

DAILY LOG BOOK

MISSION
NUMBER

2009-11

DATE:

From: Sept 4, 2009 to: SEPT 15, 2009

VESSEL:

J. P. TULLY

PROJECT:

LA PEROUSE, WCVI

INSTITUTE OF OCEAN SCIENCES
OCEAN SCIENCES AND PRODUCTIVITY DIVISION
SIDNEY, BC, CANADA

Captain: Bryan Pennell First Officer: Corrie Cole
Second Officer: Shane Loveless Third Officer: Stephanie Nadeau

Mission Participants / Agencies: DFO / UIC / U3C

Scientific Personnel:

Scientific Personnel:		Party Chief:		Doug Yelland	
Name	Watch	Cabin	Name	Watch	Cabin
Doug Yelland (105)	12-24	H	Marie-Robert (105)	12-24	A
Doug Moore (105)	4-8	E	Wendy Richardson (105)	Days	F
Dave Machas (105)	8-12	G	Mairea Gailbraith (105)	12-4	B
			Desiree Tommasi (UBC)	12-4	S-up
			Karen Kathy Suchy (UUC)	4-8	D
			Kendra Meier (UUC)	8-12	P-up
			Mary Steele (105)	Days	C

Second leg of Mission:

[illegible]

Data logging computer: PAC 02570 HP Compaq

Data acquisition program: Sea save SBE 911+/917 plus

CTD deck unit make: Sea-bird model: 911 plus serial number: 0424

Primary CTD

Make: Scrub model: 9 plus serial number: 09P22654/0585

Primary temperature serial number: 034054

Primary conductivity serial number: 3321

Secondary temperature serial number: 031700

Secondary conductivity serial number: 1766

Transmissometer: 983DR Model: WT Labs s/n: 983DR

Fluorometer: Model	Cable gain: 6 - FCS-P	s/n: 2228	P, S or NO pump?
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Oxygen sensor: SBE Model: 5710 s/n: 053445 P, S or NO pump? NO

PAR sensor: Biospherical Instrument Model: s/n: n/a

Other sensors: _____ s/n: _____ P, S or NO pump? _____

Other sensors: <u>teledyne</u> (altimeter)	s/n: <u>1252</u>	P, S or NO pump?
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Other sensors: _____ s/n: _____

Other sensors: _____ s/n: _____
P, S or NO pump? _____

Secondary CTD

Make: SBE model: 11 plus serial number: 0619
 /CTD SIN 09P20878/0550
 serial

Primary temperature serial number: 03P209S

Primary conductivity serial number: 254

Secondary temperature serial number: 4893

Secondary conductivity serial number:

Transmissometer:

Model:

Fluorometer: Model Seaguard Cable gain: _____

Oxygen sensor: SBC Model: 43

PAR sensor: _____ Model: _____ s/n: _____

Other sensors: SBE 5T s/n: 054567

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: 24
 Manufacturer: Ocean Test Equip., General Oceanics, IOS
 Volume of bottles (litres): _____

Winches:

es:

1. Make:	Hawiboldt Ltd.	model:	SPR7583 ^{2421 SA} serial #:	17027	used for:	CTD / Posette	
2. Make:	Sundann	model:	329	serial #:	1233	used for:	BIONESS
3. Make:	Harrison & Robinson	model:	589	serial #:	515	used for:	Bongo net
4. Make:		model:		serial #:		used for:	
5. Make:		model:		serial #:		used for:	
6. Make:		model:		serial #:		used for:	
7. Make:		model:		serial #:		used for:	

ents:

Salinometer: make: SB model: 21 serial number: 034652
Comments:

Thermosalinograph System:

Program: SB21 SeaCat Version: 7.19
Sampling interval (seconds): 6. seconds
Fluorometer sensor serial number: WS 35 - 713P

Comments:

ADCP Setup:

Computer time zone: _____ UTC
Sampling interval (sec): _____
Bin Length: (2^x): _____
Pulse Length: _____
Buffer (bytes): _____
Gyro Offset: _____
Comments: _____

User Exits: Name: _____ Exit points: _____
Name: _____ Exit points: _____
Name: _____ Exit points: _____

Work File: _____

Comments:

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>September</u>				Year <u>2009</u>				Ship <u>JP TULLY</u>				Cruise ID <u>2009-11</u>			
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
5	LOOP1	0402	BO			00	48°17.60	123°50.64	179						chk & units →
5	LB01	1106	BE	ROS	US	1	48°40.44	124°59.46	35				MR 21	✓	PAR ON
		1107	BO				48°40.44	124°59.48		26	1-3	3	KY		
		1110	EN				48°40	124°59.50							
5	LB02	1143	BE	ROS	US	2	48°38.99	125°02.44	56					✓	} →
		1144	BO				48°38.99	125°02.44		46	4-8	5			
			EN				48	125							
5	LB03	1226	BE	ROS	US	3	48°37.34	125°05.70	93					✓	
		1228	BO				48°37.32	125°05.71		83	—	0			
		1230	EN				48°37.31	125°05.70							
5	LB04	1259	BE	ROS	US	4	48°35.69	125°08.73	111					✓	
		1302	BO				48°35.69	125°08.76		100	9-15	7			
		1311	EN				48°35.71	125°08.70							
5	E1	1444	BE	ROS	US	5	48°31.75	125°03.73	113					✓	LOTS OF UPS+DOWNS
		1446	BO				48°31.74	125°03.78		106	16	1			1 NISE @ 5 CHL + NUT
		1450	EN				48°31.73	125°03.82							
5	E1	1459	BE	NET		6	48°31.76	125°03.82	114						
		1503	BO				48°31.73	125°03.76		112					
		1505	EN				48°31.78	125°03.82							

Cast type: BOT = bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD

USW = sea water loop
MOR = mooring
NET = 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
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28 May 2003
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CHL of Loop filtered 10 hours after sampling

Cast 0002: Error alarm ~ 20 on the way up. Pressure spikes, lost communication with the CTD

DAILY LOG

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Month <u>SEPTEMBER</u>				Year <u>2009</u>			Ship <u>TULLY</u>				Cruise ID <u>2009-11 102</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
5	LBO5	1554	BE	ROS	US	7	48° 34.03	125° 12.02	101				MKD	✓	NISK @ 5 SAL, CHL, NUT
		1556	BO				48° 34.04	125° 12.04		90	17	1			
		1559	EN				48° 34.06	125° 12.06							
5	LBO6	1634	BE	ROS	US	8	48° 32.18	125° 15.54	114					✓	
		1636	BO				48° 32.18	125° 15.50		105	18-25	8	MKD		
		1644	EN				48° 32.19	125° 15.56							
5	C1	1724	BE	ROS	US	9	48° 28.91	125° 15.28	153				MKD	✓	NISK @ 5 SAL, CHL, NUT
		1727	BO				48° 28.94	125° 15.28		145	26	1			
		1731	EN				48° 28.92	125° 15.28							
5	C1	1740	BE	NET		10	48° 28.92	125° 15.26	153						
		1743	BO				48° 28.92	125° 15.24		150					
		1746	EN				48° 28.93	125° 15.23							
5	C2	1833	BE	NET		11	48° 25.37	125° 07.85	135						
		1837	BO				48° 25.37	125° 07.81		130					
		1839	EN				48° 25.37	125° 07.79							
5	C2	1902	BE	ROS		12	48° 25.42	125° 07.81	140				DMD	✓	NISK @ 5 SAL, CHL, NUT
1	1	1903	BO	1			48° 25.42	125° 7.80		130	27	1			
		1906	EN	1			48° 25.43	125° 07.81							

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DAILY LOG

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Month <u>SEPTEMBER</u>				Year <u>2009</u>			Ship <u>TULLY</u>				Cruise ID <u>2009-11</u> <u>P3</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
55	C3	2031	BE	ROS	US	13	48 23.42	125 20.79	123		28	1		✓	
		2037	BO				48 23.42	125 20.79		113					5m sal, chl, Net
		2036	EN				48 23.43	125 20.80	125						
5	C3	2049	BE	NET		14	48 23.36	125 20.90		115					Bongo
		2053	BO				48 23.37	125 20.87							
		2056	EN				48 23.38	125 20.87							
5	LBO7	2146	BE	NET		15	48 28.61	125 22.14	158						Bongo
		2157	BO				48 28.62	125 22.17		148					
		2154	EN				48 28.62	125 22.16							
5	LBO7	2208	BE	ROS		16	48 28.66	125 22.12	158		29	1		✓	5m
		2210	BO				48 28.66	125 22.11		148					
		2212	EN				48 28.68	125 22.10							
5	B8	2319	BE	ROS		17	48 34.54	125 30.02	113		30	1		✓	5m
		2321	BO				48 34.55	125 29.99		103					
		2324	EN				48 34.57	125 29.96							
5	B8	2334	BE	Net		18	48 34.52	125 29.94	111						Bongo
		2337	BO				48 34.54	125 29.92		101					
			EN												

Cast type:
BOT = bottle cast, STD = STD

USW = sea water loop
MOP

bottle firing method:

Time Code

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments	
							Latitude	Longitude								
6	B7	0021	BE	ROS		19	48 32.01	125 35.51	80					✓		
		0023	BO				48 32.02	125 35.51		70	31	1			5m	
		0025	EN				48 32.01	125 35.51								
6	B7	0035	BE	Net		20	48 32.00	125 35.62	80							
		0038	BO				48 32.04	125 35.62		70					Bongo	
		0041	EN				48 32.10	125 35.63								
6	LB8	0155	BE	Net		21	48 2530	125 28.67	140						Bongo	
		0157	BO				48 2530	125 28.66		130						
		0159	EN				48 2530	125 28.67								
6	LB8	0217	BE	ROS		22	48 25.31	125 28.66	140		32-39	8		✓		
		0219	BO				48 25.30	125 28.67		125						
		0231	EN				48 25.30	125 28.68								
6	LB09	0326	BE	ROS		23	48 22.01	125 34.84	149							
		0328	BO				48 22.02	125 34.84		139	40-47	8		✓		
		0340	EN				48 22.04	125 34.85								
6	LB10	0444	BE	ROS		24	48 18.64	125 41.36	151							
		0447	BO				48 18.63	125 41.38		141	48	1		✓	5m	
		0452	EN				48 18.62	125 41.37								
USW = sea water loop bottle firing method: Time Code																

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28 May 2003
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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month				Year				Ship				Cruise ID					
SEPT				2009				TULLY				2009-11				P5	
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments		
							Latitude	Longitude									
6	LB11	0552	BE	ROS		25	48 15.25	125 47.69	205								
		0555	BO				48 15.25	125 47.68		195	49-59	11					
		0609	EN				48 15.25	125 47.68									
6	LB11		DE	Net		26			207								
		0627	BO				48 15.25	125 47.67		207							
			EN														
6	LB12	0713	BE	RPS	US	27	48 12.92	125 51.81	505				MMD	✓	PAR OFF		
		0723	BO				48 12.92	125 51.86		500	60-74	12			1 "Beep" Error @ 500		
		0747	EN				48 12.90	125 51.91							1 @ 400 1 @ 380 →		
6	LB13	0835	BE	ROS	US	28	48 10.64	125 55.99	930				MMD	✓	1 MISK @ 5m sal not chd		
		0852	BO				48 10.61	125 56.03		901	75	1			→		
		0908	EN				48 10.58	125 56.06									
6	LB14	0945	BE	ROS	US	29	48 08.41	126 00.06	1190				MMD	X			
		1007	BO				48 08.50	125 59.91		1182	76-93	18			→		
		1041	EN				48 08.41	125 59.96									
6	LB15	1143	BE	ROS	US	30	48 04.35	126 08.47	1570				MMD		1 MISK @ 5 sal, not chd		
		1212	BO				48 04.31	126 08.34		1560	94	1			→		
		1224	EN				48 04.30	08.45							869		
Cast type: USW = sea water loop bottle firing method: Time Code:																	

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28 May 2003
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p5.5

Noticed @ 300 T: " FFFFFFFF Unsupported modem message : 4B 98 CF From SBC Carousel "

Cast 0028: Funny SAC signal on way down ~ 180 m Prun sensor

Cast 0029: 1 beep @ 520 d, FF error message appeared " : 6F FA CF

Totally lost communication @ 100 below on way up.

Pressure read out on winch still had good pressure, so closed Niskins
but did not wait 30 sec. Wanted to create new file but could not
do any command.

Cast 0030: Error message ~ 800 d F0 BC FF , D7 FF FF ~ bottom?

DAILY LOG

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Month SEPT				Year 2009			Ship TULLY				Cruise ID 2009-11 p 6					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned		Comments
							Latitude	Longitude								
6	LB15	1225	BE	ROS	US	31	48 04.30	126 08.24								UPCAST OF 30
		1229	EN				48 04 26	126 08 19		867	94	1				
6	LB15	12	EN			32	48 04	126 08		to 570						Take 3
6	LB16	1440	BE	ROS	US	33	48 00 05	126 17 00	1855							
		1513	BO				48 00 07	126 17 00		1865	95	1				
		1520	BE			34	48 00 06	126 17 02		1530						Take 2
		1542	EN				48 00 03	126 16 96								NEAR SW SWL NOT CHL
6	LB16	1559	BE	NET		35	48 00 09	126 17 10	1880							
		1607	BO				48 00 22	126 17 15		250						Bongo
		1612	EN				48 00 27	126 17 19								
6	LC12/A	1840	BE	NET		36	48 15 05	126 39 98	2550							
		1844	BO				48 15 07	126 40 00		250						Bongo
		1847	EN				48 15 10	126 39 97								
6	LC12/A4	1905	BE	ROS		37	48 15 06	126 40 07	2505							
		1931	BO				48 15 03	126 40 06		2005	96-97	2				200 15 200m - Desiree
		1959	EN				48 15 01	126 39 98								

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28 May 2003
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cast 33 385 ↓ 1st message 3E FD FF 440
415 FC FF 9F

after cast 32: check connector @ ship-rng, CTD, PAR

After cast 33: Take 2 Niskins off and check pilot connector

Then: unplug computer from network

- FFFFFFFF error & 1 light flash but no crash or alarm

DAILY LOG

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Month SEPT				Year 2009			Ship J P Tully				Cruise ID 2009-11 p7				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
6	LC11	2115	DE	ROS		38	48 18.97	126 26.67	1436						
		2133	BO				48 18.96	126 26.66		1449	98-116	19			13 m off bottom
		2216	EN				48 18.96	126 26.65							
6	LC10	2306	DE	ROS		39	48 22.36	126 20.05	1236						
		2323	BO				48 22.38	126 20.03		1235	117	1			5 m 13 m off
		2342	EN				48 22.37	126 20.04							
7	LC09	0033	BE	RO		40	48 25.78	126 11.45	606						
			BO				"			596	118-140	23			
		0109	EN				48 25.78	126 13.46							
	LC09	0128	BE	NET		41	48 25.76	126 13.43		250					
	LC09	0137	BE	NET		42	48 25.74	126 13.51	612	250					KAREN
		0147	BO				48 25.76	126 13.48							
		0153	EN				48 25.762	126 13.468							
	A2	0247	BE	NET		43	48 22.66	126 03.768	353						Down to 250
		0256	BO				48 22.65	126 03.77		250	11-12	2			
		0301	EN				48 22.65	126 03.78							

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28 May 2003

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— FFFFFF error (no beeps)

— same ↑

— error + beeps

DAILY LOG

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Month <i>SEPT</i>				Year <i>2009</i>				Ship <i>JP Tully</i>				Cruise ID <i>2009-11 p8</i>			
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
7	A2	0316	BE	ROS		44	48 22.67	126 3.76	353						
		0323	BO				48 22.66	126 3.78		350	141-142	2			250 m NA 5m
		0330	EN				48 22.67	126 3.80							
7	LC08/A1	0435	BE	ROS		45	48 29.39	126 7.39							
		0438	BO				48 29.37	126 7.39			143-153	11			
		0454	EN				48 29.32	126 7.46							
7	LC08/A1	0500	BE	Net		46	48 29.30	126 7.47	203	200					200 m bongo
		0517	BO				48 29.30	126 7.47							
		0517	EN				48 29.30	126 7.47							
7	LC07	0609	BE	ROS		47	48 33.09	126 0.48							
		0611	BO				48 33.11	126 0.51			154	1			5 m
		0613	EN				48 33.12	126 0.53							
7	LC06	0705	BE	ROS	US	48	48 36.45	125 54.00	93						
		0708	BO				48 36.43	125 54.01		85	155-161	7			
		0716	EN				48 36.42	125 54.14							
7	LC06	0729	BE	NET		49	48 36.45	125 53.96	94	84					
		0735	BO				48 36.45	125 53.99							
		0739	END				48 36.45	125 54.01							

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28 May 2003
Daily_log_book.doc

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INSTITUTE OF OCEAN SCIENCES

Month <i>SEPT</i>				Year <i>2009</i>			Ship <i>JP TULLY</i>				Cruise ID <i>2009-11 p9</i>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
7	LC05		BE	NET		50			65				MMO		
		0832	Bo				48 39.95	125 47.54		55					<i>Longo</i>
			EN												
7	LC05	0851	BE	ROS	US	51	48 39.97	125 47.55	66		162-163	2	MMO	✓	5m sal. wt. chl
		0853	Bo				48 39.99	125 47.56							+ 1 @ BOTTOM
		0855	EN				48 40.00	125 47.54							
7	LC04	0953	BE	ROS	US	52	48 43.47	125 40.89	167				MMO	✓	
		0956	Bo				48 43.47	125 40.86		158	164-178	15			
		1009	EN				48 43.47	125 40.78							
7	LC04		BE	NET		53									
		1035	Bo				48 43.50	125 40.80							<i>?</i>
		1037	EN				48 43.50	125 40.80							<i>?</i>
7	LC04	1056	BE	NET		54	48 43.49	125 40.73	166						
		1058	Bo				48 43.58	125 40.61		125					
		1107	EN				48 43.80	125 40.31							
7	LC03	1155	BE	ROS		55	48 46.93	125 34.27	135						5m NISK, S, N, C
		1158	Bo				48 46.93	125 34.26		128	179	1			
		1201	EN				48 46.92	125 34.27							

Cast type:

BOT = bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD

USW = sea water loop
MOR = mooring
NET = 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
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MR = messenger release time
RE = recover mooring time

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

28 May 2003
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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month				Year				Ship				Cruise ID					
SEPTEMBER				2009				TULLY				2009-11				p10	
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments		
							Latitude	Longitude									
7	LC02	1233	DE	ROS	US	56	48 48.72	125 30.96	110				MDK	✓			
		1236	BO				48 48.73	125 30.97		100	180-186	7					
		1245	EN				48 48.67	125 30.99									
7	LC01	1324	BE	ROS	US	57/58	48 50.49	125 27.77	95				MDK	✓	} Cast 58 to close last 4 bottles. Lost CTD again.		
		1326	BO				48 50.48	125 27.75		86	187-194	8					
		1335	EN				48 50.48	125 27.74									
7	Barkley fa CFC	2026	BO	NET		59	48 50.68	125 26.34	92	82							
	NLC01																
8	LD02	0622	BE	ROS		60	48 58.37	125 46.99	43				Wyle	✓	PAR ON		
		0623	BO				48 58.37	125 46.99		33	195-199	5			Switch to LAAS		
		0629	EN				48 58.37	125 46.99									
8	LD02		DE	Net		61											
		0641	BO				48 58.39	125 47.04	43	40							
			EN														
8	LD03	0717	BE	ROS		62	48 56.65	125 50.43	48								
		0718	BO				48 56.65	125 50.44		36	—	∅					
		0719	EN				48 56.65	125 50.44									
Cast type: USW = sea water loop bottle firing method: Time Code																	

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 BOT = bottle cast, no CTD
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28 May 2003
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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month				Year				Ship				Cruise ID					
SEPTEMBER				2009				TULLY				2009-11				P11	
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments		
							Latitude	Longitude									
8	LD07A	0809	BE	NET		63	48°53.20	125°56.95	63				MMD	X			
		0811	BO				48°53.20	125°56.93		53							
		0812	EN				48°53.21	125°56.93									
8	LD07A	0824	BE	ROS	US	64	48°53.16	125°56.96	63				MMD	✓			
		0826	BO				48°53.16	125°56.97		55	200-204	5			+3 TO CHECK ON 7		
		0831	EN				48°53.17	125°56.97									
8	LG01	1218	BE	ROS	US	65	49°20.51	126°35.06	55				MOK	✓			
		1220	BO				49°20.51	126°35.05		45	205-209	5					
		1225	EN				49°20.52	126°35.05									
8	LG02	1252	BE	NET		66	49°18.74	126°38.12	100				MOK				
		1255	BO				49°18.73	126°38.12		90							
		1257	EN				49°18.74	126°38.14									
8	LG02	1310	BE	ROS	US	67	49°18.73	126°38.15	100				MOK	✓			
		1313	BO				49°18.73	126°38.14		90	210-216	7					
		1321	EN				49°18.74	126°38.14									
8	LG03	1410	BE	ROS	US	68	49°15.02	126°43.75	120				MOK		} 1 "beep", no error message		
		1413	BO				49°14.99	126°43.77		110	217	1					
		1416	EN				49°14.97	126°43.77									
Cast type: USW = sea water loop bottle firing method: Time Code:																	

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28 May 2003
Daily_log_book.doc

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>SEPTEMBER</u>				Year <u>2009</u>			Ship <u>TULLY</u>				Cruise ID <u>2009-11</u> <u>P 12</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
8	LG04	1457	BE	NET		69	49° 11.33	126° 49.43	147				MDaK	✓	
		1500	BO				49° 11.34	126° 49.43		143					
		1503	EN				49° 11.36	126° 49.45							
8	LG04	1512	BE	ROS	US	70	49° 11.36	126° 49.35	144					✓	Funny O ₂ signal ↓
		1515	BO				49° 11.38	126° 49.35		134	218-226	9			
		1525	EN				49° 11.42	126° 49.32							
8	LG05	1609	BE	ROS	US	71	49° 07.45	126° 55.39	280				MDaK	✓	Pressure spike 130 ↓
		1614	BO				49° 07.47	126° 55.37		268	227	1			
		1620	EN				49° 07.49	126° 55.36							
8	LG06	1704	BE	ROS	US	72	49° 03.50	127° 01.18	950				MDaK	✓	
		1722	BO				49° 03.50	127° 01.18		963	228-244	17			
		1753	EN				49° 03.48	127° 01.18							
8	LG07	1836	BE	NET	US	73	48° 59.38	127° 07.20	1785						
		1842	BO				48° 59.36	127° 07.21		250					
		1846	EN				48° 59.40	127° 07.20							PAR OFF
8	LG07	1859	BE	ROS		74	48° 59.46	127° 7.51	1753		245	1		✓	
		1929	BO				48° 59.44	127° 6.98							
		1955	EN												

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28 May 2003
Daily_log_book.doc

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>SEPTEMBER</u>				Year <u>2009</u>				Ship <u>TULLY</u>				Cruise ID <u>2009-11</u> <u>P 13</u>			
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
8	LG08	2050	BE	ROS		75	48 55.28	127 13.25	2061						
		2121	BO				48 55.27	127 13.25		2005	246	1			
		2156	EN				48 55.29	127 13.22							Paused @ 50m to "unwind" cable (?)
8	LG09	2251	BE	Net		76	48 55.29	127 13.22	2046						
		2259	BO				48 51.23	127 19.37		250					Bongo
			EN												
8	LG09	2316	DE	ROS		77	48 51.22	127 19.45			247-268	22			
		0006	BO				48 51.19	127 19.37							
		0106	EN				48 51.24	127 19.32							
9	LBP8	1443	BE	ROS	US	78	49 48.59	128 16.74	~2110						
		1523	BO				49 48.54	128 16.64		2005	269-270	2			LOST COMM PORT 1 HAD TO REBOOT
		1606	EN				49 48.47	128 16.73							NISK @ 200 Desiree NISK @ 5 S.N.C
9	LBP8	1618	BE	Net		79	49 48.51	128 16.80	~2080						
		1625	BO				49 48.49	128 16.79		250					
		1629	EN				49 48.47	128 16.80							
9	LBP7	1719	BE	NET		80	49 52.38	128 11.22	2190						
		1724	BO				49 52.40	128 11.23		250					
		1728	EN				49 52.41	128 11.23							

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28 May 2003
Daily_log_book.doc

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month SEPTEMBER				Year 2009				Ship TULLY				Cruise ID 2009-11 p14			
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
9	LBP7	1746	BE	ROS		81	49.52.41	128.11.29	2176				M. D. K.	✓	
		1827	BO				49.52.39	128.11.26		2005	271-292	22			
		1926	EN				49.52.36	128.11.16							
9	LBP6	2018	BE	ROS		82	49.56.18	128.5.49	820					✓	
		2039	BO				49.56.20	128.5.52		825	293	1			5 m Niskin
		2057	EN				49.56.20	128.5.55							
9	LBP5		BE	NET		83									
		2150	BO				49.58.0	128.0.0							
			EN												
9	LBP5	2219	BE	ROS		84	50.0.06	128.0.04	1300		294-311	19		✓	
		2239	BO				50.0.07	128.0.02		1282					
		2312	EN				50.0.04	127.59.97							
10	LBP4	0002	BE	ROS		85	50.1.44	127.58.08	1050						
		0021	BO				50.1.43	127.58.08		1061	312	1			5 m Niskin
		0033	EN				50.1.42	127.58.06							
10	LBP3	0100	BE	Net		86	50.3.16	127.55.36	170						Bongo
		0106	BO				50.3.17	127.55.37							
		0110	EN				50.3.17	127.55.39							

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28 May 2003
 Daily_log_book.doc

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>SEPTEMBER</i>				Year <i>2009</i>			Ship <i>TULLY</i>				Cruise ID <i>2009-41</i> <i>p15</i>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
<i>10</i>	<i>LBP3</i>	<i>0123</i>	<i>BE</i>	<i>ROS</i>		<i>87</i>	<i>50 3.20</i>	<i>127 55.37</i>	<i>170</i>		<i>313-322</i>	<i>10</i>			
		<i>0128</i>	<i>BO</i>				<i>50 3.21</i>	<i>127 55.37</i>		<i>160</i>					
		<i>0141</i>	<i>EN</i>				<i>50 3.23</i>	<i>127 55.36</i>							
<i>10</i>	<i>LBP2</i>		<i>BE</i>	<i>NET</i>		<i>88</i>									
		<i>0207</i>	<i>BO</i>				<i>50 3.96</i>	<i>127 54.22</i>							
			<i>EN</i>												<i>bongo</i>
<i>10</i>	<i>LBP2</i>	<i>0220</i>	<i>BE</i>	<i>ROS</i>		<i>89</i>	<i>50 4.02</i>	<i>127 54.17</i>	<i>97</i>						
		<i>0222</i>	<i>BO</i>				<i>50 4.03</i>	<i>127 54.18</i>		<i>88</i>	<i>323-324</i>	<i>2</i>			<i>5m + bottom for Pen</i>
		<i>0226</i>	<i>EN</i>				<i>50 4.03</i>	<i>127 54.18</i>							
<i>10</i>	<i>LBP1</i>	<i>0246</i>	<i>BE</i>	<i>ROS</i>		<i>90</i>	<i>50 4.76</i>	<i>127 52.75</i>	<i>55</i>						
		<i>0248</i>	<i>BO</i>				<i>50 4.75</i>	<i>127 52.72</i>		<i>43</i>	<i>325</i>	<i>1</i>			<i>5m Niskin</i>
		<i>0250</i>	<i>EN</i>				<i>50 4.74</i>	<i>127 52.72</i>							
<i>10</i>	<i>CPE2</i>	<i>0733</i>	<i>BE</i>	<i>NET</i>		<i>91</i>	<i>50 43.07</i>	<i>128 39.77</i>	<i>124</i>						
		<i>0735</i>	<i>BO</i>				<i>50 43.07</i>	<i>128 39.74</i>		<i>114</i>					
		<i>0738</i>	<i>EN</i>				<i>50 43.08</i>	<i>128 39.71</i>							
<i>10</i>	<i>CPE2</i>	<i>0754</i>	<i>BE</i>	<i>ROS</i>	<i>US</i>	<i>92</i>	<i>50 43.10</i>	<i>128 39.68</i>	<i>125</i>				<i>MMO</i>	<i>✓</i>	
		<i>0757</i>	<i>BO</i>				<i>50 43.10</i>	<i>128 39.64</i>		<i>114</i>	<i>326</i>	<i>1</i>			
		<i>0801</i>	<i>EN</i>				<i>50 43.12</i>	<i>128 39.58</i>							

Cast type:
ROS = bottle cast

USW = sea water loop
MMO

bottle firing method:

Time Code

Cast type:
 BOT = bottle cast, no CTD
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Transmissometer to be cleaned for each cast, do not use Ammonia products

28 May 2003
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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month SEPTEMBER				Year 2009			Ship TULLY				Cruise ID 2009-11 P 16				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
10	LQ03	0955	BE	NET		93	50°39.72	129°01.98	~1240				MMO		
		1000	BO				50°39.74	129°01.91		250					
		1004	EN				50°39.74	129°01.90							
10	LQ03	1019	BE	ROS	US	94	50°39.72	129°01.84	~1200?						
		1045	BO				50°39.71	129°01.95		1210	327	1			no altimeter, chickened out.
		1112	EN				50°39.73	129°02.01							5m NISK sub, not ch
10	JI22	1225	BE	NET		95	50°39.88	129°17.43	~1420						
		1228	BO				50°39.89	129°17.39		250					
		1233	EN				50°39.88	129°17.38							
10	JI22	1243	BE	ROS	US	96	50°39.88	129°17.40	~1400						
		1313	BO				50°39.83	129°17.40		1433	328	1			5m NISK sub, ch, not
		1339	EN				50°39.80	129°17.42							NO BOTTOM, NO ALT
															COMP FREEZES @ ENA OF CAST
10	CS01	1538	BE	NET		97	50°34.90	129°41.50	2140						
		1542	BO				50°34.91	129°41.52		250					
		1547	EN				50°34.93	129°41.49							BONGO FOR KARYN
10	CS01	1554	BE	NET		98	50°34.92	129°41.49	2140						
		1559	BO				50°39.93	129°41.45		250					
		1603	EN				50°39.94	129°41.53							

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28 May 2003
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② LQ03 TSG has 49 42.869 , 128 18 049 hr position

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>SEPTEMBER</u>				Year <u>2009</u>			Ship <u>TULLY</u>				Cruise ID <u>2009-11</u> <u>P17</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
10	CS01	1616	BE	ROS	US	99	50 34.91	129 41.55	2140						
		1636	BO				50 34.91	129 41.44		1005	329-335	7			
		1703	EN				50 34.89	129 41.47							→
10	CS02		BE	NET		100			1936						
		1826	BO				50 41.36	129 28.11		250					
			EN												
10	CS02	1843	BE	ROS	US	101	50 41.29	129 28.05							
		1908	BO				50 41.32	129 28.10			336-353	18			✓
		1939	EN				50 41.37	129 28.09							
10	CS03		BE	NET		102			230						
		2050	BO				50 45.68	129 20.08		230					Bongo
			EN												
10	CS03	2112	BE	ROS		103	50 45.68	129 20.02	236						
		2118	BO				50 45.73	129 19.97		225	354	1			PAR on
		2125	EN				50 45.79	129 19.89							1 Niskin @ 5m
															paused @ 200T

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28 May 2003
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at the end of last cast, computer froze so I had to reboot.

at the beginning of this cast the comm Port 1 wasn't working

Related to reboot? This is (at least) the 2nd time after a reboot.

Signal less smooth, problems with LARS?

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month		SEPTEMBER		Year		2009		Ship		TULLY		INSTITUTE OF OCEAN SCIENCES				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments	
							Latitude	Longitude								
10	CS04		BE	NET		104										
10	CS04	2235	BE	ROS		105	50 49.29	129 12.83	100		355-361	7			Bongo	
		2239	BO				50 49.30	129 12.81		90						
		2250	EN				50 49.34	129 12.76								
11	CS3B	0029	BE	NET		106	51 0.02	129 26.90	220						Bongo	
		0034	BO				50 59.99	129 26.86		210					0° > !	
		0042	EN				51 0.00	129 26.87								
11	CS3B	0054	BE	ROS		107	51 0.00	129 26.71	220							
		0101	BO				50 59.98	129 26.72		208	362	1		✓	5m Niskin	
		0111	EN				50 59.67	129 26.75								
11	CS05	0313	BE	NET		108	50 56.04	129 0.02	64						bongo	
		0316	BO				50 56.02	129 0.04		60						
		0318	EN				50 56.02	129 0.07								
11	CS05	0329	BE	ROS		109	50 56.01	129 0.01	64							
		0331	BO				50 55.99	129 0.00		54	363	1		✓	5m Niskin	
		0334	EN				50 55.96	129 0.03								
11	CS1B	0507	BE	NET		110	50 53.00	128 40.13	71						bongo	
		0510	BO				50 53.01	128 40.12		68						
		0512	EN				50 53.03	128 40.13								

Last type:
BOT = bottle cast, no CTD

USW = sea water loop
MOR = mooring

bottle firing method:
LIS = up / stop

Time Code

Cast type:

BOT = bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD

USW = sea water loop
MOR = mooring
NET = 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

DE = deployment time
MR = messenger release time
RE = recover mooring time

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

28 May 2003
Daily_log_book.doc

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month				Year				Ship				Cruise ID				INSTITUTE OF OCEAN SCIENCES	
SEPTEMBER				2004				TULLY				2004-11				P19	
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments		
							Latitude	Longitude									
11	CS1B	0523	BE	ROS		111	50 53.06	128 40.03	72								
		0526	BO				50 53.04	128 40.03		62	364	1					
		0530	EN				50 53.02	128 40.03								1 Niskin @ 5m	
11	CS06	0640	BE	Net		112	50 0.01	128 51.85	62								
		0642	BO				50 0.01	128 51.83		60						Bongo to 60m	
		0645	EN				50 0.03	128 51.82									
11	CS06	0657	BE	ROS		113	51 00.04	128 51.79	63								
		0659	BO				51 00.05	128 51.75		50	365-369	5		MMD			
		0705	EN				51 00.03	128 51.68									
11	CS07	0756	BE	NET		114	51 04.54	128 43.95	63								
		0758	BO				51 04.55	128 43.92		50						Bongo	
		0759	EN				51 04.56	128 43.90									
11	CS07	0806	BE	NET		115	51 04.54	128 43.85	66								
		0809	BO				51 04.55	128 43.86		50						Bongo 50m KARYN	
		0810	EN				51 04.56	128 43.87									
11	CS07	0844	BE	ROS		116	51 04.51	128 43.99	64		370-374	5				KARYN'S ROSETTE	
		0847	BO				51 04.51	128 43.96		56						5m NISKIN →	
		0853	EN				51 04.52	128 43.88									

Cast type:
BOT = bottle cast, no CTD

USW = sea water loop
MOR = mooring

bottle firing method:
LIS = up / 300

Time Code

Cast type:
 BOT = bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD

USW = sea water loop
 MOR = mooring
 NET = 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

DE = deployment time
 MR = messenger release time
 RE = recover mooring time

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

28 May 2003
 Daily_log_book.doc

Tightened the bolts holding the break plate to the head of the LARS.

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month				Year			Ship				Cruise ID					
SEPTEMBER				2009			TULLY				2009-11					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments	
							Latitude	Longitude								
11	CS08	0941	BE	NET		117	51° 08.54	128° 35.91	144						BONGO	
		0943	BO				51° 08.55	128° 35.87		134						
		0945	EN				51° 08.56	128° 35.84								
11	CS08	1107	BE	ROS		118	51° 08.46	128° 35.82	142				MMD	✓	→	
		1111	BO				51° 08.46	128° 35.82		138	—	∅				
		1114	EN				51° 08.47	128° 35.80								
11	CS09	1159	BE	NET		119	51° 12.53	128° 27.98	195				MDOK		BONGO	
		1203	BO				51° 12.53	128° 27.96		180						
		1206	EN				51° 12.54	128° 27.94								
11	CS09	1219	BE	ROS	US	120	51° 12.44	128° 27.91	195				MDOK	✓		
		1224	BO				51° 12.43	128° 27.86		185	375-385	11				
		1237	EN				51° 12.42	128° 27.81								
11	CS10	1338	BE	NET		121	51° 16.48	128° 19.94	80						BONGO	
		1340	BO				51° 16.47	128° 19.94		70						
		1341	EN				51° 16.47	128° 19.94								
11	CS10	1351	BE	ROS		122	51° 16.45	128° 19.96	80				MDOK	✓		
		1353	BO				51° 16.46	128° 19.97		73	—	∅				
		1355	EN				51° 16.46	128° 19.98								

Cast type:

USW = sea water loop

bottle firing method:

Time Code

Cast type:
 BOT = bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD

USW = sea water loop
 MOR = mooring
 NET = 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

DE = deployment time
 MR = messenger release time
 RE = recover mooring time

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

28 May 2003
 Daily_log_book.doc

"Termination" part of the cable got stuck between the shive and the head.

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month SEPTEMBRE				Year 2009			Ship TULLY				Cruise ID 2009-11 p21				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
11	M6	1726	BE	ROS	US	123	51 42.53	128 07.52	239					✓	5m Nisk Sal Chl not
		1732	Bo				51 42.56	128 07.54	251?	245	386	1	MOAK		
		1738	EN				51 42.57	128 07.49							
11	M5	1807	BE	ROS	US	124	51 43.45	128 03.64	340					✓	
		1814	Bo				51 43.46	128 03.61		335	387	1	MOAK		
		1822	EN				51 43.48	128 03.60							
11	M4	1848	BE	ROS	US	125	51 44.65	128 0.19	437					✓	
		1900	Bo				51 44.63	128 0.20			388-401	14			
		1925	EN				51 44.62	128 0.22							
11	M3	2021	BE	ROS		126	51 46.29	127 54.53	327					✓	
		2029	Bo				51 46.29	127 54.57		317	402-415	14			
		2051	EN				51 46.32	127 54.67							
11	M2	2129	BE	ROS		127	51 46.47	127 53.23	175					✓	
		2126	Bo				51 46.46	127 53.19		168	416-425	10			
		2140	EN				51 46.48	127 53.25							
	UBC7	2337	BE	NET		128	51 30.00	127 49.00	161						
		2342	Bo				51 29.98	127 49.14		150					
		2349	EN				51 29.99	127 49.29							

Cast type: USW = sea water loop, bottle firing method: Time Code:

Cast type:

BOT = bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD

USW = sea water loop
MOR = mooring
NET = 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

DE = deployment time
MR = messenger release time
RE = recover mooring time

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

28 May 2003
Daily_log_book.doc

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>SEPTEMBER</u>				Year <u>2009</u>			Ship <u>TULLY</u>				Cruise ID <u>2009-11</u> <u>P22</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
11	UBC7	2359	BE	ROS	US	129	51 30.03	127 49.09	160						
12		0003	BO				51 30.04	127 49.10		150	426-435	10			
		0016	EN				51 30.07	127 49.10							
12	Ri1	0134	BE	NET		130	51 26.45	127 38.31	313						
		0137	BO				51 26.46	127 38.32		250					bongo
		0143	EN				51 26.47	127 38.32							
12	Ri1	0154	BE	ROS	US	131	51 26.40	127 38.33	318						
		0202	BO				51 26.30	127 38.30			436	1			
		0212	EN				51 26.34	127 38.25							5m Niskin
12	Ri2	0307	BE	Net		132	51 31.23	127 33.55	330						
		0313	BO				51 31.24	127 33.50		320					Bongo
		0320	EN				51 31.26	127 33.46							
12	Ri2	0330	BE	ROS	US	133	51 31.27	127 33.46	331						
		0338	BO				51 31.28	127 33.49		324	437-447	1X			5+7 no trap
		0356	EN				51 31.27	127 33.52							Rosette faircel
12	Ri2	0403	BE	NET		134	51 31.27	127 33.54							(2 bottles didn't close)
		0411	BO				51 31.28	127 33.57	250	250					Bongo for Karyn
		0418	EN				51 31.29	127 33.63							

Cast type:

BOT = bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD

USW = sea water loop
MOR = mooring
NET = 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

DE = deployment time
MR = messenger release time
RE = recover mooring time

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

28 May 2003
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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month SEPTEMBER				Year 2009			Ship TULLY				Cruise ID 2009-11 023				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
12	Ri 2	0424	BE	ROS	US	135	51 31.25	127 33.58	331		437-451	15		✓	17 trips, 2 not sampled
		0432	BO				51 31.22	127 33.63		322					
		0450	EN				51 31.15	127 33.82							
12	Ri 3	0534	BE	Net		136	51 35.85	127 32.10	324						
		0542	BO				51 35.85	127 32.09		315					
			EN												
12	Ri 3	0620	BE	ROS	US	137	51 35.89	127 32.10	324						
		0629	BO				51 35.90	127 32.07		319	452	1			5m Niskin
		0638	EN				51 35.92	127 32.09							
12	Ri 4	0724	BE	NET		138	51 38.92	127 26.82	298						
		0729	BO				51 38.94	127 26.87		288					
		0735	EN				51 38.96	127 26.89							
12	Ri 4	0749	BE	ROS	US	139	51 38.89	127 26.73	300				MMD	✓	5# 452 used twice
		0755	BO				51 38.88	127 26.71		290	452-464	13			
		0810	EN				51 38.84	127 26.69							
12	Ri 5	0850	BE	NET		140	51 40.70	127 19.93	200						
		0853	BO				51 40.70	127 19.93		190					
		0856	EN				51 40.69	127 19.91							

Cast type:

BOT = bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD

USW = sea water loop

MOR = mooring
 NET = 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
 DE = deployment time
 MR = messenger release time
 RE = recover mooring time

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

28 May 2003

Daily_log_book.doc

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>SEPTEMBER</i>				Year <i>2009</i>			Ship <i>TULLY</i>				Cruise ID <i>2009-11</i> <i>P 24</i>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
12	Ri 5	0909	BE	ROS	US	141	51° 40.70	127° 19.89	200					✓	
		0913	Bo				51° 40.70	127° 19.90		190	465	1	MMD		
		0918	EN				51° 40.71	127° 19.90							
12	Ri 6	0939	BE	NET		142	51° 40.49	127° 17.01	142	130					
		0942	Bo				51° 40.49	127° 17.01							
		0944	EN				51° 40.47	127° 17.00							
12	Ri 6	0956	BE	ROS	US	143	51° 40.50	127° 17.02	143				MMD	✓	
		1000	Bo				51° 40.51	127° 17.01		135	466	1			
		1003	EN				51° 40.51	127° 17.00							
12	SS7	1315	BE	ROS	US	144	51° 24.70	127° 47.65	125				MD ₀	✓	54467 to 473 not used
		1319	Bo				51° 24.69	127° 47.65		115	474-481	8			
		1330	EN				51° 24.69	127° 47.67							
12	SS6	1449	BE	ROS	US	145	51° 19.99	128° 00.00	180						
		1454	Bo				51° 19.99	128° 00.00		170	482	1			
		1459	EN				51° 19.99	127° 59.99							
12	SS7	1718	BE	ROS		146	51° 28.01	128° 30.02	200					✓	
		1723	Bo				51° 28.02	128° 29.96		192	—	Ø			
		1727	EN				51° 28.06	128° 29.95							

Cast type:
 BOT = bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD

USW = sea water loop
 MOR = mooring
 NET = 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

DE = deployment time
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 RE = recover mooring time

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

28 May 2003
 Daily_log_book.doc

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>SEPTEMBER</i>				Year <i>2009</i>				Ship <i>TULLY</i>				Cruise ID <i>2009-11 P 25</i>			
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
12	CPE1	2137	BO	NET		147	50 59.97	127 50.01	145	140					Bongo
12	CPE1	2150	BE	ROS		148	51 0.00	127 50.06	148					✓	
		2154	BO				50 59.99	127 50.05		139	-	Ø			
		2156	EN				50 59.98	127 50.06							
14	GEO1	0158	BE	ROS		149	49 13.96	123 44.96	393					✓	
		0207	BO				49 13.96	123 44.95		383	-	Ø			
		0214	EN				49 13.96	123 44.96							
14	GEO1	0230	BE	NET		150	49 13.99	123 44.99	396						Bongo (Shallow)
		0233	BO				49 13.98	123 44.99		100m					
		0236	EN				49 13.98	123 44.98							
14	GEO1	0240	BE	Net		151	49 13.99	123 44.98	399						Bongo (Deep)
		0249	BO				49 13.98	123 44.97		390					
		0255	EN				49 14.00	123 44.97							
14	GEO1		BE	Net		152	49 15.47	123 45.16	400						BIONESS
			EN												CRAP! Bad splice

Cast type:
 BOT = bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD

USW = sea water loop
 MOR = mooring
 NET = 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

DE = deployment time
 MR = messenger release time
 RE = recover mooring time

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

28 May 2003
 Daily_log_book.doc