

DAILY LOG BOOK

MISSION
NUMBER

2002-30

DATE:

From: Aug 24

to:

Sep 16 /

VESSEL:

PROJECT:

Line P, line R, Hesa!

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

Rosette Setup:

Number of bottles: 24
Manufacturer: SBE, custom (Ocean Test Equip., General Oceanics, IOS)
Volume of bottles (litres): 10 L

Winches:

1. Make: HANBOLDT model: SPK130 serial #: 17026 used for: CTD/Rosette
2. Make: HAWBOLDT model: model: 589 serial #: 12250 used for: NOT USED
3. Make: HR model: 320 serial #: 515 used for: moorings
4. Make: SWANN model: 455 serial #: 1207 used for: net tows
5. Make: SWANN model: serial #: 1451 used for: moorings
6. Make: model: serial #: used for:
7. Make: model: serial #: used for:
Comments: HR589 could not lift 600 kg. Which or ship's hydraulics?

Salinometer: make: GUILDLINE PORTASAL model: serial number:
Comments:

Thermosalinograph System:

Program: SEASAV 1 Version:
Sampling interval (seconds): 30
Fluorometer sensor serial number: WS3S-713P
Comments: +Flas meter
GPS feed was incorrect at times

ADCP Setup:

Computer time zone:
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:

OXYGEN

cm³ 1 61

62 79

86 135

$$V_1 = .005$$

$$.001$$

$$.005$$

$$V_2 = .722$$

$$.723$$

$$.717$$

$$.721$$

= CTD cast #
or bongo etc

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month		code		Year		Ship		Cruise ID						
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
						Latitude	Longitude							
24	S3	2227	ROS	BE	1	48 35.30	123 30.22	222	215	1-12	12			
24	S3	23:42	ROS	BE	2	48 35.32	123 30.11	222	100	—				
25	JF1	0553	USW			48 15.97	123 30.00							LOOP SAMPLES TAKEN
25	JF2	801	USW			48 18 00	124 00 00							Loop samples TAKEN
25	JF3	1025	USW			48 27 00	124 30 028							Loop samples TAKEN
25	JF4	12:36	USW			48 32.49	125 00 .609	68.6		Wet lab = .161				Loop samples taken
25	P1	15:06	ROS	BE	3	48 34.55	125 30 .00	115	100	13	1			Loop taken from 4m rosette
25	P1			BO										
25	P1	15:12		EN		48 34.57	125 29.94							
25	P2	1748	ROS	BE	4	48 36 00	126 0.01	117		14-19	6	TS/R5		
	P2	1752		BO		48 35 99	126 0.06		109.6					
	P2	1801		EN		48 35.70	126 0.14							
25	P3	1944	ROS	BE	5	48 37.49	126 19 89	820		20	3			Extra water for traps & Correll
		1956		BO		48 37.49	126 19.80							
		2012		EN		48 37 47	126 19 69							
25	P4	2143	ROS	BE	6	48 38 50	126 35 26	1205		21-24	24			PARTO 400M
				BO										PAR values too low!
		2212		EN		48 38 45	126 34 96							

Cast type:

BOT = bottle cast, no CTD
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ROS = Rosette plus CTD

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bottle firing method:
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Transmissometer to be cleaned for each cast, do not use Ammonia products

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Additional comments

CONFILR

0550 etd. CON

Sediment trap mooring recovery following PAR cast. All samples (21) LAP 19

DAILY LOG

Ocean Sciences and Productivity Division

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Month <i>August</i>					Year <i>2002</i>			Ship				Cruise ID <i>2002-30</i>			
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments	
						Latitude	Longitude								
26	P4	0112	GF		7						7+3 Pump			GO-FLU'S + PUMP FOR IRON 10, 25, 40, 75, 100, 200, 300 400, 600, 800 m	
26	P4	0513	ROS	BE	8	48 38.89	126 39.95	1339	1320	21-40	20	SW+TS			
		0533	"	BO		48 38.53	126 39.90								
			"	EN											
26	P4	0610	LOOP		9									from SW Loop S, chl, Nut	
26	P4	11:11	NET		10	48°39.03	126°40.07	13364	150	Bongo	—	BT	—	VNH-150m ^{A=metarod} _{B=win}	
	P4	1221	Go-Flb		11	48 38.95	126 39.95		15m	PR.PROD	6			15m 10m 7m 5m 3m 1m	
	P4	1620	TRAP	IN	12	48 38.69	126 35.686							deploy 1 trap LAP 20	
26	P5	1855	ROS	BIZ	13	48 41.65	127 09.98	2105	1500	41	1	12/15 MD/SC		NEW CALPAC - PAR	
		1921	"	BO		48 41.76	127 09.87							4m - Nektin I	
		1947	"	EN		48 41.86	127 09.68								
26	P6	2217	ROS	BE	14	48 44.60	127 39.87	2500	1500	42	1	MD/TC		4m loop	
		2235	"	BO		48 44.54	127 39.70								
		2255	"	EN		48 44.55	127 39.50								
27	P7	0120	ROS	BE	15	48-46.55	128°9.85	2534		43	1			Loop @ 4m	
27	P7	0140	ROS	BO		48 46.60	128 09.69		1501						
27	P7	0158	ROS	EN		48 46.53	128 09.63								
27	P8	0415	ROS	BE	16	48 48.99	128 40.02	2547	1500	44-67	18			Tmax near 200m	
		0440		BO		48 48.99	128 40.00								

Cast type: USW = sea water loop • bottle firing method: • Time Code
 BOT = bottle cast, no CTD MOR = mooring • US = up / stop • BE = beginning time of cast
 CTD = CTD without Rosette NET = net haul • UN = up / no stop • BO = bottom time of cast
 ROS = Rosette plus CTD DRF = drifter • DN = down / no stop • EN = end of cast time • DE = deployment time
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Additional comments

TS 80-90
 51 5-7
 T 57
 5 32-35

65-95
 6-15
 6-15
 28-35

AUG 25th 1820 UTC

CHANGED CONFIL - CAL FACTOR FOR PAR IRRADIANCE
 FROM 5.5249E10 TO 5.5249000000 TO 5.5249E9 5.524900000

DAILY LOG

Ocean Sciences and Productivity Division

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Month <i>August</i>					Year <i>2002</i>			Ship <i>Tully</i>				Cruise ID <i>2002-30</i>			
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments	
						Latitude	Longitude								
27	P8	0450	ROS	BE	17	48 48.98	128 39.98		1194	46-61				<i>Rosstart upcast at 1194m</i>	
		0523	ROS	EN		48 49.00	128 39.97								
	P8	0550	BONGO		18	48 49.00	128 40.05		150					<i>150m bongo</i>	
27	P9	0845	ROS	BE	19	48 51.45	129 10.09		1500	62	1	MD/SC			
		900		BO		48 51.39	129 10.07								
		919		EN		48 51.45	129 9.99								
27	P10	1201	ROS	BE	20	48 53.639	129° 39.904	2670		63	1			<i>loop @ 4m</i>	
		1227		BO		48 53.633	129° 40.006		1501						
		1243		EN		48 53.628	129° 40.019								
27	P11	1506	ROS	BE	21	48 56.03	130° 10.02	2780	1500	64	1			<i>Sd, chl + N4T @ 4m</i>	
		1523		BO		48 56.03	130 9.95	2781							
		1549		EN		48 55.99	130 9.94								
27	P12	1802	ROS	BE	22	48 58.28	130 40.05	3266	405	1-24	24			<i>PAR</i>	
		1808		BO		48 58.22	130 40.00	3265							
		1830		EN		58.43	40.08	3264							
28	P12	0043	Bongo	BE	23	48 58.177	130 39.963			<i>/</i>				<i>10° wine out 155</i>	
		0048		BO		48 58.198	130 39.969		155						
		0052		EN		48 58.221	130 39.978								
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Additional comments

~~Screen~~ Data Prog at 1250dbar. Restarted new file at 1194dbar on upcast

→ 05²³/P8 Loop from clean SW supply (sink) Nut, chl, S (Event 17.5)

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>AUG</u>					Year <u>2002</u>			Ship <u>TUELE</u>				Cruise ID <u>2002-30</u>		
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
						Latitude	Longitude							
28	P12	0133	ROS	BE	24	48°58.206	130°39.938	3266		65-87	23		✓	
		0215		BO		48 58 121	130 39 957		3128					
		0328		EN		48 57.81	130 40.37							
	P12	0328	LOOP		25	48 57.81	130 40.37			88				chl, S, Nut from SW loop
28	P13	801	ROS	BE	26	49 2 60	131 39 86	2954	1500	89	1	JC/MD		
		818		BO		49 2 63	131 40 05							
		834		EN		49 2 69	131 40 04							
28	P14	1259	ROS	BE	27	49 07 451	132 39 940	3346		90	1		✓	Loop from Rosette
		1320		BO		49 07 694	132 39 913		1502					
		1340		EN		49 07 724	132 39 950							
28	P15	1833	ROS	BE	28	49 11.94	133 40.07	3568?		91	2			DEPTH CHANGING > 300m
		1851		BO		49 11 87	133 39 93							Fired bottle @ 1500 by
		1917		EN		49 11 76	133 39 97							Mistake, sample taken @ 4m
28	P16	2357	ROS	BE	29	49 16.99	134 39.98	3816		1-24	24			ALL BOTTLES TRIPPED
29		0007		BO		49 17.09	134 40.09		400					
29		0034		EN		49 17.25	134 40.35	3660						
29	P16	0045	GO FLO	BE	30	49 17	134 40		800					IRON PUMP TO 40m
		0530		EN		49 17	134 40							GO FLO 3 TO 800m

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						Latitude	Longitude							
29	P16	0546	ROS	BE	31	49 17.09	134 40.04	3660	3680	92-115	24	K5-TS		
		0636		BO		49 17.24	134 40.07		3680					
		0758		EN		49 17.52	134 39.54							
29	P16	1138	Bongo		32	49° 17.071	134° 40.210	3662	150	—	—			P16 Bongo
29	P16	1309	P/P		33	49° 16.482	134° 39.589	3660	55	—	—			Primary Prod. Co P16
29	P17	1837	ROS	BE	34	49 20.94	135 39.91	3240		116	1.			
		1855		BO		49 21.01	135 39.91							
		1914		EN		49 21.04	135 39.98							
29	P18	0001	ROS	BE	35	49° 25.848	136 40.003	3860.8		117-127	14		✓	11 bottles NUTS / 3 bottles traps
30				BO		49 25.808	136 40.153		1500					
		0051		EN		49 25.76	136 40.32							
30	P19	0513	ROS	BE	36	49 30.02	137 39.99	3950	1500	128	1			22m chl max 65m chl layer Thick ~175m
		0534		BO		49 30.03	137 40.14							
		0553		EN		49 30.05	137 40.36							4m Niskin
30	P19	0553	LOOP								1			Loop with 4m Niskin
30	P20	1055	ROS	BE	37	49 34.01	138 39.81	3978	200	—	0.			
		1058		BO		49 34.01	138 39.81							
		1108		EN		49 34.01	138 39.81							

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>AUG</u>					Year <u>2002</u>			Ship <u>TUELE</u>			Cruise ID <u>2002 30</u>			
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
						Latitude	Longitude							
30	P20	1105	Bongo		38	49° 33.947	138° 39.400	3978	150					Bongo - VNH
30	P20	1302	PIP		39	49 33.867	138 40 009	3988						Rim. Prod.
30	P20	1420	PUMP	BIZ	40	49	138	11				KJ		IRON PUMPING TO 40m
		1630	GO FLO	EN										GO FLO'S 75 - 200m
30	P20	1640	ROS		41	49 34.02	138 40.06	3988				KJ/rs		PINGAR NOT ON
30	P20	1648	ROS	BIZ	41	49 34.02	138 40.03	3988		129-152	24			RESTART
		1736	"	BO		49 33.86	138 40.61		4004					
		1845		EN		49 34.14	138 40.43	3987						
30	P20	2000	GO FLO		42	49 34.038	138 40 045	3987.4	800					150m - 800m
30	P20	2215	PAR	BE	43	49 34.70	138 39 68		200	1-24	24			UBC PAR
		2217		BO		49 34 06	138 39 68							
				EN										
31	P21	0340	ROS	BE	44	49 38.03	139 39.96	4017?		153	1			Sounder not giving reliable depth
		0404		BO		49 37.98	139 39.82							
		0424		EN		49 39.94	139 39.91							
	P22	10:01			45	49 41.898	140 40 538							winds @ 33 KNOTS
31	P23	1528	ROS	BE	45	49 46.24	141 40.13	4043			0	DT KJ TS		loop only taken
		1546		BO	46	49 46.47	141 40.86	4070			1.			loop @ 4m NISKIN
		1608		EN		49 46.74	141 41.52	4072		154				

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49 43 308

Additional comments

P 23 NMBA NOT COMMUNICATING, DARRAN CHANGED OS50CTD.CON FILE
 TO WORK WITHOUT NMBA
 DOWN CAST EVENT # 45 0-1500-1346 (UPS POWER TURNED OFF (FW) CAUSING FAILURE)
 RESTARTED UP CAST 11 # 46 1346 UP TO 4

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>Aug</i>					Year <i>2002</i>			Ship <i>TULLY</i>				Cruise ID <i>2002-30</i>		
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
						Latitude	Longitude							
<i>31</i>	<i>P24</i>	<i>2055</i>	<i>ROS</i>	<i>BE</i>	<i>48</i>	<i>49 50 22</i>	<i>142 39 99</i>	<i>4009</i>	<i>1500</i>	<i>155</i>	<i>1</i>	<i>dc/md</i>		<i>There was Already a file named -30-047 so I called this -048.</i>
		<i>2114</i>		<i>BO</i>		<i>49 50 24</i>	<i>142 40 20</i>							
		<i>2132</i>		<i>EN</i>		<i>49 50 36</i>	<i>142 40 55</i>							
<i>01</i>	<i>P25</i>	<i>0155</i>	<i>ROS</i>	<i>BE</i>	<i>49</i>	<i>49 59 862</i>	<i>143 36 300</i>	<i>4101</i>		<i>156</i>	<i>1</i>		<i>✓</i>	
				<i>BO</i>		<i>50 00 133</i>	<i>143 36 846</i>							<i>Loop @ 4m</i>
		<i>0236</i>		<i>EN</i>		<i>50 00 233</i>	<i>143 37 001</i>							
<i>01</i>	<i>P36</i>	<i>0544</i>	<i>ROS</i>	<i>BE</i>	<i>50</i>	<i>49 59.98</i>	<i>144 18.24</i>	<i>4170.</i>	<i>1500.</i>	<i>157</i>	<i>1</i>	<i>FW/NS</i>		
		<i>0602</i>		<i>BO</i>		<i>49 59.86</i>	<i>144 18.44</i>							
		<i>0623</i>		<i>EN</i>		<i>49 59.81</i>	<i>144 18.45</i>							
<i>01</i>	<i>P26</i>	<i>0934</i>	<i>ROS</i>	<i>BE</i>	<i>51</i>	<i>50 00 01</i>	<i>144 59 94</i>	<i>4132</i>	<i>125</i>	<i>158-171</i>	<i>14</i>	<i>dc/md</i>		<i>125m Cast for Nuts.</i>
		<i>0935</i>		<i>BO</i>		<i>50 00 01</i>	<i>144 59 96</i>							
		<i>0947</i>		<i>EN</i>		<i>50 0 00</i>	<i>145 0.10</i>							
	<i>P26</i>		<i>go flo</i>		<i>52</i>									
<i>01</i>	<i>P26</i>	<i>1910</i>	<i>MOR</i>		<i>53</i>	<i>50 01.743</i>	<i>144 56.401</i>	<i>4255</i>						<i>Deploy SOLAS mooring</i>
	<i>P26</i>	<i>2041</i>	<i>ROS</i>	<i>BE</i>	<i>54</i>	<i>49 59 996</i>	<i>145 00 034</i>			<i>1-24</i>	<i>24</i>			<i>PAR CAST</i>
	<i>P26</i>	<i>2048</i>	<i>ROS</i>	<i>BO</i>	<i>55</i>									<i>No NMEA data</i>
		<i>2110</i>		<i>EN</i>										
<i>02</i>	<i>P26</i>	<i>0115</i>	<i>MOR</i>		<i>55</i>									<i>Recover Traps</i>
<i>02</i>	<i>P26</i>	<i>0300</i>	<i>Go Flo Pump</i>	<i>BE</i>	<i>56</i>	<i>49 59.9</i>	<i>144 59.9</i>		<i>25</i>		<i>11/11</i>	<i>RS</i>		<i>INCUBATION SW</i>

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display menu
config new style modify

Additional comments

01 Sep 10 50 PDT GPS on thermosal + CTD reading 1250 UTC, not correct.

3 traps with complete sample sets, 21 each. PA30

DAILY LOG

Ocean Sciences and Productivity Division

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Month <i>Sept</i>					Year <i>2002</i>			Ship					Cruise ID		
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments	
02	P26		PUMP	EN	56			42							
02	P26	816	ROS	BE	57	50 00 135	145 00 262	4464	4000	172-195	24			No NMEA (SSD CTD WITHOUT NMEA)	
		905		BO		50 00 08	145 00 88								
		1028		EN		50 00 657	145 02 290								
02	P26	1315-1415	Prod		58				40m		6	PT		Primary prod. w/ Go-flos	
2	P26	2138	MOR	DE	59	49 57.404	145 04.366	4270						Sed. Trap Deploy ^{PT 31}	
3	P26				60	49 59.946	145 04.619							Bongo	
3	P26	1805	ROS	BE	61	50 03.93	144 59.04		400	1-14	14			Shallow cast UBC	
		1812		BO		50 03.94	144 59.03								
		1828		EN		50 04.12	144 59.16								
4	ED1	1110	ROS	BE	62	49 12.03	145 49.92	4440	1500	196-215	20			Eddy cast	
		1136		BO		49 12.24	145 50.09								
		1215		EN		49 12.47	145 50.24								
4	ED2	1710	LOOP	BE	63	49 19.19	145 27.74								
		1714	ARGO	IN	64	49 19.090	145 27.569								
4	ED3	1812	LOOP	BE	65	49 28.00	145 21.28							#517 ARGO profiler deployed	
	ED4	2000	LOOP		66	49 45 39	145 09 58								
		1446	ARGO	IN	67	50 01 277	144 56 77							#516 ARGO profiler deployed	

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Additional comments

Sep 4/02

1340

Arrived at approx. location of ARGO profiler. Await Howard's phone call + sunrise
Searched for profiler till 1015 PDT without success (could receive signal but not DF)
Launched an Argo float in vicinity + left for SOLAS mooring site

1930

SOLAS site, began recovery of mooring line 2030 Winch problems slowed work

Sep 5

0230 utc ready for last lift of mooring

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>Sept</u>					Year <u>2002</u>			Ship <u>TULLY</u>				Cruise ID <u>2002-30</u>			
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments	
						Latitude	Longitude								
5	P26	0246	MOR		68	50 01.688	144 56.183	4240						Deploy SOLAS mooring	
5	P26	0353	LOOP		69	50 01.33	144 55.41							Loop	
5	EDS	749	Loop		70	50 18 166	144 19 685							Loop	
5	ED6	1106	ROS	BE	71	50 35 973	143 40 002	4000		216-234	19		✓	Rosette	
		12		BO		50 35 924	143 40 516		1506						
				EN		50 35 803	143 40 799								
5	PS1	1336	CTD	BE	72	50°36.040	143° 20.248	4000					✓	Loop CTD 4m NISICIN	
		1404		BO		50 35.925	143 19.975								
				EN											
5	PS2	1536	LOOP		73	50 36.89	143 00.00							SW LOOP	
5	PS3	1727	CTD	BIZ	74	50 36.17	142 40.05	2800							
		1733		BO		50 36.13	142 40.07	2800	500	234	1			4m SAMPLE	
				EN		50 36.05	142 40.15								
5	PS4	1910			75	50 36	142 20							Loop sample	
5	PS5	2029	ROS	BE	76	50 35 978	141 59 946				24			THORIUM Water	
		2055		BO		50 35 890	142 00 09			235	1			4m Sample	
		2116		EN		50 35 80	142 00 13								
6	R18	0034	ROS		77	51 00 068	141 38 989			236	1.				
6		0053				51 00 119	141 39 152							Loop @ 4m	

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

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Additional comments

Bath	me	m		
------	----	---	--	--

$$p \text{ CO}_2$$

Sep 5	50	36.46N	142	46.15	1700-1800	m	on a steep slope from 4000m plane
-------	----	--------	-----	-------	-----------	---	-----------------------------------

385

065847c	50	36.418	14245.54	~1750 m	at peak
---------	----	--------	----------	---------	---------

~ 1750

385

1705	50	36.30	142	43.68	2200	plateau
------	----	-------	-----	-------	------	---------

385

1713	50	36.5	142	41.40	~ 2000-2100
------	----	------	-----	-------	-------------

~2245

384

$\sim 4000 \text{ m}$

DAILY LOG

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Month <i>Sept</i>					Year <i>2002</i>			Ship <i>Tully</i>			Cruise ID <i>2002 30</i>			
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
						Latitude	Longitude							
<i>6</i>	<i>R18</i>	<i>0114</i>	<i>CTD</i>	<i>BO</i>	<i>77</i>	<i>51°00.211</i>	<i>141°39.418</i>							<i>Loop @ 4m</i>
<i>6</i>	<i>R17</i>	<i>0412</i>	<i>ROS</i>	<i>BE</i>	<i>78</i>	<i>51 01.98</i>	<i>140 55.91</i>	<i>~3800</i>	<i>1500</i>	<i>236</i>	<i>1</i>			<i>4m NISK</i>
		<i>0432</i>		<i>BO</i>		<i>51 01.83</i>	<i>140 55.90</i>							
		<i>0451</i>		<i>EN</i>		<i>51 01.62</i>	<i>140 55.78</i>							
	<i>R17</i>		<i>LOOP</i>											<i>CWL, Nurr, S</i>
<i>6</i>	<i>R16</i>	<i>754</i>	<i>ROS</i>	<i>BE</i>	<i>79</i>	<i>5103 98</i>	<i>140 14 04</i>		<i>1500</i>	<i>237-255</i>	<i>19</i>			
		<i>810</i>		<i>BO</i>		<i>5103 89</i>	<i>140 14 147</i>							
		<i>846</i>		<i>EN</i>		<i>5103 62</i>	<i>140 13 95</i>							
<i>6</i>	<i>R16</i>	<i>900</i>	<i>ARGO</i>	<i>INV</i>	<i>80</i>	<i>5103 785</i>	<i>14013 905</i>							<i>#519 Argo Red 16 deploy</i>
	<i>R15</i>	<i>1215</i>		<i>BE</i>	<i>81</i>	<i>51 06005</i>	<i>139 30 411</i>	<i>3005</i>			<i>3 ✓</i>			<i>39.4550</i>
		<i>1232</i>		<i>BO</i>		<i>51 05 979</i>	<i>139 29 767</i>		<i>1501</i>				<i>✓</i>	
		<i>1252</i>		<i>EN</i>		<i>51 06 033</i>	<i>139 29 297</i>							<i>10m x 2 P/P + 4m loop</i>
<i>6</i>	<i>R14</i>	<i>1540</i>	<i>CTD</i>	<i>B12</i>	<i>82</i>	<i>51 9.06</i>	<i>138 47.33</i>	<i>2640</i>		<i>256</i>	<i>1</i>	<i>K5 TS</i>	<i>✓</i>	<i>4m NISK</i>
		<i>1600</i>		<i>BO</i>		<i>51 9.22</i>	<i>138 47.33</i>	<i>2815</i>	<i>1500</i>					
		<i>1619</i>		<i>EN</i>		<i>51 9.28</i>	<i>138 47.31</i>	<i>2900</i>						<i>ECHO TRACER 2900</i>
<i>6</i>	<i>R13</i>	<i>1910</i>	<i>ROS</i>	<i>BE</i>	<i>83</i>	<i>51 10 11</i>	<i>138 23 02</i>			<i>257-262</i>	<i>6 ✓</i>			<i>5 Deep DIC / 1 loop</i>
		<i>1923</i>		<i>BO</i>		<i>51 10 11</i>	<i>138 23 02</i>							
				<i>EN</i>										

Cast type:
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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>Sept</i>					Year <i>2002</i>			Ship				Cruise ID		
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
						Latitude	Longitude							
6	R12	2238	CTD	BE	84	51 12 961	137 23 00		1500	263	1			4m
				BO		51 13 211	137 23 049							
		2314		EN		13321	23 175							
7	R11	02 ³⁰ 0700	Go-FLO		85				800	264	10	KS		10-800m Go Flo
	R11	700	ROS	BE	86	51 15 166	136 40 409			264-281	20.			
		722		BO		51 15 17	136 40 41							
				EN										
7	R11	0515	Bongo		87	51 15.00	136 40.22							Bongo
7	R10	1153			88	51 17 069	135 57 484			282-298	17			
		1213				51 17 060	135 57 442							
7	R9	1535	CTD	BE	89	51 19.05	135 14.92	3489		299	1	KS TS	✓	4m NISIKIN
		1554		BO		51 19.08	135 14.85		1500					
		1612		EN		51 19.18	135 14.94	3490						
7	R8	2018	ROS	BE	90	51 21 19	134 32 75	3346	1500	300-317	19	SC MD		
		2037		BO		51 21 10	134 32 83							
		2110		EN		51 21 02	134 33.04							
8	R7	0026		BE	91	51 23 532	133 49 531	3143	1500	318	1			CTD 1500m
		0046		BO		51 23.49	133 49.46							
		0066		EN		51 23 480	133 49 393							

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>Sept</i>		CODE		Year <i>2002</i>				Ship <i>Tully</i>				Cruise ID <i>2002-30</i>			
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments	
						Latitude	Longitude								
8	R6	0400	ROS	BE	92	51 25.52	133 06.51	2952	1500	319	1			4m Nisk	
		0418		BO		51 25.42	133 06.42							chk max ~40m ~3.	
		0437		EN		51 25.31	133 6.25								
8	J5	0727	ROS	BE	93	51 27 43	132 23 65		1500	320-337	18				
		0747		BO		51 27 46	132 22 82								
		830		BE		51 27 46	132 23 69								
8	J5		BOT		94									Go Flo	
8	J5	1100	NET		95									Bongo	
8	MT1	1650	ROS	BE	96	51 30.02	131 40.07	2480	1500	338	1				
		1709		BO		51 30.04	131 40.12							Adjusted computer time	
		1730		EN		51 30.04	131 40.08							forward ~20 min	
8	MT2	2052	ROS	BE	97	51 35 22	130 55 18			339-356	18				
		2114		BO		51 35 27	130 55 22								
		2146		EN		51 35 55	130 55 64								
9	MT3	0100	Go Flo	BE	98	51 56 97	130 27 039	408	100		2			10, 100	
9	MT3	0128	ROS	BE	99	51 56 962	130 27 012	408	395	357-370	24				
		0129		BO						380					
		0151		EN											
9	MT3	0210	Go Flo's	BE	100	51 56.97	130 27.02	410	400					200, 300, B-25, B-10 385 400	

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Argo float info

DAILY LOG

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Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments	
						Latitude	Longitude								
9	MT4	0529	ROS	BE	101	52 16.104	130 17.897	384	378	371	1	FW/TS			
		0535		BO		52 16.14	130 17.85								
		0541		EN		52 16.21	130 17.84								
9	MT5	0742	ROS	BE	102	52 36.12	130 9 87	264	264	372-383	12	MD/JO			
		0758		BO		52 36.01	130 09 73								
		806		EN		52 35 97	130 09 60								
9	MT6	1018	ROS	BE	103	52 55 07	130 08.62	242	234	384	1				
		1023		BO		52 55 158	130 08 55								
		1025		EN		52 55 2.8	130 08 56								
9	MT7	1312	ROS	BE	104	53 09 810	130 30 312	199		384-393	10				
		1332		BO		53 09 970	130 30 234								
				EN		53 —	—								
9	PCI	1945	ROS	BE	105	53 35 85	130 17 60	395		394-407	24				
		1950		BO		53 35.18	130 17.81								
		2004		EN		53 36.11	130 18.44								
9	PCI	2300	Go-Aos	EN	106	53 35.8	130 17.6	400	375		5				Cd samples
19	L1	2330	LOOP		107	53 40.57	130 26.01	62			1				Loop from sink S~31.0
10	L2	0009	LOOP		108	53 45.23	130 19.07	82			1				S~31.3

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Additional comments

→ MT7 stopped work due to weather, winds to 40kt + seas building

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Month					Year			Ship				Cruise ID		
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
						Latitude	Longitude							
10	L3	0042	LOOP		109	53 50.29	130 18.56	202			1			S = 29.8
	L4	0110	LOOP		110	53 54.42	130 15.11							S = 29.0
	L5	0130	LOOP		111	53 56.667	130 11.492							S = 28.9
	L6	0153	BUCKET		112	53 58.15	130 09.84							S = 28.8
	L7	0200	BUCKET		113	53 58.46	130 09.32							S = 29.2
	L8	0210	BUCKET		114	53 57.93	130 10.21							S = 29.2
	L9	0248	BUCKET		115	53 54.47	130 07.22							S = 29.6
10	L10	0259	BUCKET		116	53 54.77	130 06.48							
10	MT10	1305	ROS	BE	117	53°37'04.2	130°44'59	168		408-415	8			
		1318		BO		53 37 04.7	130 44 50.6		161					
		1326		EN		53 36 99.9	130 44 71.4							
10	MT10	1410	G.FLO	1410	118	53 36.58	130 44.40	182	170		4			10, 100, 165, 170
10	Bonilla Is		Boat	1600	119	53 30	130 40							Oyster pick-up
10	MT9	1720	ROS	BE	120	53 19.87	130 43.79	172		416-425	17.			
		1730		BO		53 19.87	130 43.76							
		1756		EN										
10	MT8	2010	ROS	21	121	53 9.135	130 26.213	183		426-436	11.			sponge site
10	MT8		G.FLO		122	53 9.7	130 25.97	18.						10 100 160 175

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Additional comments

Sponge reefs

Sep 10
2000 UTC

53 9.88
130 26.20

↓ 10-15 m high

Rt m ~ 190 m



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Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments	
						Latitude	Longitude								
10	SR3	2100	MORING RECOVERY	RE	123									PGC Moorings Recovery	
10	SR2	2230	11	RE	124									h u 11	
11	HN01	0008	ROS		125	53 19 771	130 13 68 6	96.4		437					
		0010				53 19 732	130 13 662			426	2		✓	Loop	
		0012				53 19 732	130 13 644								
11	HN03	0116	ROS	BE	126	53 18 325	130 24 018	89.6		438					
		0120		BO		53 18 315	130 23 957		82.4	427	1			Loop	
		0124		EN		53 18 318	130 23 934								
11	HN05	0222	ROS	BE	127	53 16 416	130 33 968	152		439					
		0228		BO		53 16 396	130 33 789			428	1			Loop	
		0230		EN		53 16 383	130 33 751								
11	HN07	0318	ROS	BE	128	53 15.48	130 40.99	191	185	440	1			4m Nisk	
		0321		BO											
		0325		EN		53 15.42	130 40.89								
11	HN09	0425	ROS	BE	129	53 13.91	130 51.07	119	109	441	1			4m Nisk	
		0429		BO		53 13.92	130 50.97								
		0432		EN		53 13.93	130 50.85								
11	HN11	0540	ROS	BE	130	53 12.09	131 02.71	47	40	442	1			4m Nisk	
		0543		EN		53 12.08	131 02.68								

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22 March 2002
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DAILY LOG

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Month <i>Sept</i>					Year <i>2002</i>			Ship <i>Tully</i>			Cruise ID <i>2002-30</i>					
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments		
						Latitude	Longitude									
<i>11</i>	<i>HN13</i>	<i>0643</i>	<i>ROS</i>	<i>BE</i>	<i>131</i>	<i>53 10.54</i>	<i>131 15.16</i>	<i>33</i>	<i>28</i>	<i>443</i>	<i>1</i>	<i>7W</i>		<i>4m Niskin</i>		
		<i>0645</i>		<i>EN</i>		<i>53 10.54</i>	<i>131 15.16</i>									
	<i>SP4</i>	<i>1800</i>	<i>Moor</i>		<i>132</i>	<i>52 02.72</i>	<i>129 25.28</i>							<i>SPI mooring Recovery</i>		
<i>11</i>	<i>SP4</i>	<i>1835</i>	<i>ROS</i>		<i>133</i>	<i>52 02.47</i>	<i>129 25.42</i>	<i>194</i>		<i>444-454</i>	<i>19</i>					
		<i>1840</i>				<i>52 2.46</i>	<i>129 25.36</i>									
		<i>1850</i>				<i>52 2 49</i>	<i>129 25 26</i>									
<i>12</i>	<i>SAR</i>	<i>0100</i>	<i>LOOP</i>		<i>134</i>	<i>51 24.54</i>	<i>129 25.61</i>	<i>139</i>		<i>—</i>	<i>1</i>			<i>SAR call, fuel pump on boat</i>		
<i>13</i>	<i>QCS 2</i>	<i>745</i>	<i>ROS</i>	<i>BE</i>	<i>135</i>	<i>50 46 69</i>	<i>127 02 30</i>		<i>217</i>	<i>455-465</i>	<i>11</i>					
		<i>800</i>		<i>BO</i>		<i>50 46 72</i>	<i>127 02 26</i>									
		<i>809</i>		<i>EN</i>		<i>50 46 71</i>	<i>127 02 19</i>									
<i>13</i>	<i>QCS 1</i>		<i>ROS</i>	<i>BE</i>	<i>136</i>	<i>} Cancelled - diesel spill</i>				<i>466-473</i>						
				<i>BO</i>												
				<i>EN</i>												

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

BOT = bottle cast, no CTD MOR = mooring • US = up / stop • BE = beginning time of cast DE = deployment time

CTD = CTD without Rosette NET = net haul • UN = up / no stop • BO = bottom time of cast MR = messenger release time

ROS = Rosette plus CTD DRF = drifter • DN = down / no stop • EN = end of cast time RE = recover mooring time

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

22 March 2002
Daily_log_book.doc

Additional comments

Sep 13 0900 UTC (0200 PDT) Diesel spill from Tully halted all work shortly after QCS 2. Stayed in vicinity over night.