

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2019-001

DATE:

From: 5 FEBRUARY To: 23 FEBRUARY 2019

VESSEL:

J.P. Tully

PROJECT(S):

LING P (+ CHATHAM SOUND + SOFG)

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

WaterProperties.ca

Captain: VICTOR GONNIMR First Officer: ANDRE BELCOURT

Second Officer: SIMON CLARKE Third Officer: STEPHEN LOWDON

Fishing Master: _____ Chief Engineer: STUART BURSLOW

Mission Participants / Agencies:

DFO-IOS / UBX / U SASK

**** Chief Scientist to complete section below OR cut and tape from cruise plan ****

1st Leg Scientific Personnel: Chief Scientist: MARILYN ROBERT 06-18 A

Name	Watch	Cabin	Name	Watch	Cabin
JASMINE WIETZKE	06-18	B			
MOIRA GALBRAITH	12-24	C			
MICHAEL ARYCHUK	06-18	D			
MARK BELTON	00-12	E			
ROBERT IZETT	12-24	F			
LIAN KWONG	00-12	G			
JADE SHILLER	00-06	H			
ISABELLE BACONNAIS	12-24	H			

2nd Leg Scientific Personnel: _____ **Chief Scientist:** _____

[illegible]

**** The following 3 pages are VERY IMPORTANT as they document equipment and settings used on board ****

These pages are to be completed by the CTD Technician setting up the equipment, the Watch Leader on board, and the Chief Scientist MUST verify that all relevant sections are completed prior to leaving the vessel. Any mid-cruise changes to be noted by watch leader in the notes.

Data logging computer: Tully Laptop
Data acquisition program: Seasave
CTD deck unit make: SBE model: 11+ serial number: 425

Primary CTD

Make: SBE model: 9+ serial number: 506
Primary temperature serial number: 2023
Primary conductivity serial number: 1763
Secondary temperature serial number: 5013
Secondary conductivity serial number: 3394
Transmissometer: Wetlabs Model: C-Star s/n: 1201DR
Transmissometer: _____ Model: _____ s/n: _____
Fluorometer: Model Seapoint Cable gain: 10x s/n: 3685 P, S or NO pump?
Fluorometer: Model _____ Cable gain: _____ s/n: _____ P, S or NO pump?
Oxygen sensor: SBE Model: H3 s/n: 3234 P, S or NO pump?
PAR sensor: Biospherical Model: QSP2350 s/n: 70613 Surface PAR? Y/N
Other sensors: Altimeter s/n: 62355 P, S or NO pump?
Other sensors: _____ s/n: _____ P, S or NO pump?
Other sensors: _____ s/n: _____ P, S or NO pump?
Other sensors: _____ s/n: _____ P, S or NO pump?

Secondary CTD

Make: _____ model: _____ serial number: _____
Primary temperature serial number: _____
Primary conductivity serial number: _____
Secondary temperature serial number: _____
Secondary conductivity serial number: _____
Transmissometer: _____ Model: _____ s/n: _____
Transmissometer: _____ Model: _____ s/n: _____
Fluorometer: Model _____ Cable gain: _____ s/n: _____ P, S or NO pump?
Fluorometer: Model _____ Cable gain: _____ s/n: _____ P, S or NO pump?
Oxygen sensor: _____ Model: _____ s/n: _____ P, S or NO pump?
PAR sensor: _____ Model: _____ s/n: _____ Surface PAR? Y/N
Other sensors: _____ s/n: _____ P, S or NO pump?
Other sensors: _____ s/n: _____ P, S or NO pump?
Other sensors: _____ s/n: _____ P, S or NO pump?
Other sensors: _____ s/n: _____ P, S or NO pump?

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

This also includes the bottle location above the CTD on non-rosette casts (e.g., W.E. Ricker)

Rosette Setup:

Number of bottles: 24
Manufacturer: _____
Volume of bottles (litres): 10

Winches:

1. Make: HAWBOLT Model: _____ Serial #: 17026 Used for: CTD / ROSETTE
2. Make: SWANW Model: 329 Serial #: 1482 Used for: BOMBO
3. Make: _____ Model: _____ Serial #: _____ Used for: _____

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

Salinometer:

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

Oxygen Kit(s):

Make: _____ Model: _____ Kit Number: 2
Make: _____ Model: _____ Kit Number: _____
Comments on performance during cruise (comments should also be reflected in the post-cruise report):

Thermosalinograph System (SBE21):

Program: SCS Version: 45
Sampling interval (seconds): 5
Fluorometer sensor serial number: WS35-953P
Comments on performance during cruise (comments should also be reflected in the post-cruise report):

ADCP Setup:

Computer time zone: _____ User Exits: _____ Name: _____ Exit points: _____
Sampling interval (sec): _____ Name: _____ Exit points: _____
Bin Length: (2^x): _____ Name: _____ Exit points: _____
Pulse Length: _____ Work File: _____
Buffer (bytes): _____
Gyro Offset: _____

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

CTD Test Cast Information

Test Cast along side? Yes No

Comments

Test Cast in Saanich Inlet or other location? ☒ Yes ☐ No

Comments WISKEN 21 DID NOT FIRE.

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

Pumps working?

☒ Yes (0011) ☐ No (0010)

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

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

Additional Comments:

DAILY SCIENCE LOG

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Month <u>February</u>		Year <u>2019</u>		Vessel <u>Tully</u>		Cruise ID <u>2019-001</u>									
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
1	ST	06	03:14	BE	ROS	US	48° 39.550	123° 30.260		175?	-	FIRE ALL BOTTLES	MR	☒	SI test cast
			03:16	BO			° 39.552	° 30.258			-			☐	
			03:22	EN			° 39.550	° 30.260			-			☐	
22	JF1	06	08:25	BE	LOOP	/	48° 16.179	123° 29.832	152	-	5002	-	MR	☐	2 CHL 1 SAL INUT
3	JF2	06	10:17	BE	LOOP	/	48° 18.035	124° 00.112	184	-	5003	-	MR	☐	2 CHL 1 SAL INUT
4	JF3	06	12:26	BE	LOOP	-	48° 26.834	124° 29.491	221	-	5004	-	MR	☐	2 CHL 1 SAL INUT
5	JF4	06	14:24	BE	LOOP	-	48° 32.311	124° 59.997	61	-	5005	-	MR	☐	2 CHL 1 SAL INUT
6	P1	06	16:25	BE	ROS	US	48° 34.550	125° 30.110	119		1-4	4	MR	☒	DEEP CAST
			16:27	BO			48° 34.550	125° 30.110		110	-			☐	
			16:32	EN			48° 34.550	125° 30.110			-			☐	
7	P2	06	18:46	BE	ROS	US	48° 36.180	125° 59.940	112		5-18	14	MR	☒	DMP CAST
			18:48	BO			48° 36.180	125° 59.950		108	-			☐	
			18:59	EN			48° 36.180	125° 59.950			-			☐	
8	P2	06	19:09	BE	NET	-	48° 36.18	125° 59.95	112		-		MR/LK	☐	BONGO
			19:13	BO			° 36.18	° 59.95		105	-			☐	
			19:15	EN			° 36.18	° 59.95			-			☐	
9	P2	06	19:26	BE	NET		48° 36.18	125° 59.95	112		-		MR/LK	☐	SCORPING NET
			19:30	BO			° 36.18	° 59.95		105	-			☐	
			19:32	EN			° 36.18	° 59.96			-			☐	

Event Type:

BOT = Bottle cast (no CTD)
CTD = Standalone CTD
ROS = CTD in Rosette
SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop (default)
UN = Up / No stop
DN = Down / No stop

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Produced by the Water Properties Group, IOS

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Notes:

NISKIN 21 DID NOT CLOSE, LATCHING MECHANISM SWITCHED OUT → SOAKING IN SINK

p1.5/22

COMMENTS FROM GERMAINE INDICATED A NOISY TRANSMITTER.

PAR values modified in CONFIG file after 0006 (2).

New file name 2019-001-newPAR.

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Month <u>FEB</u>			Year <u>2019</u>			Vessel <u>TULLY</u>			Cruise ID <u>2019001</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
10	P2	06	19:52	BE	ROS	US	48° 36.18	125° 59.96	112		19-27	9	MG	☒	NO LAT ON NHEATED
			19:55	BO			48° 36.18	125° 59.96		101	-			☐	KEPT FILE
			20:06	EN			48° 36.18	125° 59.96			-			☐	
11	P2	06	20:15	BE	ROS	US	48° 36.18	125° 59.94	113		19-27	9	MG	☐	REDO - SPICOT OPEN LAT BACK
			20:17	BO			48° 36.17	125° 59.96		109	-			☐	
			20:28	EN			48° 36.18	125° 59.96			-			☐	
12	P2→P3	06	21:06	DE	DRF	/	48° 36.81	126° 08.89	174	0	-	/	MR/MG	☐	Cement Bob 920, 924
13	P3	06	21:56	BE	ROS	US	48° 37.52	126° 20.02	818		28-	1	MG	☐	CHANGE TRANS 1396 →
			22:11	BO			48° 37.51	126° 20.07		814	-	(2)		☐	LAYSAN + SEA LION
			22:29	EN			48° 37.53	126° 19.98			-			☐	
14	P4	6	23:52	BE	ROS	US	48° 39.03	126° 40.02	1324		29-44	16	MG	☐	DMS
			23:58	BO			48° 39.02	126° 40.02		300	-			☐	
		7	00:24	EN			48° 39.02	126° 40.03			-			☐	
15	P4	7	00:34	BE	NET	/	48° 39.01	126° 40.01	1331		-	/	MG	☐	BONGO
			00:42	BO			48° 39.02	126° 40.02		250	-			☐	
			00:47	EN			48° 39.00	126° 40.04			-			☐	
16	P4	7	01:01	BE	ROS	US	48° 39.00	126° 40.00	1328		45-63	19	MR/MG	☒	Deep. 3 SEA LIONS
			01:21	BO			48° 39.00	126° 40.02		1322	-			☐	S 1326 P. 1324
			02:08	EN			48° 39.20	126° 40.48			-			☐	A 10 D: 1308

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Notes:

P2.5/22

MARK IS SWAPPING OUT TRANS BEFORE P3

NEW CONFIG FILE AFTER 0011 (P2 Dep): 2019-001 NEW PAR NEW TRANS

BOTTLE 14 CLOSED ON RETURN TO SURFACE @ P2 DEEP EAST - NO INDICATION ON SCREEN

↳ WILL TEST INTEGRITY @ P3 → WAS GOOD, NO LEAK FIRED OKAY

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Month <u>FEB</u>			Year <u>2019</u>			Vessel <u>LP TULLY</u>			Cruise ID <u>2019-001</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
17	P4	07	03:14	BE	NET	/	48°39.07	126°39.98	1321		-		MG	☐ ☐	King
			03:23	BO			48°39.04	126°39.98		250	-			☐ ☐	
			03:27	EN			48°39.02	126°39.98			-			☐ ☐	
18	P4	07	03:36	BE	NET	/	48°39.07	126°39.92	1315		-		MG	☐ ☐	BONGO SEALIONS
			04:17	BO			48°39.14	126°39.85		1200	-			☐ ☐	
			04:37	EN			48°39.10	126°39.84			-			☐ ☐	
19	P4	07	04:55	BE	ROS	US	48°39.09	126°39.83	1316		64-79	16	MG	☒ ☐	JBC Cast
			05:19	BO			48°39.16	126°39.75		1301	-			☐ ☐	51009 P1301 D1288 A 9.7
			05:50	EN			48°39.17	126°39.76			-			☐ ☐	
20	P5	07	07:49	BE	ROS	US	48°41.520	127°9.990	2105		80-	1	MS	☒ ☐	
			08:23	BO			°41.490	°9.910		2005	-			☐ ☐	
			09:00	EN			°41.490	°9.960	2108		-			☐ ☐	
21	P5	07	09:00	BE	LOOP	-	48°41.490	127°9.960	2108	5405	5021-	-	MS	☐ ☐	Loop 1x SAL 2x CHL (Loop for P5)
22	P6	07	11:03	BE	ROS	US	48°44.640	127°40.120	2567		81-	1	MB	☒ ☐	
			11:36	BO			°44.600	°40.020		2005	-			☐ ☐	
			12:09	EN			°44.590	°39.980			-			☐ ☐	
23	P7	07	14:09	BE	ROS	US	48°46.640	128°10.130	2526		82-	1		☒ ☐	+ Loop
			14:43	BO			°46.650	°9.970		2005	-			☐ ☐	1x SAL + 2x CHL
			15:19	EN			°46.610	°9.940			-			☐ ☐	

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Bottle Firing Method:

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Notes:

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Month <u>FEBRUARY</u>			Year <u>2019</u>			Vessel <u>JP JULY</u>			Cruise ID <u>2019-001</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
24	P7	07	15:34	DE	DRF	MANUAL	48°46.62	128°11.06			-		MB	☐	ARJOL #7
25	P8	7	17:23	BE	ROS	US	48°49.040	128°40.140	2540		83-106	24	MB	☒	P8
			17:56	BO			°49.040	°40.020		2005	-			☐	
			18:52	EN			°49.040	°40.020			-			☐	
26	P8	7	18:55	BE	NET	/	48°49.61	128°40.01	2540		-		MA +LK	☐	BONGO
			19:04	BO			48°49.63	128°40.00		250	-			☐	
			19:08	EN			48°49.06	128°39.99			-			☐	
27	P8	7	19:15	BE	NET	/	48°49.03	128°39.99	2540		-		MG +NA	☐	BONGO
			19:54	BO			48°49.0202	128°39.99		1200	-			☐	
			20:14	EN			48°49.01	128°39.98			-			☐	
28	P8	7	20:24	BE	NET	/	48°49.02	128°39.98	2540		-		MG +NA	☐	RING
			20:33	BO			48°49.02	128°39.98		250	-			☐	
			20:38	EN			48°49.03	128°39.99			-			☐	
29	P9	7	22:35	BE	ROS		48°51.40	129°10.00	2364		107-	1	MG	☒	FIRE 21 TO TEST →
			23:09	BO			48°51.43	129°10.02		2005	-			☐	
			23:46	EN			48°51.42	129°10.03			-			☐	
30	P10	8	01:52	BE	ROS	US	48°53.58	129°40.06	2664		108-	1	MG	☒	FIRE 20, 21, 22 TO TEST
			02:25	BO			48°53.57	129°40.06		2005	-			☐	
			03:03	EN			48°53.58	129°40.02			-			☐	

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Notes:

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CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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BOTTLE 21 DID NOT CLOSE ON PREVIOUS CAST, FIRE IT WITH THE 5M BOTTLE TO TEST → DID NOT CLOSE
IN PROGRAM ON GRAPH SAYS BOTTLE FIRED A 5 M BOTTLE FIRE SEQUENCE SHOWS BOT 21 WAS FIRED AFTER BOT 1
BOT 1 CLOSED BUT 21 DID NOT

FIRED 20 21 23 @ DEPTH BOT ²¹ STILL NOT FIRING, TRIED TO FIRE IT ON DECK AND NO GO

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Month <u>FEBRUARY</u>			Year <u>2019</u>			Vessel <u>JP TULLY</u>			Cruise ID <u>2019-001</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
31	P10	8	03:03	BE	LOOP	/	48° 53.58	129° 40.02	2663	4.5	5031	/	MG	☒ ☐	LOOP SHOULD BE 5030
32	P11	8	05:01	BE	ROS	US	48° 56.02	130° 09.87	2776		109 -	1	MG	☒ ☐	
			05:37	BO			48° 55.99	130° 09.69		2005	-			☐ ☐	
			:	EN			48° 55.90	130° 09.44			-			☐ ☐	TEST
33	P12	8	08:18	BE	ROS	US	48° 58.210	130° 39.940	3256		110 - 125	16	MR	☒ ☐	21 DID NOT FIRE
			08:	BO			° 58.240	° 40.030		2000	-			☐ ☐	
			09:28	EN			° 58.250	° 40.070			-			☐ ☐	
34	P12	8	09:34	BE	NET	/	48° 58.23	130° 40.090	3255		-		MR+LK	☐ ☐	RING
		8	09:43	BO			48° 58.22	130° 40.110		250	-			☐ ☐	
		8	09:46	EN			4° 58.23	130° 40.120			-			☐ ☐	
35	P12	8	09:55	BE	NET	/	48° 58.23	130° 40.05	3257		-		MR+LK	☐ ☐	BONGO
			10:03	BO			48° 58.23	130° 40.09		250	-			☐ ☐	
			10:07	EN			48° 58.23	130° 40.09			-			☐ ☐	
36	P12	8	10:16	BE	NET	/	48° 58.23	130° 40.02	3245		-		MR+LK	☐ ☐	BONGO
			10:56	BO			48° 58.214	130° 40.042		1200	-			☐ ☐	
			11:15	EN			48° 58.19	130° 40.03			-			☐ ☐	
37	P12	8	11:28	BE	ROS	US	48° 58.190	130° 40.030	3255		126 - 149	23	MR	☒ ☐	Bottle 21 Not
			:27	BO			° 58.220	° .0		3275	-			☐ ☐	Firing Removed
			13:41	EN			° 58.230	° 40.100			-			☐ ☐	no sample 146.

Event Type:

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Event Type:

LOOP = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop (default)
UN = Up / No stop
DN = Down / No stop

Time Code:

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PAR OK FOR DEEP CAST. AT BOT-10 A=11 D=3221 P=3274 S=3256
OXY 2x IOS + 2x UBC (LOOP 5037)

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Month <u>FEBRUARY</u>			Year <u>2019</u>			Vessel <u>XP TULLY</u>			Cruise ID <u>2019-001</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
38	P12	8	15:18	BE	ROS	US	48° 58.250	135° 40.070	3241		150-166	17	MB	☒ ☐	DNR CAST
			15:25	BO			° 58.280	° 40.110		200	-			☐ ☐	PAR BACK ON
			15:41	EN			° 58.290	° 40.270			-			☐ ☐	
39	P17	8	10:58	BE	ROS	US	49° 20.940	135° 40.040	3721		167-	1	MB	☒ ☐	
			11:31	BO			° 20.940	° 40.130		2005	-			☐ ☐	
			12:02	EN			° 20.980	° 40.220			-			☐ ☐	
40	P17-P18	8	14:35	BE	LOOP	-	49° 24.550	136° 22.685	3788	5m	5040	-	MB	☐ ☐	Loop 2x CL 1x S21
41	P18	8	15:44	BE	ROS	US	49° 25.900	136° 40.000	3853		172-190	19	MB	☒ ☐	PAR OFF
			16:18	BO			° 25.950	° 40.050		2005	-			☐ ☐	
			17:08	EN			° 25.940	° 40.190			-			☐ ☐	
42	P19	09	23:41	BE	ROS	US	49° 29.98	137° 39.86	3946		191-	1	MG	☒ ☐	2 fin whales!
		10	00:22	BO			49° 30.00	137° 39.89		2005	5042-			☐ ☐	LOOP 1SAL 2CHL
			00:59	EN			49° 30.01	137° 39.90			-			☐ ☐	
43	P19	10	01:02	BE	ARGO	/	49° 30.016	137° 39.913	3945	0	51-		MR/MA	☐ ☐	SAL MET OCEAN
44	P20	10	05:08	BE	ROS		49° 34.02	138° 39.99	3980		192-214	23	MG	☒ ☐	Deep cast.
			06:17	BO			49° 33.96	138° 40.08		4027	-			☐ ☐	OXYLOOPS 210S 2URC
			07:53	EN			49° 33.96	138° 40.08			-			☐ ☐	P4027 D 3955 S 3980 A 8
45	P2	10	08:02	BE	NET	/	49° 33.94	138° 40.01	3981		-		MBTLK	☐ ☐	BONGO
			08:13	BO			49° 33.97	138° 40.05		286	-			☐ ☐	

Event Type:

BOT = Bottle cast (no CTD)
 CTD = Standalone CTD
 ROS = CTD in Rosette
 SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter
 =

Bottle Firing Method:

US = Up / Stop (default)
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

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This page is for any notes or observations

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CAST CUT SHORT TO 2005 m DUE TO BUILDING WEATHER.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Ocean Sciences Division, Institute of Ocean Sciences															Page	7	of	22
Month				Year				Vessel				Cruise ID						
FEBRUARY				2019				JP TULLY				2018-001						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments			
							Latitude	Longitude										
45	P20	10	08:18	EN	NET		49° 33.99	138° 39.99										
46	P20	10	08:30	BE	NET		49° 33.97	138° 39.98	3981				4K	☐				
			08:38	BO			49° 33.97	138° 40.03		250			4K	☐	RING			
			08:41	EN			49° 33.99	138° 39.99						☐				
47	P21	10	13:14	BE	ROS	US	49° 37.960	139° 40.010	3975		215	1	MB	☒	PAR ON			
			13:48	BO			49° 38.050	139° 40.080		2005				☐				
			14:25	EN			49° 38.070	139° 40.400						☐				
48	P21	10	14:50	DE	DRF		49° 38.04	139° 41.38	3975				MB	☐				
49	P22	10	18:40	BE	ROS	US	49° 42.000	140° 39.920	4036		216-238	23	MB	☒	PAR ON OK			
			19:47	BO			49° 41.96	140° 40.05		3998			MB	☐	2x25 + 1x25 PAR OFF			
			21:28	EN			49° 42.00	140° 39.90					MB	☐	03925 S 3952 P3997 A 10			
50	P22 → P23		15:15	BE	LOOP		49° 45.50	141° 37.84	4069	5050			MB	☐	PAR OFF			
51	P26	12	10:58	BE	ROS	US	49° 59.970	141° 59.960	4263		253-254	16	MB	☒	Loop 2x25 + 1x25			
			11:31	BO			59° 59.90	145° 0.050		2005			MB	☐	DARK NO PAR			
			12:08	EN			59° 59.980	145° 0.140						☐				
52	P26	12	12:16	BE	NET	—	49° 59.99	145° 00.09	4263				MB + LK	☐	BONGO			
			12:26	BO			49° 59.97	145° 00.14		250				☐				
			12:30	EN			49° 59.97	145° 00.13						☐				
53	P26	12	12:43	BE	NET	—	49° 59.99	145° 00.06	4264				MB + LK	☐	RING			

Event Type:
BOT = Bottle cast (no CTD)
CTD = Standalone CTD

LOOP = Sea Water Loop
MOR = Mooring
NET = Net

Bottle Firing Method:
US = Up / Stop (default)
RE = Reap

Time Code:
RE = Reap

CTD Transmissometer and Fluorometer to be cleaned

Event Type:

BOT = Bottle cast (no CTD)
CTD = Standalone CTD
ROS = CTD in Rosette
SET = Fish Set

LOOP = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop (default)
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

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SET = Fish Set

DAILY SCIENCE LOG

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Month FEBRUARY				Year 2019		Vessel JP TULLY				Cruise ID 2019-007					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
53	P26	12	12:52	BO	NET	—	49°59.97	145°00.08		250	-	—	MB UK	☐ ☐	RING
			12:57	EN			50°00.00	145°00.07			-			☐ ☐	
54	P26	12	13:16	BE	ROS	US	50°0.014	145°0.088	4263		255-277	23	MB	☒ ☐	D 4240 S 4262 P 4320 A 8
			14:29	BO			50°00.01	145°00.25		4319	-			☐ ☐	
			16:00	EN			50°0.077	145°0.469			-			☐ ☐	
55	P26	12	17:46	BE	ROS	US	50°0.000	145°0.000	4263		278-298	21	MB	☒ ☐	PAR ON
			17:52	BO			49°59.990	145°0.070		400	-			☐ ☐	C, DM + HRC
			18:15	EN			49°59.990	145°0.720			-			☐ ☐	
56	P26	12	18:27	DE	ARGO	—	50°00.08	145°0.11	4264	0	-	/	MB	☐ ☐	598 MET GCM MAGNET 1825
57	P26	12	18:34	DE	ARGO	—	50°00.13	144°59.79	4262	0	-	/	MB	☐ ☐	9 ARVOR MAGNET 1829
58	SE P26	12	20:49	RE	GLIDER	—	49°42.31	144°35.63	4156	0	-		MG	☐ ☐	SLOCUM 276 →
59	P25	13	00:52	BE	ROS	US	50°00.08	143°36.22	4161		299-311	13	MG	☒ ☐	SALT+NUY EXPT
			01:26	BO			50°00.16	143°36.20		2005	-			☐ ☐	LOOP 1 SAL 2CHL
			02:05	EN			50°00.16	143°36.25			-			☐ ☐	
60	P24	13	05:33	BE	ROS	US	49°50.19	142°40.08	4002		316-328	13	MG	☒ ☐	C CAST
			06:06	BO			49°50.20	142°40.09		2005	-			☐ ☐	
			06:55	EN			49°50.18	142°40.08			-			☐ ☐	
61	P24	13	07:28	BE	ROS	US	49°50.19	142°40.03	4001		329-350	22	MG	☒ ☐	C CAST
			07:32	BO			49°50.22	142°40.02		200	-			☐ ☐	

Event Type:

BOT = Bottle cast (no CTD)
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SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter
=

Bottle Firing Method:

US = Up / Stop (default)
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
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EN = End Time of Cast

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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PICKED UP GLIDER USING SMALL BOAT LOG TIME IS ^{SMALL} BOAT TIME OF PICKUP ON DECK TEN MINUTES LATER AND PLUG PLUS WINGS REMOVED

MONITOR FLASHING ON DEPLOYMENT, FROM DECK TO WATER, EVERY CAST
PROBLEM WITH LOSE OF CONTROL OF ^{MOUSE} POINTER, BOTH POINTER + KEYBOARD STOPPED FUNCTIONING.
CHANGING MOUSE OR USB PORT/HUB DID NOT FIX PROBLEM. RESTARTED COMPUTER ^{AFTER CAST} DURING RESTART, TOOK ~ 10 MIN TO RESTART. POINTER + KEYBOARD WORK FOLLOWING RESTART.

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Month			Year			Vessel			Cruise ID						
FEBRUARY			2019			JP TULLY			2019-001						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
61	P24	13	07:51	EN	ROS	US	49°50.26	142°40.03			-		MG	☒	
62	Loop	13	15:11	BE	Loop	-	50°52.35	141°17.42	3928	5	5062	-	MB	☐	2x21 + 1x21
63	Loop	13	21:46	BE	Loop	-	51°53.03	139°57.57	3945	5	5063	-	MG	☐	" "
64	Loop	14	07:17	BE	Loop	-	52°50.81	137°27.03	3824	5	5064	-	MB	☐	" "
65	Loop	14	14:43	BE	Loop	-	53°27.65	135°49.27	4223	5	5065	-	LK	☐	" "
66	Loop	15	03:16	BE	Loop	-	54°03.48	134°03.16	1301	5	5066	-	MG	☐	" "
67	DIX5	15	06:51	BE	ROS	US	54°20.02	133°20.08	456		351-367	17	MG	☐	
			06:59	BO			54°20.01	133°20.10		452	-			☐	
			07:24	EN			54°19.95	133°20.14			-			☐	
68	DIX5	15	07:58	BE	NET	-	54°19.97	133°20.10	455		-	-	MG	☐	BONGO
			08:07	BO			54°19.98	133°20.18		250	-			☐	
			08:12	EN			54°19.99	133°20.19			-			☐	
69	DIX4	15	11:31	BE	ROS	-	54°28.720	132°42.770	375		-	-	MB	☒	
			11:37	BO			°28.750	°42.750		367	-			☐	
			11:43	EN			°28.790	°42.730			-			☐	
70	DIX3	15	13:23	BE	ROS	US	54°28.730	132°17.940	362		368-380	13	MB	☒	
			13:29	BO			°28.790	°17.960		356	-			☐	
			13:45	EN			°29.010	°18.020			-			☐	
			:				°	°			-			☐	

Event Type:

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LOOP = Sea Water Loop

MOR = Mooring
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 DRF = Drifter
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Bottle Firing Method:

US = Up / Stop (default)
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
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DE = Deployment Time
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Month <u>FEBRUARY</u>			Year <u>2019</u>			Vessel <u>JP TULLY</u>			Cruise ID <u>2019-001</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
71	DIX3	15	13:53	BE	NGT	-	54° 29.01	132° 18.06	366		-	-	MS/LK	☐	BONGO
			14:02	BO			° 29.02	° 18.06		250	-			☐	
			14:06	EN			° 29.02	° 18.06			-			☐	
72	DIX2	15	15:39	BE	ROS	-	54° 25.56	131° 56.680	276		-	-	LK	☒	
			15:44	BO			54° 25.57	131° 56.686		260	-			☐	
			15:49	EN			54° 25.63	131° 56.67			-			☐	
73	DIX1	15	17:51	BE	ROS	-	54° 25.660	131° 31.060	265		-	-	MS	☒	
			17:56	BO			° 25.640	° 31.080		258	-			☐	
			18:00	EN			° 25.620	° 31.130			-			☐	
74	HECS5	15	22:25	BE	ROS	US	53° 56.14	131° 60.40	84		381-388	8	MG	☒	
			22:29	BO			53° 56.14	131° 00.38		84	-			☐	
			22:40	EN			53° 56.14	131° 00.37			-			☐	
75	HECS6	16	01:34	BE	ROS	US	54° 07.38	131° 02.52	107		389-396	8	MG	☒	
			01:36	BO			54° 07.38	131° 02.52		105	-			☐	
			01:50	EN			54° 07.44	131° 02.60			-			☐	
76	HECS7	16	02:48	BE	ROS	US	54° 13.70	131° 02.20	120		397-405	9	MG	☒	
			02:52	BO			54° 13.70	131° 02.18		119	-			☐	
			03:05	EN			54° 13.69	131° 02.19			-			☐	
			:				°	°			-			☐	

Event Type:

BOT = Bottle cast (no CTD)
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ROS = CTD in Rosette
SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter
=

Bottle Firing Method:

US = Up / Stop (default)
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

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Month <u>FEBRUARY</u>			Year <u>2019</u>			Vessel <u>SP TULLY</u>			Cruise ID <u>2019-001</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
77	HECS8	16	04:27	BE	ROS	US	54° 23.16	131° 05.42	112		406-414	9	MG	☒ ☐	
			04:30	BO			54° 23.16	131° 05.41		112	-			☐ ☐	
			04:42	EN			54° 23.19	131° 05.39			-			☐ ☐	
78	HECS8	16	05:03	BE	NET	/	54° 23.24	131° 05.37	114		-	-	MG	☐ ☐	Bongo
			05:07	BO			54° 23.25	131° 05.39		110	-			☐ ☐	
			05:10	EN			54° 23.25	131° 05.39			-			☐ ☐	
79	EDR	16	07:36	BE	ROS	US	54° 40.85	131° 12.64	330		415-429	15	MG	☒ ☐	
			07:43	BO			54° 40.86	131° 12.63		329	-			☐ ☐	
			08:01	EN			54° 40.930	131° 12.610			-			☐ ☐	
80	13	16	14:39	BE	ROS	US	54° 41.380	130° 55.470	558		430-448	19	MB	☒ ☐	Oops, did 10m
			14:50	BO			° 41.420	° 55.360		568	-			☐ ☐	+ back, held @
			15:14	EN			° 41.540	° 55.070			-			☐ ☐	surface >3m, ^{MOVED SHEET}
81	ABI	16	17:00	BE	ROS	US	54° 42.120	130° 38.370	189		464-471	11	MB	☒ ☐	
			17:04	BO			° 42.140	° 38.380			-			☐ ☐	
			17:16	EN			° 42.170	° 38.380			-			☐ ☐	
82	CH2	16	18:10	BE	ROS	US	54° 39.80	130° 38.23	305		-		LK	☒ ☐	
			18:17	BO			° 39.818	° 38.250		303	-			☐ ☐	
			18:35	EN			° 39.85	° 38.250			-			☐ ☐	
			:				°	°			-			☐ ☐	

Event Type:

BOT = Bottle cast (no CTD)
 CTD = Standalone CTD
 ROS = CTD in Rosette
 SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop (default)
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time
 MR = Messenger Release Time
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DAILY SCIENCE LOG

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Month <u>FEB</u>				Year <u>2019</u>		Vessel <u>JP Tully</u>				Cruise ID <u>2019-001</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
83	CH1	16	20:14	BE	ROS	US	54° 41.72	130° 27.15	616		475-493	19	MG	☒	NUT TUBE COMPARE
			20:27	BO			54° 41.72	130° 27.17		610	-			☐	ALTIMETER NOT WORKING
			21:04	EN			54° 41.72	130° 27.18			-			☐	
84	CH1	16	21:14	BE	NET	/	54° 41.72	130° 27.19	614		-	-	MG	☐	BONGO
			21:36	BO			54° 41.71	130° 27.17		610	-			☐	
			21:47	EN			54° 41.70	130° 27.15			-			☐	
85	CH6	16	22:48	BE	ROS	US	54° 34.91	130° 31.86	243		494-506	13	MG	☒	ALTIMETER NOT WORKING
			22:55	BO			54° 34.96	130° 31.97		246	-			☐	
			23:16	EN			54° 35.11	130° 31.95			-			☐	
86	CH5	16	23:55	BE	ROS	US	54° 33.71	130° 37.59	139		507-516	10	MG	☒	ALT FLAKY
		17	00:00	BO			54° 33.72	130° 37.57		137	-			☐	
			00:14	EN			54° 33.71	130° 37.52			-			☐	
87	CH4	17	00:48	BE	ROS	US	54° 32.41	130° 30.47	80		517-523	7	MG	☒	HT BOTTOM NO MUD
			00:53	BO			54° 32.41	130° 43.46		72	-			☐	
			01:03	EN			54° 32.42	130° 43.53			-			☐	
88	CH11	17	02:07	BE	ROS	US	54° 29.92	130° 33.58	120		524-532	9	MG	☒	
			02:11	BO			54° 29.94	130° 33.57		121	-			☐	ALT SAYS 5.2
			02:23	EN			54° 29.92	130° 33.61			-			☐	
			:				.	.			-			☐	

Event Type:

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CTD = Standalone CTD
ROS = CTD in Rosette
SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

=

Bottle Firing Method:

US = Up / Stop (default)
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
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CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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WINCH SLOWING DOWN @ 120 M OFF BOTTOM THEN $\frac{1}{2}$ SPEED TO 5 M OFF BOTTOM - ALTIMETER CUTS OUT CONSTANTLY

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Month FEBRUARY				Year 2019			Vessel JP TULLY			Cruise ID 2019-001								
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments			
							Latitude	Longitude										
89	CH10	17	03:06	BE	ROS	US	54° 26.78	130° 39.28	78		533 - 539	7	MG	☒	ALT 5.3			
			03:09	BO			54° 26.78	130° 39.25		77	-			☐	PLASTIC BOTTLES FOR NUT.			
			03:18	EN			54° 26.79	130° 39.28			-			☐				
90	CH13	17	03:57	BE	ROS	US	54° 23.06	130° 39.02	152		540 - 549	10	MG	☒	0149 P 151			
			04:01	BO			54° 23.07	130° 39.04		151	-			☐	ALT 4.7 S 148			
			04:15	EN			54° 23.08	130° 38.99			-			☐	PLASTIC BOTTLES NUTS			
91	CH12	17	04:51	BE	ROS	US	54° 23.70	130° 33.97	144		550 - 559	10	MG	☒	PLASTIC BOTTLES NUTS			
			04:55	BO			54° 23.72	130° 33.97		142	-			☐	ALT FLAKY AGAIN			
			05:07	EN			54° 23.72	130° 33.92			-			☐				
92	CH17	17	05:41	BE	ROS	US	54° 20.52	130° 33.34	87		560 - 566	7	MG	☒	PLASTIC BOTTLES NUTS			
			05:44	BO			54° 20.53	130° 33.32		86	-			☐				
			05:51	EN			54° 20.53	130° 30.28			-			☐				
93	CH15	17	06:38	BE	ROS	US	54° 18.43	130° 42.50	187		567 - 578	12	MG	☒	PLASTIC BOTTLE NUTS			
			06:43	BO			54° 18.44	130° 42.50		187	-			☐				
			06:48	EN			54° 18.43	130° 42.50			-			☐				
94	CH14	17	14:53	BE	ROS	US	54° 20.570	130° 49.700	127		579 - 587	9	MS	☒				
			14:57	BO			° 20.590	° 49.710			-			☐				
			15:06	EN			° 20.550	° 49.650			-			☐				
			:				°	°			-			☐				
Event Type: LOOP = Sea Water Loop BOT = Bottle cast (no CTD) Bottle Firing Method: Time Code: CTD Temperature:																		

Event Type:

BOT = Bottle cast (no CTD)
 CTD = Standalone CTD
 ROS = CTD in Rosette
 SET = Fish Set

LOOP = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter
 =

Bottle Firing Method:

US = Up / Stop (default)
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
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ROSETTE
DISPLAY ON MAIN MONITOR STILL FLASHING AS ROSETTE IS MOVED FROM TO WATER

p13.5/22

DAILY SCIENCE LOG

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Month <u>FEBRUARY</u>			Year <u>2019</u>			Vessel <u>SP TULLY</u>			Cruise ID <u>2019-001</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
95	CH22A	17	15:54	BE	ROS	US	54° 16.150	130° 46.640	184		588-599	12	MB	☒	
			15:57	BO			° 16.160	° 46.622		182	-			☐	
			16:09	EN			° 16.220	° 46.620			-			☐	
96	CH20	17	17:00	BE	ROS	US	54° 13.48	130° 43.820	154		600-609	10	LK	☒	
			17:04	BO			54° 13.82	130° 43.820		153	-			☐	
			17:15	EN			54° 13.83	130° 43.860			-			☐	
97	CH21	17	18:16	BE	ROS	US	54° 11.970	130° 39.250	121		610-618	9	MB	☒	
			18:19	BO			54° 11.960	130° 39.270			-			☐	
			18:28	EN			54° 11.970	130° 39.350			-			☐	
98	CH19	17	20:04	BE	ROS	US	54° 15.27	130° 35.65	83		619-625	7	MG	☒	PLASTIC BOYS NUTS
			20:06	BO			54° 15.27	130° 35.65		86	-			☐	
			20:15	EN			54° 15.28	130° 35.65			-			☐	
99	CH19	17	20:25	BE	NET	-	54° 15.29	130° 35.61	87		-		MG	☐	Bongo
			20:28	BO			54° 15.31	130° 35.57		82	-			☐	
			20:30	EN			54° 15.31	130° 35.54			-			☐	
100	CH18	17	21:10	BE	ROS	US	54° 16.30	130° 29.69	32		626-630	5	MG	☒	MOVED POSITION DUE
			21:12	BO			54° 16.30	130° 29.66		32	-			☐	TO CRAB TRAPS
			21:17	EN			54° 16.32	130° 29.64			-			☐	PLASTIC BOYS NUTS
			:				°	°			-			☐	

Event Type:

BOT = Bottle cast (no CTD)
 CTD = Standalone CTD
 ROS = CTD in Rosette
 SET = Fish Set

LOOP = Sea Water Loop

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Bottle Firing Method:

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Notes:

Time Code:

BE = Beginning Time of Cast
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SWAPPED BOTTLE 21 + BOTTLE 11, BOTTLE 11 CONSISTENTLY BEEN LEAKING @ BOTTOM CAP
(NICKEN SEAL & 2000-10-26)

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Month <u>FEB</u>			Year <u>2019</u>			Vessel <u>JPTULLY</u>			Cruise ID <u>2019-001</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
101	PRHR	17	22:26	BE	ROS	US	54° 13.57	130° 21.40	27		631-635	5	MG	☒ ☐	
			22:28	BO			54° 13.58	130° 21.41		27	-			☐ ☐	
			22:33	EN			54° 13.57	130° 21.41			-			☐ ☐	
102	CH23	17	23:14	BE	ROS	US	54° 11.45	130° 23.22	95		636-643	8	MG	☒ ☐	ALT FLAKEY
			23:17	BO			54° 11.45	130° 23.21		95	-			☐ ☐	
			23:27	EN			54° 11.46	130° 23.23			-			☐ ☐	
103	CHAT1	18	00:03	BE	ROS	US	54° 12.07	130° 27.27	110		644-652	9	MG	☒ ☐	
			00:07	BO			54° 12.07	130° 27.27			-			☐ ☐	
			00:18	EN			54° 12.07	130° 27.26			-			☐ ☐	
104	CH22	18	02:04	BE	ROS	US	54° 10.03	130° 34.96	120		653-661	9	MG	☒ ☐	PLASTIC NUTS BOTS
			02:07	BO			54° 10.02	130° 34.90			-			☐ ☐	
			02:18	EN			54° 10.01	130° 34.85			-			☐ ☐	
105	CH24	18	03:00	BE	ROS	US	54° 07.62	130° 34.07	87		662-669	8	MG	☒ ☐	PLASTIC BOTS NUTS
			03:02	BO			54° 07.62	130° 34.08		85	-			☐ ☐	ALT FLAKEY
			03:11	EN			54° 07.61	130° 34.10			-			☐ ☐	
106	CH25	18	03:55	BE	ROS		54° 08.88	130° 26.28	112		670-678	9	MG	☒ ☐	PLASTIC BOTS NUTS
			03:58	BO			54° 08.89	130° 26.31		111	-			☐ ☐	
			04:08	EN			54° 08.90	130° 26.27			-			☐ ☐	
			:				.	.			-			☐ ☐	

Event Type:

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Month			Year			Vessel			Cruise ID						
FEBRUARY			2019			SP TULLY			2019-001						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
107	CH26	18	16:06	BE	ROS	US	54° 8.750	130° 21.500	60		679-685	7	MB	☒	
			16:07	BO			° 8.760	° 21.490		59	-			☐	
			16:14	EN			° 8.790	° 21.460			-			☐	
108	CH27	18	16:49	BE	ROS	US	54° 6.580	130° 16.450	47		686-691	6	MB	☒	
			16:50	BO			° 6.590	° 16.450		46	-			☐	
			16:55	EN			° 6.620	° 16.460			-			☐	
109	MP55	18	17:29	BE	ROS	US	54° 4.210	130° 16.180	107		692-699	8	MB	☒	
			17:32	BO			° 4.220	° 16.180			-			☐	
			17:39	EN			° 4.220	° 16.210			-			☐	
110	CH31	18	18:39	BE	ROS	US	54° 1.904	130° 14.000	84		700-707	8	MB	☒	
			18:41	BO			° 1.920	° 13.997		84	-			☐	
			18:49	EN			° 1.960	° 14.010			-			☐	
111	OGCH50	18	19:20	BE	ROS	US	53° 59.42	130° 12.84	131		717-726	10	LK	☒	Bottles 1 & 2 fired early so shifted #1's & 2's
			19:24	BO			53° 59.43	130° 12.83		131	708-716	9		☐	
			19:35	EN			53° 59.47	130° 12.44			-			☐	
112	OGCH46	18	20:20	BE	ROS	US	53° 55.39	130° 13.09	152		717-726	10	MG	☒	PLASTIC BOTTLE NUTS
			20:24	BO			53° 55.40	130° 13.09		151	-			☐	
			20:36	EN			53° 55.45	130° 13.12			-			☐	
			:				°	°			-			☐	

Event Type:

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 SET = Fish Set

LOOP = Sea Water Loop

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Bottle Firing Method:

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Notes:

Time Code:

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 DE = Deployment Time
 MR = Messenger Release Time
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CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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Month <u>FEBRUARY</u>			Year <u>2019</u>			Vessel <u>JP FULLI</u>			Cruise ID <u>ZoF-001</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
113	HAKI-C	19	13:39	BE	ROS	-	51°42.710	128°14.230	139		-	-	MB	☒ ☐	10m + BACK SAK
			13:41	BO			°42.710	°14.210		133	-			☐ ☐	
			13:44	EN			°42.700	°14.210			-			☐ ☐	
114	LOOP	19	13:54	BE	LOOP	-	51°41.843	128°14.106	123	5	5114		MB	☐ ☐	Wx2 Salx1
115	CPE1	19	19:04	BE	ROS	-	50°59.974	127°49.854	154		-	-	MB	☒ ☐	
			19:07	BO			°59.968	°49.847		1	-			☐ ☐	
			19:10	EN			°59.966	°49.861	forgot to record last digit - sorry!					☐ ☐	
116	CP1	19	19:17	BE	NET	-	50°59.997	127°49.834	152		-	-	MB	☐ ☐	B
			19:23	BO			50°59.961	127°49.792		148	-			☐ ☐	
			19:25	EN			50°59.921	127°49.801			-			☐ ☐	
117	LBA-1	19	20:38	BE	ROS	-	50°54.03	127°38.40	449		-	-	MG	☒ ☐	MOORING SAE
			20:47	BO			50°54.02	127°38.31		448	-			☐ ☐	
			20:56	EN			50°54.02	127°38.30			-			☐ ☐	
118	QCS3	19	23:10	BE	ROS	-	50°43.79	127°15.02	212		-	-	MG	☒ ☐	
			23:14	BO			50°43.80	127°15.04		210	-			☐ ☐	
			23:18	EN			50°43.84	127°15.08			-			☐ ☐	
119	QCS1	20	01:30	BE	ROS	-	50°40.06	126°46.34	153		-	-	MG	☒ ☐	STOP @ 105 FOR ANGLE ↓
			01:34	BO			50°40.13	126°46.30		151	-			☐ ☐	" @ 83 " " ↑
			01:38	EN			50°40.16	126°46.39			-			☐ ☐	

Event Type:

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Event Type:

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Bottle Firing Method:

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Time Code:

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Notes:

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Month <u>FEB</u>				Year <u>2019</u>			Vessel <u>JP TULLY</u>			Cruise ID <u>2019-001</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
120	14	20	15:38	BC	ROS	US	49° 52.940	124° 59.610	314		727-729	3	MB	☒	
			15:44	BO			° 52.980	° 59.600		313	-			☐	
			15:53	EN			° 53.020	° 59.700			-			☐	
121	14	20	16:01	BE	NET	-	49° 53.05	124° 59.65	315		-	-	MB/LK	☐	BONG 0
			16:11	BO			49° 53.11	124° 59.70		310	-			☐	
			16:17	EN			49° 53.15	124° 59.74			-			☐	
122	BOGN-D	20	17:10	BE	ROS	US	49° 50.100	124° 52.160	334		-	-	MB	☒	
			17:15	BO			° 50.120	° 52.160		330	-			☐	
			17:21	EN			° 50.120	° 52.180			-			☐	
123	NORTH STAR	20	18:15	BC	ROS	-	49° 44.182	124° 46.858	268		-	-	MB	☒	
			18:20	BO			° 44.24	° 46.844		265	-			☐	
			18:25	EN			° 44.214	° 46.895			-			☐	
124	12	20	19:10	BC	ROS	US	49° 43.640	124° 40.790	355		730-732	3	MB	☒	CALUD 0125
			19:16	BO			° 43.620	° 40.820		350	-			☐	
			19:25	EN			° 43.680	° 40.880			-			☐	
125	12	20	19:32	BC	NET	-	49° 43.660	124° 40.807	354		-	-	MB/MG	☐	
			19:45	BO			49° 43.635	124° 40.713		348	-			☐	
			19:52	EN			49° 43.63	124° 40.67			-			☐	
			:				°	°			-			☐	

Event Type:

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Bottle Firing Method:

US = Up / Stop (default)
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Notes:

Time Code:

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Month FEB			Year 2019			Vessel LP TULLY			Cruise ID 2019-001						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
126	20	20	21:10	BE	ROS	/	49° 47.25	124° 32.32	202		/	/	MG	☒ ☐	DEPTH CHANGE START OF CAST
			21:17	BO			49° 47.24	124° 32.32	295	299	-			☐ ☐	
			21:22	EN			49° 47.22	124° 32.31			-			☐ ☐	
127	22	20	22:54	BE	ROS	US	49° 40.19	124° 16.26	351		733-743	11	MG	☒ ☐	ALT NOT GIVING GOOD SIGNAL
			23:02	BO			49° 40.20	124° 16.28		352	-			☐ ☐	
			23:18	EN			49° 40.27	124° 16.30			-			☐ ☐	
128	22	20	23:25	BE	NET	/	49° 40.29	124° 16.32	355		-	-	MG	☐ ☐	BONGO
			23:37	BO			49° 40.304	124° 16.328		350	-			☐ ☐	
			23:48	EN			49° 40.3208	124° 16.380			-			☐ ☐	
129	24	21	01:06	BE	ROS	-	49° 30.29	124° 05.99	425		-	Ø	MR	☒ ☐	
			01:14	BO			49° 30.29	124° 05.98		424	-			☐ ☐	
			01:22	EN			49° 30.29	124° 06.00			-			☐ ☐	BONGO CANCELLED →
130	CPF2	21	04:16	BE	ROS	US	49° 27.97	124° 29.98	350		744-746	3	MG	☒ ☐	SOUNDER JUMPING →
			04:24	BO			49° 27.99	124° 29.98		325	-			☐ ☐	~30-40 sec
			04:33	EN			49° 27.99	124° 29.99			-			☐ ☐	... lions!
131	CPF2	21	04:43	BE	NET	-	49° 28.00	124° 29.97	326		-	-	MG	☐ ☐	BONGO
			04:54	BO			49° 28.00	124° 30.01		320	-			☐ ☐	
			05:00	EN			49° 28.01	124° 30.03			-			☐ ☐	
			:				.	.			-			☐ ☐	

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0127

HYDRAULICS NOT WORKING, JIMME BROKE THEM WITH HIS MAGIC TOUCH, HEADING TO CPF2 @ 0205

0215 HYDRAULICS BACK ON

SOUNDER BOUNCING FROM 350 → 325 ALTIMETER NOT WORKING STOPPED AT 325

PRESUME SOFT BOTTOM

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Month FEB				Year 2019			Vessel JP Tully			Cruise ID 2019-001					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
132	CPF1	21	06:58	BE	ROS	US	49° 21.96	124° 04.97	241		747-749	3	MG	☒ ☐	
			07:03	BO			49° 21.96	124° 04.94		240	-			☐ ☐	
			07:10	EN			49° 21.96	124° 04.95			-			☐ ☐	
133	CPF1	21	07:17	BE	NET	/	49° 21.98	124° 04.99	240		-		MG	☐ ☐	BONGO
			07:25	BO			49° 21.98	124° 04.98		235	-			☐ ☐	
			07:29	EN			49° 21.98	124° 04.98			-			☐ ☐	
134	28	21	09:04	BE	ROS	US	49° 24.060	123° 45.274	130		750-752	3	MB	☒ ☐	
			09:06	BO			° 24.072	° 45.290		126	-			☐ ☐	
			09:12	EN			° 24.090	° 45.290			-			☐ ☐	
135	28	21	09:18	BE	NET	-	49° 24.09	123° 43.30	130		-	-	MB/LIS	☐ ☐	BONGO
			09:22	BO			49° 24.117	123° 45.29		125	-			☐ ☐	
			09:24	EN			49° 24.11	123° 45.29			-			☐ ☐	
136	GEO1	21	10:44	BE	ROS	US	49° 15.050	123° 45.040	400		753-763	11	MB	☒ ☐	
			10:51	BO			° 15.050	° 45.090		397	-			☐ ☐	
			11:06	EN			° 15.110	° 45.330			-			☐ ☐	
137	GEO1	21	11:10	BE	NET	-	49° 15.14	123° 45.41	409		-		LK.	☐ ☐	BONGO
			11:18	BO			49° 15.24	123° 45.48		250	-			☐ ☐	
			11:22	EN			49° 15.28	123° 45.50			-			☐ ☐	
138	GEO1	21	11:29	BE	NET	-	49° 15.39	123° 46.54	400		-		LK	☐ ☐	

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Version: 20 April 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month			FÉVRIER		Year		2019		Vessel		TULLY		Cruise ID		2019-001	
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments	
138	GEO1	21	11 :40	BO	NET	-	49°15.51	123°45.65		395	-		LK	☐ ☐	BONGO	
			11 :46	EN			49°15.58	123°45.72			-			☐ ☐		
139	38	21	13:31	BE	ROS	US	49°12.020	123°26.360	307		764-766	3	MB	☒ ☐		
			13:37	BO			°12.040	°26.380		304	-			☐ ☐		
			13:45	EN			°12.040	°26.480			-			☐ ☐		
140	38	21	13:51	BE	NET	-	49°12.040	123°26.53	307		-		MB + LK	☐ ☐	BONGO	
			14:02	BO			49°12.01	123°26.54		300	-			☐ ☐		
			14:07	EN			49°11.99	123°26.63			-			☐ ☐		
141	42	21	15:19	BE	ROS	US	49°1.760	123°26.100	320		767-777	11	MB	☒ ☐		
			15:25	BO			°1.750	°26.060		317	-			☐ ☐		
			15:38	EN			°1.720	°26.110			-			☐ ☐		
142	42	21	15:48	BE	NET	-	49°01.74	123°26.12	319		-		MB + LK	☐ ☐	BONGO	
			15:58	BO			49°01.73	123°26.11		315	-			☐ ☐		
			16:03	EN			49°01.78	123°26.16			-			☐ ☐		
143	Hag 59	21	19:55	BE	ROS	US	48°36.82	123°14.79	232		778-789	12	MG	☒ ☐		
			20:00	BO			48°36.75	123°14.74		229	-			☐ ☐		
			20:15	EN			48°36.64	123°14.64			-			☐ ☐		
			:				°.	°.			-			☐ ☐		
			:				°.	°.			-			☐ ☐		

Event Type:

BOT = Bottle cast (no CTD)
CTD = Standalone CTD
ROS = CTD in Rosette
SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter
=

Bottle Firing Method:

US = Up / Stop (default)
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Produced by the Water Properties Group, IOS

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Month <u>FÉVRIER</u>			Year <u>2019</u>			Vessel <u>TULLY</u>			Cruise ID <u>2019-001</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
144	59	21	20:25	BE	NET		48° 36.36	123° 14.67	224		-	/	MG	☐ ☐	BOMMO
			20:33	BO			48° 36.27	123° 14.67		220	-			☐ ☐	
			20:37	EN			48° 36.22	123° 14.67			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
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