

DAILY LOG BOOK

MISSION
NUMBER

2006-15

DATE:

From: 20 SEPTEMBER 2006 to: 9 OCTOBER 2006

VESSEL:

JOHN P TULLY

PROJECT:

LINE P

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

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month SEPTEMBER				Year 2006			Ship JOHN P RULLY				Cruise ID 2006-15 p.1 ✓				
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
20	SIO3	2058	BE	ROS		1	48° 35.61	123° 29.99	225				DY/MR	✓	CAST FOR WBC OSDdata.com
		2103	BO				48° 35.59	123° 30.02		200	1-24	24			
		2121	EN				48° 35.60	123° 29.96							
21	JF1	0345	BE	USW	-	-	48° 16.01	123° 30.03	159		-	-	DY/MR		SAL, NUT, CHL
21	JF2	0527	BE	USW	-	-	48° 18.36	123° 59.59	182		-	-	DY/MR		SAL NUT CHL
21	JF3	0736	BE	USW			48° 26.79	123° 30.02					H.M.		SAL/NUT/CHL
21	JF4	0956	BE	USW			48° 32.15	124° 59.72					H.M.		SAL/NUT/CHL
21	P1	1251	BE	USW			48° 34.45	125° 30.05		LOOA	LOOP				SAL/NUT/CHL WIND ~ 35-40 kts
21	P2	1541	BE	ROS		2	48° 36.08	126° 00.04	115				DY/MR	✓	DIG SWELL
		1545	BO				48° 36.09	126° 00.04		105	26-33	8			
		1555	EN				48° 36.09	126° 00.04							
21	P2	1603	BE	NET		3	48° 36.01	126° 00.10	117						
		1611	BO				48° 36.08	126° 00.15		100					
		1614	EN				48° 36.11	126° 00.17							
															PAR SENSOR ON
21	P3	1815	BE	ROS		4	48° 37.50	126° 19.85	809				DY/MR	✓	
		1829	BO				48° 37.49	126° 19.90	815	800	34	1			Alt: ~17
		1842	EN				48° 37.49	126° 19.95							

Cast type:

BOT = bottle cast, no CTD
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Started TSG after Samish inlet cast, 15h24 local time 20/9/2006
2006-25-0002 con

PI cancelled because of weather. Serial number 25 not used.
PI in loop sample.

DAILY LOG

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INSTITUTE OF OCEAN SCIENCES

Month SEPTEMBER				Year 2006			Ship JOHN P TULLY				Cruise ID 2006-15 p. 2 ✓				
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							
21	P4	2047	BE	ROS		5	48° 38.97	126° 39.87	1323				DY/MR	✓	SHALLOW PAR DHS CAST.
		2053	BO				48° 38.95	126° 39.88		300	35-54	20			
		2110	EN				48° 39.01	126° 39.84							
21	P4	2130	BE	PUMP		6	48° 39.	126° 39.	1307						Pumping for TM in chains
		2206	EN				48° 39.10	126° 39.86		25	—	—			
21	P4	2226	BE	ROS		7	48° 39.09	126° 39.82	1304				DY/MR	✓	PAR SENSOR OFF
		2251	BO				48° 39.16	126° 39.79		1300	55-66	12			UBC DEEP CAST.
		2314	EN				48° 39.18	126° 39.60							
21	P4	2322	BE	BONGO		8	48° 39.36	126° 37.43	1300	250					BONGO'S
		2345	EN				48° 39.37	126° 39.42							
22	P4	0043	BE	UBC INSITU PUMPS		9	48° 39.27	126° 39.87							UBC INSITU PUMPS
		0312	EN				48° 39.30	126° 41.80							EN: last pump on board.
22	P5	0812	BE	ROS		10	48° 41.48	127° 09.94	2092		67	1	HY/MR		1 BOT 25m - SAL/CHL/NUTS
		0841	BO				48° 41.50	127° 09.99		2005					
		0910	EN				48° 41.49	127° 09.99							

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P4 Deep IOS cast cancelled, too rough.

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Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>SEPTEMBER</i>				Year <i>2006</i>			Ship <i>JOHN A TULLY</i>				Cruise ID <i>2006-15 p3</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
22	P6	11:47	BE	ROS	VS	11	48° 44.53	127° 39.98	2545		68	1	H.M./H.J.	✓	BOT@ 5m. SAL/CHL/NUIS
		12:17	BO				49° 44.58	127° 39.90		2005			A.S.		
		12:46	EN				49° 44.60	127° 39.97							
22	P7	15:12	BE	ROS		12	48° 46.61	128° 09.89	2505				DY/MR	✓	
		15:49	BO				48° 46.61	128° 09.91		2005	69	1			
		16:11	EN				48° 46.55	128° 09.95							
22	P8	18:33	BE	ROS		13	48° 48.99	128° 40.01	2519	2005			DY/MR	✓	+ Loop Taken while @ 5m.
		19:07	BO				48° 48.99	128° 40.01			70-89	20			
		19:47	EN				48° 48.99	128° 40.07							
22	P8	19:55	BE	GO FLD		14	48° 49.	128° 40.1	2519	20					3 BOTTLES/CLEANING TO 20 m for SORT
		20:20	EN				48° 49.01	128° 40.20							
22	P8	20:26	BE	NET		15	48° 49.02	128° 40.19	2519						
		20:32	BO				48° 49.04	128° 40.19		250					
		20:37	EN				48° 49.06	128° 40.19							
22	P9	23:14	BE	ROS		16	48° 51.36	129° 09.97	2344		90	1	H.M./H.J.	✓	BOT@ 5m. SAL/CHL/NUIS
		23:36	BO				48° 51.40	129° 10.04		2005					
		23:56	EN				48° 51.43	129° 10.07							

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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							
23	P10	0216	BE	ROS		17	48°53.55	129°39.84	2643		91	1	H.M./C.R.	✓	BOT@5m. SAL/CHL/NUTS
		0250	BO				48°53.60	129°39.98		2005					
		0309	EN				48°53.64	129°40.02							
23	P11	0535	BE	ROS		18	48°55.98	130°09.95	2752				DY/ML	✓	* SAMPLES →
		0601	BO				48°56.01	130°09.98		2005	92	1			LEFT IN LAB FOR 3 HRS
		0621	EN				48°56.02	130°10.04							NUTS & CHL NOT REFRIGERATED
23	P12	0837	BE	ROS	VS	19	48°58.17	130°40.03	3227		93-115	23	H.M./M.S.	✓	
		0925	BO				48°58.21	130°39.98		3270					15m FROM BOTTOM
		1029	EN				48°58.23	130°40.06							
23	P12	1130	BE	PUMP		20	48°58.23	130°40.00		40					10, 25 + 40m
		1240					48°58.20	130°40.00							
23	P12	1256	BE	NET		21	48°58.19	130°40.01	3227	250			H.M./S.J.		BONGO
23	P12	1330		GOFLDS		22	48°58.17	130°40.06		100					75 + 100m ONLY
		1345													
23	P12	1356	BE	ROS	V.S	23	48°58.21	130°40.08	3226		116-134	19	H.M.		AMS CAST
		1359	BO				48°58.25	130°40.04		200					
		1417	EN				48°58.43	130°39.98							

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Pressure repeater not working. Batteries??

- opened up Pressure Remote Display - significant water inside (condensation?)
 - cleaned boards - some green corrosion on IC
 - flushed with Nitrogen on closure (no oven to dry silica gel)
- appears to still work

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							Latitude	Longitude							
23	P13	1842	BE	ROS		24	49°02.62	131°39.92	3018				DY/MR	✓	Remote P display working
		1906	BO				49°02.61	131°39.96		2005	135	1			Oxygen sensor goes weird @ ~350 way up.
		1926	EN				49°02.59	131°40.04							
23	P14	2339	BE	ROS		25	49°07.44	132°39.93	3301						Bot@5m - Sal/chl/nut
24		0003	BO				49°07.47	132°39.97		2005	136	1	H.M/H.J.	✓	300-185 - O ₂ sensor spikes
		0024	EN				49°07.47	132°40.01							
24	P15	0439	BE	ROS		26	49°11.94	133°39.98	3396				DY/MR	✓	O ₂ spike 450→425 270→250
		0504	BO				49°12.03	133°40.00		2005	137	1			+ LOOP sal, chl, nut.
		0524					49°12.02	133°40.02							
24	P16	0949	BE	ROS	US	27	49°16.98	134°40.00	3620				H.M/S.J.	✓	DEEP 105 CAST
		1046	BO				49°17.00	134°40.01		3697	138-161	24			
		1156	EN				49°17.03	134°39.98							
24	P16	1250	BE	GOFLD		28	49°16.95	134°39.92	3620	120					75-1100 XNISK
		1306	EN				49°16.89	134°39.81							
24	P16	1317	BE	ROS	US	29	49°16.98	134°39.94	3697						
		1404	BO				49°16.92	134°40.09		3520	162-185	24	H.M/5	✓	MO's DEEP ROSSETTE
		1500	EN				49°16.94	134°40.07					OTHERS		

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							Latitude	Longitude							
24	P16	1517	BE	NET		30	49° 16.94	134° 40.00	3618				DY MR ICS		BONITO
		1527	BO				49° 16.86	134° 40.02		250					thawed in iso bath
		1534	EN				49° 16.82	134° 40.04							
24	P16	1625	BE	PUMPS		31	49° 17.00	134° 39.90	3618						UBC IN-SITU PUMPS
		1723	BO				49° 17.00	134° 40.03		3500					1st pump going in
		1948	BE				49° 16.99	134° 40.06							1st pump @ 3500
		2047	EN				49° 16.96	134° 40.04							Start coming up.
24	P16	1735	BE	PUMP		32	49° 16.98	134° 39.97							CHAINS, TRACE METAL
		1845	BN				49° 16.99	134° 40.07							10 25 + 40m
24	P16	1915	BE	BOAT 733		33									SUR WATER Fe
		1945	EN												
24	P16	2056	BE	ROS		34	49° 16.97	134° 40.03	3620				DY/MR	✓	PAR SENSOR ON
		2101	BO				49° 16.98	134° 40.02		200	186-204	19			
		2118	EN				49° 17.00	134° 40.03							
24	P16	2221	BE	NET		35	49° 17.03	134° 40.00	3620				DY/MR		MULTI NET
		2248	BO				49° 17.04	134° 39.98		1000					
		2305	EN				49° 17.02	134° 40.00							

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✓
Fix Niskin #7, bottom lanyard too long, Niskin would not open properly.

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24	P16	2332	BE	PUMPS		36	49° 16.98	134° 39.98	3620						UBC IN SITU PUMPS.
25		0008	BO			↓	49° 16.99	134° 39.94		1500					
			BE												
25		0252	EN			✓	49° 16.97	134° 40.07							LAST PUMP ON DECK
25	P16	0303	BE	Go-Blos		37	49° 16.94	134° 40.10	3619						200-300 m.
		0310	MR				49° 16.93	134° 40.10		300					
		0321	EN				49° 16.92	134° 40.08							
															PAR SENSOR OFF
25	P17	0816	BE	ROS	US	38	49° 20.98	135° 39.93	3550		205	1	H.M/H.S.	✓	BOT @ 5m. SAL/CAL/HUTS
		0844	BO				49° 20.99	135° 40.02		2005					
		0911	EN				49° 20.99	135° 40.00							
25	P18	1347	BE	ROS	US	39	49° 25.99	136° 40.03	3817		206	1	H.M/H.S.	✓	BOT @ 5m - SAL/CAL/HUTS
		1416	BO				49° 25.99	136° 40.01		2005			H.J.		→
		1442	EN				49° 26.00	136° 39.92							Called P17 in BL.
25	P19	1912	BE	ROS	US	40	49° 30.07	137° 39.95	3907				DY/MR	✓	+LOOP SAMPLE
		1936	BO				49° 30.00	137° 40.00		2005	207	1			O ₂ sensor. Bow spikes
		1956	EN				49° 29.96	137° 39.97							

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Leave P16 @ 2025 local time

P18- O₂ SENSOR GOES FUZZY ON DOWNCAST @ 720m → 950 1050 - 1150

UPCAST @ 1540m → 1495, 1250-1230, 1150 - 1140, 1100-1039

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26	P20	0011	BE	ROS	US	41	49° 34.04	138° 40.10	3945				HM/K.J.	✓	PAC ON
		0016	BO				49° 34.04	138° 40.15		200	208-226	19			
		0035	EN				49° 33.98	138° 40.01							
26	P20 DWN	0053	BE	PUMP		42	49° 33.97	138° 40.01	3944				C.P./M.S.		PAC OFF
		0206	BO				49° 33.95	138° 40.02		3850					UBC IN SITU PUMPS DEEP CAST.
	UP	0430	BE				49° 33.96	138° 40.03							
		0549	BO				49° 33.96	138° 40.07							
26	P20	0218	BE	KEITH IRON PUMP		43	49° 33.93	138° 40.06	3944	40			HM/K.J.		KEITHS IRON PUMPING
		0320	EN				49° 33.87	138° 39.94							10, 25-40cm
26	P20	0626	BE	NET		44	49° 33.95	138° 40.07	3943				OY/MR		MULTI NET
		0702	BO				49° 34.00	138° 40.06		1000					
		0722	EN				49° 33.99	138° 39.98							
26	P20	0809	BE	ROS	US	45	49° 34.03	138° 39.97	3945		227-250	24	H.M./K.J.	✓	10S DEEP CAST
		0914	BO				49° 34.04	138° 40.00		4020					
		1017	EN				49° 33.99	138° 40.00							

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							Latitude	Longitude								
26	P20	1141	BE	NET		46	49° 33.95	138° 40.00	3945	250			H.M.		BONGO	
26	P20	1215	BE	BOT		47	49° 33.94	138° 39.88	3945	100		2	H.M.		-thawed in iso bath	
		1230	GH				49° 33.94	138° 39.88							GO-FLO'S-KGITH	
26	P20	1245	BE	ROS		48	49° 33.97	138° 39.98	3945						Ment @ 1223 ^{25m} 100m	
		1335	BO				49° 33.98	138° 40.00		3850	251-274	24	H.M.	✓	MO'S DEEP CAST	
		1436	GH				49° 33.84	138° 40.03								
26	P20	1506	MR	BOT		49	49° 33.90	138° 39.99	3945	400					200, 400	
		1519	EN				49° 33.86	138° 39.93								
26	P20	1537	BE	PUMP		50	49° 34.06	138° 40.19	3945						UBC IN SITU PUMPS	
		1619	BO				49° 33.98	138° 40.09		1750					SHALLOW CAST	
			BE													
		1950	EN				49° 33.94	138° 39.99								
26	P20	1629	BE	ZODIAC		51	49° 33.99	138° 40.10							SURFACE Fe SAMPLING	
		1650	EN				49° 33.98	138° 39.99								
27	P21	0038	BE	ROS		52	49° 38.01	139° 40.03	3936		275	1	H.M.	✓	→	
		0110	BO				49° 37.98	139° 40.01							BOT @ 5m SAL/CHL/NUIS	
		0130	EN				49° 37.87	139° 39.97								

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CABLE CONNECTIONS/BULKHEAD CONNECTORS TO OXY SENSOR CLEANED/LOBED RECONNECTED - NO CORROSION EVIDENT
OXY PROFILE SMOOTH - NO SPIKES

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>SEPTEMBER</u>				Year <u>2006</u>			Ship <u>JOHN P TULLY</u>				Cruise ID <u>2006-15</u> <u>p. 10</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							
27	P22	0607	BE	ROS	VS	53	49° 42.05	140° 40.04	3912				py/MR	✓	
		0631	BO				49° 42.01	140° 40.01		2008	276	1			
		0653	EN				49° 42.02	140° 39.95							
27	P23	1115	BC	ROS	VS	54	49° 45.98	141° 40.02	4028		277	1	H.M/O.S	✓	
		1145	BO				49° 46.06	141° 39.95		2005					
		1210	EN				49° 46.03	141° 39.92							
27	P24	1631	BE	ROS	US	55	49° 50.18	142° 39.96	3964			1	MR/OR	✓	+LOOP SAMPLE
		1701	BO				49° 50.25	142° 40.06		2005	278				
		1729	EN				49° 50.23	142° 40.06							
27	P25	2130	BE	ROS	US	56	50° 00.08	143° 36.22	4120			1		✓	
		2204	BO				50° 00.06	143° 36.35		2006	279				
		2225	EN				50° 00.07	143° 36.36							
28	P35 ²	0153	BC	ROS	N.S	57	50° 00.01	144° 18.26	4123		280	1	H.M/H.M	✓	5m BOT. For Loop
		0216	BO				50° 00.01	144° 18.24		2005					
		0236	EN				50° 00.00	144° 18.20							

Cast type:

BOT = bottle cast, no CTD
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NET = net haul
DRF = drifter

bottle firing method:
US = up/stop
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Time Code

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

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month SEPTEMBER				Year 2006			Ship J.P. TULLY				Cruise ID 2006-15 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							
28	P26	0716	BE	PUMP-KJ		58	49°59.97	145°00.11	4222	40			H.M/K.J		TRACE METAL PUMPING
		0945	EN												
28	P26	1000	BB	GoFLO	mess	59	50.00	145°00.0	4222	100					75 + 100m
		1012		mess											
		1016	BN				50.00.0	145°00.0							
28	P26	1030	BE	ROS	US	60	50°00.05	145°00.11	4221		281-304	24	H.M/S.J	✓	DEEP 105 CAST
		1129	BO				50°00.07	145°00.00		4318					→
		1252	GN				50°00.04	145°00.05							
28	P26	1520	BE	ROS	US	61	50°00.02	144°59.89	4223				DY/MK	✓	PAR SENSOR ON
		1525	BO				50°00.01	144°59.90		200	305-319	15			SUNRISE DMS CAST
		1540	EN				50°00.01	144°59.97							
28	P26	1553	BE	NET		62	49°59.95	145°00.02	4223				DY/MK		BOWDO
		1606	BO				49°59.86	144°59.90		250					-150 bath warm (error)
		1611	EN				49°59.88	144°59.93							
28	P26	2120	BE	ROS		63	50°00.06	145°00.05	4222				DY/MK	✓	NOON DMS CAST
		2124	BO				50°00.04	145°00.08		200	320-340	21			
		2139	EN				50°00.01	145°00.04							

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P26-105 DEEP CAST - GAP IN CABLE WINDING ON UP CAST @ 400m - BACK DOWN TO 550m THEN UP ALL THE WAY

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month SEPTEMBER				Year 2006				Ship JOHN P. TULLY				Cruise ID 2006-15 p12 ✓			
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							
28	P26	2145	B/B	GO-FLO	MRE	64	49° 59.95	145° 00.05	4222	200					150 + 200 m + 27
		2158	BO				49° 59.95	145° 00.06		200					Messenger
		2202	EN				49° 59.88	145° 00.12							NOTICE COUNTER MISSING ON WAY OUT OF 27m
28	P26	2312	B/B	GO-FLO		65	49° 59.95	145° 00.66		600					450-1600 m (407+613)
		2335	BO	125			49° 59.86	145° 00.65							Messenger
		2357	EN				49° 59.95	145° 00.75							COUNTER FIXED
29	P26	0319	BE	ROS		66	49° 59.97	145° 00.01	4222				DY/MA	✓	SUNSET DMS CAST
		0324	BO				49° 59.96	144° 59.99		200	341-353	13			
		0338	EN				50° 00.00	145° 00.07							
															PAR OFF
29	P26	1211	BE	ROS	V.S.	67	50° 00.03	144° 59.93	4222		354-377	24	H.M/SJ	✓	DEEP VBC CAST
		1304	BO				50° 00.01	145° 00.05		3850					
		1410	EN				50° 00.03	145° 00.24							
29	P26	1518	BE	PUMPS		68	50° 00.07	144° 59.96	4221						VBC IN SITU PUMPS DEEP CAST.
		1646	BO				50° 00.14	145° 00.15		3850					
		2109	BE				50° 00.01	145° 00.11							
		2215	EN				50° 00.02	145° 00.15							
29	P26	1713	BE	BOAT		69	50° 00.04	145° 00.00		0					Fe Surface Sampling
		1736	EN				50° 00.09	145° 00.00							MARK III

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>SEPTEMBER</u>				Year <u>2006</u>			Ship <u>JOHN P TULLY</u>				Cruise ID <u>2006-15</u> <u>p13. ✓</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
29	P26	2239	BE	NET		70	49 59.97	145 00.04	4223						MPS
		2335	BO				50 00.03	144 00.10		2000					
		2416	EN				50 00.0	145 00.03							
30	P26	0032	BE	NET		71	49 59.99	145 00.18	4222						
		0034	BO				49 59.98	145 00.18		90					BONGO TO 90.
		0036	EN				49 59.97	145 00.19							
30	P26	0115	BE	PUMPS		72	50 00.02	145 00.01	4222						UBC IN SITU PUMPS SHALLOW CAST
		0157	BO				50 00.02	145 00.16		1750					
		0613	BE				50 01.02	145 02.27							
		0652	EN				50 01.47	145 01.93							
30	P26	0210	BE	CHAINS Fe PUMP		73	50 00.03	145 00.23	4222	10 m					FILLING CARBOYS
		0425	EN				50 00.18	145 01.38							UBC, UVC + LOS
30	P41	10:15	BE	ROS		74	50° 27.00	144° 59.94	4232		378	1	H.M./C.P.	✓	BOT@ 5m For <u>Loops</u> surface
		10 43	BO				50° 27.05	144° 59.94		2005					
		11 11	EN				50° 26.98	144° 59.96							
30	P32	1454	BE	ROS		75	50 54.05	144 59.89	4227		379	1	H.M./	✓	BOT@ 5m For <u>surface</u> <u>Loops</u>
		1523	BO				50 53.99	144 59.98		2005					VNC started @ 90m
		1549	EN				50 54.00	144 59.97							↑

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month SEPTEMBER / OCT				Year 2006			Ship J P TULLY				Cruise ID 2006-15					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								
30	Z1	1935	BE	ROS		76	51 21.061	145 0.329			380-403				Calibration Cast	
		2002	BO				51.21.106	145.0522		2005		24	MA/MS	✓	spikes @ ~1600-1800m + LOOP	
		2024	EN				51 21.066	145.0659	2000							
30	Z2	2353	BE	ROS		77	51° 47.56	144° 59.88	3800							
1		0028	BO				51 47.54	145 0.11		2005	404	1	HM/FM	✓	Bot @ 5m - LOOPS SURFACE	
		0048	EN				51 47.60	145 00.02								
1	Z3	0408	BE	ROS		78	52 12.04	144 59.88	4041							
1		0440	BO				52 11.96	144 59.95		2005	#405 NOT USED	✓	W/DS	✓	5m surface bottle	
		0500	EN				52 11.95	145 0.11				1/loop			O ₂ good Bottle didn't trip	
1	Z4	0850	BE	Pump ¹⁶⁵		79	52 38.94	145 00.05	4039				MA/CP			
		0856	BO				52 38.89	145 00.01		40						
		0940	EN				52.3826	145 00.33								
1	Z4	0956	BE	GOFLDS ¹⁶⁵		80	52.3899	145 00.01	4035				MA/CP			
		1002	BO				52 38.94	145 00.03		755/100						
		1010	EN				52 38.86	145 00.13								
1	Z4	1020	BE	ROS		81	52.3899	145 00.15	4035				MA/CP	✓		
		1053	BO				52.38.97	145° 00.05		2005	406-424	19				
		1141	EN				52° 38.99	145° 00.04								

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→ CLEANED O_2 BULKHEAD CONNECTORS - SENSOR/FISH BETWEEN STA Z_1 & Z_2
LUBED

→ REPLACED "Y" CABLE AFTER Z_2



- Z_3 O_2 good...

BOTTLE 18 DIDNT TRIGGER

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month OCTOBER				Year 2006			Ship JOHN P TULLY				Cruise ID 2006-15 p151				
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
1	Z4	1228	BE	NET		82	52° 38.99	145° 00.15	4035	250			AM/SI		BONGOS
		1244	BN				52 39.09	145 00.13	4035						
1	Z5	1540	BE	ROS		83	53 06.06	145 00.03	4057						
		1606	BO				53 6.05	145 00.01		2005	4125	1	SV/KS	✓	5m bottle
		1632	EN				53 6.08	144 59.98							
1	Z6	1930	BE	ROS		84	53 33.10	145 00.18	4027				MA/MS	✓	
		1957	BO				53 33.01	145 03.98		2005	426				
		2018	EN				53 32.88	145 03.47				1			5m bottle.
1	Z7	2318	BE	ROS	US	85	54° 00.01	144° 59.98	3997		427	1	H.M./F.M.	✓	5m BOT - SAL/CHL/NUIS
		2343	BO				53° 59.89	145° 00.07		2005					
2		0004	EN				53° 59.85	145° 00.01							
2	Z8	0300	BE	ROS	US	86	54° 27.0	145° 00.0	4033		428	1	H.M./F.M.	✓	5m BOT - SAL/CHL/NUIS
		0329	BO				54 26.92	145 00.03		2005					
		0355	EN				54 26.82	144 59.96							
2	Z9	0726	BE	ROS		87	55 00.107	144 59.95	4001		429-447	19	MA/EP	✓	
		0753	BO				55 00.034	144 59.900		2005					
		0840	EN				55 00.043	144 59.982							

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INSTITUTE OF OCEAN SCIENCES

Month <u>OCTOBER</u>				Year <u>2006</u>			Ship <u>J. P. TULLY</u>				Cruise ID <u>2006-15</u>				<u>p161</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	
<u>2</u>	<u>Z9</u>	<u>1007</u>	<u>BE</u>	<u>UBC</u> <u>ROS</u>		<u>88</u>	<u>55 0.041</u>	<u>144 59.970</u>	<u>4015</u>		<u>448-471</u>	<u>24</u>	<u>MA/CP</u>	<u>✓</u>	<u>Lantern broke on →</u>	
		<u>1058</u>	<u>BO</u>				<u>54° 59.99</u>	<u>145° 00.04</u>		<u>3850</u>			<u>HM/ST</u>			
		<u>1202</u>	<u>EN</u>				<u>55 00.04</u>	<u>144° 59.98</u>								
<u>2</u>	<u>Z9</u>	<u>1230</u>	<u>BE</u>	<u>PUMPS</u>		<u>89</u>	<u>55 00 00</u>	<u>145' 00 07</u>							<u>1st pump down</u>	
		<u>1415</u>	<u>BO</u>				<u>54.59.99</u>	<u>145' 00.02</u>								
		<u>1815</u>	<u>BE</u>												<u>BE - 1ST PUMP UP</u>	
		<u>1930</u>	<u>BO</u>													
<u>2</u>	<u>Z9</u>	<u>1447</u>	<u>BE</u>	<u>PUMP/KITIC</u>		<u>90</u>	<u>55° 00.00</u>	<u>145° 00.05</u>	<u>406</u>	<u>40</u>			<u>HM/K.J.</u>		<u>KITIC 1 RON PUMP</u>	
		<u>1600</u>														
<u>2</u>	<u>Z9</u>	<u>1605</u>		<u>TM</u> <u>X-NISK</u>		<u>91</u>	<u>55° 00.00</u>	<u>145 00.02</u>		<u>100</u>					<u>CHAINS</u> <u>75 + 100 m</u>	
		<u>1625</u>		<u>CHAINS</u>			<u>55 00.00</u>	<u>145 00.02</u>								
<u>2</u>	<u>Z9</u>	<u>1740</u>		<u>733</u> <u>SWR</u>			<u>54 59.96</u>	<u>145 00.02</u>		<u>0</u>					<u>Sur Fe SAM</u>	
<u>2</u>	<u>Z9</u>	<u>1925</u>	<u>EN</u>	<u>UBC</u> <u>DEEP PUMP</u>		<u>92⁸⁹</u>	<u>55 00.26</u>	<u>145 0.57</u>		<u>2000</u>						
<u>2</u>	<u>Z9</u>	<u>1938</u>	<u>BE</u>	<u>NET</u>		<u>93</u>	<u>55 0.76</u>	<u>145 0.58</u>	<u>4015</u>						<u>Bongo</u>	
<u>1</u>	<u>Z1</u>	<u>1937</u>	<u>BO</u>	<u>1</u>		<u>1</u>	<u>55 0.23</u>	<u>145 0.61</u>		<u>250</u>						
		<u>1945</u>	<u>EN</u>				<u>55 0.22</u>	<u>145 0.67</u>								

Cast type:

USW = sea water loop

bottle firing method

TM = Trawl

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while re-coating

Fixed

Driskin #19. We used some zip straps to fix it but it will need servicing, & hopefully it will work this coast.

DAILY LOG

Ocean Sciences and Productivity Division

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Month OCT				Year 2006			Ship J. A. TULLY			Cruise ID 2006-15 p17 ✓					
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							
2	Z9	2012	BE	NET		94	55 0.14	145 0.76	4016				DM/MA		MPS to 2000m
		2115	BO				55 0.16	145 1.07		2000					
		2148	EN				55 0.12	145 1.26							
2	Z9	2206	BE	USE shallow pump		95	55 00.20	145 01.10	4015						
		2247	BO				55 00.30	145 00.90		1750					
3		0309	BE				55° 00.11	145° 02.03							1 st pump up
3		0847	EN				55° 00.14	145° 02.65							last pump up
3	Z10	0711	BE	ROS		96	55 30.07	145 0.054		3977			MA/CP		
		0738	BO				55.29.994	144 59.92		2005	472	1			Sal, net, chl 5m sample
		0806	EN				55 30.00	145 0.02							
3	Z11	1118	BE	ROS	VS	97	55° 59.95	145° 00.06	3871		473	1	H.M/S.J	✓	Bot @ 5m
		1154	BO				55° 59.95	145° 00.08		2005					
		1225	EN				55° 59.99	144° 59.88							
	Z12	1532	BE	RO		98	56 30.0	144 59.92	3830				DM/KJ	✓	
		1602	BO				56 29.84	144 59.85		2005					Bot @ 5m
		1629	EN				56 29.77	144 59.90							

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DAILY LOG

Ocean Sciences and Productivity Division

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Month OCTOBER				Year 2006			Ship JOHN P TULLY				Cruise ID 2006-15 P 18 ✓				
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							
3	Z13	1959	BE	ROS		99	57° 0.032	145° 0.192	3814						
		2022	BO				56 59.93	145 0.170		2005	475	1	MA/MS	✓	
		2043	EN				56 59.83	145 0.277							
4	Z14	0009	BC	ROS	US	100	57° 30.01	145° 00.22	3840		476-494	19	H.M/F.M	✓	
		0034	BO				57° 29.91	145° 00.12		2005					
		0116	GM				57° 29.95	144° 59.99							
4	Z14	0020	BC	PUMP		101	57° 30.00	145° 00.21	3837	40			H.J/H.M		KEITH'S 1000 PUMP
		0052	EH				57° 29.97	144° 59.92							10, 25 + 40 m
4	Z14	0125	BE	CO-FLO		102	57° 29.86	145 00.04		120			H.J		75 + 100 m
		0140	EN												
4	Z14	0201	BE	NET		103	57° 29.87	145° 00.19	4151	250			H.M/F.M		BONGOS
4	Z15	0541	BE	ROS		104	58 0.06	145 0.14	3845	3845			DE DS		
		0605	BO				57 59.92	145 0.44		2005	495	1			5 w bottle
		0626	EN				57 59.92	145 00.65							
4	Z15	0640		DRF		105	57 59.91	145 00.19							Deploy Aug 2677

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>OCTOBER</u>				Year <u>2006</u>				Ship <u>JOHN P. TULLY</u>				Cruise ID <u>2006-15</u> <u>P.19</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							
4	Loop 1	1509	BC	USW	—	—	58°00.76	142°21.30	3652						
4	Argo N	1624	BE	ROS		106	58°00.03	142°00.00	3642						
		1653	BO				58°00.01	142°00.01		2005	496	1	dy		5 m sample
		1721	EN				58°00.00	141°59.97							PLUS Loop 2
4	Argo N	1726	BC	DRF		107	57°59.96	142°00.02	3642						Deploy Argo 2676
4	Loop 3	1916	BC	USW		—	57°45.31	141°55.92	3646		Loop 3				
4	LOOP 4	2315	BR	USW		108	57°11.14	141°40.26	3542	5	LOOP 4		HM KS		
5	LOOP 5	0300	BR	USW		109	56°39.72	141°27.94	3551		LOOPS		KS		
5	Loop 6	0702	BC	USW		110	56°03.15	141°01.55	3596		Loop 6		H.M.		Loop
5	ARGO 0	0733	BC	ROS	U.S.	111	55°59.99	141°00.03	3575		497-515	19	H.M./C.A	✓	
		0802	BO				56°00.05	141°00.26		2005					
		0850	GM				55°59.91	141°00.45							
5	ARGO 0	0925	BC	DRF		112	56°00.107	141°59.659	3570				H.M./C.A		DEPLOY ARGO # 2683?
5	Loop 7	1110	BR	USW		113	55°51.3	140°35.8	3509		LOOP 7		KS		
5	Loop 8	1502	BR	USW		114	55°27.78	139°40.6	3340		LOOP 8		KS/DY		

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Month OCTOBER				Year 2006				Ship JOHN P TULLY				Cruise ID 2006-15 p20 ✓			
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	LOOP 9	1933	BE	USW		—	54° 59.73	138° 35.44	3061		LOOP 9				
5	Loop 10	2306	BE	USW			54° 37.34	137° 42.90	3048		Loop 10		H.M.		
6	Loop 11	0312		USW		—	54° 11.25	136° 46.65	3079		Loop 11		DY		
6	LOOP 12	0653		USW		—	53° 49.4	135° 54.3	3038		LOOP 12		KS		
6	Loop 13	1100		USW			53° 25.35	134° 57.51	3443		Loop 13		H.M.		
6	Loop 14	1502		USW		—	53° 01.08	134° 03.86	2726		Loop 14		MR		
6	LOOP 15	1857		USW			52° 38.54	133° 11.07	2904		LOOP 15		MA		
6	Loop 16	2300		USW			52° 14.81	132° 17.43	2929		Loop 16		H.M.		
6 ⁷	Loop 17	0304		USW			51° 48.28	131° 22.71	1998		Loop 17		DY		
7	Loop 18	0649		USW			51° 28.32	130° 36.63	1603		LOOP 18		MA		
7	SSI	0947	BE	ROS	US	113	51° 11.978	130° 0.018	497		516-529	18	MA/CP	✓	Not a 1300m station!!! →
		0955	BO				51° 11.972	130° 0.008		487					
		1018	EN				51° 11.978	130° 0.018							
7	SS2	1139	BE	ROS	US	114	51° 13.04	129° 42.83	570	580	530	1	H.M./S.J.	✓	5m BOT - SAL/CHL/NUIS
		1149	BO				51° 13.16	129° 42.84		560					
		1159	GM				51° 12.97	129° 42.93							
		1212	BE	NET		115	51° 13.01	129° 43.02		250					BONGO

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Confirmed w/ bridge station SSI was not 1400m. Was actually ~497m. Made new cast sheets and adjusted sample numbers.

DAILY LOG

Ocean Sciences and Productivity Division

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Month OCTOBER				Year 2006				Ship JOHN P TULLY				Cruise ID 2006-15				p 21	
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	SS3	1357	BE	ROS	U.S.	116	51° 14.96	129° 21.35	290		531-542	12	HM/SJ	✓			
		1403	BO				51° 14.94	129° 21.35									
		1419	EN				51° 14.99	129° 21.30									
7	SS4	1554	BE	ROS		117	51 21.04	129 0.25	238								
		1600	BO				51 21.08	129 0.28		233	543	1	DY/KJ	✓	5 m bottle		
		1604	EN				51 21.07	129 0.32									
7	SS4	1620	BO	NET		118	51 21.06	129 0.22	238	225					Bongo to 225 m		
7	SS5	1833	BE	ROS		119	51 28.01	128 30.01	202		544-553	10	DY/KJ	✓			
		1837	BO				51 28.00	128 30.00		197							
		1850	EN				51 28.009	128 29.958									
7	SS6	2109	BE	ROS		120	51 19.952	128 0.044	180		554	1	MA/MS	✓	5m bottle.		
		2112	BO				51 19.962	128 0.002									
		2117	EN				51 19.978	127 59.942									
7	SS6	2130	BE	NET		121	51 19.864	128 00.043	120								
		2137	BO				51 19.840	127.59.999		155							
		2150	EN				51.19.810	127.59.829									
7	SS7	2259	BE	ROS	U.S.	122	51° 24.71	127° 47.65	124								
		2302	BO				51° 24.70	127° 47.65			555-562	8	H.N./F.N	✓			
		2312	EN				51° 24.60	127° 47.61									

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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
8	Ri 1	0006	BE	ROS	U.S.	123	51° 26.43	127° 38.20	325		563-576	14	H.M./F.M.	✓	
		0011	BO				51° 26.42	127° 38.19		314					
		0031	EN				51° 26.36	127° 38.17							
8	Ri 2	0119	BE	ROS	U.S.	124	51° 31.23	127° 33.60	329		577	1	H.M./F.M.	✓	BOT@ 5m - SAL/CAL/NOTS
		0124	BO				51° 31.23	127° 33.58		320					
		0129	EN				51° 31.25	127° 33.57							
8	Ri 3	0213	BE	ROS	U.S.	125	51° 35.90	127° 31.98	324		578	1	H.M./F.M.	✓	BOT@ 5m - SAL/CAL/NOTS
		0219	BO				51° 35.90	127° 32.01		315					
		0224	EN				51° 35.90	127° 32.00							
8	Ri 4	0310	BE	ROS	U.S.	126	51 38.93	127 26.62	295		579-591	13	DY/DS	✓	
		0315	BO				51 38.95	127 26.64		290					
		0331	EN				51 38.97	127 26.67							
8	Ri 5	0416	BE	ROS		127	51 40.73	127 19.93	198						
			BO							194	592	1	DY/DS		5 m bottle
		0424	EN				51 40 72	127 19.94							

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