

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2010-13

DATE:

From: 5 JUNE to: 22 JUNE 2010

VESSEL:

JOHN P TULLY

PROJECT(S):

LINE P

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

WaterProperties.ca

Captain: ANDREW QUAIN
Second Officer: SHANE LOVEACE
Fishing Master:

First Officer: DONALD GIBSON
Third Officer: BRANDON AUSTIN

Mission Participants / Agencies:

Scientific Personnel: _____
Chief Scientist: _____
_____ (UVC)

Name	Watch	Cabin	Name	Watch	Cabin
JODY WRIGHT	12-18	B	SETH BUSHINSKY	18-24	H
KEITH JONNISON	PH/HPLC	C	KARL SCHIFFMACHER	06-12	H
CONSTANCE COUTURE	00-06	D	MICHAEL ARYCHUK	RMS	4
MAUREEN SOON	06-12	D	HUGH MACLEAN	00-12	7
MICHAEL CRAIG	18-24	E	DOUG VELLAND	12-00	UP-P
KEITH ROWNHOLM	12-18	E	MICHAEL BENTLEY	BIRDS	UP-S
ROGER FRANCOIS	12-18	F			
YIMING LUD	00-06	F			
JOSIANE MELANCON	00-06	G			
JESSIE MOTARD-COTE	18-24	G			

[illegible]

Data logging computer:

Data acquisition program:

CTD deck unit make: Seabird model: 11 plus serial number: 0424

Primary CTD

Make: Seabird model: 9 plus serial number:

Primary temperature serial number: 2449

Primary conductivity serial number: 2280

Secondary temperature serial number: 2038

Secondary conductivity, serial number: 3394

Transmissometer: Wetlabs Model: _____

Fluorometer: Model	Wet Labs	Cable gain:
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Oxygen sensor: ✓ SBE Model: ✓ SBE

PAR sensor:	Biospherical	Model:
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Other sensors: 4H seabird 18-I

Other sensors: _____

Other sensors: _____

Other sensors:

Secondary CTD

Make: _____ model: _____ serial number: _____

Primary temperature serial number:

Primary conductivity serial number:

Secondary temperature serial number:

Secondary conductivity serial number:

Transmissometer: _____ Model: _____

Fluorometer: Model	Cable gain:
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Oxygen sensor: _____ Model: _____

PAR sensor: _____ Model: _____

Other sensors: _____

Other sensors:

Other sensors:

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

Rosette Setup:

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

Winches:

1. Make: Hawbolt Model: _____ Serial #: 17026 Used for: Rosette
2. Make: Hawbolt Model: _____ Serial #: 17027 Used for: Multinet
3. Make: N&B Model: 589 Serial #: 515 Used for: Bongo Pumping

Comments on performance during cruise (comments should also be reflected in the post-cruise report):
- no anomalies

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

Thermosalinograph System (SBE21):

Program: _____ Version: _____
Sampling interval (seconds): _____
Fluorometer sensor serial number: _____
Comments on performance during cruise (comments should also be reflected in the post-cruise report):

ADCP Setup:

N/A
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

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) .001

Secondary Salinity – Primary Salinity:
(Average from the mixed region) .010

Additional Comments:

Guide to cable terminations:

Please identify nominal cable diameter:

back from termination.
At cable end: $\frac{10}{5}$ metres:

1. 322
2. 321
3. 323

Nominal .316" should be .3155 to .3165"

Record specifications for other cables:

For nominal .316" cable the lowest possible diameter is .309"

Describe cable:

Megger results by conductor (should be greater than 10,000. meg ohms)

Please identify PMI sleeve used by checking the appropriate blank:

Comments:

The deployment procedure during this cruise was to "go down 10 m and back to surface" with the pumps ON, then stay @ the surface for a short time (~ 30 to 60 sec?), start archiving and do the cast.

The CTD was still running (and recording) when it exited the water during the last cast (0080) to help with pressure offset measurements. (?)

mani

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month			Year			Ship			Cruise ID						
JUN			2010-13			TULLY			2010-13						
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
6	Sta 3	0223	BE	ROS		1	48 35.61	123 30.02	226				HY	✓	PAR, Mon
1	1	0228	BO	1		1	48 35.59	123 30.01		216	1-11	11	MR		All misters closed
		0243	EN	1		1	48 35.57	123 30.01							
6	JF1	0829		UWS		—	48 16 30	123 29 69		—	—	—	—	—	Loop: SAC, CHL, NUTS
6	JF2	1819		UWS			48 17 99	123 59 91							Loop: SAC/CHL/NUTS
6	JF3	2011		UWS			48 27 51	124 29 83							Loop: Sal, chl, Nut
6	JF4	2200		UWS			48 32 36	125 00 02							Loop: Sal, chl, Nut
6	P1	2351	BE	ROS		2	48 34 46	125 30 07	137				HY	✓	Wrong CON file
1	1	2353	BO	1		1	48 34 46	125 30 05		127	12-13	2			Chl max @ 10m, 5m
		2357	EN	1		1	48 34 45	125 30 04							+ loop
7	P2	0200	BE	ROS		3	48 35 98	125 59 91	117				HY	✓	Does cast
1	1	0203	BO	1		1	48 35 98	125 59 92		100	14-24	11			
		0213	EN	1		1	48 35 92	125 59 93							
7	PL	0223	BE	NET		4	48 35 95	125 59 89	117						Bongo to 107m
		0227	BO				48 35 97	125 59 85		107					
		0229	EN				48 35 98	125 59 84							
7	P2	0246	BE	ROS	US	5	48 35 98	126 00 00	117				HY/MR	NO	?
		0249	BO				48 35 97	126 00 00		107	25-32	8			
		0257	EN				48 35 94	126 00 01							

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month June				Year 2010			Ship Tully				Cruise ID 2010-13				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
7	P3	0437	BE	ROS	US	6	48° 37.48	126° 19.92	817				DY	✓	(30m)
		0450	BO				48° 37.48	126° 19.98		810	33-34	2			chl max + 5m Ox. chl. sal. Net
		0505	EN				48° 37.55	126° 20.01							+ loop
7	P4	0718	BO	NET		7	48° 39.03	126° 40.00	1302				H.M.		BONGO
		0735	EN				48° 38.98	126° 40.03		250					
7	P4	0737	BO	NET		8	48° 38.99	126° 39.99	1302				H.M.		BONGO
		0748	EN				48° 38.98	126° 39.99		250					
7	P4	0825	BE	ROS		9	48° 38.99	126° 36.99	1314		35-48	14	H.M.		#1 - VBC CAST
		0846	BO				48° 38.99	126° 40.01		1300					→
		0912	EN				48° 38.98	126° 40.01							PH AND PAR OFF
7	P4	1002	BE	PUMPS		10	48° 38.98	126° 39.93	1317	60			H.M./M/RF		
		1100	EN				48° 38.98	126° 39.95							
7	P4	1200	BE	TFP		11	48° 38.77	126° 40.24	1319	5					
		1410	EN				48° 38.86	126° 40.57							

DIFFERENCE IN SALINITY (PSU) = 0.010 BETWEEN 2 CONDUCTIVITY SENSORS

DAILY SCIENCE LOG

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Month <u>JUNE</u>				Year <u>2010</u>			Ship <u>TULLY</u>			Cruise ID <u>2010-13</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
7	P4	1429	BE	ROS	U.S.	12	48° 38.99	126° 40.01	1315		49-66	18	HM	✓	105 DEEP CAST
		1452	BO				48° 39.00	126° 40.04		1250					pH on. + Loop SAL/OXY
		1531	EN				48° 38.98	126° 39.99							Stop 795 ↓ switch sp.
7	P4	1653	BE	ROS		13	48° 39.02	126° 40.00	1311						
		1658	BO				48° 39.08	126° 40.03		300	67-81	15	HM	✓	DMS CAST
		1717	EN				48° 39.07	126° 40.12							+ Loop - NUTS/CHL
7	P5	2101	BE	ROS		14	48° 41.47	127° 10.09	2085						pH + pH off 40m, 5m
		2130	BO				48° 41.49	127° 9.98		2005	82-83	2	dy	✓	+ Loop O ₂ , nut, sal, chl
		2201	EN				48° 41.49	127° 9.96							17 PLC
8	P6	0047	BE	ROS		15	48° 44.61	127° 40.08	2541		84-85	2	dy	✓	25m, 5m HPLC
		0122	BO				48° 44.64	127° 40.01		2005					+ Loop O ₂ , nut, sal, chl
		0151	EN				48° 44.59	127° 40.03							
8	P7	0423	BE	ROS		16	48° 46.45	128° 9.95	2502		86-87	2	dy	✓	25m, 5m HPLC
		0457	BO				48° 46.65	128° 9.97		2005					+ Loop O ₂ , nut, sal, chl
		0531	EN				48° 46.63	128° 10.04							

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

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

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
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 RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 06 March 2008

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month <u>JUNE</u>				Year <u>2010</u>			Ship <u>TULLY</u>				Cruise ID <u>2010-13</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
8	P8	0835	BE	ROS		18	48° 48.98	128° 40.00	2515		88-107	20	H.M.	✓	2 nd
		0908	BO				48° 48.97	128° 40.01		2005					
		0950	EN				48° 48.98	128° 40.01							
8	P8	08:09	BO	NET		17	48° 48.9310	128° 39.8987							BONGO (1st)
		08:14	EN				48° 48.8968	128° 39.8166							
9	P9	1218	BE	ROS		19	48° 51.34	129° 10.02	2346		108-109	2?	H.M.	✓	34m CH MAX - CHL/HPLC(2)
		1252	BO				48° 51.38	129° 10.02		2005					LOOP - O ₂ /SAL/CHL/NOTS
		1319	EN				48° 51.40	129° 10.03							5m BOT - O ₂ /S/CH/NOT/HPLC(2)
8	P10	1546	BE	ROS		20	48° 53.61	129° 40.00	2640						CHL M: 40
		1623	BO				48° 53.59	129° 39.98		2005	110-111	2 ⁽⁴⁾	H.M.		DIP BOT TRIPS in case
		1655	EN				48° 53.59	129° 39.95							OF FAILURE
8	P11	1923	BE	ROS		21	48° 55.82	130° 10.05	2750					✓	40m, 5m - HPLC
		2000	BO				48° 55.76	130° 10.04		2005	112-113	2	H.M.		O ₂ , CHL, NOT, SAL
		2037	EN				48° 55.74	130° 9.98							+ Loop ↑
	P12	2256	BE	ROS		22	48° 58.12	130° 39.66	3235					✓	overflow light
		2312	BO				48° 58.16	130° 39.61		1000	114-115	2			lock up
			EN												+ loop, chl, NOTs

- 4 BOTTLES TRIPPED BOT 1 & 2 @ CHL MAX (34 m) BOT 3 & 4 @ 5 m - SAMPLE ARE FROM BOT 1 & 3

← PII Chlorophylls filtered @ 2000 8/6/10 Local (0300 9/6/10 UTC)

← upcast completed @ 23 (next page)
locked up @ ~865 m

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Month JUN				Year 2010			Ship TULUV			Cruise ID 2010-13					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
8	P12	2328	BE	ROS		23	48 58.19	130 39.71	235						completion of previous cast
			EN							865	116-136				
9	P12		BE	NET		24			3233						Bongo to 250
		0017	BO				48 58.21	130 39.96		250					
			EN												
9	P12	0055	BE	ROS	US	25	48 58.20	130 40.00	3233						Deep Cast
			BO							B-10	137-159	23			Par, pH off
			EN												Depth =
9	P12	0120	BE	ROS		26	48 58.21	130 40.00	3233	@649 m to start					2nd try
		0210	BO				48 58.21	130 40.08		B-10	137-159	23			3275 db sampler
		0327	EN				48 58.21	130 40.00							3222 m 3233 altimeter 10 m
9	P12	0446	BE	ROS		27	48 58.20	130 40.01	3235						Loop - Oxy Sal
		0517	BO				48 58.28	130 40.10		2000	160-173	14			1) BC cast
		0553	EN				48 58.39	130 39.97							
9	P13	1432	BE	ROS		28	49° 02.59	131° 40.00	3003		174-184	11	H.M	✓	ARGO O ₂ CAST
		1505	BO				49° 02.59	131° 40.01		2005					
		1544	EN				49° 02.611	131° 40.003							
9	P13	1558	DRF	DRF		29	49 02.58	131° 40.20							ARGO released
							02.58								slw 4833

-froze @ 649 m

CHANGED OUT OXY / TRANSMISOMETER^Y CABLE AFTER R 12 BEFORE R 13

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Month <u>June</u>				Year <u>2010</u>			Ship <u>Tully</u>			Cruise ID <u>2010-13</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
9	P14	2135	BE	ROS	US	30	49 7.33	132 39.89	3316						45m 5m chl. Net O. Sal
		2215	BO				49 7.36	132 39.97		2005	185-186	2	dy	✓	+ Loops
		2256	EN				49 7.32	132 39.71							no bottle 1 (45m)
10	P15	0421	BE	ROS	US	31	49 12.12	132 39.84	3403						
		0455	BO				49 12.14	133 40.01		2005	187-188	2	dy	✓	50m, 5m chl. Net O. Sal
		0529	EN				49 12.13	133 39.99							+ Loops
10	P16	1058	BO	NET		32	49° 16.9596	134° 39.9381							BONGO
		1103	EN				49° 16.9665	134° 40.0147							
10	P16	1123	BE	ROS		33	49° 16.99	134° 39.97	3634		189-201	13	H.M.	✓	UVC CAST
		1201	BO				49° 16.99	134° 39.97		2000					
		1239	EN				49° 17.00	134° 39.96							
10	P16	1300	BE	PUMPS		34	49° 17.00	134° 39.95	3634				H.M./M.S./R.F.		UVC PUMPS
		1340	EN				49° 17.02	134° 40.00		60m			YH		
10	P16	1359	BE	ROS		35	49° 17.00	134° 39.96	3634		202-225	24	H.M.		10S DEEP CAST
10	P16	1438	BE	ROS		36	49° 17.00	134° 39.95	3634						Shp 2360 ↓ switch ops
		1501	BO				49° 16.97	134° 40.00		3681					SAME CAST →
		1644					49 16.99	134 40.00							

Transmissometer to be cleaned before each cast. do not use Ammonia products

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Bottle Firing Method:

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Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 06 March 2008

- bottle 1 didn't fire (not a hang-up)

Comp Froze @ 2504 ↓ Reboot Restart @ 2580

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Ocean Sciences Division, Institute of Ocean Sciences

Month <u>JUNE</u>				Year <u>2010</u>			Ship <u>TULLY</u>				Cruise ID <u>2010-13</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
10	P16	1803	BE	ROS		37	49 17.07	134 39.94	3634		226-242	17	H.M.	✓	DMS CAST
		1813	BO				49° 17.03	134° 40.01		500					→
		1836	EN				49 17.00	134 40.02							
10	P17	2318	BE	ROS		38	49 20.93	135 39.81	3673					✓	PAR, pH OFF
		2344	BO				49 20.80	135 39.77		2005	243-244	2	dy		60.5m CHL/O ₂ /NUT/SET + LOOPS
11		0013	EN				49 20.69	135 39.84							
11	P18	0433	BE	ROS		39	49 25.88	136 39.71	3835				dy	✓	45m.5m CHL/O ₂ /NUT/SET + LOOPS
		0500	BO				49 25.88	136 39.62		2005	245-246	2			
		0531	EN				49 25.86	136 39.48							Bottle 1 - no trip
11	P19	1011	BE	ROS		40	49° 30.06	137° 39.87	4000						BOT@5m - CHL/O ₂ /S/NUTS/HPLC
		1046	BO				49° 30.04	137° 39.95		2005	247-248	2	H.M.	✓	CHL MAX - CH/HPLC (60m)
		1119	EN				49° 30.00	137° 39.94							Loop - O ₂ /CH/S/NUTS
11	P20	1643	BE	ROS		41	49° 33.98	138° 39.98	3965		249-272	24	H.M.	✓	10S DEEP CAST
		1745	BO				49 34.01	138 40.02							
		1913	EN				49 33.97	138 39.99							
11	P20	1938	BE	TH POND		42	49 34.00	138 40.31	3965						Pumping in chains
11	P20	2052	BE	ROS		43	49 34.10	138 40.77	3966						DMS CAST
		2057	BO				49 34.12	138 40.81		300	273-287	15	dy	✓	PAR, pH ON
		2113	EN				49 34.17	138 40.90							Bot 1 - NO sample

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=

Bottle Firing Method:
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Transmissometer to be cleaned before each cast, do not use Ammonia products

This page is for any notes or observations

PH & PAR SENSORS ON
pH cap left on

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Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>JUN</u>				Year <u>2010</u>			Ship <u>TULLY</u>			Cruise ID <u>2010-13</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
11	P20	21:29	BE	NET		44	49°34.181	138°40.950	3966				dy		Borgo to 250m
		21:37	BO				49°34.184	138°40.973		250					
		21:41	EN				49°34.207	138°41.000							
11	P20	2205	DE	ROS		45	49 34.03	138 40.03	3967		288-305	18	dy	✓	PAR, pH off
		2249	BO				49 34.02	138 39.98		2500					
		2336	EN				49 34.09	138 40.10							
12	P21	0502	BE	ROS		46	49 37.94	139 39.93	3961						505m, Chl, Nuts, O ₂ S ₂
		0540	BO				49 37.93	139 39.91		2005	306-307	2	dy	✓	+ Loops
		0616	EN				49 37.89	139 39.82							
13	P26	2030	BE	ROS		47	49 59.96	144 59.88	4252					✓	Roger PAR, pH ON
		2033	BO				49 59.94	144 59.88		200	308-331	24			- pH cover left on
		2042	EN				49 59.95	144 59.87							inverte!
13	P26	2127	BE	ROS		48	50 0.00	144 59.92	4252				dy	✓	Dns Cas
		2132	BO				49 59.97	144 59.92		300	332-346	15			
		2149	EN				49 59.91	144 59.96							
13	P26	2246	BE	ROS		49	49 59.99	144 59.88	4252				dy	✓	105 Deep Cast + Cops
14		0000	BO				50 0.01	144 59.96			347-370	24			Press: 4316
		0137	EN				50 0.00	144 59.93							Depth: 4235 6m off
															Sounder: 4252
															(0-11)

Cast Type:

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=

Bottle Firing Method:

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RE = Recover Mooring Time

Transmissometer to be cleaned before each cast, do not use Ammonia products

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>June</u>			Year <u>2010</u>				Ship <u>Tully</u>			Cruise ID <u>2010-13</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
14	P26	0303	BE	ROS	US	50	50 0.04	144 59.74	4252				dy	✓	UBC Cast
		0337	BO				49 59.96	144 59.84		2000	371-387	17			
		0412	EN				49 59.94	144 59.84							
14	P26	0711	BE	ROS	US	51	50° 00.00	144° 59.90	4252		388-411	24	H.M.	✓	ROGER Tn 230 CAST
		0738	BO				49° 59.99	144° 59.98		1600					* →
		0814	EN				50° 00.01	144° 59.98							
14	P26	0849	BE	ROS	US	52	49° 59.98	144° 59.89	4252		412-427	16	H.M.	✓	ROGER Bat ONAR Cast
		0851	BO				49° 59.99	144° 59.91		30					
		0857	EN				49° 59.99	144° 59.94							→
14	P-004	18 40	BE	MOR		53	50 02.183	144 48.400							Surface mooring
		~2300	EN				50 3.2650	144 54.1226							Final Position
14	P-004	2347	BE	ROS		54	50 2.86	144 52.92	4230					✓	ONAR Cast
		2356	BO				50 2.81	144 52.90		500	428-443	16	dy		
15		0015	EN				50 2.78	144 52.94							
15	P26	0119	BE	IN-SITU PUMPS		55	50 00.00	145 00.00	4253						1st pump out = 135
		0146	BO				50 00.07	145 00.01							@ depth
		0605	BE				49 59.98	145 0.06							
		0640	EN												

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DRF = Drifter
=

Bottle Firing Method:

US = Up / Stop
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Notes:

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x COMPUTER FROZE @ START UP - REBOOT - ALL OK

Event 52.5: Trace Metal pumping @ Stn P for Université Laval.

DAILY SCIENCE LOG

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Month June				Year 2010			Ship Tully				Cruise ID 2010-13				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
15	P26	0650	BE	NET		56	50 0.02	144 59.60	4252				AY		Bongo to 250
		0658	BA				49 59.96	144 59.56		250					
		0707	EN				49° 59.92	144° 59.69							
15	P26	0915	BE	IN SITU PUMPS		57	49° 59.99	145° 00.47	4252				H.M.		ROGER'S VBC INSITU
		0929	BO				49° 59.97	145° 00.02		1000	(DOWN 4NRS)				PUMPS X3
		1411	EN				50° 00.14	145° 00.14							
15	Wave Rider	1757	BE	MOR		58	50° 00.4687	145° 02.6445					AY		
		2026	EN				49 58.9941	145° 06 034							
16	P26	0020	BE	IN SITU PUMP		59	50° 00.00(?)	145° 00.00(?)	4250				AY		ROGERS VBC INSITU
		0520	EN				50° 00.00	145° 00.00		400					PUMPS X3
16	P26	0553	BE	NET		60	50° 00.05	144° 59.94	4252				AY		BONGO
		0557	EN				50° 00.03	144° 59.82		250					
16	P26	0743	BE	IN SITU PUMPS		61	49° 59.98	144° 59.93	4250				H.M.		ROGERS VBC INSITU
	ADCP	1230	EN				49° 59.99	144° 59.99		100					PUMPS 20, 60, 100m
16	P26	1650	BE	MOR		62	50° 06.98	144° 58.79	4241				H.M.		157 BUOY RECOVERED
			EN												ADCP MOORING
16	RA-004	2205	BE	ROS		63	50 2.84	144 52.66	4229				AY	✓	O/A
		2211	BO				50 2.89	144 52.65		300	444-448	5			
		2220	EN				50 2.88	144 52.59							

DAILY SCIENCE LOG

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Month <u>June</u>				Year <u>2010</u>			Ship <u>Tully</u>			Cruise ID <u>2010-13</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
16	P26	2328	BE	Net	UN	64	50 8.02	144 59.90	4252						Multinet to 2000
17		0034	BO				50 0.04	144 59.93		2000		5			
		0121	EN				49 59.97	145 00.02							
17	P26	0141	BE	ROS	US	65	49 59.97	144 59.96	4252				MR/DY	✓	Roger 200m Pa
		0145	BO				49 59.98	144 59.95			449-472	24			
		0153	EN				49 59.96	145 00.02							
17	P26	0222	BE	Net	UN	66	49 59.96	144 59.98	4252						Multinet to 500
		0244	BO				49 59.90	144 59.91		500		5			for Bart
			EN												
17	P26	0338	BE	ROS	US	67	49 59.92	144 59.98	4252				dy/mr	✗	PAR, plt OFF
		0406	BO				49 59.99	144 59.99		1600	473-496	24			Yiming
		0451	EN				50 0.01	144 59.99							
17	P26	0550	BE	ROS		68	49 59.95	145 0.00	4252					✓	Roger
		0615	BO				50 0.01	145 0.00		1600	497-520	24			
		0647	EN				49 59.98	145 0.00							
17	P26	0739	BE	ROS		69	50° 00.01	144° 59.95	4252					✓	ROGER + ONAR
		0755	BO				50° 00.01	145° 00.00		1000	521-537	18			
		0823	EN				50° 00.01	145° 00.05							

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DAILY SCIENCE LOG

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Month <u>JUNE</u>				Year <u>2010</u>			Ship <u>TULLY</u>				Cruise ID <u>2010-13</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
17	P26	1207	BE	ROS		70	50° 07.51	144° 48.95	4252		538-542	5	H.M	✓	300m ONAR
	PA-003	1213	BO				50° 07.48	144° 48.93		300					PAR & PH ON
		1222	EN				50° 07.44	144° 48.95							* FORGOT TO UNCAP pH SENSOR
															PAR & PH OFF
17	PA-003	1948		MOR		71									Recover PA-003
		2136													
17	P26	2305	BE	ROS		72	50 0.01	145 0.01	4252				dy	✓	File named 17L1ex
18		0008	BO				49 59.98	145 00.01		4315	543-561	19			TABLE DRIVEN
		0125	EN				50 0.00	145 0.01							
18	P26	0144	BE	NET		73	49 59.97	145 0.00	4252						WPS for Roger
		0241	BO				50 0.01	144 59.95		1600	5 nets		dy		
		0319	EN				49 59.98	145 00.03							
18	P26	0339		DRF		74	50 00.01	144 58.80	4252						LOW FLOAT
18	P35	0629	BE	ROS		75	50 0.00	144 18.24	4150					✓	40m, 5m chl Not 0, 5m
		0702	BO				49° 59.97	144° 18.18		2005	562-563	2	dy		* HPLC x 2
		0738	EN				50° 00.05	144° 18.22							+1mops

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