DAILY LOG BOOK

MISSION NUMBER 2009-01

DATE: From: FEB. 25/09 to: MAR. 22/09

VESSEL: W.E. RICKER

PROJECT: TRUDEL - HI SEAS SALMON

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

Captain: ANDY QUATE First Officer: SEAN POTTER
Second Officer: _____ Third Officer: _____

Mission Participants / Agencies: PBS - IOS - OSU

Scientific Personnel: Party Chief: JOHN MORRIS

Name	Watch	Cabin	Name	Watch	Cabin
TYLER ZUBKOWSKI					
MARY THIESS					
TOBI					
WILET EVANS					
HUGH MACLEAN					

Second leg of Mission: Party Chief: _____

Name	Watch	Cabin	Name	Watch	Cabin

Data logging computer: PACOSAP F303
Data acquisition program: SEASAVE V7
CTD deck unit make: SEABIRD model: 11 serial number: 0471

Primary CTD
Make: SEABIRD model: 9 serial number: ~~31019 2009-04 CTD~~ 26 ? 0506
Primary temperature serial number: 4752
Primary conductivity serial number: 2173
Secondary temperature serial number: 2968
Secondary conductivity serial number: 2399
Transmissometer: WETLABS Model: _____ s/n: 723 DR
Fluorometer: Model SEAPOINT Cable gain: 10 X 0.15 s/n: 2229 **P, S or NO pump?**
Oxygen sensor: SEABIRD Model: SBE 43 s/n: 0047 **P, S or 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: _____ **P, S or NO pump?**
PAR sensor: _____ Model: _____ s/n: _____
Other sensors: _____ s/n: _____ **P, S or NO pump?**
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CTD calibration bottle location (height above CTD in metres): 5m

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Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month FEB **Year** 2009 **Ship** W. E. RICKER **Cruise ID** 2009-01

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
25	GS 01	1716	BE	CTD		001	49° 19. 80	124° 09. 80	260	240		1	H.M.		T: 6.79 S: 29.33
		1720	BO				49° 19. 83	124° 09. 77							BOT @ 10m - SAL/CHL/NUTS
		1726	EN				49° 19. 81	124° 09. 75							
		1733	BE	NET		002	49° 19. 80	124° 09. 72		150					BONGO
		17:58	BE	TRAWL		003	49 19. 997	124 10. 93.			15min TOW AT 55m.				TRAWL
25	GS 02	1910	BE	CTD		004	49° 22 15	124 19 93	113			1			T: 6.74 S: 29.21
		1914	BO				49° 22. 13	124° 19. 96		100					BOT@10m · SAL/CHL/NUT
		1916	EN				49° 22. 10	124° 19. 96							
		1922	BE	NET		005	49° 22. 09	124° 20.00		105					BONGO
		19:40	BE	TRAWL		006	49 22 43	124 21. 36			SURFACE TOW				TRAWL
25	GS 03	2123	BE	CTD		007	49° 24. 15	124° 33.09	81			1			T: 6.68 S: 29.39
		2125	BO				49° 24. 13	124° 33. 15		70					BOT@10m · SAL/CHL/NUTS
		2127	EN				49° 24. 11	124° 33 18							
		2131	BE	NET		008	49° 24. 08	124° 33. 23		65					BONGO
		2151	BE	TRAWL		009	49 24. 69.	124 34. 58							TRAWL

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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EN = end time of cast
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MR = messenger release time
RE = recover mooring time

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

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25	GS 04	2304	BE	CTD		010	49° 29. 31	124° 32. 83	201			1	H.M.		T: 6.80 S: 29.45
		2308	BO				49° 29. 30	124° 32. 85		190					BOT @ 10m · SAL/CHL/NUTS
		2313	EN				49° 29. 27	124° 32. 90							
		2317	BE	NET		011	49° 29. 21	124° 32. 92		150					BONGO
		2340	BE	TRAWL		012	49 29. 46	124 31. 43			SURFACE TOW				TRAWL
26	GS 05	0056	BE	CTD		013	49° 35. 47	124° 25. 92	334			1			T: 6.74 S: 29.41
		0101	BO				49° 35. 43	124° 25. 97		250					BOT @ 10m · SAL/CHL/NUTS
		0107	EN				49° 35. 40	124° 26. 05							NO BONGO
		0118	BE	TRAWL		014	49 35 89	124 26. 97			SURFACE TOW				TRAWL
26	GS 06	1522	BE	CTD		015	49° 56. 59	125° 09. 39	39			1			T: 7.68 S: 28.78
		1523	BO				49° 56. 56	125° 09. 39		30					BOT @ 10m · SAL/CHL/NUTS
		1524	EN				49° 56 55	125° 09 39							NO BONGO
		1537	BE	NET		/	NO BONGO								~~BONGO~~
		1537	BE	TRAWL		016	49 55. 67	125 8.5			SURFACE TOW				TRAWL

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— NO BONGO - WINCH PROBLEMS

— NO BONGO - HYDROLIC FIX ON WINCH INCOMPLETE

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26	GS 07	1648	BE	CTD		017	49° 50.32	125° 00.63	93			1	4 M.		T: 6.75 S: 28.56
		1650	BO				49° 50.32	125° 00.66		85					BOT@ 10m - SAL/CHL/NUTS
		1652	EN				49° 50.33	125° 00.70							
		1657	BE	NET		018	49° 50.35	125° 00.82	83	73					BONGO - WINCH FIXED
		1616	BE	TRAWL		019	49 49.70	124 59 69			SURFACE TOW				TRAWL
26	GS 08	1829	BE	CTD		020	49° 49.71	124° 49.71	283			1			T: 7.01 S: 29.66
		1834	BO				49° 49.69	124° 49.74		250					BOT@ 10m - SAL/CHL/NUTS
		1839	EN				49° 49.69	124° 49.78							
		1842	BE	NET		021	49° 49.69	124° 49.82	150						BONGO
		18:02	BE	TRAWL		022	49 49,605	124 48,6			SURFACE TOW.				TRAWL
26	GS 09	2045	BE	CTD		023	49° 56.21	124° 43.48	141			1			T: 7.26 S: 29.45
		2048	BO				49° 56.17	124° 43.44		130					BOT@ 10m - SAL/CHL/NUTS
		2051	EN				49° 56.15	124° 43.43							
		2055	BE	NET		024	49° 56 11	124° 43.39							BONGO
		21 20	BE	TRAWL		025	49 55 17	124 41 81			SURFACE TOW				TRAWL

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Month Feb **Year** 2009 **Ship** W.E. RICKER **Cruise ID** 2009-01

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
26	GS 10	2204	BE	CTD		026	49° 53.42	124° 38.32	114			1	H.M		T: 7.23 S: 29.19
		2207	BO				49° 53 39	124° 38.31		105					BOT@10m: SAL/CHL/NUTS
		22 09	EN				49° 53. 37	124° 38. 31							
		22 14	BE	NET		027	49° 53 36	124° 38. 29							BONGO
		22.32	BE	TRAWL		028	49 52.79	124 37. 64		SURFACE TOW					TRAWL
26	GS 11	2340	BE	CTD		029	49° 47.11	124° 39. 71	102			1			T: 6.86 S: 29.09
		23 42	BO				49° 47. 07	124° 39. 66		95					BOT@10m: SAL/CHL/NUTS
		2345	EN				49° 47. 05	124° 39. 64							
		2350	BE	NET		030	49° 47. 03	124° 39. 58							BONGO
		0007	BE	TRAWL		031	49 46 27	124 39 .62		SURFACE TOW					TRAWL
27	GS 12	0133	BE	CTD		032	49° 40. 94	124° 33. 05	171			1			T: 6.80 S: 29.55
		01 37	BO				49° 40. 94	124 33. 01		160					BOT@10m: SAL/CHL/NUTS
		0141	EN				49° 40. 96	124° 32. 95							
		0144	BE	NET		033	49° 40. 97	124° 32. 92							BONGO
		02 05	BE	TRAWL		034	49 40 62	124 31, 93		SURFACE TOW					TRAWL

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27	GS 13	1457	BE	CTD		035	49° 28.92	124° 01.79	130			1	H.M.		T: 6.82 S: 29.31
		1500	BO				49° 28.83	124° 01.77		120					BOT@10m - SAL/CHL/NUTS
		1503	EM				49° 28.84	124° 01.75							
		1507	BE	NET		036	49° 28.85	124° 01.72		108					BONGO
		1528	BE	TRAWL		037	49 28 37	124 00.42		SURFACE TOW					TRAWL
27	GS 14	1642	BE	CTD		038	49°26.66	123° 50.64	167			1			T: 6.71 S: 29.35
		1646	BO				49° 26.67	123° 50.61		155					BOT@10m - SAL/CHL/NUTS
		1649	EM				49° 26.67	123° 50.57							
		1653	BE	NET		039	49° 26.68	123° 50.54		150					BONGO
		1713	BE	TRAWL		040	49 26 67	123 49 53.		SURFACE TOW.					TRAWL
27	GS 15	1825	BE	CTD		041	49° 24.62	123° 39.98	81			1			T: 6.43 S: 28.47
		1826	BO				49° 24.62	123° 39.98		70					BOT@10m - SAL/CHL/NUTS
		1829	EM				49° 24.62	123° 39.98							
		1832	BE	NET		042	49° 24.59	123° 40.00							BONGO
		1853	BE	TRAWL		043	49 24 41	123 38 90		SURFACE TOW					TRAWL

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
27	GS 16	2018	BE	CTD		044	49° 20.55	123° 28.66	149			1	H.M.		T: 6.13 S: 26.85
		2021	BO				49° 20.55	123° 28.67		140					BOT@10m - SAL/CHL/NUTS
		2024	EN				49° 20.56	123° 28.68							
		20	BE	NET		NO	~~49° 20.~~	~~123° 28.~~							BONGO - NO BONGO
		2036	BE	TRAWL		045	49 20.25	123 27.83		SURFACE TOW					TRAWL
27	GS 17	2212	BE	CTD		046	49° 14.90	123° 17.51	50			1			T: 7.06 S: 27.6
		2213	BO				49° 14.90	123° 17.51		45					BOT@10m - SAL/CHL/NUTS
		2215	EN				49° 14.90	123° 17.49							
		2218	BE	NET		047	49° 14.94	123° 17.45		36					BONGO
		2234	BE	TRAWL		048	49 14.05	123 17.6		SURFACE TOW					TRAWL
27	GS 18	2322	BE	CTD		049	49° 11.261	123° 17.97	66			1			T: 6.68 S: 25.32
		2323	BO				49° 11.28	123° 17.96		60					BOT@10m - SAL/CHL/NUTS
		2325	EN				49° 11.30	123° 17.97							
		2330	BE	NET		050	49° 11.31	123° 18.00							BONGO
		2346	BE	TRAWL		051	49 10.64	123 17.91		SURFACE TOW					TRAWL

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DID NOT LOG CAST 46 - MUST HAVE MISPRESSED "START ARCHIVING" BUTTON - HEADER IN FILE BUT NO COM OR HEX FILE

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
29	GS 19	0127	BE	CTD		052	49° 03. 81	123° 17. 97	61			1	H.M.		T: 6.41 S: 27.50
		0129	BO				49° 03. 82	123° 17. 99		50					BOT@10m - SAL/CHL/NUTS
		0131	EN				49° 03. 83	123° 18. 00							
		0134	BE	NET		053	49° 03.	123°		52					BONGO
		0150	BE	TRAWL		054	49 03.35	123 17.25			SURFACE TOW				TRAWL
															* →
28	GS 20	1459	BE	CTD		055	49° 06.48	123° 35. 50	80			1			T: 6.66 S: 29.45
		1500	BO				49° 06.49	123° 35. 50		70					BOT@5m - SAL/CHL/NUTS
		1502	EN				49° 06. 50	123° 35. 49							
		1508	BE	NET		056	49° 06. 48	123° 35. 49		71					BONGO
		1525	BE	TRAWL		057	49 05.76	123 37. 73.			SURFACE TOW				TRAWL
28	GS 21	1628	BE	CTD		058	49° 00.96	123° 33.07	98			1			T: 6.56 S: 29.29
		1631	BO				49° 00. 98	123° 33.06		90					BOT@10m - SAL/CHL/NUTS
		1633	EN				49° 01.01	123° 33.05							
		1637	BE	NET		059	49° 01.02	123° 33.06							BONGO
		1654	BE	TRAWL		060	49 01,09	123 31. 97							TRAWL

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RENAMED CON FILE FROM "2009-04 CTD 26" TO "0506.CON" - NO CHANGE IN CON FILE, JUST RENAMED IT TO INDICATE WHICH CTD IS BEING USED

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28	GS 22	1805	BE	CTD		061	48° 59.39	123° 21.08	215			1	H.M.		T: 6.48 S: 28.54
		1809	BO				48° 59.34	123° 21.02		205					BOT@10m - SAL/CHL/NUTS
		1813	GH				48° 59.30	123° 21.00							
		1817	BE	NET		062	48° 59.19	123° 20.98		150					BONGO
		1839	BE	TRAWL		063	48 58 42	123 19.52			SURFACE TOW.				TRAWL
28	GS 23	2006	BE	CTD		064	48° 50.04	123° 10.05	143			1			T: 6.69 S: 29.16
		2009	BO				48° 50.03	123° 10.01		135					BOT@10m - SAL/CHL/NUTS
		2013	GH				48° 50.03	123° 09.99							
		2017	BE	NET		065	48° 49.99	123° 09.95							BONGO
		2036	BE	TRAWL		066	48 49 49	123 08.81			TOW AT	15m			TRAWL
28	GS 24	2130	BE	CTD		067	48° 49.39	123° 03.95	181			1			T: 6.80 S: 29.28
		2134	BO				48° 49.35	123° 03.90		170					BOT@10m - SAL/CHL/NUTS
		2138	GH				48° 49.35	123° 03.97							
		2143	BE	NET		068	48° 49.32	123° 03.81		150					BONGO
		2203	BE	TRAWL		069	48 49 50	123 04.55			TOW AT	30m			TRAWL

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28	GS 25	2302	BE	CTD		070	48° 50. 71	123° 11. 66	135	108		1	H.M.		T: 6.75 S: 29.04
		2305	BO				48° 50. 70	123° 11. 76		100					BOT@ 10m - SAL/CHL/NUTS
		2307	EN				48° 50. 71	123° 11. 85							
		23 13	BE	NET		071	48° 50. 71	123° 11. 97		105					BONGO
		23 32	BE	TRAWL		072	48 51 23	123 12. 95			TOW AT 15m				TRAWL
1	GS 26	0129	BE	CTD		073	48° 55. 47	123° 23. 44	61			1			T: 6.68 S: 29.18
		0130	BO				48° 55. 48	123° 23. 46		50					BOT@ 10m - SAL/CHL/NUTS
		0132	EN				48° 55. 48	123° 23. 49							
		0135	BE	NET		074	48° 55. 49	123° 23. 53							BONGO
		0150	BE	TRAWL		075	48 55 28	123 22. 75			TOW AT 15m				TRAWL
1	GS 27	1518	BE	CTD		076	48° 52. 21	123° 24. 26	36			1			T: 7.01 S: 29.98
		1519	BO				48° 52. 21	123° 24. 26		30					BOT@ 10m - SAL/CHL/NUTS
		1520	EN				48° 52. 21	123° 24. 27							
		1524	BE	NET		077	48° 52. 22	123° 24. 31							BONGO
		1540	BE	TRAWL		078	48 52 87	123 25 37			SURFACE TOW				TRAWL

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INSTITUTE OF OCEAN SCIENCES

Month MAR **Year** 2009 **Ship** W.E. RICKER **Cruise ID** 2009-01

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
1	GS 28	1645	BE	CTD		079	48°56.47	123° 31.59	49			1	H.M.		T: 7.23 S: 29.80
		16 46	BO				48° 56. 47	123° 31. 58		45					BOT@ 10m - SAL/CHL/NUTS
		16 48	EN				48° 56. 46	123° 31. 57							
		1652	BE	NET		080	48° 56. 48	123° 31. 62		41					BONGO
		17:07	BE	TRAWL		081	48 56 99	123 32 44			TOW AT 15m.				TRAWL
1	GS 29	1808	BE	CTD		082	49° 00. 92	123° 37. 10	48			1			T: 7.05 S: 29.51
		1809	BO				49° 00. 82	123° 37. 10		45					BOT@ 10m - SAL/CHL/NUTS
		18 10	EN				49° 00. 82	123° 37. 09							
		18 13	BE	NET		083	49° 00. 83	123° 37. 10							BONGO
		18 28	BE	TRAWL		084	49 01. 31	123 37 79			SURFACE TOW.				TRAWL
1	GS 30	1958	BE	CTD		085	49° 07. 22	123° 44. 02	38			1			T: 7.14 S: 29.61
		1959	BO				49° 07 22	123° 44. 03		35					BOT@ 10m - SAL/CHL/NUTS
		2001	EN				49° 07 22	123° 44. 03							
		2004	BE	NET		086	49° 07 21	123° 44. 03		30					BONGO
		20 19	BE	TRAWL		087	49 06 65	123 43. 3			SURFACE TOW				TRAWL

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
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RE = recover mooring time

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month MARCH **Year** 2009 **Ship** W.E. RICKER **Cruise ID** 2009-01

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
1	GS 31	2144	BE	CTD		088	49° 05 62	123° 46 77	55			1	H.M.		T: 7.49 S: 29.60
		2146	BO				49° 05 62	123° 46 76		50					BOT@10m · SAL/CHL/NUTS
		2147	EN				49° 05 62	123° 46 75							
		2152	BE	NET		089	49° 05 62	123° 46 74							BONGO
		2202	BE	TRAWL		090	49 04 99	123 45 92			SURFACE	TOW			TRAWL
1	GS 32	2307	BE	CTD		091	49° 00. 37	123° 43. 77	62			1			T: 7.72 S: 29.13
		2309	BO				49° 00. 37	123° 43. 76		55					BOT@10m · SAL/CHL/NUTS
		2310	EN				49° 00. 37	123° 43. 77							
		2314	BE	NET		092	49° 00. 37	123° 43 82							BONGO
		2333	BE	TRAWL		093	48 59 43	123 43 84			SURFACE	TOW			TRAWL
2	GS 33	0032	BE	CTD		094	48° 56. 51	123° 41. 18	92			1			T: 6.92 S: 28.58
		0034	BO				48° 56. 53	123° 41. 21		85					BOT@10m · SAL/CHL/NUTS
		0036	EN				48° 56. 54	123° 41. 22							
		00	BE	~~NET~~		~~094~~	48° 56.	123° 41		NO	BONGO				~~BONGO~~ →
		0050	BE	TRAWL		095	48 56 14	123 40 56			SURFACE	TOW			TRAWL

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Daily_log_book.doc

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* BONGO WINCH COUNTER BROKEN

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 Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
2	JF1	1503	BE	CTD		096	48° 17. 77	123° 35. 89	136			1	H.M		T: 7.13 S: 31.44
		1506	BO				48° 17. 78	123° 35. 95		130					BOT @ 10m. SAL/CHL/NUTS
		1510	EN				48° 17 77	123° 35. 93							
		1514	BE	NET		097	48° 17. 77	123° 35. 79		128					BONGO
		1535	BE	TRAWL		098	48 17 48	123 37 345			SURFACE TOW				TRAWL
2	JF2	1647	BE	CTD		099	48° 20. 02	123° 48. 28	127			1			T: 7.22 S: 31.37
		1650	BO				48° 20. 01	123° 48. 31		120					BOT @ 10m. SAL/CHL/NUTS
		1652	EN				48° 20. 01	123° 48 41							
		1656	BE	NET		100	48° 20. 00	123° 48. 56		118					BONGO
		1715	BE	TRAWL		101	48 20 09	123 50 18			SURFACE TOW				TRAWL
2	JF3	1828	BE	CTD		102	48° 22. 97	124° 02. 89	102			1			T: 7.26 S: 31.26
		1830	BO				48° 22. 98	124° 02. 97		95					BOT @ 10m. SAL/CHL/NUTS
		1832	EN				48° 23. 00	124° 03. 03							
		1936	BE	NET		103	48° 23. 01	124° 03. 05		93					BONGO
		1853	BE	TRAWL		104	48 23. 46	124 04. 62			SURFACE TOW				TRAWL

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Ocean Sciences and Productivity Division

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Month MARCH **Year** 2009 **Ship** W.E. RICKER **Cruise ID** 2009-01

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
2	JF 4	20 13	BE	CTD		105	48° 26.01	124° 15.59	110			1	H.M		T: 7.30 S: 31.19
		20 15	BO				48° 26.04	124° 15.68		100					BOT@ 10m - SAL/CHL/NUTS
		20 18	EN				48° 26.06	124° 15.75							
		20 21	BE	NET		106	48° 26.07	124° 15.80		95					BONGO
		20 41	BE	TRAWL		107	48 26.8	124 17 42			SURFACE TOW				TRAWL
2	JF 5	21 48	BE	CTD		108	48° 30 35	124° 27.70	110			1			T: 7.20 S: 30.97
		21 50	BO				48° 30 37	124° 27.80		100					BOT@ 10m - SAL/CHL/NUTS
		21 53	EN				48° 30 37	124° 27.87							
		2157	BE	NET		109	48° 30 40	124° 28.01		102					BONGO
		22 19	BE	TRAWL		110	48 30 98	124 29.92			TOW AT 8m.		*		TRAWL
2	JF 6	2344	BE	CTD		111	48° 33.20	124° 42.15	103			1			T: 7.27 S: 29.68
		2347	BO				48° 33.18	124° 42.20		95					BOT@ 10m - SAL/CHL/NUTS
		2350	EN				48° 33.18	124° 42.23							
		2353	BE	NET		112	48° 33.18	124° 42 28							BONGO
3		0016	BE	TRAWL		113	48 33 04	124 44 44			TOW AT 24m.		*		TRAWL

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* TIDE, WINDS AT WESTERN END OF JUAN DE FUCA STRAIT MADE FOR CONFUSED SEAS.

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
3	VI 01	1506	BE	CTD		114	48° 47.71	125°21.16	86			1	H.M.		T: 7.37 S: 29.83
		1508	BO				48° 47.70	125° 21.17		80					BOT@ 10m · SAL/CHL/NUTS
		1511	EN				48° 47.69	125° 21.24							
		1515	BE	NET		115	48° 47.68	125° 21 33							BONGO
		1541	BE	TRAWL		116	48 47 18	125 23 14		SURFACE TOW					TRAWL
3	VI 02	1717	BE	CTD		117	48° 40.75	125° 35.78	144			1			T: 7.60 S: 30.58
		1720	BO				48° 40 75	125° 35. 83		135					BOT@ 10m · SAL/CHL/NUTS
		1723	EN				48° 40 83	125° 35. 85							
		1729	BE	NET		118	48°40 93	125° 36. 11		124					BONGO
		1752	BE	TRAWL		119	48 40 48	125 37 53		TOW AT 15m.					TRAWL
3	VI 03	1900	BE	CTD		120	48° 35.67	125° 43.07	59			1			T: 7.63 S: 30.86
		1902	BO				48° 35.69	125° 43.07		50					BOT@ 10m · SAL/CHL/NUTS
		1903	EN				48° 35 68	125° 43. 06							
		1906	BE	NET		121	48° 35.66	125° 43 07		48					BONGO
		1925	BE	TRAWL		122	48 35 18	125 44 21		TOW	AT 15m				TRAWL

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Month MARCH **Year** 2009 **Ship** W.E. RICKER **Cruise ID** 2009-01

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
3	VI 04	2049	BE	CTD		123	48°29.11	125°51.37	109			1	H.M.		T: 7.96 S: 31.66
		2051	BO				48°29.17	125°51.36		100					BOT@10m. SAL/CHL/NUTS
		2054	EN				48°29.24	125°51.31							
		2101	BE	NET		124	48°29.30	125°51.37							BONGO
		2123	BE	TRAWL		125	~~48 28.73~~	~~125 52 37~~		TOW	AT 15m				TRAWL
3	VI 05	2237	BE	CTD		126	48°29.61	125°48.40	97			1			T: 7.78 S: 31.67
		2239	BO				48°29.66	125°48.42		90					BOT@10m. SAL/CHL/NUTS
		2242	EN				48°29.70	125°48.42							
		2247	BE	NET		127	48°29.74	125°48.57		85					BONGO
		2307	BE	TRAWL		128	~~48 30 89~~	~~125 47 48~~		TOW	AT 15m				TRAWL
/	VI 06		BE	CTD		~~129~~	~~48°35.~~	125°41.	CANCELLED			1		X	T: S:
			BO						CTD						BOT@10m. SAL/CHL/NUTS
			EN												
4		0030	BE	NET		130	48°35.12	125°40.94							BONGO
		0051	BE	TRAWL		131	48 35 84	125 40.97		TOW	AT 15m				TRAWL

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* - CANCELLED CTD - V7 or PROGRAM HUNG UP - WILL SWITCH TO WIN 32 UNTIL I HEAR FROM SEABIRD AS TO FIX V7

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 Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
4	IVI 01	1458	BE	CTD		132	48° 57.90	125°07 02	92		NOTE: WIN 32	1	H.M.		T: 7.21 S: 28&79
		1500	BO				48° 57 90	125° 07 02		80					BOTE 10m SAL/CHL/NUTS
		1502	EN				48° 57 91	125° 07 03							
		1505	BE	NET		133	48° 57.92	125° 07. 05							BONGO
		15:45	BE	TRAWL		134	48 56 46	125 08.43		SURFACE TOW.					TRAWL
4	IVI 02	1645	BE	CTD		135	48° 53. 80	125° 11 84	71			1			T: 7.03 S: 28.91
		16 47	BO				48° 53 80	125° 11. 84		60					BOTE 10m. SAL/CHL/NUTS
		16 49	EN				48° 53. 80	125° 11. 84							
		16 51	BE	NET		136	48° 53 78	125° 11. 93							BONGO
		1709	BE	TRAWL		137	48 53 08	125 12 86		SURFACE TOW					TRAWL
4	IVI 03	1759	BE	CTD		138	48° 50 55	125° 15. 15	93			1			T: 7.34 S: 29.63
		1800	BO				48° 50. 55	125° 15. 17		85					BOTE 10m SAL/CHL/NUTS
		1802	EN				48° 50. 55	125° 15. 17							
		1805	BE	NET		139	48° 50. 56	125° 15. 19		84					NET
		18:32	BE	TRAWL		140	48 48 93	125 15 47		SURFACE TOW					TRAWL

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V7 NOT WORKING, SWITCH TO WIN 32 OPERATING SYSTEM

* PUMPS NOT ON DOWNCAST

DAILY LOG

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4	VI 07	2320	BE	CTD		141	48°54.56	125°33.99	87			1	H.M.		T: 7.38 S: 29.38
		2322	BO				48° 54.56	125° 33.99		80					BOT@10m. SAL/CHL/NUTS
		2324	EN				48° 54.55	125° 33.96							
		2329	BE	NET		142	48° 54.50	125° 33.95							BONGO
		2350	BE	TRAWL		143	48 54 83	125 35 42			SURFACE	TOW			TRAWL
5	VI 08	0220	BE	CTD	2ND	144	48°57.35	125°55.94	53			1			T: 7.55 S: 30.15
		0221	BO				48° 57.34	125° 55.95		45					BOT@10m. SAL/CHL/NUTS
		0223	EN				48° 57.32	125° 55.97							
		0230	BE	NET	3RD	145	48° 57.33	125° 55.72		44					BONGO
		0132	BE	TRAWL	1ST	146	48 57 46	125 52 34			SURFACE	TOW.			TRAWL
5	CP 07	1506	BE	CTD		147	49°08.41	126°59.21	418			1			T: 8.03 S: 32.21
		1511	BO				49° 08 35	126° 59.32		250					BOT@10m. SAL/CHL/NUTS
		1517	EN				49° 08 27	126° 59.42							
		1525	BE	NET		148	49° 08 24	126° 59.61		150					BONGO
		1549	BE	TRAWL		149	49 08 61	127 00.97			TOW AT 15m				TRAWL

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* MARCH 5 - JULIAN DAY SHOULD BE 31+28+5 = 64 SET THERMOSAL COMPUTER TO MAR 5 BUT SEASAVE SAYS JULIAN DAY
is 54.845 @ 8 AM MAR 5/09 - CANNOT RESET SEASAVE TIME, JUST COMPUTER
- REBOOTED SEASAVE - DATE CORRECTED TO 64.5 IN FILE 2009-01-002.DSO @ 0820 5/3/09

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5	EP 06	1723	BE	CTD		150	49° 10. 59	126° 54. 26	177			1	H.M.		T: 7.88 S: 32.10
		1727	BO				49° 10. 58	126° 54. 35		165					BOT@10m - SAL/CHL/NUT
		1731	EN				49° 10. 57	126° 54. 42							
		1734	BE	NET		151	49° 10. 56	126° 54. 53		150					BONGO
		1759	BE	TRAWL		152	49 10 91	126 53 39		Tow AT 15m					TRAWL
5	EP 05	1849	BE	CTD		153	49° 12. 16	126° 49. 84	142			1			T: 7.86 S: 31.98
		1852	BO				49° 12. 14	126° 49. 87		130					BOT@ 10m - SAL/CHL/NUTS
		1855	EN				49° 12. 11	126° 49. 91							
		1858	BE	NET		154	49° 12. 10	126° 49. 96		130					BONGO
		1924	BE	TRAWL		155	49 12 72	126 48 68		Tow AT 15m					TRAWL
5	EP 04	2018	BE	CTD		156	49° 14. 53	126° 45 31	117			1			T: 7.28 S: 31.60
		2020	BO				49° 14. 49	126° 45. 38		105					BOT@ 10m. SAL/CHL/NUTS
		2024	EN				49° 14. 45	126° 45. 47							
		2028	BE	NET		157	49° 14. 42	126° 45. 56		106					BONGO
		2051	BE	TRAWL		159	49 14 82	126 44 75		Tow AT 15m					TRAWL

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5	EP 03	21 45	BE	CTD		159	49° 16.79	126° 40.91	107			1	N.M.		T: 7.13 S: 31.17
		21 48	BO				49° 16.75	126° 40.94		100					BOT@10m · SAL/CHL/NUTS
		21 50	EN				49° 16.75	126° 41.00							
		21 54	BE	NET		160	49° 16.72	126° 41.04		98					BONGO
		22 14	BE	TRAWL		161	49 17 16	126 46 39		TOW	AT 15m				TRAWL
5	EP02	2307	BE	CTD		162	49° 18.91	126° 36.61	83			1			T: 7.14 S: 31.02
		2309	BO				49° 18.89	126° 36.64		75					BOT@10m · SAL/CHL/NUTS
		2311	EN				49° 18.88	126° 36.65							
		2315	BE	NET		163	49° 18.86	126° 36.62							BONGO
		2352	BE	TRAWL		164	49 19 82	126 34 41		TOW	AT 15m				TRAWL
6	V1 09	0222	BE	CTD		165	49° 26.34	126° 48.25	75			1			T: 7.06 S: 30.88
		0224	BO				49° 26.32	126° 48.25		65					BOT@10m · SAL/CHL/NUTS
		0226	EN				49° 26.32	126° 48.30							
		0230	BE	NET		166	49° 26.29	126° 48.32		60					BONGO
		0137	BE	TRAWL		167	49 23 91	126 46 90		TOW	AT 15m				TRAWL

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month MARCH **Year** 2009 **Ship** W.E. RICKER **Cruise ID** 2009-01

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
6	VI 04	1736	BE	CTD		168	49° 35.43	126° 35.63	97			1	H.M.		T: 6.71 S: 26.34
		1738	BO				49° 35.42	126° 35.65		90					BOT@10m. SAL/CHL/NUTS
		1740	EN				49° 35.41	126° 35.68							
		1744	BE	NET		169	49° 35.37	126° 35.74		88					BONGO
		1803	BE	TRAWL		170	49 34 68	126 37 .26		TOW AT 5kn.					TRAWL
6	VI 10	1922	BE	CTD		171	49° 32.26	126° 48.86	50			1			T: 6.85 S: 30.74
		1923	BO				49° 32.27	126° 48.86		40					BOT@10m - SAL/CHL/NUTS
		1924	EN				49° 32.27	126° 48.85							
		1929	BE	NET		172	49° 32.27	126° 48.90		35					BONGO
		1945	BE	TRAWL		173	49 32 42	126 50 58		TOW AT 1.5kn.					TRAWL
6	VI 11	2107	BE	CTD		174	49° 37.86	126° 57.12	48			1			T: 7.09 S: 31.16
		2109	BO				49° 37.83	126° 57.08		40					BOT@10m - SAL/CHL/NUTS
		2111	EN				49° 37.82	126° 57.04							
		2116	BE	NET		175	49° 37.76	126° 56.94		35					BONGO
		2132	BE	TRAWL		176	49 38 23	126 54 70		TOW AT 1.5kn					TRAWL

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6	VI 12	2247	BE	CTD		177	49° 43.30	127° 05.26	71			1	H.M		T: 7.11 S: 30.80
		2249	BO				49° 43.30	127° 05.25		65					BOT@10m - SAL/CHL/NUTS
		2251	EN				49° 43.30	127° 05.24							
		2255	BE	NET		178	49° 43.27	127° 05.15		60					BONGO
		2315	BE	TRAWL		179	49 43 91	127 06.51		TOW	AT 15m				TRAWL
7	VI 13	0025	BE	CTD		180	49° 47.64	127° 14.83	46			1			T: 7.47 S: 30.92
		0026	BO				49° 47.65	127° 14.84		40					BOT@10m: SAL/CHL/NUTS
		0027	EN				49° 47.66	127° 14.83							
		0032	BE	NET		181	49° 47.71	127° 14.79		32					BONGO
		0047	BE	TRAWL		182	49 48 21	127 16 10		SURFACE TOW					TRAWL
7	V14	0234	BE	CTD	2ND	183	49° 54.17	127° 27.63	67			1			T: 7.21 S: 31.17
		0236	BO				49° 54.17	127° 27.62		60					BOT@10m: SAL/CHL/NUTS
		0238	EN				49° 54.18	127° 27.59							
		0241	BE	NET	3RD	184	49° 54.18	127° 27.57							BONGO
		0201	BE	TRAWL	1ST	185	49 53 30	127 25.21		SURFACE TOW					TRAWL

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7	VI 05	1504	BE	CTD		186	50° 05.21	127° 15.24	183			1	H.M.		T: 7.37 S: 29.62
		15 07	BO				50° 05.20	127° 15.24		175					BOTTOM SAL/CHL/NUTS
		15 11	EN				50° 05.18	127° 15.25							
		15 16	BE	NET		187	50° 05.13	127° 15.37		150					BONGO
		15 41	BE	TRAWL		188	50 04 44	127 15 15.			SURFACE	TOW.			TRAWL
7	VI 06	1652	BE	CTD		189	50° 00.81	127° 09.95	114			1			T: 7.26 S: 30.00
		1654	BO				50° 00 81	127° 09.94		105					BOTTOM SAL/CHL/NUTS
		16 57	EN				50° 00 81	127° 09.94							
		1701	BE	NET		190	50° 00 79	127° 09.93		100					BONGO
		1720	BE	TRAWL		191	50 00 28	127 11 33			SURFACE TOW				TRAWL
7	VI 15	1832	BE	CTD		192	49° 55.37	127° 20.21	55			1			T: 7.01 S: 30.94
		18 33	BO				49° 55.37	127° 20.23		45					BOTTOM SAL/CHL/NUTS
		18 34	EN				49° 55.35	127° 20.22							
		18 40	BE	NET		193	49° 55.29	127° 20.29		40					BONGO
		19:00	BE	TRAWL		194	49 55 29	127 21 94			SURFACE	TOW.			TRAWL

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
7	VI 16	2043	BG	CTD	1443	195	49°57.04	127°34.59	64			1	H.M.		T: 6.90 S: 30.89
		2045	BO		1445		49°57.01	127°34.57		55					BOT@10m. SAL/CHL/NUTS
		2047	EN		1447		49°56.98	127°34.55							
		2051	BG	NET	1451	196	49°56.91	127°34 54		45					BONGO
		2108	BG	TRAWL	1508	197	49 56 99	127 35 72		Tow AT 25m.					TRAWL
					Local Time										* →
8	IV107	1501	BE	CTD	0801	198	50°23.99	127°29.18	116			1			T: 7.46 S: 28.49
		1504	BO		0804		50°23.99	127°29.18		105					BOT@10m - SAL/CHL/NUTS
		1506	EN		0806		50°23.99	127°29.18							
		1510	BE	NET	0810	199	50°24.05	127°29.25		110					BONGO
		1532	BE	TRAWL	0832	200	50 25 01	127 30 21		SURFACE TOW.					TRAWL
8	IV1 08	1621	BG	CTD	0921	201	50°27.70	127°32.29	181			1			T: 7.09 S: 29.68
		1624	BO		0924		50°27.79	127°32.30		170					BOT@10m. SAL/CHL/NUTS
		1628	EN		0928		50°27.81	127°32.30							
		1632	BG	NET	0932	202	50°27.77	127°32.24							BONGO
		1655	BG	TRAWL	0955	203	50 28 54	127 33.18		SURFACE TOW.					TRAWL

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* - DAYLIGHT SAVINGS TIME - CLOCKS CHANGED (PICKER DID NOT - UNTIL TOMORROW) ALL DATA FILES WILL BE ON UTC (LOCAL PST TIME NOTED IN LOG BOOK)

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
8	VI 09	2009	BE	CTD	1309	204	50° 35.80	127°44.38	77			1	H.M.		T: 7.51 S: 28.86
		2011	BO		1311		50° 35.80	127°44.37		70					BOT@10m - SAL/CHL/NUTS
		2013	EN		1313		50° 35.79	127°44.36							
		2017	BE	NET	1317	205	50° 35.78	127°44.31							BONGO
		2035	BE	TRAWL	1335	206					SURFACE TOW				TRAWL
8	VI 10	2147	BE	CTD		207	50° 35.06	127° 35.57	122			1			T: 7.29 S: 27.96
		2150	BO				50° 35.07	127° 35.57		110					BOT@10m - SAL/CHL/NUTS
		2153	EN				50° 35.09	127° 35.58							
		2157	BE	NET		208	50° 35.09	127° 35.58		108					BONGO
		2215	BE	TRAWL		209	50 34 44	127 34 62			SURFACE TOW.				TRAWL
8	VI 11	2320	BE	CTD		210	50° 35.03	127° 26 99	62			1			T: 6.55 S: 23.66
		2321	BO				50° 35.04	127° 26.99		55					BOT@10m - SAL/CHL/NUTS
		2323	EN				50° 35.03	127° 26.99							
		2327	BE	NET		211	50° 35.01	127° 27.00	48						BONGO
		2343	BE	TRAWL		212	50 34 95.	127 25 32.			SURFACE TOW.				TRAWL

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* CHANGED TIME TO PST @ 1200 HR

DAILY LOG

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
9	VI 12	0055	BE	CTD		213	50° 35. 18	127° 36. 71	113			1	H.M.		T: 7.41 S: 28.66
		0057	BO				50° 35. 17	127° 36. 73		105					BOT@10m. SAL/CHL/NUTS
		0100	EN				50° 35. 16	127° 36. 75							
		0104	BE	NET		214	50° 35. 15	127° 36. 82		103					BONGO
		0122	BE	TRAWL		215	50 34. 7	127 35 45.			SURFACE TOW				TRAWL
9	VI 13	1400	BE	CTD		216	50° 30. 04	127° 44. 72	113			1			T: 7.00 S: 30.17
		1402	BO				50° 30. 05	127° 44. 72		105					BOT@10m. SAL/CHL/NUTS
		1405	EN				50° 30. 06	127° 44. 71							
		1409	BE	NET		217	50° 30. 09	127° 44. 65		100					BONGO
		1430	BE	TRAWL		218	50 29 78	127 45 94			SURFACE TOW				TRAWL
9	VI 14	1523	BE	CTD		219	50° 29. 40	127° 51. 14	53			1			T: 6.87 S: 30.06
		1524	BO				50° 29 40	127° 51. 13		50					BOT@10m. SAL/CHL/NUTS
		1526	EN				50° 29 40	127° 51. 13							
		1529	BE	NET		220	50° 29. 40	127° 51. 09		47					BONGO
		1546	BE	TRAWL		221	50 29 89	127 51 89.			SURFACE TOW				TRAWL

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9	VI 15	1636	BG	CTD		222	50° 28.41	127° 57.13	126			1	H.M.		T: 6.88 S: 30.58
		1638	BO				50° 28.43	127° 57.14		117					BOTTOM SAL/CHL/NUTS
		1642	EN				50° 28.44	127° 57.11							
		1646	BG	NET		223	50° 28.43	127° 57.09		102					BONGO
		1705	BG	TRAWL		224	50 27 72	127 57 11		TOW AT 15m					TRAWL
9	VI 17	1904	BG	CTD		225	50°27.44	128°14.96	116			1			T: 6.76 S: 31.89
		1907	BO				50° 27.40	128° 14.99		105					BOTTOM SAL/CHL/NUTS
		1910	EN				50° 27.36	128° 15.02							
		1913	BG	NET		226	50° 27.35	128° 15.07		106					BONGO
		1934	BE	TRAWL		227	50 27 79	128 15 80.		TOW AT 15m					TRAWL
9	VI 18	2056	BE	CTD		228	50° 33.02	128 19.02	70			1			T: 6.93 S: 31.94
		2058	BO				50° 33.02	128° 19.01		60					BOT@10m - SAL/CHL/NUTS
		2101	EN				50° 33.00	128° 19.02							
		2104	BE	NET		229	50° 33.00	128° 19.06		60					BONGO
		2122	BE	TRAWL		230	50 33 63	128 19 78		TOW AT 15m					TRAWL

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9	VI 19	2249	BG	CTD		231	50° 39. 85	125° 25. 41	66			1	H.M.		T: 6.73 S: 31.93
		2251	BO				50° 39. 86	128° 25. 42		60					BOT@10m · SAL/CHL/NUTS
		2253	EN				50° 39. 86	125° 25. 42							
		2256	BG	NET		232	50° 39. 85	125° 25. 42		57					BONGO
		23 14	BE	TRAWL		233	50 40 53	128 25 96		TOW AT 15m.					TRAWL
10	QCSD 01	0139	BG	CTD	2ND	234	50° 49. 89	129° 27. 47	55			1			T: 6.46 S: 31.63
		0141	BO				50° 49. 92	128° 27. 51		50					BOT@10m · SAL/CHL/NUTS
		01 43	EN				50° 49. 91	128° 27. 53							
		0147	BG	NET	3RD	235	50° 49. 92	128° 27. 59		46					BONGO
		05 57	BE	TRAWL	1ST	236	50 48 10	128 29 28.		TOW AT 15m.					TRAWL
11	T 07	1401	BG	CTD		237	50° 49 39	129° 13. 90	103			1			T: 6.66 S: 31.91
		1403	BO				50° 49. 43	129° 13. 93		95					BOT@10m · SAL/CHL/NUTS
		1406	EN				50° 49. 46	129° 13. 96							
		1411	BG	NET		238	50° 49. 54	129° 14. 02		90					BONGO
		1431	BE	TRAWL		239	50° 50. 70	129° 13. 19	80	TOW at SURFACE					TRAWL

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11	T 06	1557	BE	CTD		240	50°55.90	129°00.27	60			1	H.M.		T: 6.67 S: 31.92
		1559	BO				50°55.94	129°00.26		50					BOT@10m. SAL/CHL/NUTS
		1606	EN				50°55.96	129°00.27							
		1605	BE	NET		241	50°56.02	129°00.26							BONGO
		1622	BE	TRAWL		242	50°56.78	128°50.25	61	Tow at SURFACE					TRAWL
11	T 05	1717	BG	CTD		243	51°00.04	128°51.86	59			1			T: 6.25 S: 31.69
		1718	BO				51°00.06	128°51.83		50					BOT@10m. SAL/CHL/NUTS
		1720	EN				51°00.11	128°51.79							
		1725	BG	NET		244	51°00.21	128°51.73	50						BONGO
		1741	BG	TRAWL		245	51°01.08	128°50.25	57	Tow at surface					TRAWL
11	T 04	1901	BG	CTD		246	51°04.51	129°43.03	63			1			T: 6.35 S: 31.81
		1903	BO				51°04.53	129°42.98		55					BOT@10m. SAL/CHL/NUTS
		1905	EN				51°04.53	129°42.94							
		1910	BG	NET		247	51°04.59	129°42.81		55					BONGO
		1926	BG	TRAWL		248	51°05.16	128°41.21	67	Tow at surface					TRAWL

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11	T03	20:16	BE	CTD		249	51°08.30	128°35.69	138			1	H.M.		T: 6.40 S: 31.85
		20 21	BO				51°08.27	128°35.59		130					BOT@10m: SAL/CHL/NUTS
		20 24	EN				51°08.27	128°35.51							
		20 28	BE	NET		250	51°08.28	128°35.42		130					BONGO
		2047	BE	TRAWL		251	51°08.93	128°34.16	153	Tow at surface					TRAWL
11	T02	21 44	BE	CTD		252	51°12.44	128°27.90		187		1			T: 6.59 S: 31.94
		21 48	BO				51°12.42	128°27.87			175				BOT@10m: SAL/CHL/NUTS
		21 52	EN				51°12.43	128°27.82							
		21 56	BE	NET		253	51°12.46	128°27.76			150				BONGO
		2216	BE	TRAWL		254	51°13.26	128°26.23	173		Tow at surface				TRAWL
11	T01	2318	BE	CTD		255	51°17.04	128°20.38	77			1			T: 6.41 S: 31.67
		2320	BO				51°17.02	128°20.38		70					BOT@10m: SAL/CHL/NUTS
		2322	EN				51°17.02	128°20.41							
		2325	BE	NET		256	51°17.03	128°20.47							BONGO
		2341	BE	TRAWL		257	51°17.89	128°21.18		Tow at surface					TRAWL

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month MARCH | **Year** 2009 | **Ship** W.E. RICKER | **Cruise ID** 2009-01

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
12	HS 01	2100	BG	CTD		258	54° 04.28	131° 01.30	93			1	H.M.		T: 5.43 S: 31.84
		2102	BO				54° 04.32	131° 01.20		85					BOT@10m · SAL/CHL/NUTS
		2105	EN				54° 04.38	131° 01.10							
		21	BE	~~NET~~		~~259~~	54° 04.	131° 01.		BONGO	CANCELLED				~~BONGO~~
			~~BE~~	~~TRAWL~~		~~260~~	CANCELLED DUE	TO WEATHER			50+ KTS				~~TRAWL~~
13	ISEA01	1401	BG	CTD		259	55° 18.33	131° 56.96	393			1			T: 4.54 S: 30.70
		1406	BO				55° 18.31	131° 56.93		250					BOT@10m · SAL/CHL/NUTS
		1413	EN				55° 18.25	131° 56.87							
		1417	BG	NET		260	55° 18.25	131° 56.86							BONGO
		1440	BE	TRAWL		261	55° 19.08	131° 57.41	458	Tow at 15m					TRAWL
13	ISEA 02		BG	CTD		262	CANCELLED		430			1			T: ~~S:~~
			BO							250					BOT@10m · SAL/CHL/NUTS
			EN												
		1513	BG	NET		263	55° 26.29	132° 04.43		150					BONGO
		1630	BE	TRAWL		264	55° 26.95	130° 05.68	403	Tow at 15m					TRAWL

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Additional commemts

* COMPUTER CRASHED - TRYING TO LOAD C.S COMPUTER & SEABIRD - DEFRAGGING CTD COMPUTER

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13	ISEA 03	1737	BE	CTD		265	55° 33.06	132° 08.50	337			1	H.M		T: 4.79 S: 30.71
		1742	BO				55° 33.11	132° 08.53		250					BOTTOM SAL/CHL/NUTS
		1747	EN				55° 33.14	132° 08.51							*
		1751	BE	NET		266	55° 33.20	132° 08.54		150					BONGO
			BE	TRAWL		267	55° 34.09	132° 10.21	205		Tow at surface				TRAWL
13	ISEA 04	1921	BE	CTD		268	55° 40.87	132° 14.70	318			1			T: 4.30 S: 30.53
		1926	BO				55° 40.93	132° 14.68		250					BOTTOM SAL/CHL/NUTS
		1931	EN				55° 40.96	132° 14.68							→ *
		1937	BE	NET		269	55° 41.03	132° 14.67		150					BONGO
			BE	TRAWL		270	55° 42.10	132° 15.29	317	TOW at 15m					TRAWL
13	ISEA 05	2110	BE	CTD		271	55° 47.88	132° 21.84	637			1			T: 4.45 S: 30.69
		2115	BO				55° 47.92	132° 21.75		250					BOTTOM SAL/CHL/NUTS
		2121	EN				55° 47.90	132° 21.70							
		2127	BE	NET		272	55° 47.94	132° 21.56							BONGO
		2146	BE	TRAWL		273	55° 49.02	132° 22.86	414	TOW at surface					TRAWL

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Additional commemts

* CANNOT TURN PUMPS ON - CONTINUE AND REVUE AFTER CAST - (CHIEF SCIENTEST COMPUTER)

* BACK TO CTD COMPUTER (PAC02328) AFTER DEFRAGGING, COMPUTER WORKS FINE & PUMPS WORKING

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
13	ISEA 06	2301	BG	CTD		274	55° 55.40	132° 30.33	460			1	H.M.		T: 4.48 S: 30.74
		2306	BO				55° 55.36	132° 30.35		250					BOT@10m SAL/CHL/NUTS
		2312	EN				55° 55.33	132° 30.43							
		2318	BG	NET		275	55° 55.34	132° 30.44		150					BONGO
		2335	BE	TRAWL		276	55° 55.93	132° 31.53	415	Tow at 15 m					TRAWL
14	ISEA 07	0049	BG	CTD		277	56° 01.39	132° 40.79	162			1			T: 4.16 S: 30.62
		0052	BO				56° 01.40	132° 40.77		150					BOT@10m SAL/CHL/NUTS
		0056	EN				56° 01.41	132° 40.78							
		0059	BE	NET		278	56° 01.41	132° 40.77							BONGO
		0117	BE	TRAWL		279	56° 01.98	132° 41.63	184	Tow at surface					TRAWL
14	ISEA 08	1409	BG	CTD		280	56° 11.63	132° 43.88	268			1			T: 4.19 S: 30.69
		1414	BO				56° 11.73	132° 43.89		250					BOT@10m SAL/CHL/NUTS
		1420	EN				56° 11.87	132° 43.88							
		1424	BE	NET		281	56° 11.95	132° 43.87		150					BONGO
		1444	BE	TRAWL		282	56 13.47	132° 35.55	376	Tow at 15m					TRAWL

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14	ISEA 09	1558	BE	CTD		283	56°19.09	132°35.54	290			1	H.M.		T: 4.17 S: 30.74
		1602	BO				56°19.13	132°35.52		250					BOT@10m - SAL/CHL/NUTS
		1606	EN				56°19.16	132°35.50							
		1610	BE	NET		284	56°19.22	132°35.53		150					BONGO
		1630	BE	TRAWL		285	56°20.46	130°35.55	276		Tow at 15m				TRAWL
14	ISEA 10	1743	BE	CTD		286	56°27.90	132°39.06	83			1			T: 4.48 S: 30.94
		1745	BO				56°27.90	132°39.06		75					BOT@10m - SAL/CHL/NUTS
		1746	EN				56°27.90	132°39.05							
		1750	BE	NET		287	56°27.89	132°39.06		74					BONGO
		1809	BE	TRAWL		288	56°28.37	132°40.16	76		Tow at surface				TRAWL
14	ISEA 11	1932	BE	CTD		289	56°29.40	132°54.39	119			1			T: 4.69 S: 31.27
		1935	BO				56°29.43	132°54.36		110					BOT@10m - SAL/CHL/NUTS
		1937	EN				56°29.48	132°54.27							
		1941	BE	NET		290	56°29.52	132°54.15		116					BONGO
		1958	BE	TRAWL		291	56°29.13	132°54.83	113		Tow at 15m				TRAWL

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14	ISEA 12	2118	BG	CTD		292	56° 25.72	133° 04.98	73			1	H.M		T: 4.68 S: 31.40
		2119	BO				56° 25.77	133° 04.91		65					BOT@10m - SAL/CHL/NUTS
		2121	EN				56° 25.79	133° 04.85							
		2125	BG	NET		293	56° 25.88	133° 04.74	86	76					BONGO
		2143	BG	TRAWL		294	56° 25.27	133° 05.39	80	Tow at surface					TRAWL
14	ISEA 13	2306	BG	CTD		295	56° 22.21	133° 17.44	246			1			T: 5.02 S: 31.70
		2311	BO				56° 22.26	133° 17.44	212	200					BOT@10m - SAL/CHL/NUTS
		2315	EN				56° 22.32	133° 17.47							
		2319	BG	NET		296	56° 22.33	133° 17.55		150					BONGO
		2337	BG	TRAWL		297	56° 22.52	133° 19.20	258	Tow at 15m					TRAWL
15	ISEA 14	0054	BG	CTD		298	56° 23.83	133° 32.92	308			1			T: 4.87 S: 31.63
		0059	BO				56° 23.92	133° 32.96		250					BOT@10m - SAL/CHL/NUTS
		0104	EN				56° 24.01	133° 33.04							
		0107	BE	NET		299	56° 24.04	133° 33.06		150					BONGO
		0128	BE	TRAWL		300	56° 23.97	133° 34.68	252	Tow at surface					TRAWL

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
15	ISEA 15	1416	BE	CTD		301	56° 22. 26	133° 46. 15	282			1	HM		T: 5.09 S: 31.95
		1420	BO				56° 22. 18	133° 46. 30		250					BOTQ 10m SAL/CHL/NUTS
		1426	EN				56° 22. 13	133° 46. 54							
		1437	BE	NET		302	56° 22. 07	133° 46. 17		150					BONGO
		1458	BE	TRAWL		303	56° 20. 87	133° 45.99	332		Tow at surface				TRAWL
15	ISEA 16	1607	BE	CTD		304	56° 13. 97	133° 46. 75	292			1			T: 5.14 S: 31.90
		1611	BO				56° 13. 96	133° 46. 71		250					BOTQ 10m SAL/CHL/NUTS
		1616	EN				56° 13. 95	133° 46. 69							
		1619	BE	NET		305	56° 13. 94	133° 46. 68		150					BONGO
		1638	BE	TRAWL		306	56° 13. 15	133° 46. 94	249		Tow at surface				TRAWL
15	ISEA 17	1752	BE	CTD		307	56° 06. 32	133° 46. 40	246			1			T: 5.10 S: 31.93
		1756	BO				56° 06. 39	133° 46. 35		235					BOTQ 10m SAL/CHL/NUTS
		1801	EN				56° 06. 47	133° 46. 29							
		1805	BE	NET		308	56° 06. 53	133° 46. 27		150					BONGO
		1825	BE	TRAWL		309	56° 06. 47	133° 46. 89	278		Tow at surface				TRAWL

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15	ISEA 18	1936	BE	CTD		310	56° 00. 38	133° 48. 95	324			1	H.M.		T: 5.08 S: 31.89
		1942	BO				56° 00. 40	133° 48. 96		250					BOT@10m. SAL/CHL/NUTS
		1947	EN				56° 00. 46	133° 48. 95							
		1952	BE	NET		311	56° 00. 55	133° 48. 90		150					BONGO
		2010	BE	TRAWL		312	56° 00 07	133° 48 47		304	Tow at 15m				TRAWL
15	ISEA 19	2130	BE	CTD		313	56° 00. 53	133° 59. 43	170						T: 5.03 S: 31.84
		2134	BO				56° 00. 60	133° 59. 32		160					BOT@10m. SAL/CHL/NUTS
		2138	EN				56° 00. 67	133° 59. 20							
		2141	BE	NET		314	56° 00. 72	133° 59. 04		150					BONGO
		2200	BE	TRAWL		315	56° 00 30	133° 59 50	177		Tow at 15m				TRAWL
15	ISEA 20	2310	BE	CTD		316	55° 55. 07	134° 02. 86	250			1			T: 5.05 S: 31.79
		2316	BO				55° 55. 17	134° 02. 73		240					BOT@10m. SAL/CHL/NUTS
		2321	EN				55° 55. 22	134° 02. 70							
		2324	BE	NET		317	55° 55 27	134° 02. 66		150					BONGO
		2345	BE	TRAWL		318	55° 54 73	134° 02 54	240		Tow at surface				TRAWL

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16	ISCA 21	0100	BE	CTD		319	55° 48.02	134°03.22	296			1	H.M.		T: 4.97 S: 31.67
		0105	BO				55°48.05	134°03.17		250					BOTTOM - SAL/CHL/NUTS
		0110	EN				55°48.09	134°03.16							
		0114	BE	NET		320	55°48.12	134°03.17							BONGO
		0136	BE	TRAWL		321	55°47.30	134°03.06	278	Tow at 15m					TRAWL
16	FI 07	1403	BG	CTD		322	54°43.62	133°59.29	204			1			T: 5.71 S: 32.19
		1407	BO				54°43.67	133°59.27		195					BOTTOM - SAL/CHL/NUTS
		1411	EN				54°43.70	133°59.21							
		1416	BG	NET		323	54°43.76	133°59.07		150					BONGO
		1437	BE	TRAWL		324	54°44.15	133°57.41	287	Tow at surface					TRAWL
16	FI 06	1537	BE	CTD		325	54°43.52	133°51.23	218			1			T: 5.49 S: 32.11
		1541	BO				54°43.56	133°51.22		210					BOTTOM - SAL/CHL/NUTS
		1544	EN				54°43.61	133°51.19							
		1549	BG	NET		326	54°43.67	133°51.17		150					
		1610	BE	TRAWL		327	54°43.93	133°49.75	202	Tow at surface					

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16	Fi 05	1715	BG	CTD		328	54°43.76	133°42.02	216			1	H.M.		T: 5.29 S: 32.03
		1718	BO				54°43.80	133°41.97		205					BOT@10m. SAL/CAL/NUTS
		1722	EN				54°43.83	133°41.94							
		1730	BG	NET		329	54°43.84	133°41.99							BONGO
		1750	BG	TRAWL		330	54°44.06	133°40.31	210	Tow at surface					TRAWL
16	Fi 04	1855	BG	CTD		331	54°43.91	133°34.09	196			1			T: 5.23 S: 31.96
		1859	BO				54°44.00	133°34.92		185					BOT@10m. SAL/CAL/NUTS
		1903	EN				54°44.07	133°34.91							
		1906	BG	NET		332	54°44.16	133°34.98		150					BONGO
		1930	BG	TRAWL		333	54°43.67	133°34.28	190	Tow at 1-5m					TRAWL
16	Fi 03	2051	BG	CTD		334	54°45.04	133°26.76	142			1			T: 5.40 S: 32.04
		2054	BO				54°45.05	133°26.73		130					BOT@10m. SAL/CAL/NUTS
		2057	EN				54°45.09	133°26.73							
		2101	BG	NET		335	54°45.12	133°26.77		130					BONGO
		2120	BG	TRAWL		336	54°45.52	133°24.98	139	Tow at surface					TRAWL

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16	F1 02	2211	BE	CTD		337	54°45.89	133°18.89	110			1	H.M.		T: 5.28 S: 31.87
		2213	BO				54°45.90	133°18.85		100					BOT@10m - SAL/CHL/NUTS
		2215	EN				54°45.90	133°18.80							
		2218	BE	NET		338	54°45.94	133°18.75		102					BONGO
			BE	TRAWL		339	54°46.21	133°17.14	109		TOW at Surface				TRAWL
16	F1 01	2322	BE	CTD		340	54°47.10	133°10.71	212			1			T: 5.04 S: 31.62
		2327	BO				54°47.16	133°10.63		200					BOT@10m - SAL/CHL/NUTS
		2331	EN				54°47.18	133°10.47							
		2334	BE	NET		341	54°47.20	133°10.39		150					BONGO
			BE	TRAWL		342	54°47.46	133°08.47	207		Tow at surface				TRAWL
17	DG06	1408	BE	CTD		343	54°14.69	132°55.39	212			1			T: 5.19 S: 31.90
		1411	BO				54°14.73	132°55.37		200					BOT@10m - SAL/CHL/NUTS
		1414	EN				54°14.76	132°55.34							
		1419	BE	NET		344	54°14.84	132°55.37		150					BONGO
		1441	BE	TRAWL		345	54°14.73	132°54.43	165		Surface tow				TRAWL

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month MARCH **Year** 2009 **Ship** W.E. RICKER **Cruise ID** 2009-01

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
17	DE 05	1550	BG	CTD		346	54° 10. 81	132° 45. 95	65			1	H.M.		T: 5.12 S: 31.84
		1552	BO				54° 10. 81	132° 45. 96		55					BOT@10m. SAL/CHL/NUTS
		1553	EN				54° 10. 81	132° 45. 97							
		1556	BG	NET		347	54° 10. 83	132° 46. 01		55					BONGO
		1610	BG	TRAWL		348	54° 10. 87	132° 44. 93	63	Surface tow					TRAWL
17	DE 04	1736	BG	CTD		349	54° 08. 69	132° 31. 14	60			1			T: 5.11 S: 31.76
		1737	BO				54° 08. 69	132° 31. 13		50					BOT@10m. SAL/CHL/NUTS
		1739	EN				54° 08. 69	132° 31. 12							
		1742	BG	NET		350	54° 08. 71	132° 31. 10		40					BONGO
		1758	BG	TRAWL		351	54° 08. 73	132° 29. 75	58	Tow at 15m					TRAWL
17	DG 03	1935	BG	CTD		352	54° 10. 12	132° 13. 99	71			1			T: 5.04 S: 31.62
		1936	BO				54° 10. 15	132° 12. 98		60					BOT@10m. SAL/CHL/NUTS
		1939	EN				54° 10. 17	132° 12. 96							
		1941	BG	NET		353	54° 10. 22	132° 12. 95		61					BONGO
		1957	BG	TRAWL		354	54° 10. 67	132° 11. 34	70	Surface tow					TRAWL

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17	DE 02	2127	BG	CTD		355	54°09.82	131°55.96	68			1	H.M.		T: 5.21 S: 31.82
		2129	BO				54°09.83	131°55.91		60					BOT@10m. SAL/CHL/NUTS
		2131	EN				54°09.83	131°55.87							
		2134	BE	NET		356	54°09.82	131°55.81		59					BONGO
		2150	BE	TRAWL		357	54°10.19	131°54.29	74.5	tow at 15m					TRAWL
17	DE 01	2321	BG	CTD		358	54°15.54	131°39.95	120			1			T: 4.81 S: 31.31
		2323	BO				54°15.56	131°39.92		110					BOT@10m. SAL/CHL/NUTS
		2325	EN				54°15.58	131°39.91							
		2329	BG	NET		359	54°15.57	131°39.89		110					BONGO
		2350	BE	TRAWL		360	54°16.25	131°38.42	126	Tow at 15m					TRAWL
18	IBC 01	1401	BG	CTD		361	55°07.17	129°56.98	414			1			T: 4.77 S: 30.91
		1405	BO				55°07.22	129°56.94		250					BOT@10m. SAL/CHL/NUTS
		1409	EN				55°07.24	129°56.92							
		1412	BE	NET		362	55°07.25	129°56.94		150					BONGO
		1434	BE	TRAWL		363	55°06.48	129°57.54	417	Surface tow					TRAWL

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
19	IBC 02	1532	BG	CTD		364	55° 00. 29	130° 01. 64	186			1	H.M.		T: 4.17 S: 28.92
		1535	BO				55° 00. 27	130° 01. 53		175					BOT@10m - SAL/CHL/NUTS
		1538	EN				55° 00. 25	130° 01. 47							
		1542	BE	NET		365	55° 00. 24	130° 01. 37		150					BONGO
		1602	BE	TRAWL		366	54° 59.48	130° 02.75	208	tow at 15m					TRAWL
18	IBC 03	1737	BG	CTD		367	54° 52. 05	130° 12. 28	420			1			T: 4.83 S: 31.12
		1742	BO				54° 52. 05	130° 12. 29		250					BOT@10m. SAL/CHL/NUTS
		1747	EN				54° 52. 01	130° 12. 29							
		1750	BE	NET		368	54° 51. 99	130° 12. 29							BONGO
		1809	BE	TRAWL		369	54° 51. 30	130° 13. 11	424	surface tow					TRAWL
18	IBC 04	1910	BG	CTD		370	54° 47. 73	130° 17. 74	463			1			T: 5.08 S: 31.22
		1915	BO				54° 47. 72	130° 17. 74		250					BOT@10 - SAL/CHL/NUTS
		1920	EN				54° 47. 69	130° 17. 72							
		1926	BG	NET		371	54° 47. 64	130° 17. 67		150					BONGO
		1944	BG	TRAWL		372	54° 47. 11	130° 18. 38	474	tow at 15m					TRAWL

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INSTITUTE OF OCEAN SCIENCES

Month MARCH **Year** 2009 **Ship** W. E. RICKER **Cruise ID** 2009-1

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
18	IBC 05	2054	BE	CTD		373	54° 43. 86	130° 25. 29	493			1	H.M.		T: 5.25 S: 31.15
		2059	BO				54° 43. 91	130° 25. 29		250					BOT@10m. SAL/CHL/NUTS
		2104	EN				54° 43. 97	130° 25. 24							
		2107	BE	NET		374	54° 44. 03	130° 25. 21							BONGO
		2128	BE	TRAWL		375	54° 43. 41	130° 25. 33	495	tow at 5m					TRAWL
19	H 06	1400	BE	CTD		376	52° 28. 88	130° 28. 96	170			1			T: 6.07 S: 31.94
		1403	BO				52° 28. 90	130° 28. 91		160					BOT@10m. SAL/CHL/NUTS
		1410	EN				52° 28. 96	130° 28 89							
		1430	BE	NET		377	52° 28.	130° 28		150					BONGO
		1430	BE	TRAWL		378	52° 28. 17	130° 2728	211	surface tow					TRAWL
19	H 05	1553	BE	CTD		379	52° 26. 07	130° 13. 61	315			1			T: 6.29 S: 32.26
		1557	BO				52° 26. 12	130° 13. 60		250					BOT@16m. SAL/CHL/NUTS
		1601	EN				52° 26. 17	130° 13. 58							
		1604	BE	NET		380	52° 26. 21	130° 13. 57		150					BONGO
		1622	BE	TRAWL		381	52° 26. 14	130° 12. 38	230	surface tow					TRAWL

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	#of Bottles	Watch Keepers	Trans. Cleaned	Comments
19	H 04	1753	BE	CTD		382	52° 22.58	129° 57.77	212			1	H.M.		T: 6.56 S: 32.29
		1756	BO				52° 22.60	129° 57.72		200					BOT@10m - SAL/CHL/NUTS
		1900	EN				52° 22.61	129° 57.67							
		1904	BE	NET		383	52° 22.67	129° 57.60		150					BONGO
		1823	BE	TRAWL		384	52° 22.67	129° 56.51	196	tow at 15m					TRAWL
19	H 03	1956	BE	CTD		385	52° 19.03	129° 41.89	204			1			T: 6.15 S: 31.95
		2000	BO				52° 19.05	129° 41.88		195					BOT@10m SAL/CHL/NUTS
		2004	EN				52° 19.07	129° 41.84							
		2007	BE	NET		386	52° 19.09	129° 41.82							BONGO
		2027	BE	TRAWL		387	52° 19.00	129° 40.51	205	Surface tow					TRAWL
19	H 02	2156	BE	CTD		388	52° 16.30	129° 26.70	170			1			T: 6.23 S: 31.83
		2159	BO				52° 16.31	129° 26.67		160					BOT@10m. SAL/CHL/NUTS
		2203	EN				52° 16.31	129° 26.64							
		2206	BE	NET		389	52° 16.30	129° 26.64		150					BONGO
		2227	BE	TRAWL		390	52° 16.18	129° 25.25	160	Surface tow					TRAWL

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20	H01	0042	BE	CTD	2ND	391	52° 12.89	129° 08.98	166			1	H.M.		T: 6.14 S: 31.69
		0046	BO				52° 12.90	129° 08.95		155					BOT@10m - SAL/CHL/NUTS
		0049	EN				52° 12.87	129° 08.92							
		0052	BE	NET	3RD	392	52° 12.87	129° 08.89		150					BONGO
		0052	BE	TRAWL	1ST	393	52° 13.50	129° 12.33	167	tow at 15m					TRAWL
20	IBC 06	1402	BG	CTD		394	51° 37.70	127° 32.01	311			1			T: 5.77 S: 29.04
		1406	BO				51° 37.68	127° 32.04		250					BOT@10m - SAL/CHL/NUTS
		1410	EN				51° 37.67	127° 32.06							
		1413	BG	NET		395	51° 37.66	127° 32.07		150					BONGO
		1433	BG	TRAWL		396	51° 36.71	127° 32.16	314	surface tow					TRAWL
20	IBC 07	1531	BG	CTD		397	51° 31.88	127° 32.98	319			1			T: 5.95 S: 29.53
		1535	BO				51° 31.86	127° 32.99		250					BOT@10m - SAL/CHL/NUTS
		1539	EN				51° 31.83	127° 32.98							
		1542	BG	NET		398	51° 31.81	127° 33.00		150					BONGO
		1600	BG	TRAWL		399	51° 30.00	127° 33.97	311	tow at 15m					TRAWL

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20	IBC 08	1651	BG	CTD		400	51° 28. 06	127° 36. 26	287			1	H.M		T: 5.82 S: 29.42
		1654	BO				51° 29. 04	127° 36. 31		250					BOT@10m - SAL/CHL/NUTS
		1658	EN				51° 28. 02	127° 36. 34							
		1702	BG	NET		401	51° 27. 98	127° 36. 41		150					BONGO
		1724	BG	TRAWL		402	51° 26. 93	127° 37. 81	303	tow at 10m					TRAWL
20	IBC 09	1854	BG	CTD		403	51° 26. 19	127° 45. 67	159			1			T: 6.18 S: 31.16
		1857	BO				51° 26. 20	127° 45. 71		150					BOT@10m. SAL/CHL/NUTS
		1901	EN				51° 26. 22	127° 45. 73							
		1903	BG	NET		404	51° 26. 23	127° 45. 76							BONGO
		1923	BG	TRAWL		405	51° 25. 82	127° 46. 79	124	Surface tow					TRAWL
20	IBC 16	2021	BG	CTD		406	57° 22. 56	127° 49. 94	92			1			T: 6.38 S: 31.17
		2023	BO				51° 22. 59	127° 49. 95		80					BOT@10m. SAL/CHL/NUTS
		2025	EN				51° 22. 60	127° 49. 94							
		2030	BG	NET		407	51° 22. 63	127° 49. 98		83					BONGO
		2047	BG	TRAWL		408	51° 21. 95	127° 50. 72	95	tow at 15m					TRAWL

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20	IBC 11	2222	BG	CTD		409	51° 13. 84	127° 43. 22	110			1	H.M.		T: 6.37 S: 29.62
		22 24	BO				51° 18. 84	127° 43. 21		100					BOT @ 10 m - SAL/CHL/NUTS
		22 27	EN				51° 18. 84	127° 43. 21							
		22 30	BG	NET		410	51° 18. 85	127° 43. 21							BONGO
		2248	BE	TRAWL		411	51° 19. 08	127° 41. 97	126	Tow at 5m					TRAWL
21	IBC 12	0034	BE	CTD		412	57° 18. 48	127° 28. 00	244			1			T: 6.69 S: 31.15
		0039	BO				51° 18. 47	127° 28. 01		235					BOT @ 10 - SAL/CHL/NUTS
		0044	EN				51° 18. 46	127° 28. 04							
		0047	BG	NET		413	51° 18. 45	127° 28. 07		150					BONGO
		0108	BE	TRAWL		414	51° 18. 55	127° 29. 57	210	Surface tow					TRAWL
21	QCTS 1	1404	BG	CTD		415	50° 51. 99	127° 21. 68	151			1			T: 6.65 S: 31.33
		1406	BO				50° 52. 01	127° 21. 62		140					BOT @ 10m - SAL/CHL/NUTS
		1409	EN				50° 52. 03	127° 21. 62							
		1413	BE	NET		416	50° 52. 08	127° 21. 52		136					BONGO
		1434	BE	TRAWL		417	50° 51. 90	127° 20. 01		Tow at 10 m					TRAWL

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21	QCST 2	1617	BG	CTD		418	50°47.53	127°04.97	207			1	H.M.		T: 6.58 S: 31.26
		1620	BO				50° 47. 51	127° 05. 02		195					BOTTOM - SAL/CHL/NUTS
		1624	EN				50° 47. 51	127° 04. 99							
		1627	BE	NET		419	50° 47. 50	127° 04. 98		150					BONGO
		1648	BE	TRAWL		420	50°47.47	127° 03.44	158	Surface tow					TRAWL
21	QC ST 3	1850	BE	CTD		421	50° 40. 17	126° 50. 89	178			1			T: 6.76 S: 31.47
		1853	BO				50° 40. 17	126° 50. 91		170					BOTTOM SAL/CHL/NUTS
		1857	EN				50° 40. 16	126° 50. 89							
		1900	BG	NET		422	50° 40. 17	126° 50. 92		150					BONGO
		1920	BG	TRAWL		423	50° 39. 32	126° 50. 11	156	Surface tow					TRAWL
21	JS 1	2127	BG	CTD		424	50° 31. 85	126° 39. 51	397			1			T: 6.94 S: 30.66
		2132	BO				50° 31. 87	126° 39 54		250					BOTTOM - SAL/CHL/NUTS
		2137	EN				50° 31. 90	126° 39. 61							
		2140	BG	NET		425	50° 31. 93	126° 39. 64		150					BONGO
		2200	BG	TRAWL		426	50° 31. 68	126° 39. 04	399	Tow at 15m					TRAWL

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21	JS 2	2323	BE	CTD		427	50° 30.33	126° 29.65	370			1	H.M.		T: 6.95 S: 30.63
		2329	BO				50° 30.34	126° 29.71		270					BOT@10m - SAL/CHL/NUTS
		2333	EN				50° 30.38	126° 29.87							
		2336	BE	NET		428	50° 30.39	126° 29.90							BONGO
		2356	BE	TRAWL		429	50°30.9x	126°29.32	379	Tow at surface					TRAWL
22	JS 3	0111	BE	CTD		430	50°29.39	126° 20.56	360			1			T: 6.95 S: 30.68
		0116	BO				50° 29.39	126° 20.59		250					BOT@10m - SAL/CHL/NUTS
		0124	EN				50° 29.40	126° 20.73							
		01	BE	NET		431	50°29.	126°20.							BONGO
		0140	BE	TRAWL		432	50°29.30	126°19.85	348	Tow at 15m					TRAWL
	END OF CRUISE														

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Time Code
BE = beginning time of cast
BO = bottom time of cast
EN = end time of cast
DE = deployment time
MR = messenger release time
RE = recover mooring time

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