

DAILY LOG BOOK

MISSION
NUMBER

2002 - 38
1 of 2

DATE:

From: OCT 15 - to: NOV 11 2002

VESSEL:

W.E. RICHER

PROJECT:

WELCH Hi SEAS SALMON

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

Captain: Jim Songerville 2nd
~~Second Officer:~~ Bob Barker
 1st Dale Hanson
 Third Officer: _____

Mission Participants / Agencies:

Scientific Personnel: _____
 Name _____
 Party Chief: John Morris
 Watch _____ Cabin _____ Name _____

Name	Watch	Cabin	Name	Watch	Cabin
MARY THIESS					
TYLER ZOBKOWSKI					
DAN HAYWARD	1 ST LEG				
HUGH MACLEAN					
IAN WILSON	2 ND LEG				

[illegible]

Data logging computer:

Data acquisition program: SEASAVE WIN 32 VER 5.25

CTD deck unit make: 11 PLUS model: SCABED serial number: 0471

Primary CTD

Make: SEABIRD model: 911 + serial number: 0550

Primary temperature serial number: 2371 CAL DATE 16 APR/02 serial number: _____

Primary conductivity serial number: 2399

Secondary temperature serial number: 2663

Secondary conductivity serial number: 2424

Transmissometer: SCATECH Model: 197 s/n: 197

Fluorometer: Model	SEA POINT	Cable gain:	10 X	s/n:	2228	P(S or NO pump?)
--------------------	-----------	-------------	------	------	------	------------------

Oxygen sensor: _____
 Model: _____
 s/n: _____
 P, S or NO pump? _____
 s/n: _____

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

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

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

Other sensors: _____

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

Other sensors: _____

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

Secondary CTD

Make: _____ model: _____ serial number: _____

Primary temperature serial number: _____ model: _____ serial number: _____

Primary conductivity serial number:

Secondary temperature serial number:

Secondary conductivity serial number:

Secondary conductivity serial number:
Transmissometer:

Fluorometer: Model: _____	Cable strain: _____	s/n: _____
Transmissometer: _____	Model: _____	_____

Fluorometer: Model _____ s/n: _____
 Cable gain: _____
 Oxxygen sensor: _____
 Model: _____

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

FAK sensor: _____ Model: _____ s/n _____
Other sensors: _____

Other sensors: _____ s/n: _____

Other sensors: _____

Other sensors: _____ s/n: _____

Other sensors: _____

Other sensors: _____ s/n: _____

Other sensors: _____

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

WETA-85 SEASTAR

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month OCT					Year 2002			Ship W.E. RICKER				Cruise ID 2002 38		
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							
17	1V1 01	1414	CTD	BC	001	48 49 65	125 11 21	75			1			T: S:
		1417		BO		48 49 64	125 11 21		65					* PUMPS OFF
		1423		EN		48 49 64	125 11 21							BOT @ 10m - CH/S/NUTS
		1431	NET	BC	002	48 49 64	125 11 02		65					BONGO
		1504	TRAWL	BC	003	48 50 13	125 9 83	74	SORMACH TOW					
17	1V1 02	1605	CTD	BC	004	48 52 15	125 07 72	121			1			T: 10.36 S: 31.32
		16		BO		48 52 16	125 07 75		110					BOT @ 10m FOR S/CHL/NUTS
		1611		EN		48 52 17	125 07 78							
		1616	NET	BC	005	48 52 16	125 07 76	109	100					BONGO
		1646	TRAWL	BC	006	48 52 39	125 06 72	142	SURFACE TOW					
17	1V1 03	1740	CTD	BC	007	48 54 31	125 02 90	176			1			T: 11.07 S: 30.17
		1743		BO		48 54 41	125 02 89		150					BOT @ 10m - S/CHL/NUTS
		1748		EN		48 54 37	125 02 90							PUMPS ON @ 20m
		1752	NET	BC	008	48 54 31	125 02 93		150					BONGO
		1823	TRAWL	BO	009	48 55 28	125 02 86		156	SURFACE TOW				

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

USW = sea water loop
MOR = mooring
NET = net haul
DRF = drifter

• bottle firing method:
• US = up / stop
• UN = up / no stop
• DN = down / no stop

• Time Code
• BE = beginning time of cast
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DE = deployment time
MR = messenger release time
RE = recover mooring time

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

22 March 2002
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Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

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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								
17	101 04	1943	CTD	BE	010	48 57 93	125 05 89	102			1			T: 11.16 S: 30.25	
		1945		BO		48 57 94	125 05 94		95					BOT @ 10m - S/CAL/NOTES	
		1948		EN		48 57 95	125 05 97								
		1954	NET	BE	011	48 57 90	125 06 08		90					BONGO	
		20 16	TRAWL	BE	012	48 58 29	125 7 95.		91	SURFACE TOW					
17	101 65	21 05	CTD	BE	013	48 56 20	125 11 29	96			1			T: 10.88 S: 31.57	
		21 07		BO		48 56 17	125 11 29		90					BOT @ 10m - S/CAL/NOTES	
		21 09		EN		48 56 17	125 11 29								
		21 16	NET	BE	014	48 56 07	125 11 28		90					BONGO	
		21 37	TRAWL	BE	015	48 54 92	125 12 19		94	SURFACE TOW					
17	101 06	22 26	CTD	BE	016	48 52 32	125 14 56	89			1			T: 12.08 S: 30.43	
		22 28		BO		48 52 32	125 14 60		85					BOT @ 10m - S/NOT/CR	
		22 30		EN		48 52 33	125 14 63								
		22 36	NET	BE	017	48 52 32	125 14 72		80					BONGO	
		23 00	TRAWL	BE	018	48 51 18	125 15 35	94		SURFACE TOW					

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OCT					2002			W F RICHER				2002-38			
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								
17	1V1 07	2352	CTD	BE	019	48 47 79	125 15 42				1			T: 9.80 S: 32.13	
		2354		BO		48 47 77	125 15 43							BOTE 10m - S/CHL/NUTS	
		2355		EN		48 47 76	125 15 45								
		2400	NET	BE	020	48 47 68	125 15 53							BONGO	
18		0047	TRAWL	BE	021	48 48 25	126 17 80	82		SURFACE	TOW				
18															
18	EP01	1411	CTD	BE	022	49 21 22	126 31 50	30			1			T: 10.69 S: 31.92	
		1412		BO		49 21 24	126 31 47		25					BOTE 10m - S/CHL/NUTS	
		1413		EN		49 21 25	126 31 47								
		1419	NET	BE	023	49 21 39	126 31 49		25					BONGO	
		1440	TRAWL	BE	024	49 20 37	126 32 8	54		SURFACE	TOW				
18	GP 02	1535	CTD	BE	025	49 18 97	126 36 36	85			1			T: 10.54 S: 31.77	
		1537		BO		49 19 02	126 36 36		75					BOTE 10m - S/CHL/NUTS	
		1540		EN		49 19 05	126 36 36							→ * PUMPS NOT ON →	
		1551	NET	BE	026	49 19 23	126 36 36		75					BONGO	
		1643	TRAWL	BE	027	49 18 96	126 37 96	94		SURFACE	TOW				

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22 March 2002
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* EP02 - CONTROL F2 NOT ALWAYS WORKING / FROM NOW ON TURN PUMPS ON/OFF WITH 'REALTIME DATA' IN SEASAVE

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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							
18	EP03	1712	CTD	BE	028	49 16 75	126 40 71	113			1			T: 10.98 S: 31.98
		1714		BO		49 16 77	126 40 74		105					BOTE 10m - S/CHL/NOTS
		1717		EN		49 16 80	126 40 76							
		1741	NET	BE	029	49 16 84	126 40 84		100					BONGO
		1806	TRAWL	BE	030	49 16 24	126 42 86	117		SURFACE	Tow			
18	EP04	1907	CTD	BE	031	49 14 63	126 45 17	122			1			T: 11.89 S: 32.17
		1910		BO		49 14 64	126 45 07		115					BOT @ 10m - S/NOTS/CHL
		1914		EN		49 14 64	126 45 00							* PUMPS OFF UNTIL 60m
		1924	NET	BE	032	49 14 57	126 44 02		105					BONGO
		2034	TRAWL	BE	033	49 13.28	126 42 05	119		SURFACE	Tow			
18	EP05	2144	CTD	BE	034	49 12 29	126 49 10	139			1			T: 11.32 S: 32.22
		2147		BO		49 12 37	126 49 02		130					BOT @ 10m - S/NOTS/CHL
		2151		EN		49 12 41	126 48 96							
		2157	NET	BE	035	49 12 47	126 48 91		120					BONGO
		2221	TRAWL	BE	036	49 12 02	126 49 48	146		SURFACE	Tow			

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
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Additional comments

EP04 - AGAIN - Pumps off until 60 m on DOWNCAST.

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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							
18	EP 06	2320	CTD	BE	037	49 10 32	126 54 27	188			1			T: 11.42 S: 32.21
		2324		BO		49 10 34	126 54 19		150					BOTE 10m - S/NUTS/CAL
		2327		EN		49 10 35	126 54 15							
		2332	NET	BE	038	49 10 47	126 54 00		150					Bongo
19		0036	TRAWL	BE	039	49 09 30	126 52 64		172	SURFACE TOW.				
19	EP 12	1305	CTD	BE	040	48 29 29	128 12 39	2584			2			T: 14.116 S: 32.183
		1315		BO		48 29 27	128 12 32		500					BOTE 500m for S
		1329		EN		48 29 29	128 12 32							BOTE 10m for S/NUT/CAL
		1407	NET	BE	041	48 29 59	128 11 09		150					BONGO
		1440	TRAWL	BE	042	48 30 49	128 9 50	2568		SURFACE TOW.				
19	EP 11	1603	CTD	BE	043	48 37 52	127 56 90	2465			1			T: 13.98 S: 32.14
		1606		BO		48 37 54	127 56 79		150					BOTE 10m - S/NUTS/CAL
		1610		EN		48 37 56	127 56 74							
		1615	NET	BE	044	48 37 58	127 56 70		150					Bongo
		1640	TRAWL	BE	045	48 38 01	127 55 13	2554		SURFACE TOW.				

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15:49
18:00

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							
19	EP 10	1832	CTD	BG	046	48 45 46	127 41 52	2565			1			T: 12.04 S: 32.16
		1835		BO		48 45 46	127 41 47		150					BOT @ 10 m - S/NUTS/CAL
		1838		EN		48 45 47	127 41 44							
		1851	NET	BG	047	48 45 26	127 41 57		150					BONGO
		1920	TRAWL	BG	048	48 45 23	127 39 34	2565		SURFACE TOW.				
19	EP 09	2046	CTD	BG	049	48 53 75	127 25 51	2136						
		2050		BO		48 53 80	127 25 41		150		1			T: 11.79 S: 32.17
		2053		EN		48 53 81	127 25 35							BOT @ 10 m - S/NUTS/CAL
		2059	NET	BG	050	48 53 81	127 25 26		150					BONGO
		2128	TRAWL	BG	051	48 55 05	127 23 09	2105		SURFACE TOW.				
19	EP 08	2252	CTD	BG	052	49 02 39	127 10 56	1706			1			T: 11.78 S: 32.14
		2256		BO		49 02 44	127 10 43		156					BOT @ 10 - S/NUTS/CAL
		2300		EN		49 02 45	127 10 38							* 15m
		2305	NET	BG	053	49 02 53	127 10 32		150					BONGO
		2333	TRAWL	BG	054	49 03 50	127 08 61	1524		SURFACE TOW.				

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														
20	EP 07	0037	CTD	BG	055	49 07 99	126 59 02	604			1			T: 11.53 S: 32.16							
		0041		BO		49 08 03	126 58 93		150					Bot @ 10m - S/CHL/HUTS							
		0044		CH		49 08 05	126 58 88														
		0049	NET	BG	056	49 08 09	126 58 82		150					BONGO							
20		0118	TRAWL	BG	057	49 9 88	126 58 11	246	SURFACE TOW.												
20																					
20	1V1 08	1401	CTD	BG	058	49 53 58	126 47 06	126			1			T: 10.54 S: 31.52							
		1404		BO		49 53 59	126 47 03		120					Bot @ 10m - S/HUTS/CHL							
		1408		CH		49 53 60	126 47 03														
		1416	NET	BG	059	49 53 69	126 47 02		120					BONGO							
		1458	TRAWL	BG	060	49 53 73	126 47 45	226	SURFACE TOW.												
20	1V1 09	1536	CTD	BG	061	49 52 48	126 49 37	227			1			T: 10.56 S: 31.92							
		1539		BO		49 52 47	126 49 37		150					Bot @ 10m - S/HUTS/CHL							
		1543		CH		49 52 46	126 49 38														
		1548	NET	BG	062	49 52 47	126 49 36		150					BONGO							
		1611	TRAWL	BG	063	49 52 23	126 50 47	238	SURFACE TOW.												

Additional comments

THERMOSHINDOGRAPH

HISTORY:

STARTED 19:18 Oct 16, 2002

* STOPPED 21:10 Oct 17, 2002

STARTED 21:11 Oct 17, 2002

* STOPPED 23:24 Oct 17, 2002

STARTED 7:08 Oct 18, 2002

* STOPPED 21:00 Oct 19, 2002

STARTED 21:45 Oct 19, 2002

DAILY LOG

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Month <i>OCT</i>					Year <i>2002</i>			Ship <i>W.E. RICKER</i>				Cruise ID <i>2002-38</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							
20	141 10	1705	CTD	BE	064	49 54 29	126 55 86	275			1			T: 11.13 S: 31.55
		1709		BO		49 54 29	126 55 85		150					BOT@ 10m - S/CHL/NUTS
		1712		EN		49 54 30	126 55 85							
		1717	NET	BE	065	49 54 29	126 55 85		150					BONGO
		1743	TRAWL	BE	066	49 52 96	126 55 62	243	SURFACE TOW					
20	141 11	1813	CTD	BE	067	49 51 41	126 54 67	192			1			T: 10.92 S: 31.70
		1821		BO		49 51 41	126 54 70		150					BOT@ 10m - SAL/NUTS/CHL
		1825		EN		49 51 41	126 54 74							
		1858	NET	BE	068	49 51 41	126 54 39		150					BONGO
		1923	TRAWL	BE	069	49 51 22	126 56 80	193	SURFACE TOW					
20	141 01	2024	CTD	BE	070	49 46 98	127 04 15	45	40		1			T: 10.54 S: 31.96
		2025		BO		49 46 97	127 04 17							BOT@ 10m - SAL/NUTS/CHL
		2026		EN		49 46 96	127 04 19							
		2032	NET	BE	071	49 46 95	127 04 23		40					BONGO
		2052	TRAWL	BE	072	49 46 78	127 06 24	47	SURFACE TOW					

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22 March 2002
 Daily_log_book.doc

1 VI 12

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						Latitude	Longitude								
20	VI 02	2145	CTD	BE	073	49 45 55	127 11 08	61			1			T: 10.80 S: 32.06	
		2146		BO		49 45 56	127 11 11		55					BOT @ 10m - SAL/CWL/NTS	
		2148		EN		49 45 57	127 11 13								
		2157	NET	BE	074	49 45 64	127 11 20		50					BONGO	
		2219	TRAWL	BE	075	49 45 29	127 12 50	66	SURFACE TOW						
20	VI 03	2308	CTD	BE	076	49 43 74	127 16 96	99			1			T: 10.51 S: 32.13	
		2310		BO		49 43 75	127 16 98		90					BOT @ 10m - SAL/CWL/NTS	
		2312		EN		49 43 75	127 16 99								
		2316	NET	BE	077	49 43 77	127 17 02		90					BONGO	
		2335	TRAWL	BE	078	49 43 42	127 18 38	102	SURFACE TOW						
21	VI 04	0043	CTD	BE	079	49 41 84	127 24 32	120			1			T: 11.17 S: 32.17	
		0051		BO		49 41 84	127 24 39		115					BOT @ 10m - SAL/CWL/NTS	
		0054		EN		49 41 86	127 24 40								
		0058	NET	BE	080	49 41 39	127 24 48		110					BONGO	
		0155	TRAWL	BE	081	49 42 82	127 24 04	101	SURFACE TOW						

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						Latitude	Longitude								
21	IV1 12	1359	CTD	BE	082	50 06 20	127 07 26	160			1			T: 11.28 S: 30.97	
		1403		BO		50 06 18	127 07 26		150					BOT @ 10m - SAL/CHL/MUTS	
		1407		EN		50 06 17	127 07 28								
		1412	NET	BE	083	50 06 12	127 07 38		150					BONGO	
		1455	TRAWL	BE	084	50 05 32	127 09 38	162		SURFACE	Tow.				
21	IV1 13	1550	CTD	BE	085	50 05 73	127 14 73	117			1			T: 11.48 S: 31.28	
		1553		BO		50 05 72	127 14 73		110					BOT @ 10m - SAL/MUTS/CHL	
		1556		EN		50 05 72	127 14 73								
		1600	NET	BE	086	50 05 75	127 14 72		100					BONGO	
		1625	TRAWL	BE	087	50 04 94	127 15 11	203		SURFACE	Tow.				
21	IV1 14	1733	CTD	BE	088	50 01 19	127 09 35	98			1			T: 11.08 S: 31.52	
		1735		BO		50 01 22	127 09 34		90					BOT @ 10m - SAL/CHL/MUTS	
		1740		EN		50 01 22	127 09 34							* WINCH DRIVER STOPPED AT 90m	
		1744	NET	BE	089	50 01 22	127 09 34		90					BONGO	
		1802	TRAWL	BE	090	50 00 41	127 10 8	116		SURFACE	Tow.			AND THEN CONTINUED DOWN	
														INSTEAD UP - LAID CTD ON	
														BOTTOM - NO DAMAGE LONG	

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22 March 2002

Daily_log_book.doc

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month OCT.					Year 2002			Ship W.E. RICKER				Cruise ID 2002-38		
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							
21	VI 15	1900	CTD	BG	091	49 59 34	127 12 96	211			1			T: 10.69 S: 32.00
		1904		BO		49 59 32	127 12 97		150					BOT @ 10m - SAL/CHL/NUTS
		1907		EN		49 59 79	127 12 98							
		1912	NET	BG	092	49 59 76	127 12 99		150					
		1940	TRAWL	BG	093	49 59 16	127 14 41	144		SURFACE TOW				
21	VI 16	2014	CTD	BG	094	49 57 99	127 16 45	122/15			1			T: 10.62 S: 32.03
		2016		BO		49 57 99	127 16 50		105					BOT @ 10m - SAL/NUTS/CHL
		2019		EN		49 57 99	127 16 54							
		2024	NET	BG	095	49 58 01	127 16 57		100					BONGO
		2047	TRAWL	BE	096	49 57 11	127 17 28	109		SURFACE TOW				
21	VI 05	2121	CTD	BG	097	49 55 34	127 19 36	64			1			T: 10.58 S: 32.01
		2123		BO		49 55 36	127 19 30		60					BOT @ 10m - SAL/NUTS/CHL
		2125		EN		49 55 37	127 19 34							
		2129	NET	BG	098	49 55 39	127 19 38		55					BONGO
		2153	TRAWL	BE	099	49 55 32	127 22 29	60		SURFACE TOW				

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22 March 2002
Daily_log_book.doc

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Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>OCT</i>					Year <i>2002</i>			Ship <i>W.C. RICKER</i>				Cruise ID <i>2002-38</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								
21	V1 06	2242	CTD	BE	100	49 54 89	127 27 92	69			1			T: 11.03 S: 32.20	
		2244		BO		49 54 88	127 27 94		66					BOT @ 10m - SAL/CHL/NUTS	
		2246		EN		49 54 86	127 27 96								
		2250	NET	BE	101	49 54 83	127 28 00		60					BONGO	
		23 12	TRAWL	BE	102	49 54 58	127 29 96	69	SURFACE TOW.						
22	V1 07	0029	CTD	BE	103	49 54 17	127 38 44	85			1			T: 10.92 S: 32.23	
		0031		BO		49 54 17	127 38 45		80					BOT @ 10m - SAL/CHL/NUTS	
		0033		EN		49 54 18	127 38 45								
		0039	NET	BE	104	49 54 18	127 38 50		80					BONGO	
		02 00	TRAWL	BE	105	49 54 28	127 40 59	127	SURFACE TOW.						
22	V1 17	1358	CTD		106	50 31 80	127 38 89	77			1			T: 9.94 S: 32.06	
		1400				50 31 82	127 38 88		70					BOT @ 10m - SAL/CHL/NUTS	
		1402				50 31 81	127 38 89								
		1408	NET		107	50 31 77	127 38 86		70					BONGO	
		1438	TRAWL		108	50 31 40	127 40 46	108	SURFACE TOW.						

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22 March 2002
Daily_log_book.doc

2.23

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

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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								
22	101 18	1511	CTD	BC	109	50 29 95	127 42 25	115	110		1			T: 9.82 S: 32.17	
		1514		BO		50 29 96	127 42 24							BOT @ 10m - SAL/CHL/NUTS	
		1517		EN		50 29 97	127 42 23								
		1522	NET	BC	110	50 30 01	127 42 19		105					BONGO	
		1540	TRAWL	BE	111	50 30 24	127 43 30	71	SURFACE TOW						
22	101 19	1626	CTD	BC	112	50 29 13	127 46 78	140			1			T: 9.85 S: 32.19	
		1629		BO		50 29 13	127 46 74		135					BOT @ 10m - SAL/CHL/NUTS	
		1633		EN		50 29 12	127 46 70								
		1637	NET	BC	113	50 29 08	127 46 67		110					BONGO	
		1702	TRAWL	BE	114	50 28 74	127 47 93	141	SURFACE TOW						
22	101 20	1743	CTD	BC	115	50 28 20	127 52 46	156			1			T: 9.95 S: 32.27	
		1747		BO		50 28 22	127 52 47		150					BOT @ 10m - SAL/CHL/NUTS	
		1751		EN		50 28 23	127 52 45								
		1757	NET	BC	116	50 28 30	127 52 46		145					BONGO	
		1826	TRAWL	BE	117	50 28 26	127 53 47	215	SURFACE TOW						

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						Latitude	Longitude								
22	V1 21	1916	CTD	BG	118	50 26 99	127 59 24	137			1			T: 10.00 S: 32.31	
		1919		BO		50 26 96	127 59 26		130					BOT @ 10m - SAL/CHL/NUIS	
		1922		EN		50 26 93	127 59 24								
		1927	NET	BG	119	50 26 89	127 59 24		125					BONGO	
		1954	TRAWL	BE	120	50 24 95	128 00 16	177	SURFACE Trawl						
22	V1 08	2049	CTD	BG	121	50 23 22	128 04 36	77			1			T: 10.21 S: 32.26	
		2051		BO		50 23 23	128 04 34		70					BOT @ 10m - SAL/CHL/NUIS	
		2053		EN		50 23 23	128 04 34								
		2057	NET	BG	122	50 23 24	128 04 36		65					BONGO	
		2215	TRAWL	BG	123	50 23 39	128 9 23	115	SURFACE Trawl						
22	V1 09	2305	CTD	BG	124	50 23 39	128 14 14	160			1			T: 11.32 S: 31.96	
		2308		BO		50 23 39	128 14 11		150					BOT @ 10m - SAL/CHL/NUIS	
		2311		EN		50 23 37	128 14 12								
		2316	NET	BG	125	50 23 38	128 14 10		145					BONGO	
		2345	TRAWL	BG	126	50 23 36	128 16.06	170	SURFACE Trawl						

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22 March 2002
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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								
23	T 13	1302	CTD	BE	127	50 18 57	130 20 00	1900			2			T: 14.15 S: 32.06	
		1313		BO		50 18 59	130 20 07		500					Bottle 500 m for Sal	
		1326		EN		50 18 67	130 20 07							Bottle 10m for Sal/CHL/MUTS	
		1405	NET	BE	128	50 18 57	130 19 71		150					BONGO	
		1435	TRAWL	BE	129	50 19 38	130 17 57	2296		SURFACE TOW					
23	T 12	1532	CTD	BE	130	50 22 75	130 09 55	1800			1			T: 13.90 S: 32.02	
		1536		BO		50 22 74	130 09 51		150					Bottle 10m - SAL/CHL/MUTS	
		1539		EN		50 22 74	130 09 47								
		1546	NET	BE	131	50 22 72	130 09 35		150					BONGO	
		1615	TRAWL	BE	132	50 23 43	130 07 45	1850		SURFACE TOW					
23	T 11	1715	CTD	BE	133	50 27 57	129 59 54	2166			1			T: 11.83 S: 31.80	
		1718		BO		50 27 55	129 59 50		150					Bottle 10m - SAL/CHL/MUTS	
		1722		EN		50 27 52	129 59 44								
		1728	NET	BE	134	50 27 46	129 59 34		150					BONGO	
		1755	TRAWL	BB	135	50 28 16	129 57 51	2187		SURFACE TOW					

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						Latitude	Longitude								
23	T 10	1910	CTD	BE	136	50 32 25	129 49 21	2160			1			T: 12.18 S: 31.67	
		1913		BO		50 32 27	129 49 19		150					BOT @ 10m - SAL/CAL/NTS	
		1916		EN		50 32 26	129 49 17								
		1922	NET	BE	137	50 32 25	129 49 20		150					BONGO	
		1950	TRAWL	BE	138	50 33 42	129 47 44	2156		SURFACE	Tow				
23	T 09	2049	CTD	BE	139	50 37 33	129 39 12	2055			1			T: 12.18 S: 31.86	
		2053		BO		50 37 35	129 39 03		150					BOT @ 10m - SAL/CAL/NTS	
		2056		EN		50 37 36	129 38 96								
		2102	NET	BE	140	50 37 44	129 38 91		150					BONGO	
		2148	TRAWL	BE	141	50 38 56	129 37 16			SURFACE	Tow				
23	T 08	2224	CTD	BE	142	50 41 99	129 29 02	1912			1			T: 13.00 S: 31.80	
		2227		BO		50 41 98	129 28 95		150					BOT @ 10m - SAL/CAL/NTS	
		2230		EN		50 41 98	129 28 89								
		2236	NET	BE	143	50 41 94	129 28 76							BONGO	
		2305	TRAWL	BE	144	50 42 60	129 27 08			SURFACE	Tow				

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						Latitude	Longitude							
24	T07	0038	CTD	BE	145	50 49 00	129 13 18	104			1			T: 10.56 S: 31.88
		0040		BO		50 48 94	129 13 19		106					BOT @ 10m - SAL/CHL/MUTS
		0043		EN		50 48 89	129 13 18							
		0048	NET	BE	146	50 48 80	129 13 21		95					BONGO
		0110	TRAWL	BE	147	50 49 47	129 12 05.	98.		SORFACE		Tow		
24	T06	1355	CTD	BE	148	50 55 89	128 59 88	60			1			T: 11.18 S: 31.56
		1357		BO		50 55 90	128 59 85		55					BOT @ 10m - SAL/CHL/MUTS
		1359		EN		50 55 92.	128 59 83							
		1407	NET	BE	149	50 55 96	128 59 76		50					BONGO
		1430	TRAWL	BE	150	50 56 89.	128 58 43	64		SORFACE		Tow.		
24	T05	1530	CTD	BE	151	51 00 01	128 52 14	63			1			T: 10.80 S: 31.70
		1532		BO		51 00 05	128 52 17		55					BOT @ 10m - SAL/CHL/MUTS
		1534		EN		51 00 07	128 52 19							
		1542	NET	BE	152	51 00 20	128 52 31		50					
		1602	TRAWL	BE	153	51 00 40	128 51 06.	40		SORFACE		Tow		

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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								
24	T04	1654	CTD	BC	154	51 04 44	128 43 86	61			1			T: 11.56 S: 31.67	
		1656		BO		51 04 48	128 43 79		55					BOT @ 10m - SAL/CHL/NUIS	
		1658		EN		51 04 50	128 43 76								
		1703	NET	BC	155	51 04 55	128 43 66		50					BONGO	
		1723	TRAWL	BE	156	51 05 50	128 41 80	64		SURFACE	Trawl				
24	T03	1819	CTD	BC	157	51 08 54	128 35 96	142			1			T: 9.39 S: 30.71	
		1822		BO		51 08 59	128 35 87		135					BOT @ 10m - SAL/CHL/NUIS	
		1825		EN		51 08 61	128 35 81								
		1851	NET	BC	158	51 08 56	128 36 02		125					BONGO	
		1918	TRAWL	BE	159	51 09 51	128 34 30	163		SURFACE	Trawl				
24	T02	2012	CTD	BC	160	51 12 53	128 27 93	193			1			T: 10.75 S: 30.63	
		2015		BO		51 12 53	128 27 91		150					BOT @ 10m - SAL/CHL/NUIS	
		2019		EN		51 12 53	128 27 85								
		2023	NET	BC	161	51 12 53	128 27 78		150					BONGO	
		2048	TRAWL	BE	162	51 13 35	128 26 36	181		SURFACE	Trawl			TRANSMISSOMETER - WORST YET	

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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							
24	T 01	2148	CTD	BC	163	51 16 53	128 19 89	78			1			T: 9.44 S: 31.54
		2150		BO		51 16 54	128 19 84		70					BOT @ 10m - SAL/CAL/NUIS
		2152		CH		51 16 53	128 19 81							
		2157	NET	BC	164	51 16 51	128 19 73							BOTGO
		2220	TRAWL	BE	165	51 15 44	128 18 59	112		SURFACE Trawl				
	OCT 25	in Port	HARDY	ALL DAY										
26	H 01	1359	CTD	BC	166	52 12 35	129 10 55	160			1			T: 11.29 S: 30.80
		1403		BO		52 12 41	129 10 55		150					BOT @ 10m - SAL/CAL/NUIS
		1407		CH		52 12 46	129 10 53							
		1416	NET	BC	167	52 12 55	129 10 45		145					BOTGO
		1442	TRAWL	BE	168	52 13 14	129 12 78	165		SURFACE Trawl				
26	H 02	1559	CTD	BC	169	52 15 53	129 26 06	180			1			T: 11.40 S: 31.21
		1602		BO		52 15 53	129 25 97		150					BOT @ 10m - SAL/CAL/NUIS
		1606		CH		52 15 54	129 25 89							
		1611	NET	BC	170	52 15 58	129 25 84		150					BOTGO
		1636	TRAWL	BE	171	52 16 15	129 28 05	180		SURFACE Trawl				

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 Daily_log_book.doc

Additional comments

THERMOSANING GRAPH — 1/2K INCOMPATIBLE COMPUTER, YEAR SET AT 1981.
 AND IS RECORDED AS 1981, AS A CONSEQUENCE
 THE CHANGE TO PACIFIC STANDARD TIME TOOK PLACE.
 ON SATURDAY, OCT 25, 2002, OR OCT 25, 1981 COMPUTER TIME.
 AT APPROXIMATELY 11:00 PM, DURING THE PORT HARDY STOPOVER.

DAILY LOG

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						Latitude	Longitude								
26	H 03	1755	CTD	BE	172	52 18 08	129 41 94	204			1			T: 11.27 S: 31.73	
		1759		BO		52 18 87	129 41 93		150					BOT @ 10 m - SAL/CHL/NUTS	
		18 02		EN		52 18 86	129 41 95								
		1807	NET	BE	173	52 18 86	129 42 03		150					BONGO	
		1830	TRAWL	BE	174	52 19.35	129 44 70	204		SURFACE	Towed				
26	H 04	1946	CTD	BE	175	52 22 30	129 57 78	203			1			T: 11.27 S: 31.91	
		1949		BO		52 22 31	129 57 78		150					BOT @ 10 m - SAL/CHL/NUT	
		1952		EN		52 22 30	129 57 79								
		1957	NET	BE	176	52 22 29	129 57 97		150					BONGO	
		2024	TRAWL	BE	177	52 23 04	130 00 45	251		SURFACE	Towed				
26	H 05	2140	CTD	BE	178	52 25 69	130 12 95	327			1			T: 11.07 S: 31.81	
		2143		BO		52 25 70	130 12 91		150					BOT @ 10 m - SAL/CHL/NUTS	
		2146		EN		52 25 68	130 12 87								
		2154	NET	BE	179	52 25.90	130 13 21		150					BONGO	
		2224	TRAWL	BE	180	52 26 67	130 15 72	338		SURFACE	Towed				

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Month OCT					Year 2002			Ship W.E. RICKER				Cruise ID 2002-38			
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	H 06	2342	CTD	BC	181	52 28 93	130 28 84	176			1			T: 11.20 S: 31.64	
		2345		BO		52 28 92	130 28 75		150					Bot @ 10m - SAL/CHL/NUTS	
		2349		EN		52 28 90	130 28 66								
			NET	BC	/	CANCELLED - WEATHER								BONGO	
27		0005	TRAWL	BC	182	52 28 68	130 30 02	160		SURFACE	Tow				
27	DE 01	1459	CTD	BC	183	54 10 89	131 45 10	48			1			T: 9.84 S: 31.97	
		1500		BO		54 10 88	131 45 14		45					Bot @ 10m - SAL/CHL/NUTS	
		1502		EN		54 10 87	131 45 15								
		1509	NET	BC	184	54 10 80	131 45 30		40					BONGO	
		1532	TRAWL	BC	185	54 10 62	131 47 15	56		SURFACE	Tow				
27	DE 02	1648	CTD	BC	186	54 09 62	131 57 51	67			1			T: 10.14 S: 32.16	
		1650		BO		54 09 62	131 57 54		60					Bot @ 10m - SAL/CHL/NUTS	
		1652		EN		54 09 62	131 57 57								
			NET	BC	/	CANCELLED - WEATHER								BONGO	
		1709	TRAWL	BC	187	54 09 83	131 58 10	67		SURFACE	Tow				

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

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						Latitude	Longitude								
27	DE 05	2042	CTD	BC	188	54 11 34	132 39 09	78			1			T:10.05 S:31.36	
		2044		BO		54 11 33	132 39 08		74					BOTE 10m - SAL/CHL/NUTS	
		2046		EN		54 11 34	132 39 02								
		2054	NET	BC	189	54 11 19	132 38 50		65					BONGO	
		2122	TRAWL	BC	190	54 10 48	132 35 06	89	SURFACE	TOW					
27	DE 04	2218	CTD	BC	191	54 09 66	132 24 86	96			1			T:10.19 S:31.57	
		2220		BO		54 09 64	132 24 85		90					BOTE 10m - SAL/CHL/NUTS	
		2222		EN		54 09 63	132 24 83								
		2229	NET	BC	192	54 09 59	132 24 40		80					BONGO	
		2251	TRAWL	BC	193	54 09.23	132 21 44	94	SURFACE	TOW					
27	DE 03	2353	CTD	BC	194	54 09 23	132 11 23	57			1			T:10.95 S:32.11	
		2354		BO		54 09 23	132 11 21		50					BOTE 10m - SAL/CHL/NUTS	
		2355		EN		54 09 24	132 11 21								
		0002	NET	BC	195	54 09 13	132 10 96		45					BONGO	
		0023	TRAWL	BC	196	54 09 23	132 8.22	45	SURFACE	TOW					

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						Latitude	Longitude							
28	DE 02	0140	CTD	BC	197	54 09 47	131 59 27	62			1			T: 10.72 S: 32.09
		0141		BO		54 09 46	131 59 29		55					BOT @ 10m - SAL/CHL/NUIS
		0142		CM		54 09 46	131 59 30							
		0149	NET	BC	198	54 09 47	131 59 05		50					BONGO
28	F 13	1401	CTD	BC	199	54 35 00	135 10 37	2712			2			T: 11.62 S: 31.99
		1412		BO		54 34 97	135 10 45		500					BOT @ 500m - SAL
		1425		CM		54 35 01	135 10 50							BOT @ 10m - SAL/CHL/NUIS
		1501	NET	BC	200	54 35 18.	135 10 17		150					BONGO
		1529	TRAWL	BC	201	54 35 55.	135 7 66	2710		SURFACE Trawl				
28	F 12	1634	CTD	BC	202	54 36 64	134 54 18	2609			1			T: 11.60 S: 32.09
		1637		BO		54 36 64	134 54 14		150					BOT @ 10m - SAL/CHL/NUIS
		1641		CM		54 36 65	134 54 09							
		1646	NET	BC	203	54 36 67	134 54 01		150					BONGO
		1710	TRAWL	BC	204	54 37 22	134 51 72	2611		SURFACE Trawl				

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22 March 2002
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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month OCT					Year 2002			Ship W. E. Ricker					Cruise ID 2002-38	
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	F 11	1820	CTD	BE	205	54 38 39	134 38 15	2368			1			T: 12.13 S: 32.01
		1823		BO		54 38 40	134 38 15		150					Bottle 10n - SAL/CAL/HUTS
		1827		EN		54 38 42	134 38 14							
		1831	NET	BE	206	54 38 3	134 38 16		150					BONGO
		1858	TRAWL	BE	207	54 38 13	134 36 90	2348		SURFACE TOW				
28	F 10	2023	CTD	BE	208	54 40 04	134 21 79	2145			1			T: 12.00 S: 32.07
		2026		BO		54 40 04	134 21 77		150					Bottle 10n - SAL/CAL/HUTS
		2029		EN		54 40 05	134 21 73							
		2033	NET	BE	209	54 40 09	134 21 78		150					BONGO
		2102	TRAWL	BE	210	54 40 48	134 19 83	1954		SURFACE TOW				
28	F 09	2211	CTD	BE	211	54 41 45	134 05 90	223			1			T: 11.84 S: 32.06
		2214		BO		54 41 48	134 05 81		150					Bottle 10n - SAL/CAL/HUTS
		2218		EN		54 41 49	134 05 73							TRANSMISSOMETER WRT OFF
		2222	NET	BE	212	54 41 54	134 05 67		150					BONGO
		2250	TRAWL	BE	213	54 42 43	133 55 48	227		SURFACE TOW				ON DECAST

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>OCT</u>					Year <u>2002</u>			Ship <u>W.E. RICKER</u>				Cruise ID <u>2002-38</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	F 08	2328	CTD	BE	214	54 42 18	133 57 92	206			1			T: 11.52 S: 31.96
		2331		BO		54 42 17	133 57 82		150					BOTE 10 m - SAL/CHL/NUTS
		2334		EN		54 42 17	133 57 77							
		2340	NET	BE	215	54 42 15	133 57 83		150					BONGO
29		0009	TRAWL	BE	216	54 42 43	133 55 48	217		SURFACE	Tow			
29	F 07	0130	CTD	BE	217	54 43 01	133 50 07	227			1			T: 11.19 S: 31.77
		0134		BO		54 43 02	133 50 05		150					BOTE 10 m - SAL/CHL/NUTS
		0137		EN		54 43 02	133 50 00							
		0142	NET	BE	218	54 43 14	133 50 10							BONGO
		0209	TRAWL	BE	219	54 43 40	133 48 52	209		SURFACE	Tow			
SWITCH HCD - CTD CAST NAMED *220 IN FILE														
29	F 01	1510	TRAWL	BE	220	54 47 41	132 59 48	167		SURFACE	Tow			
		1606	CTD	BE	221	54 47 24	133 03 22	126			1			T: 9.58 S: 30.87
		1608		BO		54 47 23	133 03 21		110					BOTE 10 m - SAL/CHL/NUTS
		1611		EN		54 47 22	133 03 21							
		1615	NET	BE	222	54 47 21	133 03 21		110					BONGO

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22 March 2002
Daily_log_book.doc

DAILY LOG BOOK

MISSION
NUMBER

2002-38
2 of 2

DATE:

From: Oct 15 /02

to: NOV 11 /02

VESSEL:

W.E. RICKER

PROJECT:

WELCH - Hi SEAS SALMON

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

Captain:	Jim Somerville	First Officer:	Dale Hanson
Second Officer:	Bob Barker	Third Officer:	

Mission Participants / Agencies:

[illegible][illegible]

Data logging computer:

Data acquisition program: SEASAVE win 32 VER 5.25
CTD deck unit make: II + model: SEABIRD serial number: 0471

Primary CTD

Make: SEABIRD model: 911 + serial number: 0550

Primary temperature serial number: 2371

Primary conductivity serial number: 2399

Secondary temperature serial number: 2663Secondary conductivity serial number: 2424

Transmissometer: SEA TEC 4 Model: 197 s/n: 197

Fluorometer: Model	SEA P01M7	Cable gain:	10 X	s/n:	2228	P(S) or NO pump?
--------------------	-----------	-------------	------	------	------	------------------

Oxygen sensor: _____
 Model: _____
 s/n: _____
 P, S or NO pump? _____
 For NO pump: _____

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

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

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

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

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

Secondary CTD

Make: _____ model: _____ serial number: _____

Primary temperature serial number: _____

Primary conductivity serial number:

Secondary temperature serial number:

Secondary conductivity serial number:

Transmissometer: _____ Model: _____
s/n: _____

Fluorometer: Model _____ Cable gain: _____ s/n: _____ P, S or NO pump? _____

Oxygen sensor: _____ Model: _____ s/n: _____

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

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

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

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

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

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>OCT</i>					Year <i>2002</i>			Ship <i>W. G. RICKER</i>				Cruise ID <i>2002-38</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							
29	F02	1640	TRAWL	BC	223	54 47 21	133 05 64		214	SURFACE	TOW			
		1734	CTD	BC	224	54 46 58	133 11 18	205			1			T: 9.58 S: 30.93
		1738		BO		54 46 62	133 11 13		150					BOT @ 10m - SAL/CAL/MUTS
		1741		CH		54 46 63	133 11 08							
		1746	NET	BC	225	54 46 64	133 11 05		150					BONGO
29	F03	1815	TRAWL	BC	226	54 45 95	133 13 16	164		SURFACE	TRAWL	30		minutes
		1906	CTD	BC	227	54 45 95	133 19 03	112			1			T: 10.63 S: 31.54
		1908		BO		54 45 97	133 19 01		105					BOT @ 10m - SAL/CAL/MUTS
		1911		CH		54 45 99	133 19 01							
		19	NET	BC	/	54	133 CANCELLED - WEATHER							BONGO
29	F04	2032	TRAWL	BC	228	54 45 48	133 18 64	121		SURFACE	TOW	30		minutes
		2102	CTD	BC	229	54 44 99	133 26 68	147			1			T: 11.14 S: 31.91
		2105		BO		54 44 99	133 26 63		140					BOT @ 10m - SAL/CAL/MUTS
		2109		CH		54 44 99	133 26 57							*
		2115	NET	BC	230	54 45 02	133 26 50		120					BONGO / GELIQUE DUE TO WEATHER

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22 March 2002
Daily_log_book.doc

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month OCT					Year 2002			Ship W.C. RICKER				Cruise ID 2002-38			
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								
29	F 05	22 08	TRAWL	BC	231	54 42 89	133 31 13	211		HEADROPE AT 10-15m				30 minutes	
		2310	CTD	BC	232	54 44 30	133 34 34	196			1			T: 10.70 S: 31.88	
		2313		BO		54 44 31	133 34 28		150					BOT @ 10m - SAL/CAL/NTS	
		2317		EN		54 44 30	133 34 22								
			NET	BC	/	CANCELLED	DUE TO WEATHER							BONGO	
30	SEA 01	15 19	CTD	BC	233	56 10 75	134 44 45	115			1			T: 7.84 S: 30.74	
		15 21		BO		56 10 75	134 44 44		107					BOT @ 10m - SAL/CAL/NTS	
		15 24		EN		56 10 76	134 44 42								
		15 34	NET	BC	234	56 10 79	134 44 38		85					BONGO	
		16 01	TRAWL	BC	235	56 10 68	134 46 06	147		SURFACE TOW FOR 30 minutes					
30	SEA 02	17 35	CTD	BC	236	56 17 33	134 57 30	149			1			T: 7.98 S: 30.85	
		17 38		BO		56 17 28	134 57 27		140					BOT @ 10m - SAL/CAL/NTS	
		17 41		EN		56 17 22	134 57 24								
		17 46	NET	BC	237	56 17 18	134 57 22		135					BONGO	
		18 12	TRAWL	BC	238	56 19 68	134 54 32	145		HEADROPE AT 10m for 30 minutes					

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						Latitude	Longitude							
30	SEA 03	1934	CTD	BE	239	56 24 16	135 01 88	110			1			T: 8.74 S: 30.99
		1936		BO		56 24 12	135 01 90		105					BOTE 10m - SAL/CAL/MUTS
		1939		EN		56 24 10	135 01 93							
			NET	BE	240									BONGO
		2026	TRAWL	BE	241	56 24 54	135 02 58	107		SURFACE	Tow	for		30 minutes
30	SEA 04	2152	CTD	BE	242	56 32 72	135 08 38	115 105			1			T: 9.36 S: 31.12
		2154		BO		56 32 67	135 08 38		110 97					BOTE 10m - SAL/CAL/MUTS
		2156		EN		56 32 64	135 08 39							
		2202	NET	BE	243	56 32 57	135 08 38		80 75					BONGO
		2226	TRAWL	BE	244	56 33 02	135 09 44	76		SURFACE	Tow	for		30 minutes
31	SEA 05	0056	CTD	BE	245	56 38 27	135 33 56	136			1			T: 9.31 S: 31.39
		0058		BO		56 38 23	135 33 59		130					BOTE 10m - SAL/CAL/MUTS
		0101		EN		56 38 22	135 33 56							
		0131	NET	BE	246	56 37 29	135 34 36		130					BONGO
		0205	TRAWL	BE	247	56 40 00	135 34 39	134		SURFACE	Tow	for		30 minutes

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						Latitude	Longitude								
31	SEA 06	1501	CTD	BE	248	56 50 81	135 42 40	130			1			T: 9.49 S: 31.07	
		1504		BO		56 50 85	135 42 41		120					BOT @ 10m - SAL/CHL/NUTS	
		1507		CH		56 50 86	135 42 44								
		1514	NET	BE	249	56 50 96	135 42 52		115					BONGO	
		1542	TRAWL	BE	250	56 51 38	135 45 18	124		SURFACE	Tow	for	30 minutes.		
31	SEA 07	1717	CTD	BE	251	56 58 58	135 59 31	112			1			T: 10.04 S: 31.54	
		1719		BO		56 58 59	135 59 35		105					BOT @ 10m - SAL/CHL/NUTS	
		1722		CH		56 58 61	135 59 39								
		1727	NET	BE	252	56 58 62	135 59 45		100					BONGO	
		1751	TRAWL	BE	253	57 00 00	135 59 70	104		SURFACE	Tow	for	30 minutes.		
31	SEA 08	1914	CTD	BE	254	57 10 07	136 02 10	155			1			T: 10.58 S: 31.81	
		1918		BO		57 10 05	136 02 07		150					BOT @ 10m - SAL/CHL/NUTS	
		1921		CH		57 10 03	136 02 08								
		1926	NET	BE	255	57 10 00	136 02 11		140					BONGO	
		1952	TRAWL	BE	256	57 11 28	136 02 27	156		SURFACE	Tow	for	30 minutes.		

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Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month OCT / NOV					Year 2002			Ship W.F. RICHOR				Cruise ID 2002-38			
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								
31	SEA 09	2217	CTD	BG	257	57 20 55	136 04 12	102			1			T: 9.30 S: 30.65	
		2219		BO		57 20 53	136 04 14		10097					BOT @ 10m - SAL/CHL/NOTS	
		2221		EN		57 20 51	136 04 17								
		2227	NET	BG	258	57 20 46	136 04 21		85					BONGO	
		2250	TRAWL	BE	259	57 21 71	136 04 35	102		SURFACE TOW FOR 30 minutes.					
31	SEA 10	2359	CTD	BG	260	57 27 08	136 11 85	92			1			T: 9.26 S: 30.62	
1		0001		BO		57 27 08	136 11 81		95					BOT @ 10m - SAL/CHL/NOTS	
		0003		EN		57 27 04	136 11 82								
		0009	NET	BG	261	57 27 03	136 11 90		80					BONGO	
		0030	TRAWL	BE	262	57 28 72	136 13 57	99		SURFACE TOW FOR 30 minutes.					
1	SEA 11	0146	TRAWL	BG	263	57 35 16	136 24 83	121		SURFACE TOW FOR 3 minutes.					
		0233	CTD	BG	264	57 38 33	136 27 50	137			1			T: S:	
		0236		BO		57 38 25	136 27 60		130					BOT @ 10m - SAL/CHL/NOTS	
		0239		EN		57 38 27	136 27 65								
		0245	NET	BG	265	57 38 38	136 27 92		125					BONGO	

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

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

22 March 2002
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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>NOV</i>					Year <i>2002</i>			Ship <i>W. E. Ricker</i>				Cruise ID <i>2002-38</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>1</i>	<i>ISCA 01</i>	<i>1534</i>	<i>CTD</i>	<i>BC</i>	<i>266</i>	<i>58 14 72</i>	<i>136 09 52</i>	<i>136¹⁴³</i>			<i>1</i>			<i>T: 7.29 S: 30.16</i>
		<i>1538</i>		<i>BO</i>		<i>58 14 73</i>	<i>136 09 46</i>		<i>136</i>					<i>BOT @ 10m - SAL/CAL/NOTS</i>
		<i>1541</i>		<i>CH</i>		<i>58 14 72</i>	<i>136 09 39</i>							
		<i>1546</i>	<i>NET</i>	<i>BC</i>	<i>267</i>	<i>58 14 69</i>	<i>136 09 32</i>		<i>125</i>					<i>BONGO</i>
		<i>1613</i>	<i>TRAWL</i>	<i>BC</i>	<i>268</i>	<i>58 14 64</i>	<i>136 06 69</i>	<i>153</i>		<i>SURFACE</i>	<i>Tow</i>	<i>for</i>		<i>30 minutes</i>
<i>1</i>	<i>ISCA 02</i>	<i>1754</i>	<i>CTD</i>	<i>BC</i>	<i>269</i>	<i>58 18 87</i>	<i>135 47 38</i>	<i>110</i>			<i>1</i>			<i>T: 7.23 S: 29.02</i>
		<i>1757</i>		<i>BO</i>		<i>58 18 86</i>	<i>135 47 29</i>		<i>105</i>					<i>BOT @ 10m - SAL/CAL/NOTS</i>
		<i>1800</i>		<i>CH</i>		<i>58 18 86</i>	<i>135 47 25</i>							
		<i>1806</i>	<i>NET</i>	<i>BC</i>	<i>270</i>	<i>58 18 89</i>	<i>135 47 27</i>		<i>100</i>					<i>BONGO</i>
		<i>1830</i>	<i>TRAWL</i>	<i>BC</i>	<i>271</i>	<i>58 17 83</i>	<i>135 45 44</i>		<i>Tow</i>	<i>at 15m for 15 min, then at surface for 15 min</i>				
<i>1</i>	<i>ISCA 03</i>	<i>1943</i>	<i>CTD</i>	<i>BC</i>	<i>272</i>	<i>58 18 15</i>	<i>135 34 39</i>	<i>197</i>			<i>1</i>			<i>T: 7.524 S: 24.97</i>
		<i>1946</i>		<i>BO</i>		<i>58 18 14</i>	<i>135 34 44</i>		<i>150</i>					<i>BOT @ 10m - SAL/CAL/NOTS</i>
		<i>1949</i>		<i>CH</i>		<i>58 18 11</i>	<i>135 34 51</i>							
		<i>1956</i>	<i>NET</i>	<i>BC</i>	<i>273</i>	<i>58 18 06</i>	<i>135 34 71</i>							<i>BONGO</i>
		<i>2023</i>	<i>TRAWL</i>	<i>BC</i>	<i>274</i>	<i>58 18 09</i>	<i>135 32 94</i>	<i>156</i>	<i>Tow</i>	<i>at 15m, SURFACE, TOTAL TIME 30 minutes</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

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22 March 2002
 Daily_log_book.doc

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month NOV					Year 2002			Ship W. E. RICKER				Cruise ID 2012-38		
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							
1	15EA 04	2133	CTD	BE	275	58 15 25	135 21 00	275			1			T: 7.43 S: 24.77
		2136		BO		58 15 27	135 21 11		150					BOT@ 10 m - SAL/CAL/NOTS
		2139		EN		58 15 27	135 21 12							
		2144	NET	BE	276	58 15 30	135 21 17		150					BONGO
		2212	TRAWL	BE	277	58 14 66	135 20 12	279	TOW AT 15m AND SURFACE, TOTAL TIME 30 MINUTES					
1	15EA 05	2325	CTD	BE	278	58 08 68	135 12 95	198			1			T: 7.10 S: 22.40
		2329		BO		58 08 70	135 12 94		150					BOT@ 10 m - SAL/CAL/NOTS
		2332		EN		58 08 71	135 12 89							
		2338	NET	BE	279	58 08 73	135 12 90		150					BONGO
2		0005	TRAWL	BE	280	58 08 08	135 10 68	295	TOW AT 15m AND SURFACE, TOTAL TIME 30 MINUTES					
2	15EA 06	0158	TRAWL	BE	281	58 03 80	134 56 85	578	TOW AT 15m AND SURFACE					T: 7.25 S: 26.10
		0217	CTD	BE	282	58 01 30	134 54 62	558	150		1			BOT@ 10 m - SAL/CAL/NOTS
		0220		BO		58 01 26	134 54 64							
		0223		EN		58 01 24	134 54 67							BONGO
		0228	NET	BE	283	58 01 16	134 54 72		150					

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22 March 2002

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Month NOV					Year 2002			Ship W.E. RICKER					Cruise ID 2002 - 38		
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								
2	15CA 07	1458	CTD	BC	284	57 47 93	134 54 36	490			1			T: 7.27 S: 26.71	
		1502		BO		57 47 96	134 54 35		150					BOT@ 10m - SAL/CAL/MYS	
		1505		EN		57 47 98	134 54 35								
		1511	NET	BC	285	57 48 02	134 54 34		150					BONGO	
		1537	TRAWL	BE	286	57 46 94	134 53 91	526	TOW AT 15m AND SURFACE, TOTAL TIME = 30 minutes						
2	15CA 08	1721	CTD	BC	287	57 34 21	134 47 74	570			1			T: 7.44 S: 27.12	
		1724		BO		57 34 18	134 47 75		150					BOT@ 10m - SAL/CAL/MYS	
		1728		EN		57 34 16	134 47 77							* NO SAL, Low on BOTTLES	
		1733	NET	BC	288	57 34 09	134 47 75							BONGO	
		1800	TRAWL	BE	289	57 32 43	134 48 10	640	TOW AT 15m AND SURFACE, TOTAL TIME = 30 minutes						
2	15CA 09	1948	CTD	BC	290	57 18 60	134 46 90	462			1			T: 7.11 S: 28.41	
		1951		BO		57 18 69	134 46 00		150					BOT@ 10m - SAL/CAL/MYS	
		1954		EN		57 18 75	134 46 04							* SAL EVERY 2 nd CAST in INLETS	
		2000	NET	BC	291	57 18 85	134 46 11		150					BONGO	
		2029	TRAWL	BE	292	57 17 757	134 46 725	400	TOW AT 15m AND SURFACE, TOTAL TIME = 30 minutes						

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Month Nov					Year 2002			Ship W.E. RICKER				Cruise ID 2002-38		
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							
2	15EA 10	2206	CTD	BE	293	57 05 69	134 44 66	620			1			T: 7.28 S: 29.36
		2210		BO		57 05 59	134 44 60		150					BOT @ 10 - CHL/NOTS
		2213		EN		57 05 53	134 44 55							
		2217	NET	BE	294	57 05 41	134 44 47		150					BONGO
		2245	TRAWL	BE	295	57 03 67	134 43 67	637	Tow at 15m AND SURFACE, TOTAL TIME = 30 minutes.					
3	15EA 11	0030	CTD	BE	296	56 51 95	134 33 45	689			1			T: 7.37 S: 30.44
		0033		BO		56 51 90	134 33 57		150					BOT @ 10m - SAL/CAL/NOTS
		0036		EN		56 51 89	134 33 58							
		0042	NET	BE	297	56 51 83	134 33 61		150					BONGO
		0134	TRAWL	BE	298	56 52 25	134 32 43	655	Tow at 15m AND SURFACE, TOTAL TIME = 30 minutes.					
3	15EA 12	1459	CTD	BE	299	57 22 84	133 34 28	175			1			T: 6.62 S: 27.45
		1503		BO		57 22 86	133 34 30		150					BOT @ 10m - SAL/CAL/NOTS
		1506		EN		57 22 86	133 34 32							
		1511	NET	BE	300	57 22 88	133 34 33		150					BONGO
		1541	TRAWL	BE	301	57 23 00	133 36 75	180	Tow at 15m AND SURFACE, TOTAL TIME = 30 minutes.					

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INSTITUTE OF OCEAN SCIENCES

Month NO V					Year 2002				Ship W. E. RICKER				Cruise ID 2002-38			
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									
3	156A 13	1723	CTD	BE	302	57 33 31	133 37 77	363			1			T: 6.81 S: 28.21		
		1726		BO		57 33 34	133 37 76		150					Bottle 10 - CHL/NOTS		
		1730		EN		57 33 36	133 37 76									
		1734	NET	BE	303	57 33 42	133 37 77		150					BONGO		
		1800	TRAWL	BE	304	57 33 37	133 38 45	355	Tow at 15m AND SURFACE; TOTAL TIME = 30 minutes.							
3	156A 14	1916	CTD	BE	305	57 42 51	133 41 76	296			1			T: 6.40 S: 27.48		
		1920		BO		57 42 52	133 41 73		150					Bottle 10 - SAL/CHL/NOTS		
		1923		EN		57 42 54	133 41 73									
		1948	NET	BE	306	57 42 61	133 41 95		150							
		2014	TRAWL	BE	307	57 43 48	133 43 24	224	Tow at 15m AND SURFACE; TOTAL TIME = 30 minutes.							
4	IN JUNEAU															
5	156A 15	1457	CTD	BE	308	56 50 84	134 27 55	279			1			T: 7.54 S: 31.36		
		1501		BO		56 50 80	134 27 59		150					Bottle 10 - SAL/CHL/NOTS		
		1504		EN		56 50 74	134 27 65									
		1510	NET	BE	309	56 50 74	134 27 66		150					BONGO		
		1538	TRAWL	BE	310	56 49 30	134 27 27	336	Tow at 15m AND SURFACE; TOTAL TIME = 30 min							

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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								
5	ISGA 16	1641	CTD	BE	311	56 42 93	134 25 71	402			1			T: 7.99 S: 31.32	
		1645		BO		56 42 89	134 25 71		150					BOTE 10m - SAL/NUTS	
		1648		EN		56 4 94	134 25 72								
		1652	NET	BE	312	56 4 02	134 25 73		150					BONGO	
		1720	TRAWL	BE	313	56 41	134 25 04	385	TOW AT 15m + SURFACE, 30 MINUTES						
5	ISGA 17	1834	CTD	BE	314	56 35 48	134 22 30	247			1			T: 7.30 S: 30.32	
		1838		BO		56 35 71	134 22 16		150					BOTE 10m - SAL/CHL/NUTS	
		1843		EN		56 35 95	134 22 09								
		1848	NET	BE	315	56 36 14	134 21 99		150					BONGO	
		1918	TRAWL	BE	316	56 36 61	134 22 10	122	TOW AT 15m + SURFACE, 30 MINUTES						
5	ISGA 18	2047	CTD	BE	317	56 28 12	134 19 27	126			1			T: 8.34 S: 31.23	
		2049		BO		56 28 15	134 19 23		115					BOTE 10m - CHL/NUTS	
		2052		EN		56 28 13	134 19 17								
		2058	NET	BE	318	56 28 07	134 19 29		110					BONGO	
		2120	TRAWL	BE	319	56 27 00	134 19 96	887	TOW AT 15m, SURFACE, 30 MINUTES						

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22 March 2002
Daily_log_book.doc

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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							
5	ISCA 19	2228	CTD	BE	320	56 19 86	134 21 63	490			1			T: 9.94 S: 31.86
		2232		BO		56 19 88	134 21 59		150					BOTE 10m - SAL/CHL/NUTS
		2235		EN		56 19 87	134 21 50							
		2239	NET	BE	321	56 19 77	134 21 48		150					BONGO
		2306	TRAWL	BE	322	56 18 48	134 21 76	445		Tow AT 15m		SURFACE		30min.
6	ISCA 20	0034	CTD	BE	323	56 08 43	134 20 14	142			1			T: 9.83 S: 31.67
		0037		BO		56 08 43	134 20 02		135					BOTE 10m - CHL/NUTS
		0040		EN		56 08 44	134 19 95							
		0045	NET	BE	324	56 08 36	134 19 94	125	115					BONGO
		0134	TRAWL	BE	325	56 06 11	134 22 28	207		Tow AT 15m		SURFACE		30 min.
6	ISCA 21	1505	CTD	BE	326	55 59 27	133 58 41	184			1			T: 7.79 S: 31.26
		1509		BO		55 59 26	133 58 33		150					BOTE 10m - SAL/CHL/NUTS
		1513		EN		55 59 26	133 58 29							
		1519	NET	BE	327	55 59 24	133 58 20							BONGO
		1553	TRAWL	BE	328	55 59 81	133 57 05	169		Tow AT 15m		SURFACE		30 min.

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						Latitude	Longitude							
6	ISCA 22	1703	CTD	BE	329	56 05 66	133 49 07	396			1			T: 7.91 S: 31.48
		1707		BO		56 05 68	133 49 13		150					BOT @ 10m - C4L/HUTS
		1710		EN		56 05 69	133 49 19							
		1715	NET	BE	330	56 05 67	133 49 25		150					BONGO
		1743	TRAWL	BE	331	56 06 69	133 48 54	334	Tow AT 15m, SURFACE FOR 30m					
6	ISCA 23	1843	CTD	BE	332	56 12 74	133 46 78	283			1			T: 7.55 S: 31.45
		1846		BO		56 12 81	133 46 62		150					BOT @ 10m - SAL/C4L/HUTS
		1850		EN		56 12 87	133 46 48							
		1856	NET	BE	333	56 12 92	133 46 26		150					BONGO
		1927	TRAWL	BE	334	56 13 94	133 44 96	237	Tow AT 15m, SURFACE, 30 min.					
6	ISCA 24	2028	CTD	BE	335	56 20 09	133 48 12	318			1			T: 7.19 S: 31.70
		2031		BO		56 20 12	133 48 09		150					BOT @ 10m - C4L/HUTS
		2034		EN		56 20 12	133 48 08							
		2038	NET	BE	336	56 20 15	133 48 10		150					BONGO
		2105	TRAWL	BE	337	56 21 44	133 46 68	217	Tow AT 15m, SURFACE, 30 min.					

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						Latitude	Longitude								
6	ISEA 25	2206	CTD	RE	338	56 24 61	133 41 48	288			1			T: 7.21 S: 31.45	
		2209		BO		56 24 56	133 41 47		150					BOT @ 10m - SAL/CHL/NUTS	
		2212		EN		56 24 54	133 41 46								
		2219	NET	BE	339	56 24 37	133 41 46		150					BONGO	
		2243	TRAWL	BE	340	56 23 99	133 40 25	318	Tow AT 15m, SURFACE, 30 min						
6	ISEA 26	2347	CTD	BE	341	56 22 26	133 29 73	369			1			T: 7.21 S: 31.54	
		2351		BO		56 22 32	133 29 71		150					BOT @ 10m - CHL/NUTS	
		2354		EN		56 22 34	133 29 71								
7		0000	NET	BE	342	56 22 48	133 29 92		150					BONGO	
		0025	TRAWL	BE	343	56 22 59	133 28 91	405	Tow AT 15m, SURFACE, 30 min						
7	ISEA 27	0142	TRAWL	BE	344	56 21 94	133 20 37	294	Tow AT 15m, SURFACE, 30 min						
		0234	CTD	BE	345	56 22 55	133 27 10	271			1			BOT @ 10m - SAL/CHL/NUTS	
		0237		BO		56 22 53	133 27 18		150					T: 7.21 S: 31.45	
		0240		EN		56 22 54	133 27 21								

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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								
7	15CA 28	1503	CTD	BE	346	55 34 73	132 14 85	494			1			T: 8.71 S: 28.20	
		1507		BO		55 34 80	132 14 90		150					BOT @ 10m - SAL/CHL/NOT	
		1511		EN		55 34 87	132 14 95								
		1516	NET	BE	347	55 34 99	132 15 06		150					BONGO	
		1550	TRAWL	BE	348	55 34 48	132 13 92	494	TOW AT SURFACE, 15m					30 min.	
7	15CA 29	1706	CTD	BE	349	55 28 54	132 06 91	460			1			T: 8.66 S: 29.55	
		1710		BO		55 28 58	132 06 97		150					BOT @ 10m - CHL/NOTS	
		1713		EN		55 28 60	132 06 94								
		1719	NET	BE	350	55 28 67	132 06 87		150					BONGO	
		1738	TRAWL	BE	351	55 28 19	132 06 44	445	TOW AT SURFACE, 15m					30 min.	
7	15CA 30	1840	CTD	BE	352	55 25 13	132 03 53	461			1			T: 8.71 S: 28.89	
		1844		BO		55 25 15	132 03 60		150					BOT @ 10m - SAL/CHL/NOTS	
		1847		EN		55 25 18	132 03 63								
		1853	NET	BE	353	55 25 30	132 03 60		150					BONGO	
		1918	TRAWL	BE	354	55 24 80	132 03 46	484	TOW AT SURFACE, 15m					30 min.	

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