

DAILY SCIENCE LOG BOOK

Version Jun2022

Water Properties Group
Fisheries and Oceans Canada
Institutue of Ocean Sciences
Ocean Sciences Division
Norh Saanich, BC, Canada
www.waterproperties.ca

Mission Number:	2022-068
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Start Date: 06-Sep-22
End Date: 20-Sep-22

Vessel:	JP Tully
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Project(s):	Joint Canada-USA International Seamount Survey
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Ship Personnel:

Captain:			
Engineer Officer:			
Bosun:			
Cook/Steward			

Mission Participants (Department/Agencies):	
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Scientific Personnel:

Name	Role	Watch	Cabin
Chris Rooper	CS/PBS		
Steve Romaine	IOS		
Paul Hillman	NOAA		
Ianelle Curtis	PBS		
Devon Warawa			
Christina Conrath	NOAA		
Pamela Goddard			
Carline Fox	NOAA		
Cindy Wright	IOS		

Scientific Equipment

CTD

	Primary						Secondary					
Equipment	Make	Model	Serial Number	Pump (P, S or No)	Depth Rating (m)	Comment	Make	Model	Serial Number	Pump (P, S or No)	Depth Rating	Comment
Data Logging Computer	Lenovo		102									
Data Acquisition Program												
CTD Deck Unit	SBE11	11	425									
CTD	SBE9	9	443	Y (1602)			SBE9	9	443	Y (3164)		
Temperature Sensor			4700	Y (1602)					4888	Y (3164)		
Conductivity Sensor			3531	Y (1602)					4513	Y (3164)		
Transmissometer			g=1183/r=1185	N								
Fluorometer							Seapoint		3641	Y		

Set up the same as Line P and LaPerouse but with a second transmissometer and a refPAR/par combo.

Fluorometer Gain Cable												
Oxygen Sensor	SBE	43	371	Y (1602)								
Par Sensor	Satlantic		70613	N								
Additional Sensors...												

Rosette

Winches

	Make	Model	Serial Number	Comment (Describe Application)
Winch 1				
Winch 2				
Winch 3				

Salinometer

Make	Model	Serial Number	Comments on performance during cruise
N/A			

Oxygen kit

Make	Model	Serial/kit Number	Comments on performance during cruise
N/A		2	Same as LaPerouse 2022-022

Thermosalinograph System

Instrument

Make	Model	Serial/kit Number	Program	Version							Comments on performance during cruise
Sea-Bird	SBE	1235	Campbell Sci								

ADCP Setup

N/A

Computer Time Zone:	UTC	User Exits:	Name:			Exit Points:	
Sampling Interval (sec):	BBNo bottom ping		Name:			Exit Points:	
Bin Length: (2^x):			Name:			Exit Points:	
Pulse Length:		Work File:					
Buffer (bytes):							
Gyro Offset:							

Comment on Performance During Cruise

CTD Test Cast Information

	CTD Pressure Reading on Deck		Pumps Working (Y = 0011/N = 0010)	2° Temp - 1° Temp (Avg. from mixed layer)		2° Sal - 1° Sal (Avg. from mixed layer)	Additional Comments
Cast Location	Before Cast	After Cast					

Additional Cruise Comments

No test case, Ctd setup and operational since LaPerouse 2022-022

Pictures

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Cruise Number:2022-068

Vessel:JP Tully

Event Number	Station Name	Cast Type	Firing Method	Time Code	Date Time (UTC) Computer	Time (UTC) GPS	Positional Information		Sounder Depth	Max Sampling Pressure	Sample Number		# of Bottles	Watch Keepers	Trans. Cleaned	Fluorometer Cleaned	PAR Status	Comments	
							Latitude	Longitude			Start	End							
1	WARSW2	ROS	US	BE	10/09/2022 02:24	10-09-22 02:24:43	48° 3.394 N	132° 51.841 W	2953					Steve Romaine	yes	yes	no	depth variable, stabilized at 640ish	
1	WARSW2	ROS	US	BO	10/09/2022 02:36	10-09-22 02:36:29	48° 3.381 N	132° 51.865 W	648	638				Steve Romaine					
1	WARSW2	ROS	US	EN	10/09/2022 02:47	10-09-22 02:47:21	48° 3.368 N	132° 51.84 W	648	638				Steve Romaine					
2	WARSW2	NET		BE	10/09/2022 03:02	10-09-22 03:00:55	48° 3.371 N	132° 51.767 W	648					Steve Romaine					
2	WARSW2	NET		BO	10/09/2022 03:13	10-09-22 03:11:25	48° 3.44 N	132° 51.609 W	630	250				Steve Romaine					
2	WARSW2	NET		EN	10/09/2022 03:18	10-09-22 03:16:11	48° 3.491 N	132° 51.652 W	630	250				Steve Romaine					
3	WARSW1	ROS	US	BE	10/09/2022 03:40	10-09-22 03:40:13	48° 3.761 N	132° 50.322 W	588		1	15	15	Steve Romaine	yes	yes	no		
3	WARSW1	ROS	US	BO	10/09/2022 03:49	10-09-22 03:49:27	48° 3.756 N	132° 50.312 W	588	584	1	15	15	Steve Romaine					
3	WARSW1	ROS	US	EN	10/09/2022 04:17	10-09-22 04:17:36	48° 3.832 N	132° 50.344 W	588	584	1	15	15	Steve Romaine					
5	WARNE1	ROS	US	BE	10/09/2022 05:19	10-09-22 05:19:10	48° 4.988 N	132° 44.627 W	1128					Steve Romaine	yes	yes	no		
5	WARNE1	ROS	US	BO	10/09/2022 05:38	10-09-22 05:38:18	48° 5.045 N	132° 44.525 W	1128	1120	16	31	16	Steve Romaine					
5	WARNE1	ROS	US	EN	10/09/2022 06:17	10-09-22 06:17:15	48° 5.054 N	132° 44.318 W	1128	1120	16	31	16	Steve Romaine					
6	WARNE2	ROS	US	BE	10/09/2022 07:04	10-09-22 07:04:59	48° 6.166 N	132° 42.573 W	1530					Cindy Wright	yes	no	no	deck pressure 0.5db	
6	WARNE2	ROS	US	BO	10/09/2022 07:28	10-09-22 07:28:59	48° 6.15 N	132° 42.64 W	1520	1510				Cindy Wright				bottom pressure variable	
6	WARNE2	ROS	US	EN	10/09/2022 07:51	10-09-22 07:51:20	48° 6.17 N	132° 42.583 W						Cindy Wright				the altimeter did not kick in so either deeper or too soft. Stopped cast 10m above sounder bottom	the sounder did periodically tease me with 1700+ but was stead at low 1500s
7	WARNE2	NET		BE	10/09/2022 08:03	10-09-22 08:01:43	48° 6.168 N	132° 42.609 W	1516	250				Steve Romaine					
7	WARNE2	NET		BO	10/09/2022 08:12	10-09-22 08:10:42	48° 6.186 N	132° 42.615 W	1516	250				Steve Romaine					
7	WARNE2	NET		EN	10/09/2022 08:17	10-09-22 08:15:17	48° 6.195 N	132° 42.593 W	1516	250				Steve Romaine					
8	WARNE2	LOOP		BE	10/09/2022 08:30	10-09-22 08:28:28	48° 6.303 N	132° 42.671 W	1516	0	5008	5008	1	Steve Romaine				2xChl and 1xSal	
9	WARNW2	ROS	US	BE	10/09/2022 09:29	10-09-22 09:29:18	48° 7.855 N	132° 52.821 W	1779		32	49	18	Steve Romaine	yes	yes	no		
9	WARNW2	ROS	US	BO	10/09/2022 10:00	10-09-22 10:00:42	48° 7.842 N	132° 52.892 W	1865	1856	32	49	18	Steve Romaine					
9	WARNW2	ROS	US	EN	10/09/2022 10:49	10-09-22 10:49:39	48° 7.851 N	132° 52.981 W	1865	1856	32	49	18	Steve Romaine					
10	WARCENTRAL	ROS	US	BE	10/09/2022 11:47	10-09-22 11:47:12	48° 3.96 N	132° 47.68 W	567		50	63	14	Cindy Wright	yes	no	no		
10	WARCENTRAL	ROS	US	BO	10/09/2022 11:57	10-09-22 11:57:37	48° 3.952 N	132° 47.706 W	567	560	50	63	14	Cindy Wright					
10	WARCENTRAL	ROS		EN			48° 4.01 N	132° 47.73 W											
11	WARCENTRAL	NET		BE	10/09/2022 12:48	10-09-22 12:46:09	48° 3.948 N	132° 47.645 W	566	250				Cindy Wright					
11	WARCENTRAL	NET		BO	10/09/2022 12:56	10-09-22 12:54:25	48° 3.987 N	132° 47.666 W	566	250				Cindy Wright					
11	WARCENTRAL	NET		EN	10/09/2022 13:07	10-09-22 13:05:49	48° 3.949 N	132° 47.579 W	566	250				Cindy Wright				computers running sounds/tsg/adcp went down at 19:38 on Saturday the 10th	
12	Transit to Corn	LOOP		BE	11/09/2022 09:49	11-09-22 09:47:49	47° 8.367 N	131° 52.277 W	2468	0				Cindy Wright				2x chl+1xsal	
13	CORNNW2	NET		BE	12/09/2022 02:36	12-09-22 02:34:59	46° 47.684 N	131° 28.964 W	2289	250				Cindy Wright					At some point on Sunday the comp bank crashed again. TSG and ADCP no back online until around 1350
13	CORNNW2	NET		BO	12/09/2022 02:46	12-09-22 02:44:35	46° 47.633 N	131° 29.162 W	2315	250				Cindy Wright					
13	CORNNW2	NET		EN	12/09/2022 03:01	12-09-22 02:59:32	46° 47.618 N	131° 29.264 W	2315	250				Cindy Wright					
14	CORNNW2	NET		BE	12/09/2022 03:01	12-09-22 02:59:40	46° 47.62 N	131° 29.265 W	2315	1200				Cindy Wright					
14	CORNNW2	NET		BO	12/09/2022 03:45	12-09-22 03:43:33	46° 48.039 N	131° 29.621 W	2235	1200				Cindy Wright					
15	CORNNW2	NET		EN	12/09/2022 04:04	12-09-22 04:02:33	46° 48.246 N	131° 29.767 W						Cindy Wright					
16	CORNNW2	ROS	US	BE	12/09/2022 04:26	12-09-22 04:26:42	46° 47.718 N	131° 28.876 W	2272	2000	64	83	20	Steve Romaine	yes	yes	no		
16	CORNNW2	ROS	US	BO	12/09/2022 05:02	12-09-22 05:02:52	46° 47.812 N	131° 28.934 W	2272	2000	64	83	20	Steve Romaine					

16	CORNNW2	ROS	US	EN	12/09/2022 05:56	12-09-22 05:56:31	46° 47.882 N	131° 29.078 W			64	83	20	Steve Romaine				
17	CORNNW1	ROS	US	BE	12/09/2022 06:47	12-09-22 06:47:48	46° 45.337 N	131° 25.582 W	1708					Cindy Wright	yes	yes	no	
17	CORNNW1	ROS	US	BO	12/09/2022 07:16	12-09-22 07:16:21	46° 45.3 N	131° 25.502 W	1676	1761				Cindy Wright				sounder depth not accurate, went with altimeter
17	CORNNW1	ROS	US	EN	12/09/2022 07:41	12-09-22 07:41:47	46° 45.277 N	131° 25.388 W						Cindy Wright				
18	CORNCENTRAL	NET		BE	12/09/2022 08:24	12-09-22 08:22:08	46° 42.677 N	131° 21.335 W	492	250				Carline Fox				
18	CORNCENTRAL	NET		BO	12/09/2022 08:33	12-09-22 08:31:11	46° 42.732 N	131° 21.332 W	492	250				Cindy Wright				
18	CORNCENTRAL	NET		EN	12/09/2022 08:36	12-09-22 08:34:42	46° 42.738 N	131° 21.291 W	492	250				Cindy Wright				
19	CORNCENTRAL	ROS	US	BE	12/09/2022 08:48	12-09-22 08:48:00	46° 42.652 N	131° 21.393 W	484					Steve Romaine	yes	yes	no	
19	CORNCENTRAL	ROS	US	BO	12/09/2022 08:56	12-09-22 08:56:39	46° 42.612 N	131° 21.326 W	484	473	84	96	13	Steve Romaine				
19	CORNCENTRAL	ROS	US	EN	12/09/2022 09:21	12-09-22 09:21:41	46° 42.46 N	131° 21.23 W	484	473	84	96	13	Steve Romaine				
20	CORNSE1	ROS	US	BE	12/09/2022 10:21	12-09-22 10:21:13	46° 41.185 N	131° 16.985 W	960					Cindy Wright	yes	no	no	
20	CORNSE1	ROS	US	BO	12/09/2022 10:36	12-09-22 10:36:46	46° 41.106 N	131° 16.878 W	1017	1030				Cindy Wright				
20	CORNSE1	ROS	US	EN	12/09/2022 10:52	12-09-22 10:52:37	46° 41.007 N	131° 16.802 W						Cindy Wright				
21	CORNSE2	ROS	US	BE	12/09/2022 11:37	12-09-22 11:37:01	46° 39.365 N	131° 10.402 W	1826		97	112	16	Steve Romaine	yes	yes	no	
21	CORNSE2	ROS	US	BO	12/09/2022 12:05	12-09-22 12:05:37	46° 39.19 N	131° 10.26 W	1879	1892	97	112	16	Steve Romaine				
21	CORNSE2	ROS	US	EN	12/09/2022 12:51	12-09-22 12:51:03	46° 38.916 N	131° 9.958 W	1879	1892	97	112	16	Steve Romaine				
22	C-C2	ROS	US	BE	13/09/2022 02:24	13-09-22 02:24:53	46° 43.901 N	131° 1.224 W	2450					Steve Romaine	yes	yes	no	
23	C-C2	ROS	US	BO	13/09/2022 03:07	13-09-22 03:07:57	46° 43.92 N	131° 1.214 W	2448	2439				Steve Romaine				
23	C-C2	ROS	US	EN	13/09/2022 03:46	13-09-22 03:46:14	46° 43.938 N	131° 1.132 W	2448	2100				Steve Romaine				
24	COBBSW2	NET		BE	13/09/2022 04:22	13-09-22 04:20:39	46° 44.481 N	130° 56.117 W	1109	250				Cindy Wright				
24	COBBSW2	NET		BO	13/09/2022 04:32	13-09-22 04:30:43	46° 44.569 N	130° 56.174 W	1109	250				Cindy Wright				
24	COBBSW2	NET		EN	13/09/2022 04:37	13-09-22 04:35:22	46° 44.599 N	130° 56.195 W	1109	250				Cindy Wright				
25	COBBSW2	ROS	US	BE	13/09/2022 04:47	13-09-22 04:47:23	46° 44.48 N	130° 56.173 W	1112		113	128	16	Cindy Wright	yes	no	no	
25	COBBSW2	ROS	US	BO	13/09/2022 05:06	13-09-22 05:06:04	46° 44.505 N	130° 56.154 W	1110	1120	113	128	16	Cindy Wright				
25	COBBSW2	ROS	US	EN	13/09/2022 05:42	13-09-22 05:42:37	46° 44.44 N	130° 56.228 W			113	128	16	Cindy Wright				
26	COBBSW1	ROS	US	BE	13/09/2022 06:30	13-09-22 06:30:39	46° 44.95 N	130° 52.612 W	291					Steve Romaine	yes	yes	no	
26	COBBSW1	ROS	US	BO	13/09/2022 06:35	13-09-22 06:35:41	46° 44.957 N	130° 52.617 W	291	289				Steve Romaine				
26	COBBSW1	ROS	US	EN	13/09/2022 06:40	13-09-22 06:40:32	46° 44.964 N	130° 52.621 W	291	289				Steve Romaine				
27	COBBCENTRAL	ROS	US	BE	13/09/2022 07:18	13-09-22 07:18:17	46° 45.297 N	130° 49.252 W	121		129	136	8	Steve Romaine	yes	yes	no	moved station .5cable east due to submerged mooring (not on chart)
27	COBBCENTRAL	ROS	US	BO	13/09/2022 07:20	13-09-22 07:20:49	46° 45.291 N	130° 49.242 W	121	118	129	136	8	Steve Romaine				
27	COBBCENTRAL	ROS	US	EN	13/09/2022 07:34	13-09-22 07:34:15	46° 45.278 N	130° 49.289 W	121	118	129	136	8	Steve Romaine				
28	COBBCENTRAL	NET		BE	13/09/2022 07:59	13-09-22 07:57:37	46° 45.346 N	130° 49.264 W	120					Cindy Wright				
28	COBBCENTRAL	NET		BO	13/09/2022 08:03	13-09-22 08:01:42	46° 45.373 N	130° 49.268 W	120	110				Cindy Wright				
28	COBBCENTRAL	NET		EN	13/09/2022 08:05	13-09-22 08:03:10	46° 45.375 N	130° 49.268 W	120	110				Cindy Wright				
29	COBBSE1	ROS	US	BE	13/09/2022 08:35	13-09-22 08:34:58	46° 43.278 N	130° 48.01 W	220					Cindy Wright	yes	no	no	
29	COBBSE1	ROS	US	BO	13/09/2022 08:38	13-09-22 08:38:24	46° 43.279 N	130° 48.006 W	220	214				Cindy Wright				
29	COBBSE1	ROS	US	EN	13/09/2022 08:41	13-09-22 08:41:59	46° 43.283 N	130° 48.006 W						Cindy Wright				
30	COBBSE2	ROS	US	BE	13/09/2022 09:20	13-09-22 09:20:52	46° 41.172 N	130° 46.52 W	1421		137	153	17	Steve Romaine	yes	yes	no	
30	COBBSE2	ROS	US	BO	13/09/2022 09:42	13-09-22 09:42:43	46° 41.159 N	130° 46.524 W	1421	1480	137	153	17	Steve Romaine				
30	COBBSE2	ROS	US	EN	13/09/2022 10:26	13-09-22 10:26:20	46° 41.151 N	130° 46.569 W	1421	1480	137	153	17	Steve Romaine				
31	COBBSE3	ROS	US	BE	13/09/2022 11:16	13-09-22 11:16:06	46° 39.101 N	130° 45.655 W	2140					Cindy Wright	yes	no	no	
31	COBBSE3	ROS	US	BO	13/09/2022 11:48	13-09-22 11:48:59	46° 39.104 N	130° 45.641 W	2135	2154				Cindy Wright				
31	COBBSE3	ROS	US	EN	13/09/2022 12:24	13-09-22 12:24:47	46° 39.141 N	130° 45.666 W						Cindy Wright				
32	COBBSE3	NET		BE	13/09/2022 12:34	13-09-22 12:32:47	46° 39.158 N	130° 45.679 W	2133	250				Steve Romaine				
32	COBBSE3	NET		BO	13/09/2022 12:44	13-09-22 12:42:17	46° 39.197 N	130° 45.684 W	2133	250				Steve Romaine				
32	COBBSE3	NET		EN	13/09/2022 12:48	13-09-22 12:46:49	46° 39.208 N	130° 45.675 W	2133	250				Steve Romaine				
33	COBBNW1	ROS	US	BE	14/09/2022 02:50	14-09-22 02:50:51	46° 47.882 N	130° 49.986 W	814		154	167	14	Cindy Wright	yes	no	no	
33	COBBNW1	ROS	US	BO	14/09/2022 03:04	14-09-22 03:04:56	46° 47.808 N	130° 50.005 W	790	824	154	167	14	Cindy Wright				
33	COBBNW1	ROS	US	EN	14/09/2022 03:35	14-09-22 03:35:31	46° 47.882 N	130° 49.968 W			154	167	14	Cindy Wright				
34	COBBNE1	ROS	US	BE	14/09/2022 04:12	14-09-22 04:12:52	46° 46.051 N	130° 45.234 W	660					Cindy Wright	yes	no	no	
34	COBBNE1	ROS	US	BO	14/09/2022 04:24	14-09-22 04:24:28	46° 46.027 N	130° 45.197 W	660	656				Cindy Wright				
34	COBBNE1	ROS	US	EN	14/09/2022 04:35	14-09-22 04:35:22	46° 46.018 N	130° 45.183 W						Cindy Wright				
35	COBBNE1	NET		BE	14/09/2022 04:48	14-09-22 04:46:23	46° 46.103 N	130° 45.205 W	690					Cindy Wright				
35	COBBNE1	NET		BO	14/09/2022 04:58	14-09-22 04:56:32	46° 46.204 N	130° 45.153 W	690	250				Cindy Wright				

35	COBBNE1	NET		EN	14/09/2022 05:02	14-09-22 05:00:38	46° 46.242 N	130° 45.128 W						Cindy Wright					
36	COBBNE2	ROS	US	BE	14/09/2022 05:38	14-09-22 05:38:42	46° 46.984 N	130° 39.77 W	1768					Steve Romaine	yes	yes	no		
36	COBBNE2	ROS	US	BO	14/09/2022 06:08	14-09-22 06:08:33	46° 46.956 N	130° 39.76 W	1768	1788				Steve Romaine					
36	COBBNE2	ROS	US	EN	14/09/2022 06:37	14-09-22 06:37:29	46° 46.974 N	130° 39.77 W	1768	1788				Steve Romaine					
37	COBBNE3	ROS	US	BE	14/09/2022 07:07	14-09-22 07:07:03	46° 47.69 N	130° 36.096 W	2700					Cindy Wright	yes	no	no		
37	COBBNE3	ROS	US	BO	14/09/2022 07:49	14-09-22 07:49:07	46° 47.723 N	130° 36.062 W	2734	2754				Cindy Wright					
37	COBBNE3	ROS	US	EN	14/09/2022 08:28	14-09-22 08:28:52	46° 47.717 N	130° 36.038 W	2734	2754				Cindy Wright					
38	COBBNE3	NET		BE	14/09/2022 08:42	14-09-22 08:40:58	46° 47.662 N	130° 36.023 W	2734	250				Steve Romaine					
38	COBBNE3	NET		BO	14/09/2022 08:51	14-09-22 08:49:22	46° 47.692 N	130° 36.034 W	2734	250				Steve Romaine					
38	COBBNE3	NET		EN	14/09/2022 08:54	14-09-22 08:52:52	46° 47.696 N	130° 36.043 W	2734	250				Steve Romaine					
39	COBBNE3	NET		BE	14/09/2022 09:02	14-09-22 09:00:19	46° 47.665 N	130° 36.032 W	2734	1200				Steve Romaine					
39	COBBNE3	NET		BO	14/09/2022 09:38	14-09-22 09:36:27	46° 47.792 N	130° 35.999 W	2734	1200				Steve Romaine					
39	COBBNE3	NET		EN	14/09/2022 09:57	14-09-22 09:55:24	46° 47.867 N	130° 35.92 W	2734	1200				Steve Romaine					
40	LOOP	LOOP		BE	15/09/2022 05:46	15-09-22 05:44:37	46° 43.243 N	131° 2.598 W	2164	0				Cindy Wright				In Transit (2 chl+1 sal)	
41	CORNSW2	ROS	US	BE	15/09/2022 07:44	15-09-22 07:43:59	46° 40.369 N	131° 27.549 W	1971					Cindy Wright	yes	no	no	the top sholder of the OMZ seems to have more structure here	
41	CORNSW2	ROS	US	BO	15/09/2022 08:14	15-09-22 08:14:32	46° 40.371 N	131° 27.561 W	1971	2002				Cindy Wright					
41	CORNSW2	ROS	US	EN	15/09/2022 08:42	15-09-22 08:42:33	46° 40.374 N	131° 27.581 W						Cindy Wright					
42	CORNSW1	ROS	US	BE	15/09/2022 09:08	15-09-22 09:08:48	46° 41.641 N	131° 24.558 W	1028		168	183	16	Steve Romaine	yes	yes	no		
42	CORNSW1	ROS	US	BO	15/09/2022 09:25	15-09-22 09:25:02	46° 41.656 N	131° 24.56 W	1035	1081	168	183	16	Steve Romaine					
42	CORNSW1	ROS	US	EN	15/09/2022 10:02	15-09-22 10:02:27	46° 41.644 N	131° 24.587 W	1045	1081	168	183	16	Steve Romaine					
43	CORNNE1	ROS	US	BE	15/09/2022 10:49	15-09-22 10:49:26	46° 44.3 N	131° 17.085 W	1537					Steve Romaine	yes	yes	no		
43	CORNNE1	ROS	US	BO	15/09/2022 11:13	15-09-22 11:13:46	46° 44.283 N	131° 17.095 W	1547	1562				Steve Romaine					
43	CORNNE1	ROS	US	EN	15/09/2022 11:39	15-09-22 11:39:32	46° 44.251 N	131° 17.16 W	1547	1562				Steve Romaine					
44	LOOP	LOOP		BE	16/09/2022 06:40	16-09-22 06:38:55	46° 18.636 N	130° 34.141 W	1102	0	5044	5044	1	Cindy Wright				In transit to Brown Bear: 2 chl+1 sal	Chl labels show 5042. Should be 5044
45	BBS-S2	ROS	US	BE	16/09/2022 08:56	16-09-22 08:56:07	45° 57.623 N	130° 25.631 W	970					Cindy Wright	yes	no	no		
45	BBS-S2	ROS	US	BO	16/09/2022 09:11	16-09-22 09:11:57	45° 57.618 N	130° 25.644 W	970	989				Cindy Wright					
45	BBS-S2	ROS	US	EN	16/09/2022 09:26	16-09-22 09:26:53	45° 57.625 N	130° 25.631 W						Cindy Wright					
46	BBS-S2	NET		BE	16/09/2022 09:39	16-09-22 09:37:47	45° 57.641 N	130° 25.649 W	958					Steve Romaine					
46	BBS-S2	NET		BO	16/09/2022 09:46	16-09-22 09:44:58	45° 57.662 N	130° 25.663 W	958	250				Steve Romaine					
46	BBS-S2	NET		EN	16/09/2022 09:50	16-09-22 09:48:56	45° 57.668 N	130° 25.654 W	958	250				Steve Romaine					
47	BBS-S1	NET		BE	16/09/2022 10:31	16-09-22 10:29:37	46° 1.409 N	130° 26.504 W	661	250				Cindy Wright					
47	BBS-S1	NET		BO	16/09/2022 10:39	16-09-22 10:37:38	46° 1.431 N	130° 26.496 W	661	250				Cindy Wright					
47	BBS-S1	NET		EN	16/09/2022 10:43	16-09-22 10:41:37	46° 1.442 N	130° 26.489 W	661	250				Cindy Wright					
48	BBS-S1	ROS	US	BE	16/09/2022 10:58	16-09-22 10:58:52	46° 1.347 N	130° 26.471 W	654		184	197	14	Steve Romaine	yes	yes	no		
48	BBS-S1	ROS	US	BO	16/09/2022 11:09	16-09-22 11:09:02	46° 1.341 N	130° 26.466 W	654	673	184	197	14	Steve Romaine					
49	BBS-W2	ROS	US	BE	17/09/2022 03:24	17-09-22 03:24:28	46° 4.211 N	130° 32.24 W	1791					Steve Romaine	yes	yes	no		
49	BBS-W2	ROS	US	BO	17/09/2022 03:55	17-09-22 03:55:02	46° 4.19 N	130° 32.354 W	1791	1857				Steve Romaine					
49	BBS-W2	ROS	US	EN	17/09/2022 04:24	17-09-22 04:24:52	46° 4.089 N	130° 32.444 W	1791	1857				Steve Romaine					
50	BBS-W2	NET		BE	17/09/2022 04:36	17-09-22 04:34:28	46° 4.215 N	130° 32.426 W	1823	250				Cindy Wright					
50	BBS-W2	NET		BO	17/09/2022 04:50	17-09-22 04:48:46	46° 4.287 N	130° 32.644 W	1823	250				Cindy Wright					
50	BBS-W2	NET		EN	17/09/2022 04:56	17-09-22 04:54:19	46° 4.277 N	130° 32.718 W	1823	250				Cindy Wright					
51	BBS-W2	NET		BE	17/09/2022 05:12	17-09-22 05:10:50	46° 4.18 N	130° 32.23 W	1823	1200				Cindy Wright					
51	BBS-W2	NET		BO	17/09/2022 05:57	17-09-22 05:55:47	46° 4.18 N	130° 32.845 W	1823	1200				Cindy Wright					
51	BBS-W2	NET		EN	17/09/2022 06:16	17-09-22 06:14:37	46° 4.211 N	130° 33.107 W	1823	1200				Cindy Wright					
52	BBS-W1	ROS	US	BE	17/09/2022 07:00	17-09-22 07:00:06	46° 4.1 N	130° 29.26 W	785					Cindy Wright	yes	no	no		
52	BBS-W1	ROS	US	BO	17/09/2022 07:12	17-09-22 07:12:52	46° 4.054 N	130° 29.283 W	785	781				Cindy Wright					
52	BBS-W1	ROS	US	EN	17/09/2022 07:25	17-09-22 07:25:54	46° 4.042 N	130° 29.324 W						Cindy Wright					
53	BBSCENTRAL	NET		BE	17/09/2022 07:52	17-09-22 07:50:43	46° 3.999 N	130° 26.648 W	555	250				Steve Romaine					
53	BBSCENTRAL	NET		BO	17/09/2022 08:01	17-09-22 07:59:12	46° 3.974 N	130° 26.714 W	555	250				Steve Romaine					
53	BBSCENTRAL	NET		EN	17/09/2022 08:05	17-09-22 08:03:11	46° 3.974 N	130° 26.758 W						Steve Romaine					
54	BBSCENTRAL	ROS	US	BE	17/09/2022 08:15	17-09-22 08:15:08	46° 3.964 N	130° 26.624 W	555		198	210		Steve Romaine	yes	yes	no		
54	BBSCENTRAL	ROS	US	BO	17/09/2022 08:23	17-09-22 08:23:59	46° 3.948 N	130° 26.631 W	555	556				Steve Romaine					
54	BBSCENTRAL	ROS	US	EN	17/09/2022 08:49	17-09-22 08:49:34	46° 3.964 N	130° 26.66 W	555	556				Steve Romaine					
55	BBS-E1	ROS	US	BE	17/09/2022 09:31	17-09-22 09:31:37	46° 4.406 N	130° 23.282 W	1491		211	225	15	Cindy Wright	yes	no	no	deck pressure 0.2db	
55	BBS-E1	ROS	US	BO	17/09/2022 09:55	17-09-22 09:55:54	46° 4.406 N	130° 23.259 W	1491	1557	211	225	15	Cindy Wright					

55	BBS-E1	ROS	US	EN	17/09/2022 10:40	17-09-22 10:40:14	46° 4.404 N	130° 23.256 W			211	225	15	Cindy Wright					
56	BBS-E2	ROS	US	BE	17/09/2022 11:13	17-09-22 11:13:12	46° 4.398 N	130° 19.645 W	2213					Steve Romaine	no	no	no	Bottle for eDNA work, not IOS no sample #	
56	BBS-E2	ROS	US	BO	17/09/2022 11:46	17-09-22 11:46:56	46° 4.413 N	130° 19.603 W	2213	2215				Steve Romaine					
56	BBS-E2	ROS	US	EN	17/09/2022 12:23	17-09-22 12:23:32	46° 4.398 N	130° 19.597 W	2213	2215				Steve Romaine					
57	BBN-CN	ROS	US	BE	17/09/2022 21:30	17-09-22 21:30:43	46° 22.352 N	130° 37.276 W	650					Cindy Wright	yes	no	no		
57	BBN-CN	ROS	US	BO	17/09/2022 21:42	17-09-22 21:42:24	46° 22.298 N	130° 37.382 W	650	657				Cindy Wright				bottom bottle tripped for eDNA/NOAA. No sample ID or rosette sheet	
57	BBN-CN	ROS	US	EN	17/09/2022 21:53	17-09-22 21:53:15	46° 22.23 N	130° 37.362 W						Cindy Wright					
58	BBN-NW1	ROS	US	BE	17/09/2022 22:19	17-09-22 22:19:50	46° 23.476 N	130° 39.779 W	1755					Cindy Wright	yes	no	no		
58	BBN-NW1	ROS	US	BO	17/09/2022 22:53	17-09-22 22:53:38	46° 23.526 N	130° 39.802 W	1764	1813				Cindy Wright				interesting T, S, DO microstructure >360db	winch stopped at 1462db to rectify wire angle
58	BBN-NW1	ROS	US	EN	17/09/2022 23:23	17-09-22 23:23:20	46° 23.46 N	130° 39.991 W						Cindy Wright				bottom bottle tripped for eDNA/NOAA. No sample ID or rosette sheet	
59	BBN-NW2	ROS	US	BE	17/09/2022 23:47	17-09-22 23:47:19	46° 24.662 N	130° 41.56 W	2194					Cindy Wright	yes	no	no		
59	BBN-NW2	ROS	US	BO	18/09/2022 00:24	18-09-22 00:24:52	46° 24.554 N	130° 41.776 W	2171	2190				Cindy Wright				bottom bottle tripped for eDNA/NOAA. No sample ID or rosette sheet	
59	BBN-NW2	ROS	US	EN	18/09/2022 00:59	18-09-22 00:59:11	46° 24.498 N	130° 42.078 W	2171	2190				Cindy Wright					