	-			☐ ☐	
			19:58	EN			°42.75	°55.45			-			☐ ☐	
288	QCS2N	19	20:40	BE	ROS	—	50° 47.28	126° 57.67	120		-	—	MG	☑ ☐	
			20:42	BO			°47.28	° 57.67		114	-			☐ ☐	
			20:44	EN			°47.28	° 57.67			-			☐ ☐	

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Notes: _____

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#284 Launch Science Boat w/ Cooper, Spear, Blanken to conduct weather station maintenance operations

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER **Year** 2020 **Vessel** JP TULLY **Cruise ID** 2020083 Page 44 of _____

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
289	QCS2	19	21:18	BE	ROS	—	50° 44.450	127° 2.280	142		—	—	SP	☑☐	
			21:21	BO			°44.450	°2.250		140	-			☐☐	
			21:23	EN			°44.450	°2.240			-			☐☐	
290	QCS2	19	21:30	BE	NET		50° 44.454	127° 2.278	143		-		MG	☐☐	
			21:34	BO			°44.462	°2.292		138	-			☐☐	
			21:36	EN			°44.46	°02.29	14		-			☐☐	
291	QCS3N	19	22:30	BE	ROS	—	50° 49.590	127° 8.270	149		-		SP	☑☐	
			22:32	BO			°49.590	°8.320		144	-			☐☐	
			22:35	EN			°49.590	°8.320			-			☐☐	
292	QCS3M	19	23:08	BE	ROS	—	50°46.990	127° 11.400	177		—	—	SP	☑☐	
			23:12	BO			°46.990	°11.400		172	-			☐☐	
			23:16	EN			°46.990	°11.40			-			☐☐	
293	QCS7	20	00:00	BE	ROS	—	50°51.850	127°16.120	137		—	—	SP	☑☐	
			00:02	BO			°51.870	°16.130		130	-			☐☐	
			00:05	EN			°51.880	°16.150			-			☐☐	
294	QCS6	20	01:18	BE	ROS	—	50°52.468	127°21.587	149		—	—	SP	☑☐	
			01:21	BO			°52.468	°21.586		143	-			☐☐	
			:23	EN			°52.464	°21.593			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

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DAILY SCIENCE LOG

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Page 45 of ____

Month October **Year** 2020 **Vessel** JP Tully **Cruise ID** 2020-083

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
295	QCS5	20	01:54	BE	ROS		50°49.470	127°21.670	158		-	/	SB	☑☐	
			01:59	BO			50°49.480	127°21.660		153	-			☐☐	
			02:02	EN			50°49.490	127°21.680			-			☐☐	
296	QCS4	20	02:42	BE	ROS		50°46.720	127°24.340	419		-	/	Th	☑☐	
			02:50	BO			50°46.720	127°24.370		398	-			☐☐	
			05:56	EN			50°46.750	127°24.400			-			☐☐	
297	LBB	20	04:23	BE	ROS		50°50.580	127°42.800	345		-	/	RH	☑☐	
			04:30	BO			50°50.590	127°42.800		337	-			☐☐	
			04:35	EN			50°50.5[illegible]0	127°42.820			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
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			:				° .	° .			-			☐☐	

END!

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