

DAILY LOG BOOK

MISSION
NUMBER

2007-15

DATE:

From: 14 AUGUST

to: 1 SEPTEMBER 2007

VESSEL:

JOHN P. TULLY

PROJECT:

LINE P

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

Captain: ANDY QUAYE First Officer: BOB BENNETT
Second Officer: ERIKA BACKMEYER Third Officer: BILL BACKLICK

Mission Participants / Agencies: TOS, CWS, VBC, OSU, CSM, DU

Scientific Personnel:

Scientific Personnel:	Party Chief:	Watch	Cabin	Notes
Name	MARIE	ROBERT	0800-2000	A

Name	Watch	Cabin
JANET BARWELL-CLARKE		
BILL CRAWFORD	1200-2400	B
WENDY RICHARDSON		C
CHRISTINA WOOD	1800-2400	D
DAVID NICHOLSON		D
JOHAN		E
ANISSA MARZOUK	0000-0600	E
JODY WRIGHT		F
MARIA		F
MARNIE JO ZIRBER		G
		G

Second leg of Mission:

Party Chief:

[illegible]

Data logging computer:

Data acquisition program:

Indian program.
CTD declaration 1

Primary CTD

Make:

Primary tomograph: Scalpa model: Plus serial number: 1111

Primary conductivity serial number.

Primary conductivity serial number:	2424
Temperature serial number:	2106

Secondary temperature serial number.

Secondary conductivity serial number:

Transmissometer: Wet-Lab

Transmissometer: Wetlabs Model: CSTAR
Fluorometer: Model Seapoint Cable gain: 1

Micrometer: Model Sespoint Cable gain: 10

Oxygen sensor: Seabird Model: SBE 43

PAR sensor: Biospherical Model: Underwater

Other sensors: Benches, 4th Avenue

Other sensors: penetration altimeter

Other sensors: gun primer

Other sensors: pump primary
pump secondary

Other sensors: Pump sensor

Secondary CTD

Make: Seabird model: quibus serial number: _____

Primary temperature serial number: _____ model: _____

Primary conductivity serial number:

Secondary temperature serial number:

Secondary conductivity serial number:

Transmissometer: NetLab

Fluorometer: Model Scout

Oxygen sensor: Seabird

PAR sensor:

Other sensors: Barometer, Accelerometer

Other sensors:

Other sensors: _____

Other sensors: _____

Other sensors: _____

Other sensors:

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

Rosette Setup:

Number of bottles: _____
Manufacturer: _____
Volume of Bottles (litres): _____

Winches:

1. Make:	Model:	Serial #:	used for:
2. Make:	Model:	Serial #:	used for:
3. Make:	Model:	Serial #:	used for:

Comments on performance during cruise: _____

Salinometer:

Make: _____ Model: _____ Serial #: _____
Comments on performance during cruise: _____

Oxygen Kit # ☐

Comments on performance of kit and chemicals: _____

Thermosalinograph System:

Program: secsave Version: 5.37A model 21 serial # 2116733-2487
Sampling interval (seconds): _____
Fluorometer sensor serial number: 60
W335-7130
Comments on performance during cruise: _____

ADCP Setup:

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

Comments: _____

CTD Test Cast Information

Test Cast at IOS Jetty? (optional)

yes ☐ no ☐

Comments: (i.e. how did everything work??)

Test cast in Saanich Inlet? (recommended)

yes ☐ no ☐

If no, give reason: _____

Comments: (i.e. how did everything work??)

CTD pressure reading on deck (db): _____

(Should be 0.0 db $\pm$ 0.5)

Pumps working? yes ☐ no ☐

(i.e.. Was the red LED display on the deck unit 0011 and not still 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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Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>AUGUST</u>				Year <u>2007</u>			Ship <u>CGS JP TULLY</u>				Cruise ID <u>2007-15</u> <u>p1</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
15	SI03	2101	BE	ROS	US	1	48 35.66	123 30.08	225	217					
		2107	BO				48 35 70	123 30 01			1-11	11	MR/BC	✓	~ 0.01 difference in readings between conductivity sensor & temp sensors.
		2124	EN				48 35.84	123 29.97							
15	SI03	2220	BE	ROS	US	2	48 35.629	123 30.043	226		12-35	24	WRC MR DA		Cast to collect water for UBC Science
		2230	BO				48 35.645	123 30.041		200					
		2255	EN				48 35.742	123 30.059							
16	JF1	0530	BE	USW	✓	—	48 16.08	123 30.01	156				MR, WRC		Loop SAL, CHL, NUT
16	JF2	0716	BE	USW	—	—	48 18 15	124 00 74	189				MD, ROSS		Loop SAL, CHL, NUT
16	JF3	0909	BE	USW	—	—	48 27 05	124 30 201	226				MD, JS		Loop, SAL, NUT, CHL
16	JF4	1102	BE	USW	—	—	48 32 29	125 00 00					MD		Loop sal, nut, chl
16	P1	1305	BE	ROS	US	3	48 34 34	125 30 119	127				MD, J	✓	
		1310	BO				48 34 49	125 30 107		115	36	1			
		1314	EN				48 34 494	125 30 096							
16	P2	1523	BE	ROS	US	4	48 36.05	125 59.99	115					✓	
		1527	BO				48 36.05	125 59.93		105	37-48	12			
		1539	EN				48 35.95	125 59.99							
16	P2	1556	BE	NUT		5	48 35 96	125 59 87	115						
		1559	BO				48 35.96	125 59.88		105				✓	Bongo n 105
		1601	EN				48 35 97	125 59 87							

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 30 sec
UN = up/no stop
DN = down/no stop

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 <u>AUGUST</u>				Year <u>2007</u>			Ship <u>J.P. TULLY</u>				Cruise ID <u>2007-151</u> <u>P2</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							
16	P3	1733	BE	ROS	US	6	48 37.508	126 20 01	813				MD	✓	
		1751	Bo				48 37.555	126 19 985			49	1			
		1800	EN				48 37.543	126 19.556							
16	P4	1941	BE	NET	✓	7	48 38.95	126 40.04	1322				WRC F		
		1948	Bo				48 38.95	126 40.02		250					
		1953	EN				48 38.95	126 40.03							
16	P4	2056	BE	ROS	US	8	48 39.157	126 39.695	1305	300		15	WRC MR	✓	Shallow Rosette
		2101	Bo		30sec		48 39.078	126 39.578			50-64		WRC MR		Sunny day, low
		2121	EN				48 39.976	126 39.481					WRC MR		wind and swell.
16	P4	2210	BE	ROS	US	9	48 39.074	126 40.024	1315		65-73	9	WRC	✓	Anissa's Cast
		2228	Bo				48 39.03	126 39.90		1200					PAR OFF
		2245	EN				48 39.99	126 39.82							
16	P4	2318	BE	ROS	US	10	48 39.080	126 39.874	1310	1306			WRC TT		start wrong time in water
		2338	Bo				48 39.065	126 39.598			74-92	19		✓	
		0010	EN				48 39.007	126 39.308							
17	P5	0250	BE	ROS	US	11	48 41.470	127 10.104	2097	2005	93	1	WRC	✓	STARTED CAST SOON AFTER PUMP TURNED ON. MIGHT HAVE TO USE UP CAST FOR TOP FEW METERS
		0316	Bo				48 41.560	127 10.079							BOTTLES @ 5 m
		0337	EN				48 41.681	127 9.962							RAIN!

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Month <u>AUGUST</u>				Year <u>2007</u>				Ship <u>J.P. TULLY</u>				Cruise ID <u>2007-15</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
17	P6	0610	BE	ROS	US	12	48 44.721	127 39.966	2543		94	1	WRC		STARTED DOWN EARLY, SO BROUGHT IT BACK UP. THIN DOWN AGAIN. AT was as high as oil
		0646	BO				48 44.736	127 39.638	2544	2005					
		708	EN				48 44.774	127 39.641							
17	P7	0925	BE	ROS	US	13	48 46.619	128 09.952	2416		95	1	MD	✓	
		0955	BO				48 46.597	128 10.030		2005					
		1016	EN				48 46.592	128 10.022							
17	P8	1229	BE	ROS	US	14	48 49.014	128 40.039	2373						Rain
		1259	BO				48 48.988	128 39.996		2005	96-119	24	MD	✓	Samples 115-118 for use @ DM
		1355	EN				48 49.014	128 40.003							bott 24 NOT tripped
17	P8	1511	BE	NET	-	15	48 48.99	128 39.88	2518						
		1518	BO				48 48.96	128 39.88		250					Bongo
		1523	EN				48 48.93	128 39.87							
17	P9	1736	BE	ROS	US	16	48 51.412	129 10.039	2345						
		1806	BO				48 51.413	129 09.974		2005	120	1			
		1838	EN				48 51.413	129 10.019							
17	P10	2244	BE	ROS	US	17	48 53.629	129 40.443	2641		121	1	WRC JW	✓	Bottle @ 5m.
		2312	BO				48 53.714	129 40.606	2643	2005					Spikes in channel
		2334	EN				48 53.773	129 40.813							

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P6 - Temperature difference was often at 0.1 deg C when the graph showed spikes in the temperature trace. Suspect the difference is due to these spikes in one of the ~~4~~ temperature sensors. Best when there were no spikes the temperature difference was about 0.0001. WRC

Heave compensator has a leak. Engineer examined it before P6 and said he would work on it. Between P6 and P7. WRC

- TSS readout @ 0.26, bubbler 1/5 empty, increased flow to 0.70

- surface taken from loop

Between Stations P9 and P10 Marty cleaned and re-connected power cables to the pumps on the CTD, to try to correct the problems with T1, T2, C1, C2 at high pressures.

At P10 there were spikes and an offset in Temperature channel, at about the same depth range.

Y-Pump CABLE Removed, regreased & Re-attached

At P11 the T & C signals were clean.

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Month AUGUST				Year 2007			Ship J.P. TULLY				Cruise ID 2007-15 p4				
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
18	P11	0714	BE	ROS	US	18	48 55 944	130 09 988	2752		122	1	MD	✓	-new pump cable
		0739	BO				48 56 009	130 10 018		2005					
		809	EN				48 55 942	130 09 967							
18	P12	1445	BE	ROS	US	19	48 58 22	130 39 953	3227		123-145	23	MD	✓	-stopped @ 1600 for a short time
		1525	BO				48 58 182	130 39 972		3222					O2 bottle 23 bad used 24 for last depth
		1630	EN				48 58 43	130 40 022							
18	P12	1730	BE	ROS	US	20	48 58 204	130 40 007	3226		146-156	11	MD		
		1802	BO				48 58 226	130 40 006		2000					
		1831	EN				48 58 225	130 39 956							
18	P12	1848	BE	NET		21			3226						
		1858	BO				48 58.18	130 39 99		250					
		1902	EN				48 58.16	130 39 98							
18	P12	1930	BE	ROS	US	22	48 58 195	130 39 953	3228	300	157-171	15	WRC		PAR ON
		1933	BO				48 58 213	130 39 943							
		1952	EN				48 58 163	130 39 974							
18	P12	2000	BE	NET		23	48 58 19	130 39 999	3228	250			VF WRC		Bongo Par Off
		2015	BO				48 58 26	130 40 09					VP WRC		
		2036					48 58 297	130 40 506							Brought line in to 100 m
		2101	EN				48 58 331	130 41 095							Brought on board

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- Wrote Down Depth in decibars Not Meters

} Net tow at 255 m & then at 100 m line out. Tow speed to keep bongo net at 45° angle.
Samples for Vicki Fabrey

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Month				Year			Ship		Cruise ID						
AUGUST				2007			J. P. TULLY		2007-15 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							
19	P13	0131	BE	ROS	US	24	49 02.567	131 40.077	3005	2005	172	1	WRC MK	✓	1 Niskin closed @ 30 for bulk water. No #
		0201	BO				49 02.524	131 39.808	30018						
		0222	BN				49 02.473	131 39.986							
19	P14	0641	BE	ROS	US	25	49 07.414	132 39.946	3307	2005	173-177	5	WRC MK	✓	
		709	BO				49 07 459	132 39 889							
		740	EN				49 07 420	132 40 003							
19	P15	1148	BE	ROS	US	26	49 12 006	133 39 965	3399		178	1	MD	✓	
		1218	BO				49 12 043	133 40 048		2005					
		1239	EN				49 11 995	133 40 126							
19	P16	1650	BE	ROS	US	27	49 17 038	134 39 994	3620		179-202	24	MD	✓	
		1736	BO				49 16 988	134 40 000		3686					
		1851	EN				49 16 801	134 39 950							
19	P16	2010	BE	ROS	US	28	49 16.930	134 40.050	3620		203-217	15	WRC	✓	DMS cast
		2013	BO				49 16.858	134 40.115							
		2031	EN				49 16.741	134 40.069							
19	P16	2112	BE	ROS	US	29	49 17.216	134 39.934	3620		218-227	10	WRC MR YF	✓	ANISSA'S CAST
		2141	BO				49 17.082	134 40.046	3620	2000					
		2205	EN				49 16 99	134 40 00							

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4 P13 at 0630 PDT, at end of sunny day with low wind speed.

Shallow surface mixed layer and big sub-surface oxygen maximum just below the surface mixed layer.

O_2 minimum is 13 $\mu\text{mol/kg}$ at 800 to 1000 m depth.

	P13	samples at	200	400
- thermosal was down ~10cm from top			30	5

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Month <i>AUGUST</i>				Year <i>2007</i>			Ship <i>TULLY</i>			Cruise ID <i>2007-15 p6</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 <i>N</i>	Longitude <i>W</i>							
<i>19</i>	<i>P16</i>	<i>2223</i>	<i>BE</i>	<i>NET</i>		<i>30</i>	<i>49° 17.0</i>	<i>134° 40</i>	<i>3620</i>						
		<i>2233</i>	<i>Bo</i>				<i>49° 17.07</i>	<i>134° 40.02</i>		<i>250</i>					<i>BONGO VNH</i>
		<i>2237</i>	<i>EN</i>				<i>49° 17.07</i>	<i>134° 39.98</i>							
<i>19</i>	<i>P16</i>	<i>2306</i>	<i>BE</i>	<i>NET</i>	<i>sfc</i>	<i>31</i>	<i>49° 16.99</i>	<i>134° 40.04</i>	<i>3620</i>	<i>200</i>					<i>NET (TOWED) FOR</i>
		<i>2313</i>	<i>Bo</i>		<i>200</i>		<i>49° 16.798</i>	<i>134° 40.225</i>					<i>VF WRC</i>		<i>VICKI</i>
		<i>2335</i>			<i>100</i>		<i>49° 16.1959</i>	<i>134° 40.627</i>		<i>100</i>					
		<i>2358</i>			<i>sfc</i>		<i>49° 15.783</i>	<i>134° 40.99</i>							
<i>20</i>	<i>P17</i>	<i>0433</i>	<i>BE</i>	<i>ROS</i>	<i>US</i>	<i>32</i>	<i>49° 21.013</i>	<i>135° 39.931</i>	<i>3640</i>		<i>228</i>	<i>1</i>			
		<i>501</i>	<i>Bo</i>				<i>49° 20.840</i>	<i>135° 39.410</i>		<i>2005</i>					<i>← Missed bottom bottle & pos.</i>
		<i>0523</i>	<i>EN</i>				<i>49° 20.718</i>	<i>135° 39.166</i>							
<i>20</i>	<i>P18</i>	<i>1053</i>	<i>BE</i>	<i>ROS</i>	<i>US</i>	<i>33</i>	<i>49° 25.964</i>	<i>136° 39.894</i>	<i>3817</i>		<i>229-233</i>	<i>5</i>	<i>MD</i>	<i>✓</i>	
		<i>1120</i>	<i>Bo</i>				<i>49° 25.996</i>	<i>136° 39.991</i>		<i>2005</i>					
		<i>1155</i>	<i>EN</i>				<i>49° 26.069</i>	<i>136° 40.068</i>							
<i>20</i>	<i>P19</i>	<i>1705</i>	<i>BE</i>	<i>ROS</i>	<i>US</i>	<i>34</i>	<i>49° 29.996</i>	<i>137° 39.870</i>	<i>3966</i>						<i>2nd bottle fired @ 30m for OSU, too</i>
		<i>1735</i>	<i>Bo</i>				<i>49° 30.007</i>	<i>137° 39.990</i>		<i>2005</i>	<i>234-236</i>	<i>3</i>	<i>MD</i>		<i># SIVER to it.</i>
		<i>1805</i>	<i>EN</i>				<i>49° 30.056</i>	<i>137° 40.070</i>							
<i>20</i>	<i>P20</i>	<i>2255</i>	<i>BE</i>	<i>ROS</i>	<i>US</i>	<i>35</i>	<i>49° 33.990</i>	<i>138° 39.810</i>	<i>3945</i>				<i>WRC</i>	<i>✓</i>	<i>PAR ON. DMS</i>
		<i>2301</i>	<i>Bo</i>				<i>49° 34.025</i>	<i>138° 39.835</i>		<i>300</i>	<i>237-256</i>	<i>20</i>			
		<i>2319</i>	<i>EN</i>				<i>49° 34.03</i>	<i>138° 39.91</i>							

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→ Cast 31 is a net tow. Times indicate - when net entered the water 2306 UTC 1606 PDT
- when net reached 200 m depth 2313
- when net reached 100 m depth 2335
- when net reached sfc 2358

Net towed ~20 min at 200 m and 100 m.

WRC

→ Did not record bottom time & pos'n of cast 32. Monty recovered the data from the HEX file.

WRC

- 1146 pm local time 646 UTC TIME TSG down 10cm again, flow increased to 0.65

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Month				Year			Ship				Cruise ID				
AUGUST				2007			TULLY				2007-15 P-7				
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	P20	0003	BE	ROS	US	36	49 34.06	138 39.82	3945						PAR OFF
		0035	BO				49 33.956	138 39.890		2000	257-266	10	WRC	✓	Ammonia Cast
		0100	EN				49 34.009	138 39.983		4026db					
21	P20	0140	BE	ROS	US	37	49 34.468	138 39.325	3946	3954m	267-290	24	WRC	✓	B-10m
		0239	BO				49 34.267	138 39.569							BOTTLE 9 DID NOT TRIP
		0344	EN				49 33.971	138 39.702							
21	P20	0357	BE	NET		38	49 34.063	138 39.890	3944		—		WRC		Net Vertical tow
		0410	BO				49 34.15	138 39.95		250					
		0416	EN				49 34.2	138 39.9							
21	P20	0510	BE	NET TOW		39	49 34.44	138 40.37			—		VF		Net-HORIZONTAL TOW FOR VICKI FABRI
		0545	EN				49 34.8	138 40.9							
21	P21	0914	BE	ROS	US	40	49 37.969	139 39 937	3937				MD	✓	
		0941	BO				49 38.011	139 40 034		2005	291	1			
		1016	EN				49 37 993	139 40 162							
21	P22	1345	BE	ROS	US	41	49 41.987	140 39 925	3921				MD	✓	
		1421	BO				49 41.977	140 40 031		2005	292-299				
		1452	EN				49 42.08	140 40.03							

Cast type:

BOT = bottle cast, no CTD
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 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

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→ During horizontal net tow, 200 kHz sounder shows lots of signal between 25-40 metres depth.

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>AUGUST</u>				Year <u>2007</u>			Ship <u>TALLY</u>				Cruise ID <u>2007-15 P38</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							
21	P23	1824	BE	ROS	US	42	49 45.953	141 40.069	4027		300	1	MR WRC	✓	
		1858	BO				49 45.916	141 39.781		2005					
		1918	EN				49 46.048	141 39.436							
22	P24	0012	BE	ROS	US	43	49 50.345	142 40.042	3964		301-305	5	WRC	✓	
		0043	BO				49 50.844	142 39.978		2005					
		0105	EN				49 51.470	142 40.318							
22	P25	0514	BE	ROS	US	44	50 00.127	143 36.277	4123		306	1	WRC	✓	PLOTTER SCREEN THINKS DOWNCAST IS UPCAST.
		0542	BO				50 00.160	143 36.076		2005					
		0603	EN				50 00.012	143 35.948							
22	P35	0906	BE	ROS	US	45	49 59.994	144 18.224	4124		307	1	MR	✓	
		0937	BO				49 59.952	144 18.061		2005					
		958	EN				49 59.894	144 17.935							
22	P26	1302	BE	NET		46	50 00.005	145 00.00	4222						
		1353	BO							1000					
		1409	EN												
22	P26	1436	BE	ROS	US	47	50 00.08	145 00.05	4222				MR	✓	PAR ON
		1442	BO				50 00.06	145 00.04		300	308-326	19			SUNRISE DMS CASE
		1459	EN				50 00.002	145 00.017							

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winch problem @ ~ 500 meters going down on 1000m bongo CAST, after a long delay problem fixed and continued. Around 500m Net was pulled up and down several times before being sent down to 1000 meters

DAILY LOG

Ocean Sciences and Productivity Division

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DAILY LOG																Ocean Sciences and Productivity Division															
Month <u>AUGUST</u>				Year <u>2007</u>				Ship <u>CCGS J.P. Tully</u>				Cruise ID <u>2007-15</u>				Page <u>9</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																							
22	P26	1547	BE	ROS	USW	48	50 00 083	145 00 053	4222		327-350	24	MD	✓																	
		1652	BO				49 59 873	145 00 070		4316																					
		1804	EN				49 59.71	145 00.00																							
22	P26	1820	EN	GLIDER	—	49	49 59.723	145 00.1538	4222	—	—		WRC	—	Deploy glider.																
22	P26	2000	BE	NET		50	49 59.9	144 59.3		—	—		WRC		Vertical net tow																
		2008	BO				50 00.001	144 59.4804		250																					
		2011	EN				50 00.02	144 59.51																							
22	P26	2140	BE	ROS		51	49 59.973	144 59.999	4222				WRC	✓	Noon DMS to 300																
		2145	BO				49 59.962	144 59.989		300	351-373	23																			
		2202	EN				49 59.989	145 00.108																							
22	P26	2337	BE	ROS		52	50 00.040	145 00.020	4222		374-388	15	WRC	✓	Deep GNAR east																
23		0027	BO				50 00.040	145 0.092		4000					PAR OFF																
23		0117	EN				50 00.096	145 00.049																							
23	P26	0130	BE	NET		53	50 00.288	144 59.945		500m of wire out					HORIZONTAL TOW NET																
		0222					50 01.5	144 58.6																							
23	P26 MOORING	0332	BE	ROS	US	54	50 07.691	144 49.465	4189					✓	AT Spc Mooring																
		0339	BO				50 07.728	144 49.584			389-392	4																			
		0345	EN				50 07.735	144 49.666																							

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Daily_log_book.doc

-1722 vtc seawater loop SHUT off for ~30 minutes for maintenance

→ ΔT between T sensors is > 0.001 at upcast at 2000m
 ΔS " " " is > 0.002 " " " "

→ 54 at Surface, Morning

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>AUGUST</u>				Year <u>2007</u>			Ship <u>CCGS JP TULLY</u>				Cruise ID <u>2007-15</u> <u>P10</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
23	P 26	0534	BE	ROS	US	55	50 00.22	145 00.42	4221		393-409		WRC	✓	Sunset DMS cast
		0541	BO				50 00.29	145 00.45		300					CHAIN BRIDGE BROKE
		0557	EN				50 00.41	145 00.55							CAST DELAYED → WHILE FIXING IT. →
23	P 41	1004	BE	ROS	US	56	50 26.988	144 59.936	4228						
		1032	BO				50 27.062	145 00.154		2005	410	1	MD		5-m bottle
		1100	EN				50 27.101	145 00.432							
23	P 32	1406	BE	ROS	US	57	50 53.99	144 59.94	4227					✓	
		1430	BO				50 54.022	145 0.107			411	1			Stopped around 1850m to switch winch operators on way up. Plus loop
		1453	EN				50 54.04	145 00.34							
23	P 49	1757	BE	ROS	US	58	50 54.041	144 17.148	3890		412-435	24	MD	✓	P49 →
		1830	BO				50 53.980	144 17.21		3000					
		1907	EN				50 53.770	144 17.622							
23	P 33	2212	BE	ROS	US	59	50 54.01	143 35.38	3621		436-454	19	WRC	✓	Pre-rinsed salinity sample bottles in warm water →
		2244	BO				50 54.00	143 35.51		2005					
		2322	EN				50 53.93	143 35.78							
24	R 20	0152	BE	ROS	US	60	50 55.67	143 00.83			(See cast 61)		WRC	✓	5-m bottle failed to trip!
		0220	BO				50 55.79	143 00.99		2005					Put Rosette into water again for cast 61 for water
		0242	EN				50 55.63	143 01.08							

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CAST DELAYED BECAUSE CHAIN BRIDLE AT BOTTOM OF ROSETTE
BROKE PRIOR TO CAST. BOSON FIXED IT. START OF CABLE DELAYED

PRESSURE CONTROL LEVER ON HEAVE COMPENSATOR
STUCK IN "MORE PRESSURE" POSITION AFTER CAST. THIS
INCREASED PRESSURE TO VERY HIGH LEVEL. I NOTIFIED
THERESA (WATCHKEEPER).

P49
→ winch problems so winch was stopped & started part way down. - BOTTLE 23 WAS TRIPPED late
at around 2995 meters instead of 3000m

Noticed that many empty salinity sample bottles had salt (?) crystals in bottom.
I washed the 4 bottles for P33 in warm water before collecting salinity sample
A1) bottles should be pre-washed in future. WRC
Cages 18+4 Sal bottles had salt in bottom WRC

Event #60 Bottle at 5 m failed to trip because operator forgot to press trigger

DAILY LOG

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Month <u>AUGUST</u>				Year <u>2007</u>			Ship <u>CCGS JP TULLY</u>				Cruise ID <u>2007-015</u> <u>Page 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							
24	R20	0251	BE	ROS	US	61	50 55.64	143 01.27	3608		455	1	WRC	✓	cast to 5m depth only to collect water for sample 455. sal, nut, chl.
		0255	BO				50 55.65	143 01.26		5					
		0256	EN				50 55.65	143 01.26							
24	R19	0545	BE	ROS	US	62	50 57.94	142 19.87	3889		456	1	WRC	✓	5-m sample CHL, SAL, NUT
		0618	BO				50 58 04	142 20 09		2005					
		0639	EN				50 57.86	142 20.09							
24	R18	0930	BE	ROS	US	63	50 59 963	141 38 918	3856						1 Bottle @ 5m
		1002	BO				50 59 989	141 39 114		2005	457	1	MD	✓	
		1024	EN				51 00 056	141 39 150							
24	R17	1322	BE	ROS	US	64	51 02 017	140 55 930	3831						1 Bottle @ 5m
		1350	BO				51 02 058	140 56 041		2005	458-476	19	MD	✓	
		1430	EN				51 02 080	140 56 184							
24	R16	1722	BE	ROS	US	65	51 03 985	140 13 968	3752		477	1	MD	✓	1 Bottle @ 5m
		1748	BO				51 04 038	140 14 077		2005					
		1810	EN				51 04 067	140 14 263							
24	R15	2135	BE	ROS	US	66	51 05.97	139 30.42	2990		478	1	WRC	✓	1 Bottle at 5m
		2201	BO				51 06.03	139 30.55		2005					
		2222	EN				51 06.15	139 30.73							
											479				

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→ P19 lots of marine life at surface

DAILY LOG

Ocean Sciences and Productivity Division

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Month <i>AUGUST</i>				Year <i>2007</i>			Ship <i>J.P. TULLY</i>				Cruise ID <i>2007-15 P 12</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							
24	R15	2239	BE	Tow Net		67					NONE				Net tow with white net
		2330	EN				51 06.04	139 31.90	3294		NONE		WRC VF WRC	✓	5-m Bottle
25	R14	0239	BE	Ros	US	68	51 09.05	138 47.51	2994		479	1			
		0308	BO				51 09.047	138 47.677		2005					
		0329	EN				51 08.964	138 47.970							
25	R13	0629	BE	Ros	US	69	51 11.008	138 05.870	3632		480-498	19	WRC	✓	5-m Bottle
		658	BO				51 11.214	138 06.048							
		745	EN				51 11 244	138 06 347							→
25	Loop 1	1300		USW		-	51 53 762	137 17 539	3576						Loop chl, sal, nut
25	Loop 2	1800		USW		-	52 35 408	136 29 167	3471						
25	Loop 3	2246	EN	USW		-	53 17.97	135 39.04							
25	Bowie	2312	DE	MOR		70	53 17.966	135 39.043	36						Deploy Sven's mooring
26	Loop 4	0059	DE	USW		71	53 04.855	135 34.942	3238						Loop 4 chl, nut, sal
26	Loop 5	0700		USW			52 15 826	135 18 944	3445						Loop chl, nut, sal
26	Loop 6	1259		USW			51 16 712	135 03 488							Loop chl nut sal
26	Loop 7	1905		USW			51 09 286	136 15 422	3627				WRC		chl, nut, sal
26	R12	2349	BE	Ros	US	72	51 12.942	137 22.944	3631			1	WRC		5m bottle
		0018	BO				51 13.001	137 23.304		2005	499	1		✓	+LOOP
		0040	EN				51 12.86	137 23 31							

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→ Horizontal net tow at several depths to try to collect pteropods for Vicki Fabry
- Success! WRC

→ Soundus show lots of scatter at 25 metres at R14

→ R14, R13 Noise level ~~is~~ apparent signal increases when stopped
on station. Bubbles on transducer??

→ R13 winch keeper switch over and confusion about depth, 2 bottles tripped @ 175m (11412)
bottle 11 sampled, bottle 12 discarded. Niskin #'s and depths etc. changed on Rosette Log
sheet

Bower Seamount → Deploy mooring, then head toward $51^{\circ}08'N$, $135^{\circ}00.0'W$ with
all lab soundus on.

Passed S2N at ~ 0200 PDT (0800 UTC) on 26 Aug, taking photos of SIMRAD ER60 screen.
0329 PDT (1029 UTC) put 12 kHz sounder onto "passive" from "active". (External)

Reached Southern limit ($51^{\circ}05'N$, $135^{\circ}00.38'W$) at 1410 UTC 26 Aug. Currents had dropped
Turned at 1410 UTC, quality of sounder signal degraded, likely due to bubbles on sensor?
(Heaving onto 10 kn wind as we head westward after turning corner.)

DAILY LOG

Ocean Sciences and Productivity Division

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INSTITUTE OF OCEANOGRAPHY															
DAILY LOG				Ocean Sciences and Productivity Division					Ship CCGS JP TULLY			Cruise ID 2007-15 Pg 13			
Month AUGUST				Year 2007			Position		Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Latitude	Longitude							
27	R11N	0353	BE	ROS	US	73	51 26.965	136 40.316	3609		500	1	WRC JW CW	✓	S-m bottle + loop SAL, CHL, NUT
		0420	BO				51 26.986	136 40.621		2005					
		0441	EN				51 26.964	136 40.724							
27	R12 N	0738	BE	ROS	US	74	51 29.074	135 57.494	3603		501	1	MD	✓	Loop SAL CHL NUT
		0804	BO				51 28.983	135 57.649		2005					
		0825	EN				51 28.871	135 57.773							
	R10 N	0843	BE	tow net	-	75	51 28.871	135 57.773			-				white net
		0941	EN												
27	R9 N	1219	BE	ROS	US	76	51 31.039	135 14.938	3479		502-522	21	MD	✓	
		1247	BO				51 30.904	135 14.908		2005					
		1331	EN				51 30.696	135 14.990							
27	R9 N	1400	BE	tow net		77	51 30.69	135 15.05							white net
		1500	EN				51 30.06	135 14.284							
27	R8 N	1749	BE	ROS	US	78	51 33.167	134 32.694	3291						
		1815	BO				51 32.982	134 32.526		2005	523	1			Loop chl, SAL, NUT
		1840	EN				51 32.892	134 32.450							
27	R7 N	2144	BE	ROS	US	79	51 35.522	133 49.658	3095		524	1	WRC	✓	S-m bottle + Loop CHL, SAL, NUT
		2214	BO				51 35.395	133 49.540		2005					
		2230	EN				51 35.485	133 49.408							

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Daily_log_book.doc

Currents are headed N here, first time since we started sampling at R12.
So we are at western limit of eddy.

→ 0853 AIRSPACE INTSG. Flowrate @ 0.57, Adjusted Flowrate to 0.67 to get rid of AIRSPACE.

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month AUGUST				Year 2007			Ship CCGS JP TULLY			Cruise ID 2007-15			page 14		
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	R6	0201	BE	ROS	US	80	51 25.634	133 06.624	2971		525	1	WRC	✓	5-m bottle + Loop
		0230	BO				51 25.487	133 06.083		2005					
		0252	EN				51 25.354	133 05.480							
28	MJ5	0607	BE	ROS	US	81	51 27.742	132 23.767	2733		526-546	21	WRC	✓	Loop + Rosette
		0635	BO				51 27.541	132 23.964		2005					GLITCH IN SIGNALS AT 35 → 50 METRES.
		715	EN				51 27.440	132 24.016							BUG IN FLOW TUBE??
28	M54	849	BE	ROS	US	82	51 35.716	132 06.450	2538						
		0919	BO				51 35.574	132 06.528		2005	547	1	MD	✓	Loop + Rosette
		0945	EN				51 35.496	132 06.535							
28	M53	1109	BE	ROS	US	83	51 43.708	131 49.931	2307		547 -	21	MD	✓	Loop + Rosette
		1139	BO				51 43.522	131 49.999		2005	548 - 568				
		1217	EN				51 43.428	131 49.877							
28	M52	1349	BE	ROS	US	84	51 51.649	131 31.922	2123						
		1418	BO				51 51.586	131 32.002		2005	569	2	MD	✓	
		1441	EN				51 51.493	131 31.769							2 samples @ 5m
28	SS1	2244	BE	ROS	US	85	51 11.97	130 00.33	507		570-583	14	WRC	✓	SANDS IN SOME OF
		2253	BO				51 11.87	130 00.42							Bottles. One bottle has lots of air!
		2310	EN				51 11.83	130 00.78							Bottle 9 empty

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8L → Bad signal in SAL on downcast from about 35 to 55 m. Suspect animal was fast & sucked in through the tube and pump. ~~Oxygen~~ The 35 m level is near a minimum in transmissivity, so so is a likely depth to find lots of bugs.

→ SAL (MS4) sensors were good on way down but #1 noisy on way up, will flush well with DMQ when @ surface, Oxy sensor also strange so pump problem is suspected. If there is a problem @ MS3 (next station) new pump will be installed.

→ WATER flush of pump seems to have fixed problem (MS3)

→ Multi frequency EK60 Sounder Turned off @ 1420 UTC because it was not working. A system Reboot will be attempted

→ 1639 UTC TSG WAS $\frac{1}{2}$ full, flow rate at 0.57, turned flow up to 0.72 and TSG filled up

DAILY LOG

Ocean Sciences and Productivity Division

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Month AUGUST				Year 2007			Ship JP TULLY			Cruise ID 2007-15			Page 15		
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							
29	SS2	0048	BE	ROS	US	86	51 13.062	129 43.122	595	585	584	1	WRC	✓	5-m Bottle
29	SS2	0122	BO	NET		87	51 12.934	129 43.115	590						
		0104	EN				51 12.990	129 43.135					WRC		BONGO VNH
29	SS2	0122	BE	NET		87	51 12.934	129 43.115	599	250					
		0131	BO				51 12.923	129 43.192							
		0135	EN				51 12.889	129 43.244							
29	SS3	0330	BE	ROS	US	88	51 15.068	129 21.348	290	280	585-596	12	WRC	✓	
		0336	BO				51 15.077	129 21.238							
		0350	EN				51 15.028	129 21.295							
29	SS4	0538	BE	ROS	US	89	51 21.260	128 59.993	235	225	597	1	WRC	✓	Bottle @ 5 m CAL, SAL, NUT
		0544	BO				51 21.240	128 59.958							
		0547	EN				51 21.223	128 59.940							
29	SS5	0809	BE	ROS	US	90	51 28 058	128 30 041	204		598-607	10	MD	✓	
		0815	BO				51 28 042	128 30 046		195					
		0825	EN				51 27 990	128 30 002							
29	SS6	1053	BE	ROS	US	91	51 19 976	127 59 986	175		608, 609	2	MD		5m bottle for OSU
		1059	BO				51 19 980	127 59 971		170					
		1102	EN				51 19 956	127 59 989							

Cast type:

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USW =

MOR =

NET =

DRF = drifter

firing method:

top

USW = up/no stop

DN = down/no stop

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 <i>August</i>			Year <i>2007</i>				Ship <i>Tully</i>				Cruise ID <i>2007-15</i> <i>Pg 16</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
29	SS6	1118	BE	Net		92	51 19 945	127 59 94	—	—	—		MD		Bongo VNA
			BO			92			175	165	—				
		1130	EN			92	51 20 609	127 59 51	—	—	—			✓	
29	SS7	1235	BE	ROS	US	93	51 24 656	127 47 647	123		610-616	7	MD		
		1239	BO				51 24 606	127 47 642		111					
		1247	EN				51 24 634	127 47 41							
29	RI 1	1346	BE	ROS	US	94	51 26 324	127 38 269	353		617-629	13	MD		
			BO				51 26 288	127 38 398		320				✓	
		1407	EN				51 26 20	127 38.77							
29	RI 1	1439	BE	Net		95	51 26 349	127 38 315	313	250			MD		
		1444	BO												
		1449	EN				51 26 335	127 38 319							
29	RI 2	1538	BE	Net		96	51 31 301	127 33 62		250					
		1544	BO												
		1555	EN												
29	RI 2	1610	BE	ROS		97	51 31 373	127 33 631	331		630	1	MD		
		1616	BO				51 31 364	127 33 653		323					
		1620	EN				51 31 362	127 33 665							

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→ CTD STARTED DOWN WITHOUT PUMPS ON (about 12 m), package brought back to surface & restarted

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month AUGUST				Year 2007			Ship J.R. TULLY				Cruise ID 2007-15 P. 17				
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	Ri 3	1706	BE	ROS	US	98	51 35.84	127 32.06	325		631	1	WRC	✓	
		1712	BO				51 35.84	127 32.08		315					
		1716	EN				51 35.86	127 32.09							
29	Ri 3	1726	BE	Net	✓	99	51 35.89	127 32.14							
		1732	BO				51 35.90	127 32.11							
		1737	EN				51 35.30	127 32.10							
29	Ri 4	1821	BE	Net		100	51 38.844	127 26.693	299						
		1825	BO							250					
		1832	EN												
29	Ri 4	1855	BE	ROS	US	101 [*]	51 38.952	127 26.528	298		632-643	12	WRC	✓	FILE LABELLED 100. SHOULD BE 101
		1859	BO				51 38.950	127 26.563							
		1912	EN				51 38.944	127 26.641							
29	Ri 5	2001	BE	ROS	US	102	51 40.678	127 20.000	204	195	644	1	WRC	✓	5-m bottle
		2006	BO				51 40.643	127 19.979							
		2007	EN				51 40.631	127 19.972							
29	Ri 5			Net		103			218						
			BO				51 40.55	127 20.01		208					
		2034	EN				51 40.47	127 20.05							

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→ New TRANSMISSOMETER CABLE before RI4

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>AUGUST</i>				Year <i>2007</i>			Ship <i>J.P. TULLY</i>					Cruise ID <i>2007-15 P. 18</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
29	R16	2113	BE	Net		104	51 40.519	127 17.378	154	143			WRC	✓	BONGO VNH
		2115	BO				51 40.531	127 17.414							
			EN												
29	R16	2138	BE	ROS	US	105	51 40.542	127 17.575	156	146	645	1	WRC	✓	
		2143	BO				51 40.548	127 17.514							5-mu Bottle
		2147	EN				51 40 553	127 17 484							CHL, SAL, NUT
30	M2	0200	BE	ROS	US	106	51 46.45	127 53.29	195		646-654	9		✓	
		0205	BO				51 46.46	127 53.33		195					
		0214	EN				51 46.45	127 53.36							
30	M3	0253	BE	ROS	US	107	51 46.34	127 54.52	302						
		0259	BO				51 46.41	127 54.49		290	655-667	13		✓	
		0317	EN				51 46.46	127 54.47							
30	M4	0350	BE	ROS	US	108	51 44.66	128 00.29	432	422				✓	
		0358	BO				51 44.592	128 00.210			666-681	14			
		0414	EN				51 44.56	127 59.75							
30	M5	0453	BE	ROS	US	109	51 43.443	128 03.553	345	338	682	1		✓	5-mu bottle CHL, SAL, NUT
		0459	BO				51 43.378	128 03.502							
		0505	EN				51 43.364	128 03.482							

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month AUGUST

Year 2007

Ship CGCS JP T

Cruise ID 7007-15 00018816

[illegible]

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