

DAILY SCIENCE LOG BOOK

Version FEB2023

Water Properties Group
Fisheries and Oceans Canada
Institute of Ocean Sciences
Ocean Sciences Division
Nanaimo, BC, Canada
www.waterproperties.ca

Launch Daily Science
Log Userform

Print Daily Science Log
Workbook



Cruise Number	2023-088
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Start Date	09-Aug-23
End Date	24-Aug-23

Vessel	JP Tully
Project(s)	Line P

Mission Participants (Department/Agencies):	DFO
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Ship Personnel:

Name	Role
Frederic Hamilton	Captain
Ryan Hull	Chief Officer
Melissa Kniget	2nd officer
David Bolten	3rd officer
Robin Hielscher	Chief Engineer
Roxton Pitt	Bosun
Derek Hammond	Supply officer
Meghan Schwartz	Chief Cook

Scientific Personnel:

Name	Role	Watch	Cabin	Name	Role	Watch	Cabin
Marie Robert	Chief scientist	0600 - 1800	A	Laura Sofen	Incubations/V	1200 - 2400	H
Michael Arych	DMS/DMSP/W	0600 - 1800	B				
Maira Galbraith	Watch leader/t	0000 - 1200	C				
Jan Finke	Watch	0000 - 1200	D				
Ian Tompkins	DOC/TOC/CDO	1200 - 2400	D				
TJ Guercio	Incubations/W	0000 - 1200	E				
Jody Klymak	MVP/Watch	1200 - 2400	E				
Morgan Griffith	LVP/Watch	0000 - 1200	F				
Stephen Roman	Watch leader/d	1200 - 2400	F				
Danielle Calek	TM/Watch	0000 - 1200	G				
Isabelle Bacon	LVP/Watch	1200 - 2400	G				
Lynn Wharran	ONAr/MVP/Wd	0000 - 1200	H				

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 (m)	Comment
Data Logging Computer	104											
Data Acquisition Program	seasave V7											
CTD Deck Unit	SBE	11P	508				SBE	11P				
CTD	SBE	9P	1515				SBE	9P	506			
Temperature Sensor	SBE	3	6754	P		S	SBE	3	6736	P		S
Conductivity Sensor	SBE	4	6141	P		S	SBE	4	6146	P		S
Transmissometer	WETLABS	C-STAR	1185DR	P			WETLABS	C-STAR	1883DG	P		
Fluorometer	SEAPOINT	SCF	3950	S			SEAPOINT	SCF	3641	S		
Fluorometer Gain Cable	3X						3X					
Oxygen Sensor	SBE	43	1119	P			SBE	43	997	P		
Par Sensor	biospherical	QSP2350	70613									
Additional Sensors...	VALEPORT ALTIMETER - 79487											

Rosette

Setup

Number of Bottles	24
Manufacturer	estEquipment, General Ocea
Volume of Bottles (L)	10

Bottles Serial Numbers

1	2019-10-01	9		17	2000-10-27	25	
2	2016-10-05	10	2000-10-30	18	2016-10-13	26	
3	2016-10-06	11	2018-10-04	19	2016-10-14	27	
4	2016-10-07	12	2016-10-10	20	2016-10-15	28	
5	2016-10-08	13	2016-10-11	21	2018-10-03	29	
6	2018-10-02	14		22	2016-10-16	30	
7	2000-10-29	15	2000-10-24	23	2016-10-17	31	
8	2016-10-09	16	2016-10-12	24	2016-10-18	32	

Salinometer

Make	Model	Serial Number	Comments on Performance During Cruise

ADCP

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

Thermosalinograph System

Make	Model	Serial/kit Number	Program	Version	Comments on Performance During Cruise
Seabird	SBE45	45-0789			sues with flow meters getting jammed by zoo

Fluo: WSCHL-1656

Oxygen kit

Make	Model	Serial/kit Number	Comments on Performance During Cruise
		#2	

Winches

	Make	Model	Serial Number	Comment (Describe Application and Performance)
Winch 1	Hawboldt	HAW	17027	For CTD/Rosettes. Few hydraulics issues
Winch 2	Hawboldt	32523	1076-01	For TM. LOTS of spooling issues.
Winch 3	Swann	329	1482	For Bongos and LVP. No issues.
Winch 4				

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				
SI			0011			

Acoustics

			Frequencies (kHz) - Check Applicable						Comments on Performance During Cruise
Make	Model	Software	12	18	38	70	120	200	

Other Scientific Equipment Used Throughout this Cruise

Label laptop

Laptop-6VLA508P

Additional Equipment Comments During Cruise

Additional Cruise Comments

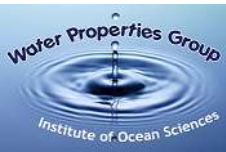
For most of the rosette casts, wait time before closing a Niskin was 60 sec for all Niskins 400 dbar (incl) to the surface, and 30 sec for all Niskins lower than 400 dbar. Except for cast 0067 (station P24) where the wait time was 30 sec for all Niskins.

Pictures (Equipment, Setups etc.)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

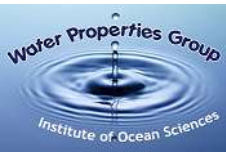
Cruise Number:		2023-088	Launch Daily Science Log		Print Daily Science Log Workbook												CTD/Rosette Status				
Vessel:		JP Tully															Trans. Cleaned	Fluorometer Cleaned	PAR Status		
Event Number	Station Name	Cast Type	Firing Method	Time Code	Date Time (UTC) Computer ("dd-mm-yyyy hh:mm:ss")	Date Time (UTC) GPS ("dd-mm-yyyy hh:mm:ss")	Positional Information (DDD MM.MMM)		Sounder Depth (m)	Max Sampling Pressure	Sample Number Start	# of Bottles	Watch Keepers	Trans. Cleaned	Fluorometer Cleaned	PAR Status					
							Latitude	Longitude													
2	Saanich	ROS	N/A	BE	09-08-2023 22:51:33	09-08-2023 22:51:31	48 39.45 N	123 30.578 W	177				Steve Romaine	yes	no	yes			test cast		
2	Saanich	ROS	N/A	BO	09-08-2023 22:56:12	09-08-2023 22:56:11	48 39.452 N	123 30.552 W	177	167			Steve Romaine						not logged		
2	Saanich	ROS	N/A	EN	09-08-2023 23:00:00	09-08-2023 23:00:00	48 39.448 N	123 30.524 W		167			Steve Romaine								
3	Saanich	ROS	N/A	BE	09-08-2023 23:04:25	09-08-2023 23:04:24	48 39.442 N	123 30.513 W	176				Steve Romaine	yes	no	yes					
3	Saanich	ROS	N/A	BO	09-08-2023 23:07:50	09-08-2023 23:07:48	48 39.438 N	123 30.489 W	176	169			Steve Romaine							24 bottles fired at surface	
3	Saanich	ROS	N/A	EN	09-08-2023 23:12:07	09-08-2023 23:12:05	48 39.43 N	123 30.478 W		169			Steve Romaine								
4	Haro59	ROS	US	BE	10-08-2023 01:41:01	10-08-2023 01:41:01	48 36.855 N	123 14.813 W		232	1	12	Steve Romaine	yes	no	yes					
4	Haro59	ROS	US	BO	10-08-2023 01:46:41	10-08-2023 01:46:41	48 36.84 N	123 14.808 W	232	225	1	12	Steve Romaine								
4	Haro59	ROS	US	EN	10-08-2023 02:09:14	10-08-2023 02:09:12	48 36.87 N	123 14.834 W		225	1	12	Steve Romaine								
5	JF1	LOOP		✓		10-08-2023 05:03:00	48 16.29 N	123 30.10 W	162	4.5	5005	1	Steve Romaine							2chl, 1sal	
6	JF2	ROS	US	BE	10-08-2023 07:25:47	10-08-2023 07:25:46	48 18.042 N	124 0.102 W	186		13	6	Moira Galbraith	yes	no	yes					
6	JF2	ROS	US	BO	10-08-2023 07:33:18	10-08-2023 07:33:15	48 18.059 N	124 0.11 W	186	176	13	6	Moira Galbraith								
6	JF2	ROS	US	EN	10-08-2023 07:50:10	10-08-2023 07:50:09	48 18.065 N	124 0.234 W		176	13	6	Moira Galbraith								
7	JF3	LOOP		BE	10-08-2023 10:09:05	10-08-2023 10:09:04	48 27.089 N	124 30.29 W	208	4.5	5007	1	Moira Galbraith	NA	NA					2chl, 1sal	
8	JF4	LOOP		BE	10-08-2023 12:21:53	10-08-2023 12:21:51	48 32.288 N	124 59.973 W	58	4.5	5008	1	Moira Galbraith	NA	NA					2chl, 1sal	
9	P1	ROS	US	BE	10-08-2023 14:57:52	10-08-2023 14:57:52	48 34.492 N	125 30.035 W	121	111	19	4	Moira Galbraith	yes	no	yes				stop us ~15min for ship	
9	P1	ROS	US	BO	10-08-2023 15:01:33	10-08-2023 15:01:33	48 34.492 N	125 30.036 W		111	19	4	Moira Galbraith								
9	P1	ROS	US	EN	10-08-2023 15:14:52	10-08-2023 15:14:53	48 34.479 N	125 30.022 W		111	19	4	Moira Galbraith								
10	P2	ROS	US	BE	10-08-2023 17:41:52	10-08-2023 17:41:50	48 35.97 N	125 59.89 W	116		23	9	Moira Galbraith	yes	no	yes				Deep cast	
10	P2	ROS	US	BO	10-08-2023 17:45:58	10-08-2023 17:45:58	48 35.995 N	125 59.912 W	116	107	23	9	Moira Galbraith							went past 100 on up	
10	P2	ROS	US	EN	10-08-2023 18:05:09	10-08-2023 18:05:08	48 35.996 N	125 59.952 W		107	23	9	Moira Galbraith								
11	P2	NET		BE	10-08-2023 18:14:41	10-08-2023 18:14:38	48 36.001 N	126 0.092 W	116	106			Moira Galbraith	NA	NA					Bongo	
11	P2	NET		BO	10-08-2023 18:19:18	10-08-2023 18:19:18	48 35.956 N	126 0.026 W		106			Moira Galbraith								
11	P2	NET		EN	10-08-2023 18:23:00	10-08-2023 18:22:58	48 35.933 N	125 59.965 W		106			Moira Galbraith								
12	P2	ROS	US	BE	10-08-2023 18:51:50	10-08-2023 18:51:47	48 35.992 N	125 59.931 W	115		32	12	Steve Romaine	yes	no	yes				DMS cast	
12	P2	ROS	US	BO	10-08-2023 18:54:50	10-08-2023 18:54:48	48 35.982 N	125 59.914 W	115	100	32	12	Steve Romaine								
12	P2	ROS	US	EN	10-08-2023 19:14:21	10-08-2023 19:14:19	48 35.989 N	125 59.832 W		100	32	12	Steve Romaine								
13	P3	ROS	US	BE	10-08-2023 21:28:49	10-08-2023 21:28:46	48 37.478 N	126 19.937 W	813		44	1	Steve Romaine	yes	no	yes				TSG pump 2 not flowing, cleared biology	
13	P3	ROS	US	BO	10-08-2023 21:43:02	10-08-2023 21:43:01	48 37.503 N	126 19.933 W	810	810	44	1	Steve Romaine								
13	P3	ROS	US	EN	10-08-2023 21:58:18	10-08-2023 21:58:16	48 37.523 N	126 19.956 W		810	44	1	Steve Romaine								
14	P4	DRF		DE	10-08-2023 23:47:01	10-08-2023 23:47:00	48 38.974 N	126 38.967 W	1315	0			Jody Klymak							glider deploy	
15	P4	ROS	US	BE	11-08-2023 00:49:55	11-08-2023 00:49:55	48 38.999 N	126 39.917 W	1313		45	17	Steve Romaine	yes	no	yes				DMS cast	
15	P4	ROS	US	BO	11-08-2023 01:03:02	11-08-2023 01:03:01	48 38.977 N	126 39.922 W	1314	600	45	17	Steve Romaine								
15	P4	ROS	US	EN	11-08-2023 01:40:13	11-08-2023 01:40:13	48 38.968 N	126 39.881 W		600	45	17	Steve Romaine								
16	P4	PUMPS		BE	11-08-2023 01:51:00	11-08-2023 01:51:00	48 38.96 N	126 39.998 W	1315	500	62	3	Isabelle Baconnais	NA	NA					3 filters/pumps	
16	P4	PUMPS		EN	11-08-2023 05:55:55	11-08-2023 05:55:53	48 39.016 N	126 40.01 W		500			Isabelle Baconnais								
17	P4	ROS	US	BE	11-08-2023 06:09:09	11-08-2023 06:09:10	48 39.014 N	126 39.939 W	1314		65	22	Steve Romaine	yes	no	yes				Deep cast	
17	P4	ROS	US	BO	11-08-2023 06:35:35	11-08-2023 06:35:34	48 39.022 N	126 39.977 W	1314	1321	65	22	Steve Romaine								
17	P4	ROS	US	EN	11-08-2023 07:37:11	11-08-2023 07:37:11	48 39.004 N	126 39.934 W		1321	65	22	Steve Romaine								
18	P4	PUMPS		BE	11-08-2023 08:00:02	11-08-2023 08:00:57	48 38.97 N	126 39.98 W	1315	105	87	3	Moira Galbraith	NA	NA					event 18 tsg pump #2 .2-.3 won't change	
18	P4	PUMPS		BO	11-08-2023 08:24:20	11-08-2023 08:24:19	48 39.0 N	126 39.94 W	1315	105	87	3	Moira Galbraith								
18	P4	PUMPS		EN	11-08-2023 11:51:45	11-08-2023 11:51:41	48 38.97 N	126 39.764 W	1315	105	87	3	Moira Galbraith								
19	P4	NET		BE	11-08-2023 12:20:25	11-08-2023 12:20:21	48 38.992 N	126 39.967 W	1313	250			Moira Galbraith	NA	NA					shallow bongo	
19	P4	NET		BO	11-08-2023 12:29:55	11-08-2023 12:29:51	48 38.981 N	126 39.993 W		250			Moira Galbraith								
19	P4	NET		EN	11-08-2023 12:34:18	11-08-2023 12:34:16	48 39.004 N	126 39.986 W		250			Moira Galbraith								
20	P4	NET		BE	11-08-2023 12:46:23	11-08-2023 12:46:21	48 38.994 N	126 39.968 W	1313	1200			Moira Galbraith	NA	NA					Deep bongo	
20	P4	NET		BO	11-08-2023 13:30:51	11-08-2023 13:30:49	48 38.976 N	126 39.982 W		1200			Moira Galbraith								
20	P4	NET		EN	11-08-2023 13:52:24	11-08-2023 13:52:23	48 38.963 N	126 39.99 W		1200			Moira Galbraith								



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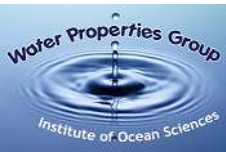
Cruise Number:			2023-088		Launch Daily Science Log		Print Daily Science Log Workbook								CTD/Rosette Status			
Vessel:			JP Tully															
Event Number	Station Name	Cast Type	Firing Method	Time Code	Date Time (UTC) Computer ("dd-mm-yyyy hh:mm:ss")	Date Time (UTC) GPS ("dd-mm-yyyy hh:mm:ss")	Positional Information (DDD MM.MMM)		Sounder Depth (m)	Max Sampling Pressure	Sample Number Start	# of Bottles	Watch Keepers	Trans. Cleaned	Fluoromet er Cleaned	PAR Status	Comments	
21	P4	PUMPS		BE	11-08-2023 15:31:32	11-08-2023 15:31:29	48 38.961 N	126 40.046 W	1315		90	3	Isabelle Baconnais	NA	NA		deep pump cast	
21	P4	PUMPS		BO	11-08-2023 16:03:49	11-08-2023 16:03:48	48 39.005 N	126 40.046 W	1319	1290	90	3	Isabelle Baconnais					
21	P4	PUMPS		EN	11-08-2023 19:45:56	11-08-2023 19:45:55	48 38.965 N	126 39.982 W	1319	1300	90	3	Isabelle Baconnais					
22	P4	BOT		BE	11-08-2023 20:05:00	11-08-2023 20:05:00							Danielle Caleb				TM cast	
22	P4	BOT	MR	MR	11-08-2023 21:05:59	11-08-2023 21:05:56	48 38.988 N	126 39.958 W	1320	800	93	10	Danielle Caleb				Sample numbers wrong on log, correct on labels, had to update all event numbers everywhere	
22	P4	BOT		EN	11-08-2023 22:05:00	11-08-2023 22:05:00							Danielle Caleb					
23	P5	ROS	US	BE	12-08-2023 02:22:46	12-08-2023 02:22:46	48 41.479 N	127 9.944 W	2084	1005	103	2	Steve Romaine	yes	no	yes	loop 5023	
23	P5	ROS		BO	12-08-2023 02:40:16	12-08-2023 02:40:14	48 41.499 N	127 9.97 W		1005	103	2	Steve Romaine					
23	P5	ROS	US	EN	12-08-2023 02:59:39	12-08-2023 02:59:39	48 41.508 N	127 9.963 W		1005	103	2	Steve Romaine					
24	P6	ROS	US	BE	12-08-2023 05:28:09	12-08-2023 05:28:07	48 44.619 N	127 39.905 W	2540	2005	105	2	Steve Romaine	yes	no	yes	TSG pump 2, air and doliolids removed	
24	P6	ROS		BO	12-08-2023 06:02:08	12-08-2023 06:02:06	48 44.612 N	127 39.938 W	2540	2005	105	2	Steve Romaine					
24	P6	ROS		EN	12-08-2023 06:36:39	12-08-2023 06:36:37	48 44.62 N	127 39.929 W		2005	105	2	Steve Romaine					
25	P7	ROS	US	BE	12-08-2023 09:11:53	12-08-2023 09:11:51	48 46.633 N	128 9.925 W	2500	1005	107	3	Moira Galbraith	yes	no	yes	loop 5025 2chl 1 sal	
25	P7	ROS		BO	12-08-2023 09:32:06	12-08-2023 09:32:04	48 46.601 N	128 9.906 W		1005	107	3	Moira Galbraith					
25	P7	ROS	US	EN	12-08-2023 09:55:11	12-08-2023 09:55:11	48 46.55 N	128 9.931 W		1005	107	3	Moira Galbraith					
26	P8	NET		BE	12-08-2023 12:31:33	12-08-2023 12:31:29	48 48.991 N	128 39.938 W	2516	250			Moira Galbraith	NA	NA		shallow bongo	
26	P8	NET		BO	12-08-2023 12:41:31	12-08-2023 12:41:27	48 48.996 N	128 39.969 W		250			Moira Galbraith					
26	P8	NET		EN	12-08-2023 12:47:02	12-08-2023 12:46:56	48 48.984 N	128 39.95 W		250			Moira Galbraith					
27	P8	NET		BE	12-08-2023 12:57:07	12-08-2023 12:57:04	48 48.998 N	128 39.931 W	2514	1200			Moira Galbraith	NA	NA		deep bongo	
27	P8	NET		BO	12-08-2023 13:40:08	12-08-2023 13:40:03	48 49.008 N	128 39.929 W		1200			Moira Galbraith					
27	P8	NET		EN	12-08-2023 14:03:00	12-08-2023 14:02:58	48 48.972 N	128 39.957 W		1200			Moira Galbraith					
28	P8	ROS	US	BE	12-08-2023 14:24:22	12-08-2023 14:24:20	48 49.002 N	128 39.955 W	2514	2005	109	24	Danielle Caleb	yes	no	yes		
28	P8	ROS		BO	12-08-2023 15:00:16	12-08-2023 15:00:16	48 48.96 N	128 40.002 W		2005	109	24	Danielle Caleb					
28	P8	ROS	US	EN	12-08-2023 16:27:45	12-08-2023 16:27:43	48 49.016 N	128 39.968 W			109	24						
29	P8	DRF		DE	12-08-2023 17:23:05	12-08-2023 17:23:00	48 49.733 N	128 47.581 W	2555	0			Moira Galbraith				Arvor NKE CA008	
30	P9	ROS	US	BE	12-08-2023 19:16:59	12-08-2023 19:16:56	48 51.365 N	129 9.964 W	2340	1005	133	2	Steve Romaine	yes	no	yes	5030 loop	
30	P9	ROS		BO	12-08-2023 19:35:37	12-08-2023 19:35:36	48 51.342 N	129 9.969 W	2341	1005	133	2	Steve Romaine					
30	P9	ROS	US	EN	12-08-2023 19:54:53	12-08-2023 19:54:51	48 51.381 N	129 9.954 W		1005	133	2	Steve Romaine					
31	P10	ROS	US	BE	12-08-2023 22:22:56	12-08-2023 22:22:56	48 53.555 N	129 40.011 W	2635	2005	135	3	Isabelle Baconnais	yes	no	yes		
31	P10	ROS		BO	12-08-2023 23:02:14	12-08-2023 23:02:12	48 53.591 N	129 39.979 W	2635	2005	135	3	Isabelle Baconnais					
31	P10	ROS	US	EN	12-08-2023 23:39:39	12-08-2023 23:39:38	48 53.588 N	129 39.973 W		2005	135	3	Isabelle Baconnais					
32	P11	ROS	US	BE	13-08-2023 02:00:15	13-08-2023 02:00:13	48 55.998 N	130 9.963 W	2747	1005	138	2	Isabelle Baconnais	yes	no	yes		
32	P11	ROS		BO	13-08-2023 02:18:42	13-08-2023 02:18:40	48 55.971 N	130 10.009 W	2747	1005	138	2	Isabelle Baconnais					
32	P11	ROS	US	EN	13-08-2023 02:41:11	13-08-2023 02:41:10	48 55.973 N	130 10.028 W		1005	138	2	Isabelle Baconnais					
33	P12	ROS	US	BE	13-08-2023 05:01:32	13-08-2023 05:01:32	48 58.184 N	130 40.003 W	3222		140	24	Steve Romaine	yes	no	no	Deep cast	
33	P12	ROS		BO	13-08-2023 05:58:03	13-08-2023 05:58:03	48 58.238 N	130 39.953 W	3224	3277	140	24	Steve Romaine				bot 18 misfired at 125	
33	P12	ROS	US	EN	13-08-2023 07:45:06	13-08-2023 07:45:05	48 58.216 N	130 39.972 W		3277	140	24	Steve Romaine					
34	P12	PUMPS		BE	13-08-2023 07:51:23	13-08-2023 07:51:17	48 58.206 N	130 39.981 W	3237	750	164	3	Moira Galbraith	NA	NA		mid depth pumps	
34	P12	PUMPS		BO	13-08-2023 08:17:10	13-08-2023 08:17:06	48 58.195 N	130 39.986 W		750	164	3	Moira Galbraith					
34	P12	PUMPS		EN	13-08-2023 11:51:33	13-08-2023 11:51:31	48 58.201 N	130 39.97 W	3237	750	164	3	Moira Galbraith					
35	P12	NET		BE	13-08-2023 12:06:40	13-08-2023 12:06:35	48 58.178 N	130 40 W	3223	250			Moira Galbraith	NA	NA		shallow bongo	
35	P12	NET		BO	13-08-2023 12:19:19	13-08-2023 12:19:16	48 58.197 N	130 39.994 W		250			Moira Galbraith					
35	P12	NET		EN	13-08-2023 12:24:47	13-08-2023 12:24:42	48 58.208 N	130 39.969 W		250			Moira Galbraith					
36	P12	NET		BE	13-08-2023 12:37:33	13-08-2023 12:37:30	48 58.202 N	130 39.985 W	3222	1200			Moira Galbraith	NA	NA		deep bogo	
36	P12	NET		BO	13-08-2023 13:23:23	13-08-2023 13:23:21	48 58.179 N	130 40.004 W		1200			Moira Galbraith					
36	P12	NET		EN	13-08-2023 13:43:59	13-08-2023 13:43:54	48 58.178 N	130 39.994 W		1200			Moira Galbraith					
37	P12	BOT		BE	13-08-2023 14:17:55	13-08-2023 14:17:53	48 58.182 N	130 39.995 W	3224	100	167	5	Danielle Caleb	no	no	yes	tm shallow	
37	P12	BOT	MR	MR	13-08-2023 14:38:27	13-08-2023 14:38:23	48 58.178 N	130 40.022 W		100	167	5	Danielle Caleb					
37	P12	BOT		EN	13-08-2023 14:58:24	13-08-2023 14:58:19	48 58.191 N	130 39.946 W		100	167	5	Danielle Caleb					



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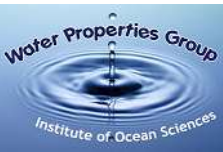
Cruise Number:			2023-088		Launch Daily Science Log		Print Daily Science Log WorkBook														
Vessel:			JP Tully														CTD/Rosette Status				
Event Number	Station Name	Cast Type	Firing Method	Time Code	Date Time (UTC) Computer ("dd-mm-yyyy hh:mm:ss")	Date Time (UTC) GPS ("dd-mm-yyyy hh:mm:ss")	Positional Information (DDD MM.MMM)		Sounder Depth (m)	Max Sampling Pressure	Sample Number Start	# of Bottles	Watch Keepers	Trans. Cleaned	Fluoromet er Cleaned	PAR Status	Comments				
							Latitude	Longitude													
38 P12		PUMPS		BE	13-08-2023 15:52:32	13-08-2023 15:52:30	48 58.16 N	130 39.989 W	3222	100	172	3	Isabelle Baconnais	NA	NA		pump shallow				
38 P12		PUMPS		BO	13-08-2023 16:01:02	13-08-2023 16:00:56	48 58.166 N	130 40.005 W		100	172	3	Isabelle Baconnais								
38 P12		PUMPS		EN	13-08-2023 19:26:12	13-08-2023 19:26:08	48 58.243 N	130 39.982 W		100	172	3	Isabelle Baconnais								
39 P12		BOT	MR	BE	13-08-2023 20:05:10	13-08-2023 20:05:05	48 58.199 N	130 40.025 W	3226	800			Danielle Caleb	NA	NA		tm deep				
39 P12		BOT		MR	13-08-2023 20:37:25	13-08-2023 20:37:21	48 58.177 N	130 40.051 W	3223	800	175	5	Danielle Caleb								
39 P12		BOT		EN	13-08-2023 21:22:49	13-08-2023 21:22:44	48 58.207 N	130 39.95 W		800	175	5	Danielle Caleb								
40 P12		ROS	US	BE	13-08-2023 21:38:17	13-08-2023 21:38:17	48 58.19 N	130 39.978 W	3223	600	180	17	Steve Romaine	yes	no	yes	DMS cast				
40 P12		ROS	US	BO	13-08-2023 21:49:30	13-08-2023 21:49:29	48 58.188 N	130 39.99 W	3220	600	180	17	Steve Romaine								
40 P12		ROS	US	EN	13-08-2023 22:24:37	13-08-2023 22:24:38	48 58.205 N	130 39.995 W		600	180	17	Steve Romaine								
41 P12		PUMPS		BE	13-08-2023 23:02:12	13-08-2023 23:02:11	48 58.17 N	130 39.968 W	3222	2000			Isabelle Baconnais	NA	NA		deep pump cast				
41 P12		PUMPS		BO	13-08-2023 23:41:14	13-08-2023 23:41:09	48 58.211 N	130 39.972 W		2000	197	3	Isabelle Baconnais								
41 P12		PUMPS		EN	14-08-2023 03:42:33	14-08-2023 03:42:27	48 58.202 N	130 40.027 W		2000	197	3	Isabelle Baconnais								
43 Loop43		LOOP		BE	14-08-2023 04:58:56	14-08-2023 04:58:51	48 59.452 N	130 56.324 W	1499		5043		Steve Romaine	NA	NA		loop				
42 P13		ROS	US	BE	14-08-2023 08:30:01	14-08-2023 08:29:58	49 2.543 N	131 39.912 W	3024	2000	200	24	Moira Galbraith	yes	no	yes	5m loop 2chl 1 sal 5042				
42 P13		ROS	US	BO	14-08-2023 09:12:32	14-08-2023 09:12:30	49 2.542 N	131 39.875 W		2000	200	24	Moira Galbraith								
42 P13		ROS	US	EN	14-08-2023 10:05:28	14-08-2023 10:05:29	49 2.551 N	131 39.89 W		2000	200	24	Moira Galbraith								
44 P14		ROS	US	BE	14-08-2023 14:57:22	14-08-2023 14:57:21	49 7.387 N	132 39.924 W	3303		224	24	Moira Galbraith	yes	no	no					
44 P14		ROS	US	BO	14-08-2023 16:06:25	14-08-2023 16:06:25	49 7.371 N	132 39.938 W		3360	224	24	Moira Galbraith								
44 P14		ROS	US	EN	14-08-2023 17:57:28	14-08-2023 17:57:26	49 7.38 N	132 39.93 W		3360	224	24	Moira Galbraith								
45 P15		ROS	US	BE	14-08-2023 22:35:36	14-08-2023 22:35:35	49 12.049 N	133 39.92 W	3393	2005	248	24	Isabelle Baconnais	yes	no	yes	5044 loop, drum fill				
45 P15		ROS	US	BO	14-08-2023 23:12:34	14-08-2023 23:12:31	49 11.988 N	133 39.951 W	3393	2005	248	23	Isabelle Baconnais								
45 P15		ROS	US	EN	14-08-2023 23:53:05	14-08-2023 23:53:03	49 11.997 N	133 39.996 W		2005	248	23	Isabelle Baconnais								
46 P16		BOT	MR	BE	15-08-2023 04:23:46	15-08-2023 04:23:41	49 17.04 N	134 40.025 W	3615	395	271	1	Jody Klymak	NA	NA		Bigelow TM cast				
46 P16		BOT		MR	15-08-2023 05:53:22	15-08-2023 05:53:18	49 17.04 N	134 40.029 W	3615	395	271	1	Jody Klymak				electrical issues with tm winch spooling				
46 P16		BOT		EN	15-08-2023 06:19:17	15-08-2023 06:19:16	49 17.067 N	134 40.048 W		395	271	1	Jody Klymak								
47 P16		ROS	US	BE	15-08-2023 06:36:12	15-08-2023 06:36:11	49 17.008 N	134 39.978 W	3615		272	24	Steve Romaine	yes	no	no	Deep cast				
47 P16		ROS	US	BO	15-08-2023 07:44:42	15-08-2023 07:44:42	49 17.019 N	134 40.016 W		3686	272	24	Steve Romaine								
47 P16		ROS	US	EN	15-08-2023 09:34:41	15-08-2023 09:34:41	49 17.03 N	134 39.986 W		3686	272	24	Steve Romaine								
48 P16		NET		BE	15-08-2023 09:58:12	15-08-2023 09:58:09	49 17.004 N	134 40.003 W	3615	250			Danielle Caleb	NA	NA		shallow bongo				
48 P16		NET		BO	15-08-2023 10:07:16	15-08-2023 10:07:13	49 17.008 N	134 40.012 W		250			Danielle Caleb								
48 P16		NET		EN	15-08-2023 10:12:25	15-08-2023 10:12:24	49 17.032 N	134 40.004 W	3615	250			Danielle Caleb								
49 P16		NET		BE	15-08-2023 10:25:43	15-08-2023 10:25:41	49 17.005 N	134 39.994 W	3615	1200			Moira Galbraith	NA	NA		deep bongo				
49 P16		NET		BO	15-08-2023 11:09:48	15-08-2023 11:09:45	49 17.005 N	134 40.008 W		1200			Moira Galbraith								
49 P16		NET		EN	15-08-2023 11:30:25	15-08-2023 11:30:23	49 17.001 N	134 40.03 W		1200			Moira Galbraith								
50 P16		BOT	MR	BE	15-08-2023 11:49:57	15-08-2023 11:49:55	49 17.041 N	134 39.94 W	3615		296	5	Danielle Caleb	no	no	yes	tm deep				
50 P16		BOT		BO	15-08-2023 12:26:53	15-08-2023 12:26:51	49 16.99 N	134 39.983 W		800	296	5	Danielle Caleb								
50 P16		BOT		EN	15-08-2023 13:24:54	15-08-2023 13:24:52	49 16.974 N	134 39.929 W		800	296	5	Danielle Caleb								
51 P16		ROS	US	BE	15-08-2023 14:18:15	15-08-2023 14:18:12	49 16.994 N	134 39.98 W	3613		306	17	Moira Galbraith	yes	no	yes	DMS cast				
51 P16		ROS	US	BO	15-08-2023 14:30:01	15-08-2023 14:30:02	49 17 N	134 39.981 W		600			Moira Galbraith								
51 P16		ROS	US	EN	15-08-2023 15:10:48	15-08-2023 15:10:46	49 16.975 N	134 39.993 W		600			Moira Galbraith								
52 P16		BOT	MR	BE	15-08-2023 15:21:32	15-08-2023 15:21:29	49 16.994 N	134 39.965 W	3614		301	5	Danielle Caleb	NA	NA		tm shallow				
52 P16		BOT		MR	15-08-2023 15:36:59	15-08-2023 15:36:57	49 16.981 N	134 39.966 W			301	5	Danielle Caleb								
52 P16		BOT		EN	15-08-2023 15:54:50	15-08-2023 15:54:50	49 16.973 N	134 39.97 W	3613	100	301	5	Danielle Caleb								
53 P17		ROS	US	BE	15-08-2023 20:31:12	15-08-2023 20:31:11	49 20.988 N	135 39.983 W	3616	2005	323	24	Isabelle Baconnais	yes	no	yes	loop 5053				
53 P17		ROS	US	BO	15-08-2023 21:08:59	15-08-2023 21:08:56	49 20.981 N	135 39.963 W	3614	2005	323	24	Isabelle Baconnais								
53 P17		ROS	US	EN	15-08-2023 21:47:44	15-08-2023 21:47:45	49 20.992 N	135 39.985 W		2005	323	24	Isabelle Baconnais								
54 P18		ROS	US	BE	16-08-2023 02:27:38	16-08-2023 02:27:37	49 25.985 N	136 39.965 W	3835		346	24	Isabelle Baconnais	yes	no	no					
54 P18		ROS	US	BO	16-08-2023 03:37:48	16-08-2023 03:37:47	49 26.04 N	136 39.989 W	3833	3823	346	24	Isabelle Baconnais								
54 P18		ROS	US	EN	16-08-2023 05:22:50	16-08-2023 05:22:47	49 26.006 N	136 40.019 W		3823	346	24	Isabelle Baconnais								



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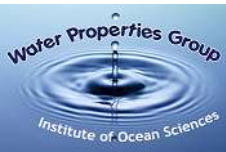
Cruise Number:			2023-088		Launch Daily Science Log		Print Daily Science Log WorkBook		CTD/Rosette Status								
Vessel:			JP Tully														
Event Number	Station Name	Cast Type	Firing Method	Time Code	Date Time (UTC) Computer ("dd-mm-yyyy hh:mm:ss")	Date Time (UTC) GPS ("dd-mm-yyyy hh:mm:ss")	Positional Information (DDD MM.MMM)		Sounder Depth (m)	Max Sampling Pressure	Sample Number Start	# of Bottles	Watch Keepers	Trans. Cleaned	Fluoromet er Cleaned	PAR Status	Comments
							Latitude	Longitude									
55	loop 55	LOOP		BE	16-08-2023 08:27:33	16-08-2023 08:27:29	49 28.742 N	137 22.218 W	3882	4.5	5055	1	Moira Galbraith	NA	NA		1sal 2chl
56	P19	ROS	US	BE	16-08-2023 10:54:45	16-08-2023 10:54:42	49 30.018 N	137 39.946 W	3962		370	3	Moira Galbraith	yes	no	yes	stop due to electronics with winch10:09-10:54 utc. Stop acqisition and overwrite relaunch excel program
56	P19	ROS	US	BO	16-08-2023 11:30:16	16-08-2023 11:30:13	49 29.991 N	137 39.943 W		2005	370	3	Moira Galbraith				
56	P19	ROS	US	EN	16-08-2023 12:06:58	16-08-2023 12:06:54	49 29.949 N	137 39.895 W		2005	370	3	Moira Galbraith				
57	P20	BOT		BE	16-08-2023 16:48:13	16-08-2023 16:48:13	49 33.986 N	137 39.878 W	3960		372	5	Danielle Caleb	NA	NA		tm shallow
57	P20	BOT	MR	MR	16-08-2023 17:08:13	16-08-2023 17:08:11	49 33.978 N	138 39.883 W		100	372	5	Danielle Caleb	NA	NA		
57	P20	BOT		EN	16-08-2023 17:29:40	16-08-2023 17:29:35	49 34.011 N	138 39.921 W		100	372	5	Danielle Caleb				
58	P20	NET		BE	16-08-2023 17:36:56	16-08-2023 17:36:51	49 33.994 N	138 39.966 W	3931	250			Moira Galbraith	NA	NA		shallow bongo
58	P20	NET		BO	16-08-2023 17:48:26	16-08-2023 17:48:21	49 33.995 N	138 39.955 W		250			Moira Galbraith				
58	P20	NET		EN	16-08-2023 17:54:25	16-08-2023 17:54:21	49 34 N	138 39.948 W		250			Moira Galbraith				
59	P20	NET		BE	16-08-2023 18:01:06	16-08-2023 18:01:02	49 33.987 N	138 39.95 W	3962	1200			Moira Galbraith	NA	NA		deep bongo
59	P20	NET		BO	16-08-2023 18:47:39	16-08-2023 18:47:34	49 34.001 N	138 39.95 W		1200			Moira Galbraith				
59	P20	NET		EN	16-08-2023 19:07:30	16-08-2023 19:07:26	49 34.021 N	138 39.971 W		1200			Moira Galbraith				
60	P20	ROS	US	BE	16-08-2023 20:01:44	16-08-2023 20:01:42	49 34.021 N	138 39.969 W	3938	600	377	18	Steve Romaine	yes	no	yes	DMS cast
60	P20	ROS	US	BO	16-08-2023 20:11:14	16-08-2023 20:11:11	49 33.992 N	138 39.973 W		600	377	18	Steve Romaine				
60	P20	ROS	US	EN	16-08-2023 20:48:06	16-08-2023 20:48:06	49 33.993 N	138 39.948 W		600	377	18	Steve Romaine				
61	P20	BOT		BE	16-08-2023 20:58:23	16-08-2023 20:58:21	49 33.994 N	138 39.949 W	395	3958	395	5	Danielle Caleb	NA	NA		TM deep
61	P20	BOT	MR	MR	16-08-2023 21:34:24	16-08-2023 21:34:22	49 33.973 N	138 39.963 W	3958	800	395	5	Danielle Caleb				
61	P20	BOT		EN	16-08-2023 22:18:27	16-08-2023 22:18:25	49 33.974 N	138 39.987 W		800	395	5	Danielle Caleb				
62	P20	ROS	US	BE	16-08-2023 22:56:24	16-08-2023 22:56:20	49 33.932 N	138 40.036 W	3939		400	24	Isabelle Baconnais	yes	no	no	Deep cast
62	P20	ROS	US	BO	17-08-2023 00:08:13	17-08-2023 00:08:10	49 33.983 N	138 39.974 W	3938	4026	400	24	Isabelle Baconnais				
62	P20	ROS	US	EN	17-08-2023 01:56:30	17-08-2023 01:56:30	49 33.989 N	138 39.958 W	3939		400	24	Isabelle Baconnais				
63	P21	ROS	US	BE	17-08-2023 06:33:18	17-08-2023 06:33:19	49 37.989 N	139 39.999 W	3932		424	3	Moira Galbraith	yes	no	yes	plus loop 5063 1 sal 2 chl
63	P21	ROS	US	BO	17-08-2023 07:12:11	17-08-2023 07:12:11	49 38.031 N	139 39.954 W	3932	2005	424	2	Moira Galbraith				
63	P21	ROS	US	EN	17-08-2023 08:00:42	17-08-2023 08:00:40	49 38.058 N	139 39.903 W		2005	424	2	Moira Galbraith				
64	P22	ROS	US	BE	17-08-2023 13:23:39	17-08-2023 13:23:39	49 41.943 N	140 39.928 W	3875		426	24	Moira Galbraith	yes	no	no	spooling issue
64	P22	ROS	US	BO	17-08-2023 14:36:15	17-08-2023 14:36:14	49 41.962 N	140 39.916 W	3875	3996	426	24	Moira Galbraith				
64	P22	ROS	US	EN	17-08-2023 16:45:40	17-08-2023 16:45:39	49 41.968 N	140 39.948 W		3996	426	24	Moira Galbraith				collected surface water for DIC drum
65	loop 65	LOOP		BE	17-08-2023 17:40:52	17-08-2023 17:40:46	49 42.704 N	140 51.453 W	3847	4.5	5065	1	Moira Galbraith	NA	NA		1 sal 2chl
66	P23	ROS	US	BE	17-08-2023 20:31:48	17-08-2023 20:31:46	49 46.028 N	141 39.959 W	4022	2005	450	11	Isabelle Baconnais	yes	no	yes	5066 loop
66	P23	ROS	US	BO	17-08-2023 21:08:22	17-08-2023 21:08:20	49 46.028 N	141 40.029 W	4022	2005	450	10	Isabelle Baconnais				bottle 9 cracked at depth, swaped
66	P23	ROS	US	EN	17-08-2023 21:47:19	17-08-2023 21:47:19	49 46.045 N	141 40.064 W	4022	2005	450	10	Isabelle Baconnais				
67	P24	ROS	US	BE	18-08-2023 01:33:55	18-08-2023 01:33:51	49 50.193 N	142 40.009 W	3958		460	24	Isabelle Baconnais	yes	no	no	
67	P24	ROS	US	BO	18-08-2023 02:44:39	18-08-2023 02:44:39	49 50.187 N	142 39.963 W	3958	4046	460	24	Isabelle Baconnais				
67	P24	ROS	US	EN	18-08-2023 04:17:39	18-08-2023 04:17:39	49 50.168 N	142 39.943 W	3958	4046	460	24	Isabelle Baconnais				
68	P25	ROS	US	BE	18-08-2023 08:03:24	18-08-2023 08:03:23	49 59.972 N	143 36.264 W	4113		484	3	Moira Galbraith	yes	no	yes	1 sal 2 chl, 5m loop 5068
68	P25	ROS	US	BO	18-08-2023 08:44:42	18-08-2023 08:44:40	50 0.014 N	143 36.215 W		2005	484	3	Moira Galbraith				
68	P25	ROS	US	EN	18-08-2023 09:29:28	18-08-2023 09:29:28	50 0.041 N	143 36.168 W		2005	484	3	Moira Galbraith				
69	Loop 69	LOOP		BE	18-08-2023 09:57:30	18-08-2023 09:57:26	50 0.025 N	143 40.428 W	4103	4.5	5069	1	Moira Galbraith	NA	NA		1 sal 2 chl
70	P35	ROS	US	BE	18-08-2023 12:16:01	18-08-2023 12:16:00	49 59.973 N	144 18.187 W	4119		486	2	Moira Galbraith	yes	no	yes	
70	P35	ROS	US	BO	18-08-2023 12:35:16	18-08-2023 12:35:16	49 59.999 N	144 18.16 W		1005	486	2	Moira Galbraith				
70	P35	ROS	US	EN	18-08-2023 12:58:49	18-08-2023 12:58:46	50 0.019 N	144 18.136 W		1005	486	2	Moira Galbraith				
71	P26	BOT		BE	18-08-2023 15:34:13	18-08-2023 15:34:10	49 59.942 N	144 59.923 W	4240		488	1	Moira Galbraith	NA	NA		Bigelow go-flow cast
71	P26	BOT	MR	MR	18-08-2023 15:58:43	18-08-2023 15:58:38	49 59.979 N	144 59.944 W		450	488	1	Moira Galbraith				
71	P26	BOT		EN	18-08-2023 16:29:17	18-08-2023 16:29:15	49 59.993 N	144 59.927 W			488	1	Moira Galbraith				
72	P26	NET		BE	18-08-2023 16:37:29	18-08-2023 16:37:23	49 59.988 N	144 59.955 W	4240	250			Moira Galbraith	NA	NA		Shallow bongo
72	P26	NET		BO	18-08-2023 16:46:27	18-08-2023 16:46:22	49 59.999 N	144 59.977 W		250			Moira Galbraith				
72	P26	NET		EN	18-08-2023 16:52:50	18-08-2023 16:52:46	50 0.008 N	144 59.944 W		250			Moira Galbraith				



DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Cruise Number:			2023-088		Launch Daily Science Log		Print Daily Science Log WorkBook									CTD/Rosette Status			
Vessel:			JP Tully																
Event Number	Station Name	Cast Type	Firing Method	Time Code	Date Time (UTC) Computer ("dd-mm-yyyy hh:mm:ss")	Date Time (UTC) GPS ("dd-mm-yyyy hh:mm:ss")	Positional Information (DDD MM.MMM)		Sounder Depth (m)	Max Sampling Pressure	Sample Number Start	# of Bottles	Watch Keepers	Trans. Cleaned	Fluoromet er Cleaned	PAR Status	Comments		
							Latitude	Longitude											
73	P26	NET		BE	18-08-2023 17:04:48	18-08-2023 17:04:44	49 59.984 N	144 59.951 W	4241	1200			Moira Galbraith	NA	NA		Deep bongo		
73	P26	NET		BO	18-08-2023 17:50:23	18-08-2023 17:50:20	50 0.011 N	145 0.037 W		1200			Moira Galbraith						
73	P26	NET		EN	18-08-2023 18:14:46	18-08-2023 18:14:42	49 59.937 N	144 59.948 W		1200			Moira Galbraith						
74	P26	ROS	US	BE	18-08-2023 19:07:53	18-08-2023 19:07:53	49 59.972 N	145 0.001 W	4216		489	19	Steve Romaine	yes	no	yes	DMS cast		
74	P26	ROS	US	BE	18-08-2023 19:19:18	18-08-2023 19:19:16	49 59.959 N	145 0.003 W	4216	600	489	19	Steve Romaine	NA	NA	no			
74	P26	ROS	US	EN	18-08-2023 19:55:31	18-08-2023 19:55:29	49 59.974 N	145 0.015 W		600	489	19	Steve Romaine						
75	P26	PUMPS		BE	18-08-2023 20:04:47	18-08-2023 20:04:41	49 59.99 N	145 0.016 W	4243	2300	508	3	Isabelle Baconnais	NA	NA		Pumps (deep cast)		
75	P26	PUMPS		BO	18-08-2023 20:52:40	18-08-2023 20:52:36	49 59.988 N	145 0.031 W		2300	508	3	Isabelle Baconnais						
75	P26	PUMPS		EN	19-08-2023 00:49:43	19-08-2023 00:49:36	50 0.034 N	145 0.019 W		2300	508	3	Isabelle Baconnais						
76	P26	ROS	US	BE	19-08-2023 01:01:56	19-08-2023 01:01:56	50 0.035 N	144 59.96 W	4216		511	24	Steve Romaine	yes	no	no	Deep cast, misfire on bottle 2		
76	P26	ROS	US	BO	19-08-2023 02:17:10	19-08-2023 02:17:10	50 0.002 N	144 59.992 W	4216	4319	511	24	Steve Romaine						
76	P26	ROS	US	EN	19-08-2023 03:58:26	19-08-2023 03:58:26	49 59.993 N	144 59.98 W		4319	511	24	Steve Romaine						
77	P26	PUMPS		BE	19-08-2023 04:33:00	19-08-2023 04:33:00	49 59.993 N	144 59.978 W	4216		535		Isabelle Baconnais				Pumps (shallow depth)		
77	P26	PUMPS		MR	19-08-2023 04:42:12	19-08-2023 04:42:06	49 59.993 N	144 59.978 W		105	535	3	Isabelle Baconnais						
77	P26	PUMPS		EN	19-08-2023 08:07:34	19-08-2023 08:07:31	49 59.965 N	145 0.036 W			535	3	Isabelle Baconnais						
78	P26	BOT		BE	19-08-2023 08:49:34	19-08-2023 08:49:29	50 0.024 N	144 59.902 W			538	6	Danielle Caleb	no	no	no	TM deep		
78	P26	BOT	MR	BO	19-08-2023 09:35:43	19-08-2023 09:35:39	50 0.04 N	144 59.943 W		1500	538	6	Danielle Caleb						
78	P26	BOT		EN	19-08-2023 10:43:01	19-08-2023 10:42:56	50 0.068 N	144 59.821 W		1500	538	6	Danielle Caleb						
79	P26	PUMPS		BE	19-08-2023 10:52:56	19-08-2023 10:52:51	50 0.007 N	144 59.942 W	4236		544	3	Isabelle Baconnais	NA	NA		Pumps (mid depth)		
79	P26	PUMPS		BO	19-08-2023 11:18:01	19-08-2023 11:17:56	50 0.003 N	144 59.979 W		800	544	3	Isabelle Baconnais						
79	P26	PUMPS		EN	19-08-2023 14:56:43	19-08-2023 14:56:38	49 59.983 N	145 0.027 W		800	544	3	Isabelle Baconnais						
80	P26	BOT		BE	19-08-2023 15:50:32	19-08-2023 15:50:29	50 0.04 N	144 59.861 W	4230		547	7	Danielle Caleb	no	no	no	TM shallow		
80	P26	BOT	MR	BO	19-08-2023 16:13:26	19-08-2023 16:13:20	50 0.108 N	144 59.92 W		200	547	7	Danielle Caleb						
80	P26	BOT		EN	19-08-2023 16:33:10	19-08-2023 16:33:04	50 0.144 N	144 59.93 W		200	547	7	Danielle Caleb						
81	Waverider	MOR		RE	19-08-2023 21:17:00	19-08-2023 21:17:01	50 32.705 N	145 13.665 W	4238		0		Steve Romaine				Waverider mooring recovery		
82	Loop 82	LOOP		BE	20-08-2023 03:15:37	20-08-2023 03:15:33	50 21.07 N	143 17.147 W	3890	4.5	5082	1	Steve Romaine				1 sal 2 chl		
83	MVP	Tow		BE	20-08-2023 04:24:15	20-08-2023 04:24:10	50 18.963 N	142 56.406 W	4180				Jody Klymak				MVP launch		
				EN	22-08-2023 20:57:03	22-08-2023 20:57:03	48 49.456 N	128 14.888 W					Jody Klymak				MVP end		
84	Loop 84	LOOP		BE	20-08-2023 08:22:47	20-08-2023 08:22:44	50 13.592 N	142 0.8 W	4191	4.5	5084	1	Moira Galbraith				1 sal 2 chl		
85	Loop 85	LOOP		BE	20-08-2023 14:43:10	20-08-2023 14:43:03	50 3.881 N	140 31.271 W	3919	4.5	5084	1	Moira Galbraith				1 sal 2 chl		
86	Loop 86	LOOP		BE	21-08-2023 01:43:00	21-08-2023 01:42:55	49 48.774 N	137 59.293 W	3930	4.5	5086	1	Steve Romaine				1 sal 2 chl		
87	Loop 87	LOOP		BE	21-08-2023 08:44:54	21-08-2023 08:44:48	49 38.854 N	136 23.006 W	3780	4.5	5087	1	Moira Galbraith				1 sal 2 chl		
88	Loop 88	LOOP		BE	21-08-2023 14:01:12	21-08-2023 14:01:06	49 31.912 N	135 12.094 W	3678	4.5	5088	1	Moira Galbraith				1 sal 2 chl		
89	Loop 89	LOOP		BE	21-08-2023 23:31:28	21-08-2023 23:31:21	49 18.987 N	133 5.419 W	2874	4.5	5089		Steve Romaine				1 sal 2 chl		
90	Loop 90	LOOP		BE	22-08-2023 05:36:37	22-08-2023 05:36:33	49 11.455 N	131 43.88 W	3599	4.5	5090	1	Steve Romaine				1 sal 2 chl		
91	Loop 91	LOOP		BE	22-08-2023 10:46:57	22-08-2023 10:46:51	49 4.08 N	130 33.2 W	3604	4.5	5091	1	Moira Galbraith				1 sal 2 chl		
92	Loop 92	LOOP		BE	22-08-2023 14:41:59	22-08-2023 14:41:54	48 58.329 N	129 38.997 W	2506	4.5	5092	1	Moira Galbraith				1 sal 2 chl		
93	Loop 93	LOOP		BE	23-08-2023 03:47:58	23-08-2023 03:47:51	48 39.324 N	126 41.754 W	1347	4.5	5093		Steve Romaine	NA	NA				
94	MVP	Tow		BE	22-08-2023 23:18:47	22-08-2023 23:18:47	48 45.414 N	127 41.616 W					Jody Klymak				MVP launch		
				EN	23-08-2023 03:54:55	23-08-2023 03:54:55	48 39.288 N	126 41.519 W					Jody Klymak				MVP end		



Event Number	Station Name	Cast Type	Firing Method	Time Code	Date Time (UTC) Computer ("dd-mm-yyyy hh:mm:ss")	Date Time (UTC) GPS ("dd-mm-yyyy hh:mm:ss")	Positional Information (DDD MM.MMM)		Sounder Depth (m)	Max Sampling Pressure	Sample Number		# of Bottles	Watch Keepers	Trans. Cleaned	Fluorometer Cleaned	PAR Status	Comments
							Latitude	Longitude			Start	End						
5	JF1	LOOP		✓		10-08-2023 05:03:00	48 16.29 N	123 30.10 W	162		5005	5005		Steve Romaine				2chl, 1sal
7	JF3	LOOP		BE	10-08-2023 10:09:05	10-08-2023 10:09:04	48 27.089 N	124 30.29 W	208		5007	5007		Moira Galbraith				2chl, 1sal
8	JF4	LOOP		BE	10-08-2023 12:21:53	10-08-2023 12:21:51	48 32.288 N	124 59.973 W	58		5008	5008		Moira Galbraith				2chl, 1sal
23	P5	LOOP		BE	12-08-2023 02:59:39	12-08-2023 02:59:39	48 41.508 N	127 9.963 W			5023	5023		Steve Romaine				May be called 5044 on labels, 2chl, 1sal
25	P7	LOOP		BE	12-08-2023 09:55:11	12-08-2023 09:55:11	48 46.55 N	128 9.931 W			5025	5025		Moira Galbraith				2chl, 1sal
30	P9	LOOP		BE	12-08-2023 19:54:53	12-08-2023 19:54:51	48 51.381 N	129 9.954 W			5030	5030		Steve Romaine				2chl, 1sal
43	Loop 43	LOOP		BE	14-08-2023 04:58:56	14-08-2023 04:58:51	48 59.452 N	130 56.324 W	1499		5043	5043		Steve Romaine				2chl, 1sal
42	P13	LOOP		BE	14-08-2023 10:05:28	14-08-2023 10:05:29	49 2.551 N	131 39.89 W			5042	5042		Moira Galbraith				2chl, 1sal
45	P15	LOOP		BE	14-08-2023 23:53:05	14-08-2023 23:53:03	49 11.997 N	133 39.996 W			5045	5045		Isabelle Baconnais				2chl, 1sal
53	P17	LOOP		BE	15-08-2023 21:47:44	15-08-2023 21:47:45	49 20.992 N	135 39.985 W			5053	5053		Isabelle Baconnais				2chl, 1sal
55	loop 55	LOOP		BE	16-08-2023 08:27:33	16-08-2023 08:27:29	49 28.742 N	137 22.218 W	3882		5055	5055		Moira Galbraith				2chl, 1sal
56	P19	LOOP		BE	16-08-2023 12:06:58	16-08-2023 12:06:54	49 29.949 N	137 39.895 W			5056	5056		Moira Galbraith				2chl, 1sal
63	P21	LOOP		BE	17-08-2023 08:00:42	17-08-2023 08:00:40	49 38.058 N	139 39.903 W			5063	5063		Moira Galbraith				2chl, 1sal
65	loop 65	LOOP		BE	17-08-2023 17:40:52	17-08-2023 17:40:46	49 42.704 N	140 51.453 W	3847		5065	5065		Moira Galbraith				2chl, 1sal
66	P23	LOOP		BE	17-08-2023 21:47:19	17-08-2023 21:47:19	49 46.045 N	141 40.064 W	4022		5066	5066		Isabelle Baconnais				2chl, 1sal
68	P25	LOOP		BE	18-08-2023 09:29:28	18-08-2023 09:29:28	50 0.041 N	143 36.168 W			5068	5068		Moira Galbraith				2chl, 1sal
69	Loop 69	LOOP		BE	18-08-2023 09:57:30	18-08-2023 09:57:26	50 0.025 N	143 40.428 W	4103		5069	5069		Moira Galbraith				2chl, 1sal
82	Loop 82	LOOP		BE	20-08-2023 03:15:37	20-08-2023 03:15:33	50 21.07 N	143 17.147 W	3890		5082	5082		Steve Romaine				2chl, 1sal
84	Loop 84	LOOP		BE	20-08-2023 08:22:47	20-08-2023 08:22:44	50 13.592 N	142 0.8 W	4191	4.5	5084	5084		Moira Galbraith				2chl, 1sal
85	Loop 85	LOOP		BE	20-08-2023 14:43:10	20-08-2023 14:43:03	50 3.881 N	140 31.271 W	3919	4.5	5084	5084		Moira Galbraith				2chl, 1sal
86	Loop 86	LOOP		BE	21-08-2023 01:43:00	21-08-2023 01:42:55	49 48.774 N	137 59.293 W	3930	4.5	5086	5086		Steve Romaine				2chl, 1sal
87	Loop 87	LOOP		BE	21-08-2023 08:44:54	21-08-2023 08:44:48	49 38.854 N	136 23.006 W	3780	4.5	5087	5086		Moira Galbraith				2chl, 1sal
88	Loop 88	LOOP		BE	21-08-2023 14:01:12	21-08-2023 14:01:06	49 31.912 N	135 12.094 W	3678	4.5	5088	5088		Moira Galbraith				2chl, 1sal
89	Loop 89	LOOP		BE	21-08-2023 23:31:28	21-08-2023 23:31:21	49 18.987 N	133 5.419 W	2874	4.5	5089	5089		Steve Romaine				2chl, 1sal
90	Loop 90	LOOP		BE	22-08-2023 05:36:37	22-08-2023 05:36:33	49 11.455 N	131 43.88 W	3599	4.5	5090	5090		Steve Romaine				2chl, 1sal
91	Loop 91	LOOP		BE	22-08-2023 10:46:57	22-08-2023 10:46:51	49 4.08 N	130 33.2 W	3604	4.5	5091	5091		Moira Galbraith				2chl, 1sal
92	Loop 92	LOOP		BE	22-08-2023 14:41:59	22-08-2023 14:41:54	48 58.329 N	129 38.997 W	2506	4.5	5092	5092		Moira Galbraith				2chl, 1sal
93	Loop 93	LOOP		BE	23-08-2023 03:47:58	23-08-2023 03:47:51	48 39.324 N	126 41.754 W	1347	4.5	5093	5093		Steve Romaine				

Zooplankton Net Tow Log

Ocean Sciences Division, Institute of Ocean Sciences

Cruise Number:	2023-088	Contact:	Marie Robert
Vessel:	JP Tully	Equipment Description/Serial Number (ex. Bongo #1)	1
Project:	Line P	Additional Notes	

Zooplankton Default Parameters

					Sampling Processing		
Current TSK Serial Number	Current RBR Serial Number	Net Type	Tow Type	Mesh Size (µM)	Formalin	Freezing	Ethanol
5294	silver	BONGO	VNH		YES	NO	NO

Print
Zooplankton
Labels - Under
Construction

Date Time (UTC) GPS	Station	Net Event	CTD Event	Positional Information		Wire Out	Wire Angle	Sounder Depth BE (m)	Net Type	Mesh Size (µm)	Tow Type	Flow Start	Flow End	TSK Serial #	RBR Serial #	Equipment #	Sampling Processing	Comments
				Latitute	Longitude													
10-08-2023 18:19:00	P2	11	10	48 35.96 N	125 00.03 W	106	20	116	Bongo	236	VNH	35910	46690	5294	silver	1	Formalin Frozen	Remove 10 calmar RNA later
11-08-2023 12:29:51	P4	19	17	48 38.981 N	126 39.993 W	250	5	1313	BONGO	236	VNH	46690	48468	5294	silver	1	Formalin Frozen	
11-08-2023 13:31:00	P4	20	17	48 39.976 N	126 39.982 W	1200	0	1316	Bongo	236	VNH	48468	56022	5294	silver	1	Formalin Frozen	
12-08-2023 12:41:27	P8	26	28	48 48.996 N	128 39.969 W	250	0	2516	BONGO	236	VNH	56022	57760	5294	silver	1	Formalin Frozen	flowmeter spun at surface
12-08-2023 13:40:03	P8	27	28	48 49.008 N	128 39.929 W	1200	0	2529	BONGO	236	VNH	57760	65580	5294	silver	1	Formalin Ethanol	
13-08-2023 12:19:16	P12	35	33	48 58.197 N	130 39.994 W	250	0	3223	BONGO	236	VNH	65585	67355	5294	silver	1	Formalin Frozen	
13-08-2023 13:23:21	P12	36	33	48 58.179 N	130 40.004 W	1200	0	3222	BONGO	236	VNH	67355	75318	5294	silver	1	Formalin	
15-08-2023 10:07:00	P16	48	47	49 17.008 N	134 40.012 W	250	0	3615	BONGO	236	VNH	75318	77199	5294	silver	1	Formalin	
15-08-2023 11:09:00	P16	49	47	49 17.005 N	134 40.008 W	1200	0	2614	Bongo	236	VNH	77199	84737	5294	silver	1	Formalin	
16-08-2023 17:48:21	P20	58	61	49 33.995 N	138 39.955 W	250	5	3931	BONGO	236	VNH	84737	86616	5294	silver	1	Formalin Frozen	
16-08-2023 18:47	P20	59	61	49 34.001 N	138 39.95 W	1200	0	3962	BONGO	236	VNH	86616	95390	5294	silver	1	Formalin Ethanol	
18-08-2023 16:46:22	P26	72	76	49 59.999 N	144 59.977 W	250	0	4240	BONGO	236	VNH	93590	95491	5294	silver	1	Formalin Frozen	
18-08-2023 17:50:20	P26	73	76	50 0.011 N	145 0.037 W	1200	9	4241	BONGO	236	VNH	95491	102289	5294	silver	1	Formalin Ethanol	