

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2012-25

DATE:

From: 12 MAY 2012 to: 22 MAY 2012

VESSEL:

JOHN P. TULLY

PROJECT(S):

LA PEROUSE, WCVI

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

Captain: VICTOR GRONHOLM
Second Officer: COLIN HILBERT
Fishing Master:
First Officer: ALAN YOUNG
Third Officer: CARSON DUCK

Mission Participants / Agencies: DFO/IOS, UBC, UVC

Scientific Personnel:			
Chief Scientist:		Doug YELLAND	
Name		Name	
MOIRA GALBRAITH	Watch	CHESTER STANLEY	Watch
SCOTT ROSE	4-8	MALE ROBERT	8-12
DAVE CAPLE	4-8		
KANG WANG	12-4		
NINA WENCK	HPIC		
DARREN TUELC	12-4		
LARYSA PARKAMOVA	4-8		
KARINA GIESBRECHT	12-4		
KELLY YOUNG	4-8		
JENNIFER LONG	8-12		
Chief Scientist:		Name	
Second leg of Mission:		Name	
Watch		Watch	
Cabin		Cabin	

Data logging computer: #3
Data acquisition program: SEASAVE
CTD deck unit make: SBE
model: 11+
serial number: 0471

Primary CTD
Make: SBE
model: 9+
serial number: 0506
Primary temperature serial number: 2023
Primary conductivity serial number: 2280
Secondary temperature serial number: 2663
Secondary conductivity serial number: 2424
Transmissometer: METLABS
Model: C-STAR
Cable gain: 3X
s/n: 2228
P, S or NO pump?
Oxygen sensor: SBE 43
Model: 43
s/n: 1119
P, S or NO pump?
PAR sensor: BIO-SPECTRAL
Model: QSP 200 W3
s/n: 4601
Other sensors: METLABS ECO Fluorometer
s/n: 2215
P, S or NO pump?
Other sensors: P, S or NO pump?
Other sensors: P, S or NO pump?
Other sensors: 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:
Fluorometer: Model:
s/n:
Cable gain: Model:
s/n:
Oxygen sensor: Model:
s/n:
PAR sensor: Model:
s/n:
Other sensors: s/n:
Other sensors: s/n:
Other sensors: s/n:
Other sensors: s/n:
Other sensors: s/n:
CTD calibration bottle location (height above CTD in metres):

Rosette Setup:Number of bottles: 24Manufacturer: Ocean TestVolume of bottles (litres): 10L**Winches:**

1. Make: _____ Model: _____ Serial #: _____ Used for: _____
2. Make: _____ Model: _____ Serial #: _____ Used for: _____
3. Make: _____ Model: _____ Serial #: _____ Used for: _____

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

Salinometer:Make: _____ Model: ~~665~~ Serial Number: ~~4~~

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

Oxygen Kit(s):Make: 105 Model: 665 Dosimat Kit Number: #1

Make: _____ Model: _____ Kit Number: _____

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

Thermosalinograph System (SBE21):Program: SEASAVE Version: _____Sampling interval (seconds): 30Fluorometer sensor serial number: WS3S 713P

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* PAR CAL was wrong

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:

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Month		Station		Time		Year		Ship		Cruise ID					
Day	Name	(UTC)	Code	Cast Type	Firing Method	Event Number	Latitude	Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
12	SS13	2130	BE	ROS	US	1	48 35 34.0	123 30.120	225		1-12	12	DT	✓	ECO V-blank 0.0159
		2143	BO				48 35 35	123 30.130		215					PAR #5 were wrong
		2201	EN				48 35.330	123 30.100							
13	LB01	0359	BE	ROS		2	48.40.40	124.59.64	31		13-15	3		✓	PAR Con File Fixed
		0404	EN				48 40.40	124 59.64		27					
13	LB82	1138	BE	ROS		3	48 39.61	125 2.42	56		16-22	7		✓	
		1140	BO				48 39.62	125 2.43		50					
		1151	EN				48 39.62	12 2.45							
13	LB03	1256	BE	ROS		4	48 37.38	125 5.75	95						
		1258	BO				48 37.39	125 5.77		87	23	1		✓	
		1302	EN				48 37.37	125 5.83							
13	LB64	1337	BE	ROS		5	48 35.66	125 8.67	113		24-30	7		✓	
		1339	BO				48 35.65	125 8.69		103					
		1352	EN				48 35.70	125 8.72							
13	E1	1442	BE	ROS		6	48 31.72	125 03.73	115				MR	✓	
		1444	BO				48 31 74	125 03 71							
		1447	EN				48 31.74	125 03.74							

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

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

Transmissometer to be cleaned before each cast, do not use Ammonia products
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes:

Produced by the Water Properties Group, IOS
WaterProperties.ca
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Month			Year			Ship			Cruise ID						
MAY			2012			TULLY			2012-25						
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							
13	E1	14:55	BE	NET		7	48° 31.72	125° 03.81	117	105					
		15:01	Bo				48° 31.69	125° 03.84							
		15:05	EN				48° 31.64	125° 03.81							
13	SBI-D	15:18	BE	MOR		8	48° 30.88	124° 56.11							Recover mooring
		15:22	EN				48° 30.83	124° 52.14							
13	LBOS	17:47	BE	ROS	US	9	48° 34.02	125° 11.96	100		31	1	ML	✓	
		17:50	Bo				48° 34.02	125° 11.95		90					
		17:53	EN				48° 34.01	125° 11.90							
13	LBOS	18:26	BE	ROS	US	10	48° 32.20	125° 15.46	115						
		18:29	Bo				48° 32.20	125° 15.47		103	32-42	11	ML	✓	OUT OF ORO
		18:42	EN				48° 32.23	125° 15.48							
13	C1	19:33	BE	NET		11	48° 28.91	125° 15.13	151						60° wire ang coming up
		19:41	Bo				48° 28.79	125° 15.03		140					
		19:47	EN				48° 28.71	125° 14.85							
13	C1	20:07	BE	NET		12	48° 28.970	125° 14.980	150				DT	✓	
		20:12	Bo				48° 29.020	125° 14.940		141					
		20:16	EN				48° 29.020	125° 14.980							
13	C2	21:00	BE	NET		13	48° 25.350	125° 07.780	122				DT	✓	11.03°C surf.
		21:05	Bo				48° 25.230	125° 07.980		109					

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Month			Year			Ship			Cruise ID						
May			2012			TC117			2012-25						
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							
13	C2	2109	EN	CTD _{pos}		13	48°25.210	125°08.080	122	109			DT	✓	11.03°C surf. ?
	C2	2119	BE	Net		14	48°25.16	125°08.247	146						
		2124	BO				48°25.19	125°08.233		140			DT		450
		2126	EN	pos			48°25.23	125°08.251							
13	C3	2238	BE	CTD _{pos}		15	48°23.450	125°20.650	122		File 0013.hex		DT		11.3°C surf temp
		2241	BO				48°23.440	125°20.666		112			15m		Seapoint = 1.607e+000
		2244	EN				48°23.440	125°20.680							
13	C3	2254	BE	Net		16	48°23.480	125°20.740	122						8° <
		2259	BO				48°23.506	125°20.752		111					
		2304	EN				48°23.545	125°20.716							
13	LBOT	2346	BE	NET		17	48°28.64	125°21.95	156						O-rings on bot 1 replaced (spigot)
		2352	BO				48°28.70	125°21.91		145					
		2359	EN				48°28.72	125°21.79							
14	LBOT	0009	BE	pos _{pos}		18	48°28.64	125°21.95	154		43	1	SC		On max @ 27m
		0012	BO				48°28.64	125°21.95		145					Had to manually fire
			EN				48°28.	125							bot 1 @ 5m
14	B8	0121	BE	NG		19	48°34.445	125°29.991	120				KY		
		0127	BO				48°39.477	125°29.973		110					
		0129	EN				48°34.475	125°29.964							

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Month			Year			Ship			Cruise ID						
MAY			2012			Tully			2012-25						
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	B8	0138	BE	ROS		20	48 34.42	125 29.90	127				SR	✓	
		0140	BO				48 34.43	125 29.91		119	—	8			
		0143	EN				48 34.45	125 29.93							
14	B1	0200	BE	MR		21	48 32.02	125 35.24	80						
		0204	BO				48 32.08	125 35.19		70			Ky		
		0206	BA				48 32.06	125 35.18							
14	B1	0235	BE	ROS		22	48 32.00	125 35.30	81		—	8	SR		
		0236	BO				48 31.99	125 35.30		72					
		0238	EN				48 31.99	125 35.31							
14	L808	0400	BE	CANORA		23	48 25 27	125 28 05	143						A BORED.
14	L808	0410	BE	NET		24	48 25 34	125 28 03	149				MG		
		0414	BO				48 25 39	125 28 58		131					
		0416	EN				48 25 36	125 28 52							
14	L808	0425	BE	ROS	US	25	48 25 39	125 28 56	153					✓	
		0428	BO				48 25.40	125 28.59	160	150	44-52	9	MR		
		0438	EN				48 25 40	125 28 62							
14	L804	0522	BE	ROS	US	26	48 21 93	125 34 60	150					✓	
		0526	BO				48 21 92	125 34 63		140	53-60	8	MR		
		0537	EN				48 21 94	125 34 71							

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Month		Year		Ship		Cruise ID									
MAY		2012		TULLY		2012.25									
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	LB10	0626	BE	ROS	US	27	48° 8.54	125° 41.19	152					✓	
		0629	BO				48° 8.54	125° 41.20		142	61	1	MR		
		0633	EN				48° 18.54	125° 41.22							
14	LB11	0720	BE	ROS		28	48° 15.180	125° 47.590	207		62-72	11	DT	✓	9.373 et 00 22m
		0725	BO				48° 15.140	125° 47.650		200					
		0740	EN				48° 15.140	125° 47.570							
14	LB11	0110	BE	net		29	48° 15.119	125° 47.604	208				DT		
			BO				48° 15.119	125° 47.609		200					≈ 350 < up
			EN				48° 15.121	125° 47.611							
14	LB12	0857	BE	ROS		30	48° 12.890	125° 51.850	510		73-87	15	DT	✓	Surf. temp 11.25°C
		0908	BO				48° 12.870	125° 51.820		501					215m 24 ug/l
		0938	EN				48° 12.860	125° 51.790							didn't Archive?
14	LB13	1025	BE	ROS		31	48° 10.580	125° 56.110	1491				DT		
		1045	BO				48° 10.560	125° 56.120		988					928m bottom
		1109	EN				48° 10.580	125° 56.120							Source wrong
14	LB14	1146	BE	ROS		32	48° 8.417	125° 59.96			88-105				arch
		1208	BO				48° 8.445	125° 59.99							
		1254	EN				48° 8.46	125° 59.97							

LB12 - Don't think "Archive Cast" was toggled for cast - D+ bed
but bottles tripped so maybe wrong con #

Month MAY

Year 2012

Ship Tully

Cruise ID 2012-25

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	LB15	1409	BE	ROS		33	48°04.36	126°08.48	1520		106	1	SR MR	✓	PAR removed
		1437	BD				48°04.41	126°08.65		1555					
		1507	EN				48°04.43	126°08.96							
14	LB16	1558	BE	ROS		34	48°00.46	126°14.95	1806		—	φ	MR	✓	Pr: 1815 D: 1742 S: 1787 At: 96
		1629	Bo				48°00.51	126°17.02		1815					
		1700	EN				48°00.56	126°17.00							
14	LB16	1713	BE	ROS	US	35	48°00.59	126°16.98	1778				MR	✓	PAR ON
		1716	Bo				48°00.57	126°17.02		100	107-110	4			UVIC CAST
		1719	EN				48°00.57	126°17.08							PAR OFF
14	LB16	1741	BE	NET		36	48°00.56	126°12.02	1734			5 wks	DR MY		Multinet
		1905	Bo				48°1.2	126°16.86		1560					
		1937	EN				48°1.5	126°16.81	1594						
14	LC12	2214	BE	ROS		37	48°14.910	126°39.990	2509			φ		✓	Br off
		2249	Bo				48°14.980	126°40.100		2010					
		2321	EN				48°15.04	126°40.06							
14	LC12	2332	BE	ROS		38	48°15.08	126°40.09	2516						UVIC cast with
		2334	Bo				48°15.08	126°40.09		160					PAR
		2336	EN				48°15.05	126°40.11							

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Month MAY Year 2012 Ship Tully Cruise ID 2012-25 Page 7 of 7

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
15	LC12/A2	0000	BO	NET		39	48° 15.09'	126° 40.23'	2516	250			SR		
	LC11	0126	BE	ROS	US	40	48° 18.93'	126° 26.80'	1478				SR		
		0149	BO				48° 19.02'	126° 26.89'					SR	✓	PAR off
		0237	EN				48° 18.98'	126° 27.04'		1468	115-135	21+1			
15	LC10	0338	BE	ROS		41	48° 22.44'	126° 20.11'	1234						
		0401	BO				48° 22.41'	126° 20.15'		1240			MR	✓	
		0422	EN				48° 22.42'	126° 20.17'							
15	LC09/A3	0516	BE	NET		42	48° 25.96'	126° 13.68'	598						
		0526	BO				48° 25.98'	126° 13.79'		250			MR		
		0533	EN				48° 26.02'	126° 13.87'							
15	LC09/A3	0549	BE	ROS	US	43	48° 25.90'	126° 13.74'	612						
		0558	BO				48° 25.93'	126° 13.78'		608	136-151	16	MR	✓	
		0622	EN				48° 25.93'	126° 13.90'							
15	A2	0723	BE	ROS		44	48° 22.630'	126° 03.860'	360						
		0731	BO				48° 22.640'	126° 03.766'		349.8				✓	
		0738	EN				48° 22.510'	126° 03.840'							
		0755		net		45	48° 22.503'	126° 04.001'	360				DK ²		
		0803					48° 22.463'	126° 04.455'							
		0811					48° 22.580'	126° 04.663'		250					150 L

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

body 1

Cont 40, LCI, Nabin 22 closed @ 250 for back water, not S/N, not in the.

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Month				Year				Ship				Cruise ID			
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	A1	0911	BE	ROS		46	48° 29.150	126° 06.320	223		152-162	11	DK ²	✓	✓
		0916	BO				48° 29.150	126° 06.830		192					
		0930	EN				48° 28.970	126° 06.870							
15	A1	0940	BE	Net		47	48° 29.196	126° 07.011	199					✓	✓
			BO							150					✓
		1000	EN				48° 29.387	126° 07.322							✓
15	LC07	0340	BE	ROS		48	48° 32.810	126° 00.620	126			Ø		✓	PAR ON
		0346	BO				48° 32.753	126° 00.640		112					no sounder
		0348	EN				48° 32.760	126° 00.670					DK ²		
15	LC06	1140	BE	ROS		49	48° 36.410	125° 54.06	91		163-169		SK ²	✓	
		1141	BO				48° 36.38	125° 54.06		82					
		1149	EN				48° 36.412	125° 53.98							
15	LC06	1200	BO	NET		50	48° 36.473	125° 54.08	92	80			SK ¹		
		1251	BE	ROS		51	48° 39.95	125° 47.58	64				SK ¹	✓	
		1253	BO				48° 39.96	125° 47.61		54					
		1255	EN				48° 39.96	125° 47.64							
15	LC05	1306	BO	NEA		52	48° 40.02	125° 47.83	64	541			SK ¹		
		1315	EN												

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A' - Bongo - wind +35 - Bongo ted hit on A frame

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							Latitude	Longitude							
15	LC04	1356	BE	ROS	us	53	48 43.40	125 40.88	165		170-179	10	SK	✓	
		1401	BO				48 43.49	125 40.94		157					
		1413	EN				48 43.45	125 41.22							
15	LC03	1500	BE	ROS		54	48 47.07	125 34.59	127	166	—	0	SK	✓	No latitude-vestibled WTEA window (little down-app)
		1508	BO				48 47.09	125 34.52							
		1511	EN				48 47.12	125 34.52							
15	LC02	1540	BE	ROS	us	55	48 48.77	125 31.08	110		180-186	7	MR	✓	
		1543	BO				48 48.78	125 31.10		100					
		1551	EN				48 48.78	125 31.05							
15	LC01	1622	BE	ROS	us	56	48 50.42	125 27.62	96		187-197	11	MR	✓	
		1626	BO				48 50.45	125 27.63		85					
		1634	EN				48 50.52	125 27.68							
15	LG01	2252	BE	ROS		57	49 20.45	126 34.92	54		198-202	5	DK2		
		2253	BO				49 20.51	126 34.96		43					
		2258	EN				49 20.51	126 34.99							
15	LG02	2331	BE	ROS		58	49 18.71	126 37.94	99		203-213	13	SK2	✓	
		2333	BO				49 18.73	126 37.97							
		2343	EN				49 18.75	126 37.90							

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

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

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

Notes:

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LG06 position altered b/o fire range active.

LG06 NatCool are frozen.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Ship TULLY

Cruise ID

2012-25

Month MAY

Year 2012

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	LG07	0610	BE	ROS	-	65	48° 59.36	127° 07.28	1776	1760	-	φ	ME	✓	Pat OFF
		0642	BO				48° 59.38	127° 07.19							30-35 lbs winds
		0713	EN				48° 59.36	127° 07.184							
16	LG08	0801	BE	ROS		66	48° 55.400	127° 13.480	2057	2010	-	φ	DK2	✓	Seapoint 2. 198 eood.
		0841	BO				48° 55.140	127° 13.710							
		0913	EN				48° 55.060	127° 13.850							
16	LG09	1004	BE	ROS		67	48° 51.150	127° 19.390	2053	2011	240-243	4		✓	1.687 Seapoint
		1039	BO				48° 51.090	127° 19.720							230m UVIC+
		1112	EN				48° 50.89	127° 19.89							HPIC 5m+dl MAX
16	LOOP 1	1306	BE	CHLA			48° 58.010	127° 27.880			LOOP 1		RY		
	LOOP 1	1308	BE	SAL			48° 58.170	127° 28.060			LOOP 1				
	LOOP 1	1310	BE	NUT			48° 58.310	127° 28.190			LOOP 1				
	LOOP 2	1659	BE	USW			49° 13.47	127° 45.90		6	LOOP 2				ALNUT CHL HPIC
16	LOOP 3	1907	BE	USW			49° 24.205	127° 53.739			LOOP 3		DT		SAL not chl HPIC
16	LOOP 4	2017	BE	USW			49° 30.041	127° 59.845			LOOP 4		DT		✓ ✓ ✓
16	LOOP 5	2120	BE	USW			49° 35.708	128° 05.436			LOOP 5		DT		SAL not chl

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

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
DNC = Rosette plus CTD

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

Time Code:

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

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MR = Messenger Release Time
RE = Recover Mooring Time

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This page is for any notes or observations

2 bottles tripped @ 30 m. + 5 m as the number of bottles needed was unclear.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month MAY Year 2012 Ship TULLY Cruise ID 2012-25

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	Loop 6	2222		USW		68	49° 40.601	128° 09.879			Loop 6		DT		
16	LBPO8	2355	BE	ROS			49° 48.56	128° 15.91	2664			24	SR		Pause @ 11bb for dinner shift
		0030	BO				49° 48.640	128° 17.040		2012					
		0101	EN				49° 48.78	128° 17.59							
16	LBPO7	0151	BE	ROS	US	69	49° 52.27	128° 11.10	2185		244-267	24	SR	✓	
		0216	BO				49° 52.35	128° 11.22							
		0314	EN				49° 52.38	128° 11.17							
	LBPO7	0324	BE	NET		70	49° 52.33	128° 11.16	2187						Bonga 25th 30° wire angle
		0340	BO				49° 52.37	128° 11.15		250					
		0346	EN				49° 52.41	128° 11.16		275					
16	LBPO6	0439	BE	ROS	-	71	49° 52.10	128° 05.39	798				MR	✓	
		0459	BO				49° 56.10	128° 05.45	?	913	-	0			
		0516	EN				49° 56.10	128° 05.59							
16	LBPO5	0604	BE	ROS	US	72	49° 59.91	127° 59.96	1275			18	MR	✓	
		0625	BO				49° 59.86	127° 59.93		1280	268-285				
		0700	EN				49° 59.88	128° 00.07							
16	LBPO5	0714	BE	NET		73	49° 59.83	128° 00.21	1326						
		0726	BO				49° 59.79	128° 00.34		250					
		0731	EN				49° 59.75	128° 00.43							

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 DN = Down / No stop Time Code: BE = Beginning Time of Cast BO = Bottom Time of Cast EN = End Time of Cast DE = Deployment Time MR = Messenger Release Time RE = Recover Mooring Time Transmissometer to be cleaned before each cast, do not use Ammonia products Notes: Produced by the Water Properties Group, IOS WaterProperties.ca Version: 16 April 2010

Bongo @ LBPO5 - added extra weight (≈ 150 lbs) very windy! Flow meter seems broken

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month			Year			Ship			Cruise ID						
MAY			2012			TULLY			2012 - 25						
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	LBP4	0804	BE	ROS		74	50 01.340	127 58 070	1054		—	0	DK ²	✓	Sounder checky
		0821	BO				50 01.290	127 58.290		1088					1135m Shallow?
		0835	EN				50 01.460	127 58.530							
17	LBP3	0900	BE	ROS		75	50 03.200	127 55.260	168				DK ²	✓	
		0907	BO				50 03.230	127 55 310		155	286-295	10			Phyto
		0918	EN				50 03.300	127 55 300							
17	LBP2	1005	BE	ROS		76	50 03.950	127 54 260	95		—	0	DK ²	✓	
		1007	BO				50 03.960	127 54 240		88.2					
		1009	EN				50 03.960	127 54 220							
17	LBP1	1032	BE	ROS		77	50 04.720	127 52 760	55		—	0	DK ²	✓	
		1033	BO				50 04.715	127 52 769		44	—	0			
		1035	EN				50 04.702	127 52 730							
17	100P7	1233		UWS			50 12.840	128 1.80			LOOP 7		K7		SAL NUT CHCA HPLC
17	CPE2	1711	BE	ROS		78	50 42.48	128 39.78	127				MA	✓	PAR ON
		1714	BO				50 42.44	128 39.82		115	294-299	4			UVIC CAST
		1718	EN				50 43.01	128 39.83							PAR OFF
17	CPE2	1733	BE	NET		79	50 43.03	128 39.78	126						
		1738	BO				50 43.07	128 39.91		115					
		1741	EN				50 43.09	128 39.98							

Cast Type:
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Notes:

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month			Year			Ship			Cruise ID						
MAY			2012			TULY			2002-25						
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	LQ03	1938	BE	ROS		80	50 39 72	129 01 980	1234		300-312	13	DK ²	✓	Gases-UBC
		2001	BO				50 39 740	129 01 950		1228					79. hex
		2027	EN				50 39 730	129 02 030							5m HPLC + chl
17	LQ03	2034	BO	NET		81	50 39 730	129 02 030		250					< 50
17	J122	2208	BE	ROS		82	50 39 732	129 17 330	1339					✓	PAR ON
		2220	BO				50 39 720	129 17 790		1006	313-316	4	DK ²		80. hex
		2240	EN				50 39 740	129 17 900			Sea Buoy = 3.687 et000				Uvic cast
17	J122	2305	BE	NET		83	50 39 81	129 17.35	1386						chl max = 8m
		2316	BO				50 39.84	129 17.13		250					RETRIEVE AT 09M/SEC
		2326	EN				50 39.74	129 16.85							WINCH STUCK AT 280 ~ 3m
															1044? HUMPHRIES → TRIANGLE
17	CS00	0238	BE	ROS	US	84	50 27.59	129 54 92	2170		317-340	24	ST/MR	✓	PAR OFF
		0309	BO				50 27.68	129 54.98		2005					
		0404	EN				50 27 70	129 55.00							
17	CS00	0413	BE	NET		85	50 27.72	129 55.046	2170						UBC 67um ring.
		0418	BO				50 27 73	129 55.034		100					
		0423	EN				50 27 75	129 55 062							
17	CS00	0529	BE	NET		86	50 27 71	129 55.37	2170						Buoy to 250.
		0543	BO				50 27.78	129 55.44		250					
		0548	EN				50 27.78	129 55.598							

Cast Type:
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Notes:

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month		Year		Ship		Cruise ID									
MAR		2012		TULLY		2012-25									
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							
18	CS01	0712	BE	ROS		87	50°34'45	129°41'500	2105		341	1	DK ²	✓	HPLC @ 5m
		0744	BO				50°35'140	129°41'570		2005					
		0815	EN				50°35'120	129°41'560							
18	CS01	0830	BE	Net		88	50°35'151	129°41'482							
		0837	BO				50°35'152	129°41'472		250					
		0843	EN				50°35'147	129°41'485							
18	CS02	1010	BE	ROS		89	50°41'210	129°28'180	1900				DK ²	✓	
		1033	BO				50°41'130	129°28'450		1400	342-358	17			
		1109	EN				50°41'120	129°28'600							
18	CS02	1135	BO	NET		90	50°41'119	129°28'62	1904	250			SR		
18	CS03	1241	BE	ROS		91	50°45'62	129°20'38	243				SR	✓	
		1245	BO				50°45'65	129°20'37		238					
		1249	EN				50°45'66	129°20'39							
18	CS03	1303	BO	NET		92	50°45'76	129°20'46	242	230			SR		
18	CS04	1357	BE	ROS		93	50°49'28	129°12'93	97		359-365	7	SR	✓	Chls stored
		1358	BO				50°49'32	129°12'93		48					
		1406	EN				50°49'44	129°12'88							
18	CS04	1413	BO	NET		94	50°49'60	129°12'84	95						

12hrs before filtering

Chls stored

Chls stored
12hrs before filtering

Cast Type:
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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month			Year		Ship		Cruise ID								
MAY			2012		TULLY		2012-25								
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							
18	TI1-A			MOR	HL	95									
	10008	1731	BE	USW			50 47.25	129 29.01	1042	6					400 CHL NOT HPLC
18	ODAS	1925	BE	ROS		96	50 51.560	129 55 270	2120		366	1	DK ²		HPLC CHL max
		1959	BO				50 51 440	129 55 490		2005					
		2037	EN				50 51 380	129 55 830							
		2044	BE	Net		97	50 51 385	129 56 037	2128				DK ²		
		2056	BO				50 51 345	129 56 174		250					O ² wire
		2101	EN				50 51 300	129 56 265							
18	CS3B	2332	BO	NET		98	50 59.87	129 27.12	218	208			SR		
18	CS3B	2348	BE	ROS		99	50 59.79	129 27.14	218		367-371		SR	✓	PAR ON
		2352	BO				50 59.79	129 27.17							
		2357	EN				50 59.81	129 27.22							
19	CS05	0159	BE	ROS		100	50 56.03	129 0.09	64				SR	✓	PAR Cap may
		0206	BO				50 56.04	129 0.09		55					have been on
		0201	EN				50 56.05	129 0.10							for last cast
		0204	BE	NET		101	50 56.05	129 0.10	64	54			KY/DE		
19	CS1B	0344	BE	ROS	-	102	50 53.04	128 40.09	74				MR	✓	
		0346	BO				50 53 06	128 40.06		64	—	φ			
		0347	EN				50 53 07	128 40.05							

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

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Notes:

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Cast 96 ODAS Chl max 10m / Sea point = 1,289 $\pm$ 100

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month			Year			Ship			Cruise ID						
MAY			2012			TULLY			2012-25						
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							
19	CS1B	0356	BE	NET	—	103	50° 53.14	128° 39.98	77						Bongo.
		0359	BO				50° 53.16	128° 39.93	79	67					
		0400	EN				50° 53.17	128° 39.91							
19	CS06	0507	BE	ROS	US	104	50° 59.97	128° 51.90	65					✓	
		6508	BO				50° 59.99	128° 51.88			372-377	6	MR		
		0515	EN				51° 00.04	128° 51.82							
		0524	BO	NET		105	51° 00.10	128° 51.69	65	56					
19	CS07	0613	BE	ROS	US	106	51° 04.48	128° 43.94	66				MR	✓	BIG # between T-5.1 and T-5.2
		0615	BO				51° 04.48	128° 43.90		56	378-379	2			
		0619	EN				51° 04.49	128° 43.84							
19	CS07	0626	BE	NET		107	51° 04.50	128° 43.86	66				MR		Bongo
		0628	BO				51° 04.51	128° 43.87		56					
		0631	EN				51° 04.51	128° 43.89							
19	CS07	0640	BE	NET		108	51° 04.49	128° 43.92	67						URC pl, h wt
		0642	BO				51° 04.49	128° 43.93		55					
		0644	EN				51° 04.49	128° 43.94							
19	CS08	0734	BE	ROS		109	51° 08.430	128° 36.250	142		—	0	DK ²	✓	
		0736	BO				51° 08.516	128° 36.240		133					
		0739	EN				51° 08.500	128° 36.260							

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Notes:

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DAILY SCIENCE LOG

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Month MAY

Year 2012

Ship TULLY

Cruise ID 2012-25

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							
19	CS08	0747	BE	Net		110	51°08.437	128°36.301	142	135			DK ²		Bongo
		0751	BO				51°08.490	128°36.281							
		0754	EN				51°08.445	128°36.249							
19	CS09	0843	BE	ROS		111	51°12.420	128°28.090	196						
		0846	BO				51°12.550	128°28.060		187	380-390	11		✓	
		0856	EN				51°12.500	128°28.170							
19	CS09	0904	BE	Net		112	51°12.436	128°28.093	195				DK ²		Bongo
		0909	BO				51°12.449	128°28.052		185					≈26°
		0913	EN				51°12.464	128°28.039							
19	CS10	1002	BE	ROS		113	51°16.380	128°20.180	825			0	DK ²	✓	
		1005	BO				51°16.360	128°20.250		71					
		1007	EN				51°16.360	128°20.280							
19	CS10	1014	BE	Net		114	51°16.463	128°20.459	82.8						Bongo
		1017	BO				51°16.411	128°20.475		73					1201
		1019	EN				51°16.432	128°20.495							
19	URC7	1345	BE	ROS		115	51°30.02	127°49.00	160		391-400	10	SR	✓	
		1348	BO				51°30.03	127°49.00		154					
		1359	EN				51°30.02	127°48.98							

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DAILY SCIENCE LOG

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Month		Year		Ship		Cruise ID		Page							
MAY		2012		TULLY		2012-25		17 of							
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							
19	UBC7	1409	Bo	NET		116	51° 30.02	127° 48.92	160	150					UBC CAST
19	Ri 1	1558	BE	ROS	US	117	51° 26.35	127° 38.12	327		401-403	3	MR	✓	
		1605	Bo				51° 26.33	127° 38.15		320					
		1613	EN				51° 26.32	127° 38.18							
19	Ri 1	1620	BE	NET		118	51° 26.32	127° 38.20	328						Bongo to 300 m
		1626	Bo				51° 26.31	127° 38.25		300					
		1630	EN				51° 26.32	127° 38.21							
19	Ri 1	1644	BE	NET		119	51° 26.341	127° 38.154	330				MR SC		MPS
		1654	Bo				51° 26.34	127° 38.14		310					
		1700	EN				51° 26	127° 38							
19	Ri 2	1749	BE	ROS	US	120	51° 31.19	127° 33.61	327		404-410	21	MR	✓	
		1755	Bo				51° 31.21	127° 33.61		320	423-435 455				
		1814	EN				51° 31.19	127° 33.69							
19	Ri 2	1822	BE	NET		121	51° 31.26	127° 33.59	330						Bongo to 300m
		1832	Bo				51° 31.20	127° 33.68		300					
		1836	EN				51° 31.16	127° 33.84							
19	Ri 2	1904	BE	NET		122	51° 31.25	127° 33.71	330			DT SC KF			UBC Ring
			Bo							315		MR			
			EN												

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month			Year			Ship			Cruise ID						
MAY			2012			TULLY			2012-25						
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							
19	Ri 2	1904	BE	NET		123	51 31.25	127 33.71	330						Multinet
		1915	BO				51 31.24	127 33.72		320					
		1921	BN				51 31.25	127 33.71							
19	Ri 3	2005	BE	ROS		124	51 35.910	127 32.060	325		411-413	3	DK ²	✓	
		2010	BO				51 35.870	127 32.000		315					
		2019	EN				51 35.860	127 31.950							
19	Ri 3	2026	BE	Net		125	51 35.949	127 31.853	325						Bongo
		2034	BO				51 35.826	127 31.900		300					
		2041	EN				51 35.769	127 31.891							Multinet
19	Ri 3	2051	BE	Mult		126	51 35.80	127 32.11	325						Net
		2108	BO				51 35.79	127 32.14		320					Stoke On
		2113	EN				51 35.79	127 32.12							
19	Ri 4	2204	BE	ROS		127	51 38.820	127 26.970	300						
		2209	BO				51 38.830	127 26.040		291.9	414-447	15			
		2229	EN				51 38.820	127 27.020							
19	Ri 4	2237	BE	Net		128	51 38.800	127 27.014	300				DK ²		Bongo
		2249	BO				51 38.775	127 27.019		290			K1		
		2258	EN				51 38.73	127 27.11							

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Notes:

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							Latitude	Longitude												
19	R15	2338	B5	RGS		129	51 40.71	127 19.84	198		448-451	4	SR	✓						
		2341	B0				51 40.72	127 19.87												
		2347	EN				51 40.71	127 19.81												
14	R15	2352	B5	NET		130	51 40.67	127 19.84	198				SR							
		2357	B0				51 40.70	127 19.86												
		2400	EN				51 40.71	127 19.87												
20	R16	0041	BE	NET		131	51 40.55	127 17.04	145				CS KY MR SR							
		0047	B0				51 40.53	127 17.06		135										
		0050	EN				51 40.53	127 17.06												
20	R16	0058	BE	ROS		132	51 40.54	127 17.07	145				SR							
		0101	B0				51 40.54	127 17.07		136										
		0110	EN				51 40.53	127 17.03												
20	CRE1	0709	BE	ROS		133	50 59.90	127 50.040	148											
		0712	B0				50 59.980	127 50.020												
		0715	EN				50 59.980	127 50.010		141			DK2	✓						
20	CRE1	0723	BE	Net		134	51 00.624	127 50.089	149											
		0730	B0				51 00.031	127 50.099		135										
		0734	EN				51 00.039	127 50.099							OL					

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month MAY

Year 2012

Ship Tully

Cruise ID 2012-25

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							
21	CPF2	1159	BE	ROS		135	49 28.04	124 30.06	325			✓	SR	✓	
		1205	B6				49 28.03	124 30.06		318					
		1210	EN				49 28.00	124 30.06							
21	CPF2	1218	BE	NET		136	49 28.06	124 30.06	325				KY		Borgo
		1226	R0				49 28.02	124 30.06		315					
		1232	EN				49 28.03	124 30.08							
21	CPF2	1243		NET		137	49 28.01	124 30.07	325	315					MPS
21	CPF1	1510	BE	ROS	-	138	49 22.02	124 04 95	244				ML	✓	
		1515	B0				49 22.03	124 04 94		235		✓			
		1519	EN				49 22.04	124 04 93				✓			
21	CPF1	1527	BE	NET		139	49 22.03	124 04 85	245						MPS
		1538	B0				"	"		235					
		1542	EN				"	"							
	CPF1	1557	B0	NET		140	"	"		235					Borgo
21	GEDI	1740	BE	ROS	-	141	49 15.07	123 44 99	398				✓	ML	all NISKINS
		1747	B0				49 15.06	123 45.02		391		✓			cland on the way
		1754	EN				49 15.04	123 45.06							up the sampling.

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Month

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