

DAILY LOG BOOK

MISSION
NUMBER

2004-03

DATE:

From: FEB 11 / 04 to: MARCH 1 / 04

VESSEL:

W. E. RICKER

PROJECT:

WELCH HI-SEAS SALMON

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

Captain: DAVE WEAVER First Officer: JULIE GASCON
Second Officer: Z. BEE Third Officer: _____

Mission Participants / Agencies: PPS-105

Scientific Personnel:

Party Chief: John Morris

[illegible]

Second leg of Mission:

Party Chief:

[illegible]

Data logging computer:

Data acquisition program:

CTD deck unit make: Seaslug || + model: 11 Plus serial number: 1318377-8471

Primary CTD

Make: SEABIRD model: 911 + serial number: 0506

Primary temperature serial number: 2668

Primary conductivity serial number: 2424

Secondary temperature serial number: 2374

Secondary conductivity serial number: 2399

Transmissometer: Model: 197 s/n: 197

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

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

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

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

Other sensors: _____ s/n: _____

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:
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Fluorometer: Model _____	Cable gain: _____	s/n: _____	P. S or NO pump? _____
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Oxygen sensor: _____
 Model: _____ s/n: _____
 P. S or NO pump? _____
 S/n: _____
 S or NO pump: _____

PAR sensor:	Model:	s/n:
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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? _____

x, y or NO pump? _____

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

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

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

Guide to cable terminations:

Date of cable termination: JAN 04

Please read and complete this form before reterminating cable. We have two standard CTD cables in use, nominal .316" and .322". This form specifically addresses these two cables, however the same considerations apply to using other cables. The specifications for non-standard cables and associated terminations are available at Tom Juhasz's office (room 1221).

Please identify nominal cable diameter:

Actual diameter measurements, two locations in triplicate at termination and approximately 5 metres back from termination.

At cable end:

at 5 metres:

1. _____
2. _____
3. _____

For comparison, the outer armour measurements of new cable:

Nominal .316" should be .3155 to .3165"

Nominal .322" should be .318 to .326"

Record specifications for other cables: _____ within: _____

The tolerance of the PMI Evergrip termination is tighter and only cables within these limits should be used.

For nominal .316" cable the lowest possible diameter is .309"

For nominal .322" cable the lowest possible diameter is .321"

Describe cable:

Kinks: _____

Birdcage _____

Rust flaking off cable _____

Cable round or oval _____

Does cable have loose outer armour? _____

(Raised wires or space between wires.)

Are outer armour wires flattened? _____

(flaking, not just looks rusty)

Remove cable that exhibits these signs of deterioration. To be authorised by Chief Scientist of the cruise, or the winch shop (Tom Juhasz at 250-363-6598).

Megger results by conductor (should be greater than 10,000. meg ohms)

Inner armour to conductor 1 _____

Inner armour to conductor 2 _____

Inner armour to conductor 3 _____

Please identify PMI sleeve used by checking the appropriate blank:

For .316" cable, diameter of inner dimension of sleeve should be .3265" _____

part number 9004897-13, cable diameter range .309" to .320" _____

For .322" cable, diameter of inner dimension of sleeve should be .3400" _____

part number 9004897-14, cable range .321" to .333".

Sliding the sleeve onto the cable should be difficult.

Evergrip helical Rods:

The part number is 9005-9002 and covers left hand lay cables of diameter range .309" to .333".

Presence of grit on inner surface (yes / no) _____

Condition of wires (damaged ends?) _____

Are the wires rusted? _____

Comments:

TERMINATED BY D. ANDERSON IN JAN /04

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Month FEB				Year 2004			Ship W.C. RICHES				Cruise ID 2004.03				
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							
13	VI 01	1512	BE	CTD		001	48 50 31	125 09 34	75			1		✓	T: 8.12 S: 28.58
		1518	BO				48 50 37	125 09 35		70					BOT 10m - for CHL/S/NUTS
		1520	EN				48 50 38	125 09 36							
		1524	BE	NET		002	48 50 42	125 09 34		70					BONGO
		1550	BE	TRAWL		003	48 51 10	125 08 57							SURFACE TOW.
14	VI 01	1715	BE	CTD		004	48 46 79	125 16 33	81			1		✓	T: 8.26 S: 29.69
		1717	BO				48 46 75	125 16 31		75					BOT 10m - CHL/NUTS/SAL
		1719	EN				48 46 73	125 16 30							
		1723	BE	NET		005	48 46 75	125 16 31		68					BONGO
		1752	BE	TRAWL		006	48 46 127	125 17 945.							SURFACE TOW.
14	VI 02	2005	BE	CTD		007	48 53 69	125 36 31	80			1			T: 8.35 S: 29.74
		2006	BO				48 53 70	125 36 34		75					BOT 10m - SAL/CHL/NUTS
		2009	EN				48 53 71	125 36 37							BONGO
		2018	BE	NET		008	48 53 61	125 36 39		60					
		2042	BE	TRAWL		009	48 54 382	125 37 876							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:

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DE = deployment time

MR = messenger release time

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							Latitude	Longitude							
14	VI 03	2057	BE	CTD		010	48 58 46	125 47 47	38			1			T: 8.34 S: 29.78
		2058	BO				48 58 47	125 47 49		30					BOT 10m - SAL/CHL/NUTS
		2059	CH				48 58 47	125 47 52							
		2111	BE	NET		011	48 58 45	125 47 49		25					BONGO
		2230	BE	TRAWL		012	48 58 53.3	125 49 360							SURFACE TOW
14	VI 04	2349	BE	CTD		013	49 02 26	126 00 56	43			1			T: 8.62 S: 30.34
		2350	BO				49 02 30	126 00 56		35					BOT 10m - SAL/CHL/NUTS
		2352	CH				49 02 34	126 00 57							
		2355	BE	NET		014	49 02 44	126 00 57		32					BONGO
		2412	BE	TRAWL		015	49 03 290	126 01 564							SURFACE TOW
15	VI 05	0135	BE	CTD		016	49 08 61	126 14 23	58			1			T: 8.55 S: 30.37
		0136	BO				49 08 66	126 14 24		50					BOT 10m - SAL/CHL/NUTS
		0138	CH				49 08 70	126 14 26							
		0142	BE	NET		017	49 08 82	126 14 33		47					BONGO
		0230	BE	TRAWL		018	49 09 804	126 15 666							SURFACE TOW

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							Latitude	Longitude							
15	EP 01	1523	BE	CTD		019	49 20 42	126 33 21	50			1		✓	T: 8.16 S: 29.90
		1524	BO				49 20 44	126 33 23		40					BOT @ 10m - SAL/CHL/NUTS
		1526	EN				49 20 45	126 33 24							
		1529	BE	NET		020	49 20 46	126 33 24		39					BONGO
		1613	BE	TRAWL		021	49 19 833	126 34 967							SURFACE TRAWL
15	EP 02	1643	BE	CTD		022	49 18 98	126 36 30	85			1			T: 8.45 S: 30.52
		1645	BO				49 19 01	126 36 33		75					BOT @ 10m - SAL/CHL/NUTS
		1647	EN				49 19 03	126 36 35							
		1650	BE	NET		023	49 19 07	126 36 37		72					BONGO
		1711	BE	TRAWL		024	49 18 695	126 37 786							SURFACE TRAWL
15	EP 03	1811	BE	CTD		025	49 16 83	126 40 84	110			1			T: 8.67 S: 31.24
		1814	BO				49 16 85	126 40 83		100					BOT @ 10m - SAL/CHL/NUTS
		1817	EN				49 16 86	126 40 81							
		1821	BE	NET		026	49 16 88	126 40 79		98					BONGO
		1857	BE	TRAWL		027	49 16 308	126 42 993							SURFACE TRAWL

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							Latitude	Longitude							
15	EP 04	2008	BC	CTD		028	49 14 60	126 45 34	120			1			T: 8.70 S: 31.48
		2011	BO				49 14 64	126 45 30		110					BOT@10m - SAL/CHL/NUTS
		2013	EN				49 14 67	126 45 31							
		2018	BE	NET		029	49 14 73	126 45 27							BONGO
		2041	BE	TRAWL		030	49 14 38.5	126 46 09.4							SURFACE Trawl
15	EP 05	2139	BC	CTD		031	49 12 42	126 49 33	142			1			T: 8.78 S: 31.54
		2141	BO				49 12 43	126 49 32		135					BOT@10m - CHL/SAL/NUTS
		2144	EN				49 12 45	126 49 80							
		2152	BE	NET		032	49 12 47	126 49 79		132					BONGO
		22:19	BE	TRAWL		033	49 12.00	126 51 26.9							SURFACE Trawl
15	EP 06	2307	BE	CTD		034	49 10 25	126 54 49	183			1			T: 8.76 S: 31.50
		2310	BO				49 10 30	126 54 50		175					BOT@10m - SAL/CHL/NUTS
		2314	EN				49 10 34	126 54 49							
		2319	BE	NET		035	49 10 35	126 54 49		150					BONGO
		2342	BE	TRAWL		036	49 09 42.0	126 55 22.8							SURFACE Trawl

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							Latitude	Longitude							
16	CP07	0040	BE	CTD		037	49 08 11	126 59 05	460			1			T: 8.67 S: 31.48
		0045	BO				49 08 19	126 59 05		250					BOT @ 10m - SAL/CAL/NUTS
		0050	CN				49 08 24	126 59 06						*	NOTE - NO TRAWL
		0055	BE	NET		038	49 08 28	126 59 01		150					BONGO
16	EP08	0217	BE	CTD		039	49 02 10	127 09 92	15-1800m			1			T: 8.66 S: 32.23
		0223	BO				49 02 12	127 09 84		250					BOT @ 10m - SAL/CAL/NUTS
		0227	CN				49 02 14	127 09 77						*	NOTE - NO TRAWL
		0231	BE	NET		040	49 02 15	127 09 72		150					BONGO
16	IV102	1510	BE	CTD		041	49 47 30	126 39 17	123			1		✓	T: 8.23 S: 27.16
		1513	BO				49 47 35	126 39 14		115					BOT @ 10m - SAL/CAL/NUTS
		1515	CN				49 47 34	126 39 10							
		1522	BE	NET		042	49 47 31	126 39 03		111					BONGO
		1611	BE	TRAWL		043	49 47 35.1	126 39 016							SURFACE TRAWL

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Month Feb				Year 2004			Ship WE RICKER				Cruise ID 2004-03				
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							Latitude	Longitude							
16	1V1 03	1650	BC	CTD		044	49 53 83	126 39 39	180			1			T: 8.58 S: 28.12
		1654	BO				49 53 86	126 39 45		170			* NO SAL		BOT@10m - CHL/NUTS
		1657	EN				49 53 88	126 39 52							
		1700	BC	NET		045	49 53 88	126 39 58		150					BONGO
		1723	BC	TRAWL		046	49 53 191	126 39 600							SURFACE TOW
16	1V1 04	1847	BC	CTD		047	49 51 84	126 44 58	220			1	* NO SAL		T: 8.48 S: 29.15
		1851	BO				49 51 88	126 44 61		215					BOT@10m - CHL/NUTS
		1855	EN				49 51 92	126 44 61							
		1859	BC	NET		048	49 51 95	126 44 59		150					BONGO
		1922	BC	TRAWL		049	49 52 686	126 45 838							SURFACE TOW
16	1V1 05	2024	BC	CTD		050	49 56 89	126 48 68	150			1			T: 8.30 S: 26.20
		2027	BO				49 56 87	126 48 67		140					BOT@10m - CHL/NUTS
		2030	EN				49 56 87	126 48 67							NO SAL
		2034	BC	NET		051	49 56 86	126 48 66		131					BONGO
		2054	BC	TRAWL		052	49 56 256	126 48 450							SURFACE TOW

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							Latitude	Longitude								
16	1V1 06	2146	BC	CTD		053	49 53 72	126 47 93	226			1			T: 8.44 S: 27.92	
		2151	BO				49 53 69	126 47 89		215					BOT @ 10m - CHL & NUTS	
		2155	BC				49 53 69	126 47 84							NO SAL	
		2200	EN	NET		054	49 53 70	126 47 78		150					BONGO	
		2224	EN	TRAWL		055	49 53 70.9	126 48 58.5							SURFACE TOW	
16	1V1 07	2335	BC	CTD		056	49 50 84	126 58 30	160			1			T: 8.12 S: 29.40	
		2338	BO				49 50 83	126 58 28		150					BOT @ 10m - CHL/NUTS	
		2341	EN				49 50 82	126 58 26							NO SAL	
		2345	BC	NET		057	49 50 82	126 58 22		140					BONGO	
		0008	BC	TRAWL		058	49 50 934	126 55 738							SURFACE TOW	
17	1V1 08	0134	BC	CTD		059	49 55 32	126 55 70	270			1			T: 8.15 S: 28.65	
		0139	BO				49 55 32	126 55 66		250					BOT @ 10m - CHL/NUTS	
		0144	EN				49 55 32	126 55 65							NO SAL	
		0148	BC	NET		060	49 55 31	126 55 65		150					BONGO	
		0212	BC	TRAWL		061	49 54 772	126 55 738							SURFACE TOW	

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							Latitude	Longitude							
17	1V1 09	1836	BC	TRAWL		062	49 51 224	126.55 884							Tow @ 100m TRAWL ONLY
17	1V1 10	1901	BC	TRAWL		063	49 51 959	126.51 774							Tow @ 50m TRAWL ONLY
18	1V1 11	1505	BC	CTD		064	50 28 13	127 54 12	210			1		✓	T: 8.26 S: 29.70
		1510	BO				50 28 16	127 54 12		200					Bottom - CHL/HUTS
		1514	EN				50 28 14	127 54 11							
		1517	BC	NET		065	50 28 13	127 54 16		150					BONGO
		1541	BC	TRAWL		066	50 28 271	127 53 344							SURFACE TAW.
18	1V1 12	1635	BC	CTD		067	50 28 26	127 48 12	124			1			T: 8.22 S: 28.97
		1638	BO				50 28 27	127 48 11		115					Bottom - CHL/HUTS
		1641	EN				50 28 28	127 48 10							
		1644	BC	NET		068	50 28 30	127 48 08		114					BONGO
		1705	BC	TRAWL		069	50 29 002	127 47.105							SURFACE TAW.

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							Latitude	Longitude							
18	101 13	1828	BE	CTD		070	50 30 38	127 35 62	152			1			T: 8.07 S: 29.14
		1832	BO				50 30 37	127 35 59		140					BOT@ 10m - CHL/NUTS
		1834	EN				50 30 38	127 35 59							
		1838	BE	NET		071	50 30 40	127 35 60		135					BONGO
		1900	BE	TRAWL		072	50 29 820	127 34 382							SURFACE Trawl
18	101 14	2227	BE	CTD		073	50 28 00	127 57 01	210			1			T: 8.45 S: 29.55
		2230	BO				50 27 97	127 57 06		200					BOT@ 10m - CHL/NUTS
		2234	EN				50 27 97	127 57 09							
		2244	BE	NET		074	50 27 66	127 57 95	157	147					BONGO
		2135	BE	TRAWL		075	50 28 222	127 53 281							SURFACE Trawl
18	101 15	2320	BE	CTD		076	50 25 42	127 57 29	110			1			T: 8.44 S: 30.37
		2323	BO				50 25 39	127 57 29		100					BOT@ 10m - CHL/NUTS
		2326	EN				50 25 35	127 57 31							
		2329	BE	NET		077	50 25 32	127 57 35		95					BONGO
		2349	BE	TRAWL		078	50 25 015	127 58 889							SURFACE Trawl

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Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month FEB			Year 2004				Ship W. E. RICKER				Cruise ID 2004-03				
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	V1 06	0140	BE	CTD		079	50 29 40	128 15 55	44			1		✓	T: 8.66 S: 31.20
		0141	BO				50 29 40	128 15 57		35				*	BOT @ 10m - CHL/NUTS/SAL
		0143	EN				50 29 41	128 15 62							
		0146	BE	NET		080	50 29 44	128 15 65		34					BONGO
		0203	BE	TRAWL		081	50 29 66S	128 16 788							SURFACE TOW
20	DE 01	1459	BE	CTD		082	54 10 50	131 51 47	70			1		✓	T: 6.47 S: 31.69
		1501	BO				54 10 50	131 51 46		65					BOT @ 10m - S/CHL/NUTS
		1503	EN				54 10 50	131 51 46							
		1508	BE	NET		083	54 10 47	131 51 43		58					BONGO
		1527	BE	TRAWL		084	54 10 412	131 52 615							SURFACE TOW
20	DE 02	1629	BE	CTD		085	54 09 59	132 00 51	58			1			T: 6.50 S: 31.61
		1630	BO				54 09 60	132 00 46		50					BOT @ 10m - SAL/CHL/NUTS
		1632	EN				54 09 61	132 00 41							
		1635	BE	NET		086	54 09 63	132 00 30		48					BONGO
		1652	BE	TRAWL		087	54 10 074	132 01 123							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
DRP = drifter

bottle firing method:

US = up / stop
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Time Code

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

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							Latitude	Longitude							
20	DE 03	1816	BE	CTD		088	54 09 03	132 12 77	60			1			T: 6.55 S: 31.56
		1817	BO				54 09 02	132 12 71		50					BOT@10m - SAL/CHL/NUTS
		1819	EH				54 09 01	132 12 64							
		1821	BE	NET		089	54 08 99	132 12 51		45					BONGO
		1838	BE	TRAWL		090	54 08 84	132 13 25							SURFACE TOW
20	DE 04	1958	BE	CTD		091	54 09 93	132 25 70	88			1			T: 6.64 S: 31.73
		2001	BO				54 09 92	132 25 66		80					BOT@10m - SAL/CHL/NUTS
		2003	EH				54 09 91	132 25 63							
		2009	BE	NET		092	54 09 87	132 25 60		86					BONGO
		2028	BE	TRAWL		093	54 09 81	132 26 72							SURFACE TOW
20	DE 05	2137	BE	CTD		094	54 10 75	132 38 42	65			1			T: 6.33 S: 31.43
		2139	BO				54 10 74	132 38 43		55					BOT@10m - SAL/CHL/NUTS
		2141	EH				54 10 74	132 38 45							
		2145	BE	NET		095	54 10 75	132 38 50		51					BONGO
		2207	BE	TRAWL		096	54 10 93	132 40 16							SURFACE TOW

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Month FEB				Year 2004			Ship WE RICKER				Cruise ID 2004-03				
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							Latitude	Longitude							
20	DE 06	2317	BE	CTD		097	54 11 65	132 52 74	94			1			T: 6.68 S: 31.72
		2320	BO				54 11 66	132 52 74		90					BOT 10m - SAL/CAL/NUTS
		2322	EN				54 11 68	132 52 74							
		2325	BE	NET		098	54 11 72	132 52 74		86					BONGO
		2330	BE	TRAWL		099	54 12 506	132 53 585							SURFACE TOW
21	ISCA 01	1504	BE	CTD		100	55 27 73	132 01 28	442			1			T: 6.26 S: 30.63
		1509	BO				55 27 70	132 01 20		250					BOT 10m - SAL/CAL/NUTS
		1514	EN				55 27 69	132 01 14							
		1518	BE	NET		101	55 27 69	132 01 06		150					BONGO
		1541	BE	TRAWL		102	55 28 613	132 02 307							SURFACE TOW
21	ISCA 02	1704	BE	CTD		103	55 35 64	132 13 77	530			1			T: 6.35 S: 30.59
		1710	BO				55 35 79	132 13 83		250					BOT 10m - SAL/CAL/NUTS
		1715	EN				55 35 89	132 13 86							
		1718	BE	NET		104	55 35 89	132 13 86		150					BONGO
		1748	BE	TRAWL		105	55 37 883	132 14 383							SURFACE TOW

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Month Feb				Year 2004			Ship W.E. RICKER				Cruise ID 2004-03				
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	ISCA 03	1901	BE	CTD		106	55 45 67	132 19 47	472			1			T: 6.26 S: 30.58
		1907	BO				55 45 67	132 19 44		250					BOT@10m - SAL/CHL/NUTS
		19 11	EN				55 45 66	132 19 41							
		19 16	BE	NET		107	55 45 67	132 19 39		150					BONGO
		20 07	BE	TRAWL		108	55 46 056	132 20 261							SURFACE TOW
21	ISCA 04	21 33	BE	CTD		109	55 53 65	132 27 45	250			1			T: 6.02 S: 30.28
		21 38	BO				55 53 66	132 27 47		240					BOT@10m - SAL/CHL/NUTS
		21 42	EN				55 53 67	132 27 46							
		21 46	BE	NET		110	55 53 67	132 27 42		150					BONGO
		22 08	BE	TRAWL		111	55 53 702	132 28 574							SURFACE TOW
21	ISCA 05	2321	BE	CTD		112	55 57 52	132 40 04	399			1			T: 6.05 S: 30.41
		2326	BO				55 57 53	132 40 05		250					BOT@10m - SAL/CHL/NUTS
		2330	EN				55 57 53	132 40 06							
		2335	BE	NET		113	55 57 51	132 40 08		150					BONGO
		23 56	BE	TRAWL		114	55 58 072	132 40 751							SURFACE TOW

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
22	ISGA 06	0135	BE	CTD		115	56 08 94	132 45 57	279			1			T: 5.73 S: 30.13
		0140	BO				56 08 92	132 45 55		250					BOTOM - SAL/CHL/NUTS
		0145	EN				56 08 90	132 45 52							
		0148	BE	NET		116	56 08 86	132 45 43		150					BONGO
		0212	BE	TRAWL		117	56 09 361	132 45 523							SURFACE TOW
22	ISGA 07	1512	BE	CTD		118	56 22 80	133 20 93	260			1		✓	T: 6.00 S: 30.85
		1517	BO				56 22 80	133 20 94		250					BOTOM - SAL/CHL/NUTS
		1521	EN				56 22 82	133 20 99							
		1526	BE	NET		119	56 22 83	133 20 98		150					BONGO
		1548	BE	TRAWL		120	56 22 718	133 23 114							SURFACE TOW
23	ISGA 08	0328	BE	CTD		121	56 25 97	132 34 23	190			1	✓		T: 5.74 S: 30.07
	2ND	0332	BO				56 25 98	132 34 29		175					BOTOM - SAL/CHL/NUTS
	3RD	0335	EN				56 25 98	132 34 31							
		0340	BE	NET		122	56 25 98	132 34 35		150					BONGO
*	1ST	0238	BE	TRAWL		123	56 27 564	132 28 419							SURFACE TOW

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							Latitude	Longitude							
23	ISEA 09	1501	BE	CTD		124	56 23 10	133 31 46	240			1		✓	T: 6.08 S: 31.00
		1506	BO				56 23 11	133 31 48		230					BOT @ 10m - SAL/CAL/NUTS
		1510	EN				56 23 13	133 31 55							
		1536	BE	NET		125	56 23 14	133 31 30		150					BONGO
		1559	BE	TRAWL		126	56 23 41Z	133 33 318							SURFACE TOW
23	ISEA 10	1732	BE	CTD		127	56 20 53	133 46 54	310			1			T: 6.08 S: 31.04
		1737	BO				56 20 49	133 46 60		250					BOT @ 10m - SAL/CAL/NUTS
		1741	EN				56 20 44	133 46 66							
		1746	BE	NET		128	56 20 36	133 46 75		150					BONGO
		1822	BE	TRAWL		129	56 21 46S	133 46 354							SURFACE TOW
23	ISEA 11	1912	BE	CTD		130	56 17 11	133 47 37	307			1			T: 6.21 S: 31.27
		1917	BO				56 17 16	133 47 28		250					BOT @ 10m - SAL/CAL/NUTS
		1920	EN				56 17 20	133 47 27							
		1955	BE	NET		131	56 17 42	133 47 39		150					BONGO
		2014	BE	TRAWL		132	56 16 46Z	133 47 200							SURFACE TOW

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OCEAN SCIENCE															
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DAILY LOG															
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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
23	ISEA 12	21 16	BE	CTD		133	56 12 49	133 49 35	247			1			T: 6.22 S: 31.28
		21 21	BO				56 12 49	133 49 31		230					BOTOM - SAL/CHL/NUTS
		21 25	EN				56 12 50	133 49 29							
		21 29	BE	NET		134	56 12 49	133 49 28							BONGO
		21 52	BE	TRAWL		135	56 11 817	133 48 476							SURFACE TOW
23	ISEA 13	22 59	BE	CTD		136	56 06 76	133 48 88	255			1			T: 6.27 S: 31.35
		23 04	BO				56 06 74	133 48 93		240					BOTOM - SAL/CHL/NUTS
		23 08	EN				56 06 76	133 48 90							
		23 13	BE	NET		137	56 06 78	133 48 90	46.91	150					BONGO * MARY'S GPS
		23 34	BE	TRAWL		138	56 05 998	133 47 300							SURFACE TOW
24	ISEA 14	00 39	BE	CTD		139	56 00 12	133 50 34	300			1			T: 6.30 S: 31.44
		00 47	BO				56 00 09	133 50 38		250					BOTOM - SAL/CHL/NUTS
		00 52	EN				56 00 04	133 50 46							
		01 46	BE	NET		140	56 00 04	133 50 63							BONGO
		02 13	BE	TRAWL		141	55 59 343	133 51 997							SURFACE TOW

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1446 15
48 45

DAILY LOG

Ocean Sciences and Productivity Division

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
24	F1 12	1437	BE	CTD		142	54 36 49	134 54 23	1000 +			2		✓	T: 6.88 S: 32.12
		1449	BO				54 36 52	134 54 10		500	BOT @	500 m	For SAL		BOT @ 10m - SAL/CHL/NUTS
		1459	EN				54 36 53	134 53 97							T: S:
		1504	BE	NET		143	54 36 54	134 53 99		150					BONGO
24	F1 11	1624	BE	CTD		144	54 38 32	134 37 91	1000 +			1			T: 7.41 S: 32.34
		1630	BO				54 38 30	134 37 92		250					BOT @ 10m - SAL/CHL/NUTS
		1633	EN				54 38 27	134 37 91							
		1638	BE	NET		145	54 38 24	134 37 96		150					BONGO
24	F1 10	1804	BE	CTD		146	54 40 02	134 21 78	1000 +						T: 7.49 S: 32.28
		1809	BO				54 40 07	134 21 78		250		1			BOT @ 10m - SAL/CHL/NUTS
		1813	EN				54 40 12	134 21 80							
		1817	BE	NET		147	54 40 17	134 21 84		150					BONGO
24	F1 09	1938	BE	CTD		148	54 41 47	134 05 94	220			1			T: 7.61 S: 32.24
		1943	BO				54 41 55	134 05 92		210					BOT @ 10m - SAL/CHL/NUTS
		1946	EN				54 41 63	134 05 94							
		19	BE	NET		149	54 41	134 05		150					BONGO

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OCEAN SCIENCES AND PRODUCTIVITY DIVISION																Cruise ID 2004-03	
Month FEB				Year 2004				Ship W. C. RICKER									
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	FI 08	2046	BE	CTD		150	54 42 23	133 58 07	205			1			T: 7.80 S: 32.21		
		2050	BO				54 42 29	133 58 01		195					BOTEION - SAL/CHL/NUTS		
		2054	EN				54 42 34	133 57 96									
		2059	BE	NET		151	54 42 34	133 57 90		150					BONGO		
24	FI 07	2142	BE	CTD		152	54 42 86	133 50 25	228			1			T: 7.79 S: 32.20		
		2146	BO				54 42 87	133 50 16		215					BOTEION - SAL/CHL/NUTS		
		2150	EN				54 42 89	133 50 11									
		2156	BE	NET		153	54 42 88	133 50 06		150					BONGO		
24	FI 06	2238	BE	CTD		154	54 43 54	133 42 39	225			1			T: 7.71 S: 32.22		
		2242	BO				54 43 54	133 42 36		215					BOTEION - SAL/CHL/NUTS		
		2247	EN				54 43 53	133 42 32									
		2250	BE	NET		155	54 43 49	133 42 25		150					BONGO		
24	FI 05	2336	BE	CTD		156	54 44 37	133 34 46	198			1			T: 6.60 S: 31.64		
		2340	BO				54 44 38	133 34 43		185					BOTEION - SAL/CHL/NUTS		
		2343	EN				54 44 39	133 34 33									
		2351	BE	NET		157	54 44 35	133 34 17							BONGO		

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							Latitude	Longitude							
25	FI 04	0043	BC	CTD		158	54 45 03	133 26 86	148			1			T: 660 S: 31.64
		0046	BO				54 45 02	133 26 86		135					BOT 10m - SAL/CAL/NUTS
		0049	EN				54 45 02	133 26 83							
		0054	BC	NET		159	54 44 99	133 26 78		135					BONGO
		0148	BC	TRAWL		160	54 45 181	133 25 657							SURFACE TOW
25	FI 03	0349	BC	CTD		161	54 45 90	133 17 27	120			1			T: 6.43 S: 31.53
	3RD	0352	BO				54 45 90	133 17 31		110					BOT 10m - SAL/CAL/NUTS
		0355	EN				54 45 91	133 17 33							
	2ND	0337	BC	NET		162	54 45 95	133 17 15	124	114					BONGO
	1ST	0242	BC	TRAWL		163	54 45 800	133 19 896							SURFACE TOW
25	SEA 01	1457	BC	CTD		164	54 56 50	133 13 57	161			1		✓	T: 6.35 S: 31.50
		1501	BO				54 56 48	133 13 55		150					BOT 10m - SAL/CAL/NUTS
		1504	EN				54 56 49	133 13 56							
		1508	BC	NET		165	54 56 52	133 13 56		145					BONGO
		1532	BC	TRAWL		166	54 56 101	133 12 931							SURFACE TOW

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							Latitude	Longitude							
25	SEA 02	1633	BE	CTD		167	54 52 05	133 09 09	116			1			T: 6.34 S: 31.45
		1636	BO				54 52 08	133 09 11		105					BOT 10m - SAL/CHL/NUTS
		1638	EN				54 52 11	133 09 14							
		1642	BE	NET		168	54 52 17	133 09 17		100					BONGO
		1702	BE	TRAWL		169	54 51 57.2	133 08 57.5							SURFACE TOW
25	FI 02	1808	BE	CTD		170	54 46 48	133 11 08	200			1			T: 6.34 S: 31.45
		1812	BO				54 46 52	133 11 07		190					BOT 10m - SAL/CHL/NUTS
		1815	EN				54 46 54	133 11 11							
		1820	BE	NET		171	54 46 58	133 11 11							BONGO
		1843	BE	TRAWL		172	54 46 52.9	133 10 13.9							SURFACE TOW
25	FI 01	2000	BE			173	54 47 12	133 02 53	112			1			T: 6.33 S: 31.42
		2003	BO				54 47 13	133 02 54		100					BOT 10m - SAL/CHL/NUTS
		2005	EN				54 47 13	133 02 54							
		2010	BE			174	54 47 09	133 02 48		090					BONGO
		2031	BE			175	54 46 60.7	133 01 66.9							SURFACE TOW

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month FEB				Year 2004				Ship W. E. RICKER				Cruise ID 2004-03			
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							
25	SEA 03	2134	BC	CTD		176	54 42 72	132 55 69	169			1			T: 6.32 S: 31.34
		2138	BO				54 42 71	132 55 69		160					BOTC10N - SAL/CAL/NUTS
		2141	EN				54 42 72	132 55 69							
		2145	BC	NET		177	54 42 72	132 55 68		150					BONGO
		2238	BC	TRAWL		178	54 41 898	132 55 997							SURFACE TOW
25	SEA 04	2350	BC	CTD		179	54 37 50	132 48 09	140			1			T: 6.33 S: 31.43
		2353	BO				54 37 56	132 47 96		130					BOTC10N - SAL/CAL/NUTS
		2356	EN				54 37 60	132 47 87							
26		0000	BC	NET		180	54 37 66	132 47 70	132	122					BONGO
		0021	BC	TRAWL		181	54 37 007	132 46 137							
26	ISEA 15	0139	BC	CTD		182	54 37 44	132 36 08	123			1			T: 6.33 S: 31.36
		0142	BO				54 37 42	132 36 08		110					BOTC10N - SAL/CAL/NUTS
		0144	EN				54 37 38	132 36 13							
		0147	BC	NET		183	54 37 34	132 36 22	117	107					BONGO
		0208	BC	TRAWL		184	54 37 388	132 35 258							SURFACE TOW

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14:44:30
2:40
47:00

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							Latitude	Longitude							
27	T-13	1436	BE	CTD		185	50 18 65	130 20 19	1000+			2		✓	T: 7.82 S: 32.43
		1447	BO				50 18 58	130 20 38		500					T: 4.54 S: 34.10
		1458	EN				50 18 48	130 20 52							
		1504	BE	NET		186	50 18 48	130 20 64		150					BOT @ 500 m - SAL BOT @ 10 m - SAL/CHL/NUTS BONGO
27	T-12	1613	BG	CTD		187	50 22 96	130 09 59	1832			1			T: 8.56 S: 31.97
		1618	BO				50 22 95	130 09 66		250					BOT @ 10 m - SAL/CHL/NUTS
		1622	EN				50 22 95	130 09 70							
		1626	BE	NET		188	50 22 94	130 09 74		150					BONGO
27	T-11	1728	BE	CTD		189	50 27 56	129 59 62	2200			1			T: 8.69 S: 32.02
		1734	BO				50 27 57	129 59 63		250					BOT @ 10 m - SAL/CHL/NUTS
		1738	EN				50 27 54	129 59 62							
		1741	BE	NET		190	50 27 51	129 59 58		150					BONGO
27	T-10	1845	BE	CTD		191	50 32 49	129 49 22	2300						T: 8.71 S: 32.00
		1850	BO				50 32 48	129 49 21		250					BOT @ 10 m - SAL/CHL/NUTS
		1854	EN				50 32 46	129 49 25							
		1858	BG	NET		192	50 32 45	129 49 25		150					BONGO

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							Latitude	Longitude								
27	T 09	2001	BE	CTD		193	50 37 27	129 39 14	2000			1			T: 8.58 S: 32.14	
		2007	BO				50 37 29	129 39 13		250					BOT@10m - SAL/CHL/NUTS	
		2012	EN				50 37 27	129 39 12								
		2016	BE	NET		194	50 37 25	129 39 14		150					BONGO	
27	T 08	2120	BE	CTD		195	50 42 11	129 28 96	1800			1			T: 8.35 S: 32.37	
		2125	BO				50 42 20	129 28 96		250					BOT@10m - SAL/CHL/NUTS	
		2130	EN				50 42 22	129 28 98								
		2134	BE	NET		196	50 42 25	129 28 96		150						
27	T 07	2302	BE	CTD		197	50 49 21	129 13 00	90			1			T: 8.71 S: 31.79	
		2304	BO				50 49 23	129 13 00		80					BOT@10m - SAL/CHL/NUTS	
		2306	EN				50 49 26	129 13 00								
		2310	BE	NET		198	50 49 26	129 13 01		80					BONGO	
		2331	BE	TRAWL		199	50 49 57.9	129 14 26.3							SURFACE TOW	

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							Latitude	Longitude							
28	T 06	0136	BE	CTD		200	50 55 96	128 59 94	61			1			T: 8.64 S: 31.46
		0137	BO				50 55 94	128 59 93		50					BOTIUM - SAL/CHL/NUTS
		0139	EN				50 55 93	128 59 94							
		0142	BE	NET		201	50 55 91	128 59 94		50					BONGO
		0159	BE	TRAWL		202	50 56 506	128 58 663							SURFACE TOW
28	T 05	1459	BE	CTD		203	51 00 01	128 52 12	63			1		✓	T: 8.63 S: 31.56
		1500	BO				51 00 00	128 52 12		50					BOTIUM - SAL/CHL/NUTS
		1502	EN				51 00 00	128 52 12							
		1506	BE	NET		204	51 00 03	128 52 16		52					BONGO
		1525	BE	TRAWL		205	51 00 667	128 51 039							SURFACE TOW
28	T 04	1628	BE	CTD		206	51 04 57	128 44 16	62			1			T: 7.88 S: 31.39
		1630	BO				51 04 57	128 44 19		50					BOTIUM - SAL/CHL/NUTS
		1632	EN				51 04 58	128 44 22							
		1635	BE	NET		207	51 04 59	128 44 28		49					BONGO
		1652	BE	TRAWL		208	51 04 978	128 43 540							SURFACE TOW

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							Latitude	Longitude								
28	T 03	1756	BE	CTD		209	51 08 50	128 36 15	140			1			T: 7.90 S: 31.35	
		1759	BO				51 08 53	128 36 21		130					BOTOM - SAL/CHL/NUTS	
		1801	EN				51 08 54	128 36 23								
		1804	BE	NET		210	51 08 54	128 36 25		126					BONGO	
		1825	BE	TRAWL		211	51 09 03.9	128 35 29.6							SURFACE TOW	
28	T 02	2000	BE	CTD		212	51 12 50	128 28 00	140			1			T: 7.91 S: 31.30	
		2003	BO				51 12 53	128 28 00		180					BOTOM - SAL/CHL/NUTS	
		2007	EN				51 12 56	128 27 99								
		2011	BE	NET		213	51 12 56	128 28 00		150					BONGO	
		2032	BE	TRAWL		214	51 13 02.3	128 27 13.0							SURFACE TOW	
28	T 01	2139	BE	CTD		215	51 16 59	128 20 01	77			1			T: 7.98 S: 31.20	
		2141	BO				51 16 59	128 20 00		65					BOTOM - SAL/CHL/NUTS	
		2143	EN				51 16 59	128 20 00								
		2147	BE	NET		216	51 16 57	128 19 97		64					BONGO	
		2207	BE	TRAWL		217	51 16 24.3	128 19 08.6							SURFACE TOW	

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