

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2010-18

DATE:

From: OCT 1 / 10 to: NOV 19 / 10

VESSEL:

W. E. RICKER

PROJECT(S):

HIGH SEAS SALMON (TRAUDEL)
.....
Book 2 of 3

Water Properties Group
Fisheries and Oceans Canada
Institute of Ocean Sciences
Ocean Sciences Division
North Saanich, BC, Canada

WaterProperties.ca

Captain: SCOTT DOAM First Officer: DURCAN M'CALLUM
 Second Officer: ANDREW COSTA Third Officer: _____
 Fishing Master: AL YOUNG

Mission Participants / Agencies: _____

Scientific Personnel: Chief Scientist: JOHN MORRIS

Name	Watch	Cabin	Name	Watch	Cabin
<u>JOHN MORRIS</u>					
<u>MARY THIESS</u>					
<u>YEONGHA JUNG</u>					
<u>LISA THOMPSON</u>					
<u>MARIAME DUPOUX</u>					
<u>HUGH MACLEAN</u>					

Second leg of Mission: Chief Scientist: MARC TRUDEL

Name	Watch	Cabin	Name	Watch	Cabin
<u>MARY THIESS</u>					
<u>YEONGHA JUNG</u>					
<u>JUDE</u>					
<u>HUGH MACLEAN</u>					

Data logging computer: PAC 02328
Data acquisition program: SEASAVE V7.19
 CTD deck unit make: SBE model: 11 serial number: 0471

Primary CTD
 Make: SBE model: 9 serial number: 535
 Primary temperature serial number: 4054
 Primary conductivity serial number: 3321
 Secondary temperature serial number: 4700
 Secondary conductivity serial number: 1766
 Transmissometer: WTLAB Model: _____ s/n: 1005 DR
 Fluorometer: Model SGA POINT Cable gain: 10 x 0.15 s/n: 2648 P, S or NO pump?
 Oxygen sensor: SBE Model: 43 s/n: 0997 P, S or NO pump?
 PAR sensor: _____ Model: _____ s/n: _____
 Other sensors: PH SBE s/n: 0692 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?
 Other sensors: _____ s/n: _____ P, S or NO pump?
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CTD calibration bottle location (height above CTD in metres): _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month <u>OCTOBER</u>			Year <u>2010</u>				Ship <u>W.E. RICKER</u>				Cruise ID <u>2010-18</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments	
							Latitude	Longitude								
17	VI 12	0128	BE	CTD	2 ND	189	49° 27.12	126° 47.48	63			1	H.M.		T: 12.42 S: 30.18	
		0130	BO				49° 27.08	126° 47.49		55					BOT@ 10m - SAL/CHL/NUTS	
		0132	EH				49° 27.07	126° 47.51								
		0136	BE	NET	3 RD	190	49° 27.03	126° 47.52			54					BONGO
		0139	BE	TRAWL	1 ST	191	49 24.8	126 46 63								TRAWL
17	VI 13	1402	BE	CTD		192	49° 32.06	127° 09.49	136			1		✓	T: 12.25 S: 30.69	
		1405	BO				49° 32.09	127° 09.43		125					BOT@ 10m - SAL/CHL/NUTS	
		1409	EH				49° 32.14	127° 09.41								
		1411	BE	NET		193	49° 32.14	127° 09.40								BONGO
		1430	BE	TRAWL		194	49 32.7	127 08.58								TRAWL
17	VI 14	1533	BE	CTD		195	49° 35.46	127° 02.32	104			1			T: 12.13 S: 30.50	
		1535	BO				49° 35.44	127° 02.29		95					BOT@ 10m - SAL/CHL/NUTS	
		1538	EH				49° 35.43	127° 02.28								
		1540	BE	NET		196	49° 35.43	127° 02.28			93					BONGO
		1554	BE	TRAWL		197	49 35.833	127 01.59								TRAWL

Cast Type:
 BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton 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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 MR = Messenger Release Time
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Transmissometer to be cleaned before each cast, do not use Ammonia products

Notes:

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OCTOBER		2010		W.E. RICKER			2010-18								
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
17	VI 15	1651	BE	CTD		198	49° 38. 27	126° 57. 20	45			1	H.M.		T: 12.18 S: 29.17
		1652	BO				49° 38. 26	126° 57. 20		40					BOT@10m. SAL/CHL/NUIS
		1653	EN				49° 38. 26	126° 57. 20							
		1655	BE	NET		199	49° 38. 25	126° 57. 19		36					BONGO
		1712	BE	TRAWL		200	49 38.677	126 58.049							TRAWL
17	VI 16	1954	BE	CTD		201	49° 55. 35	127° 20. 24	55			1			T: 12.17 S: 29.14
		1955	BO				49° 55. 35	127° 20. 22		50					BOT@10m. SAL/CHL/NUIS
		1958	EN				49° 55. 37	127° 20. 18							
		1902	BE	NET		202	49° 55. 37	127° 20. 14		45					BONGO
		2019	BE	TRAWL		203	49 54.818	127 21.164							TRAWL
17	VI 17	2113	BE	CTD		204	49° 52. 29	127° 25. 31	62			1			T: 12.10 S: 31.33
		2115	BO				49° 52. 29	127° 25. 28		55					BOT@10m. SAL/CHL/NUIS
		2118	EN				49° 52. 29	127° 25. 26							
		2120	BE	NET		205	49° 52. 25	127° 25. 19		52					BONGO
		2137	BE	TRAWL		206	49 51.63	127 26.21							TRAWL

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Ocean Sciences Division, Institute of Ocean Sciences

Page 28 of

Month OCTOBER Year 2010 Ship W. G. RICKER Cruise ID 2010-18

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							Latitude	Longitude							
17	V1 18	2241	BE	CTD		207	49° 47.99	127° 31.36	82			1	H.M		T: 12.21 S: 31.11
		2242	BO				49° 48.02	127° 31.31		72					BOT@10m - SAL/CHL/NUTS
		2245	EN				49° 48.02	127° 31.28							
		2248	BE	NET		208	49° 48.04	127° 31.25		69					BONGO
		2307	BE	TRAWL		209	49 48 34	127 32.54							TRAWL
18	V1 03	1401	BE			210	50° 24.02	127° 29.20	116			1		✓	T: 11.93 S: 28.99
		1404	BO				50° 24.03	127° 29.27		105					BOT@10m - SAL/CHL/NUTS
		1406	EN				50° 24.05	127° 29.28							
		1411	BE			211	50° 23.98	127° 29.35		117					BONGO
		1440	BE			212	50 24.15	127 29.3							TRAWL
18	V1 04	1531	BE			213	50° 27.86	127° 32.26	179			1			T: 11.84 S: 28.76
		1536	BO				50° 27.89	127° 32.23		165					BOT@10m - SAL/CHL/NUTS
		1540	EN				50° 27.90	127° 32.23							
		1543	BE			214	50° 27.89	127° 32.25		150					BONGO
		1605	BE			215	50 28 04	127 33.005							TRAWL

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OCTOBER		2010		W.E. RICHER		2010-13									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
18	1V1 05	1903	BE	CTD		216	50° 35.02	127° 27.05	60			1	H.M.		T: 11.46 S: 26.11
		1905	BO				50° 35.04	127° 27.02		50					BOT@10m - SAL/CAL/HUTS
		1907	EH				50° 35.06	127° 27.00							
		1910	BE	NET		217	50° 35.06	127° 26.97		52					BONGO
		1928	BE	TRAWL		218	50 34.99	127 28.019.							TRAWL
18	1V1 06	2019	BE	CTD		219	50° 35.01	127° 35.41	123			1			T: 11.56 S: 26.19
		2021	BO				50° 35.01	127° 35.42		115					BOT@10m - SAL/CAL/HUTS
		2025	EH				50° 35.01	127° 35.42							
		2027	BE	NET		220	50° 35.01	127° 35.41		116					BONGO
		2046	BE	TRAWL		221									TRAWL
18	1V1 07	2144	BE	CTD		222	50° 35.82	127° 44.44	77			1			T: 11.60 S: 23.10
		2146	BO				50° 35.82	127° 44.44		70					BOT@10m - SAL/CAL/HUTS
		2148	EH				50° 35.84	127° 44.44							
		2151	BE	NET		223	50° 35.85	127° 44.44		67					BONGO
		2207	BE	TRAWL		224	50 35.65	127 43.61							TRAWL

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							Latitude	Longitude							
19	1V1 08	1417	BE	CTD		225	50° 30.48	127° 41.65	166			1	H.A.	✓	T: 11.47 S: 26.15
		1420	BO				50° 30.48	127° 41.60		155					BOT@10m - SAL/CHL/NUTS
		1424	EN				50° 30.47	127° 41.55							
		1426	BE	NET		226	50° 30.47	127° 41.54		150					BONGO
			BE	TRAWL		227									TRAWL
19	1V1 09	1558	BE	CTD		228	50° 29.21	127° 50.73	147			1			T: 11.40 S: 20.09
		1601	BO				50° 29.17	127° 50.76		135					BOT@10m - SAL/CHL/NUTS
		1605	EN				50° 29.16	127° 50.76							# S = 28.0 @ 10m
		1607	BE	NET		229	50° 29.15	127° 50.75	162	150					BONGO
			BE	TRAWL		230									TRAWL
19	1V1 10	1722	BE	CTD		231	50° 28.41	127° 57.12	115			1			T: 11.82 S: 26.01
		1725	BO				50° 28.41	127° 57.16		105					BOT@10m - SAL/CHL/NUTS
		1728	EN				50° 28.41	127° 57.17							
		1730	BE	NET		232	50° 28.39	127° 57.19	144	134					BONGO
			BE	TRAWL		233									TRAWL

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month			Year			Ship			Cruise ID						
OCTOBER			2010			W. E. RICKER			2010-18						
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
19	VI 19	1923	BE	CTD		234	50° 21.80	128° 05.69	79			1	H.M.		T: 12.21 S: 31.51
		1925	BO				50° 21.80	128° 05.65		70					BOT@10-SAL/CAL/NOTS
		1928	EN				50° 21.80	128° 05.62							
		1930	BE	NET		235	50° 21.80	128° 05.57		65					BONGO
		19 18	BE	TRAWL		236	50 21 55	128 06.37							TRAWL
19	VI 20	2052	BE	CTD		237	50° 18.05	128° 12.07	171	7		1			T: 12.60 S: 31.86
		2055	BO				50° 18.00	128° 12.04		160					BOT@10-SAL/CAL/NOTS
		2058	EN				50° 17.99	128° 12.01							
		2101	BE	NET		238	50° 17.95	128° 12.00		150					BONGO
		2128	BE	TRAWL		239	50 17.6	128 12.9							TRAWL
19	VI 21	2232	BE	CTD		240	50° 14.76	128° 18.41	1021			1			T: 12.68 S: 31.84
		2237	BO				50° 14.82	128° 18.26		250					BOT@10-SAL/CAL/NOTS
		2243	EN				50° 14.80	128° 18.19							* SPIKES
		2247	BE	NET		241	50° 14.77	128° 18.07		150					BONGO
		2308	BE	TRAWL		242	50 14.55	128 18.52							TRAWL

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							Latitude	Longitude							
20	T 07B	1402	BE	CTD		243	50° 49.44	129° 13.88	104			1	H.M.	✓	T: 12.25 S: 31.77
		1404	BO				50° 49.47	129° 13.83		95					BOT@10m - SAL/CAL/NUIS
		1407	EM				50° 49.51	129° 13.80							
		1410	BE	NET		244	50° 49.51	129° 13.75		90					BONGO
		1439	BE	TRAWL		245	50 50.54	129 12.94							TRAWL
20	T 06B	1556	BE	CTD		246	50° 55.94	129° 00.17	58			1			T: 12.13 S: 31.76
		1557	BO				50° 55.93	129° 00.17		50					BOT@10m - SAL/CAL/NUIS
		1600	EM				50° 55.94	129° 00.07							
		1602	BE	NET		247	50° 55.95	129° 00.03		48					BONGO
		1718	BE	TRAWL		248	50 56.55	128 58.9							TRAWL
20	T 05B	1721	BE	CTD		249	51° 00.04	128° 51.85	59			1			T: 12.17 S: 31.74
		1722	BO				51° 00.04	128° 51.80		50					BOT@10m - SAL/CAL/NUIS
		1724	EM				51° 00.03	128° 51.77							
		1725	BE	NET		250	51° 00.03	128° 51.72		49					BONGO
		1742	BE	TRAWL		251	51 00.548	128 50.5							TRAWL

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							Latitude	Longitude							
20	T04B	1858	BE	CTD		252	51° 04.45	128° 42.84	63			1	H.M.		T: 12.08 S: 31.74
		1859	BO				51° 04.42	128° 42.78		55					BOT@10m - SAL/CAL/NUIS
		1901	EH				51° 04.40	128° 42.76							
		1904	BE	NET		253	51° 04.34	128° 42.72		55					BONGO
		1923	BE	TRAWL		254	51 04.567	128.41.77							TRAWL
20	T03B	2028	BE	CTD		255	51° 08.22	128° 35.74	134			1			T: 11.56 S: 31.62
		2030	BO				51° 08.19	128° 35.70		125					BOT@10m - SAL/CAL/NUIS
		2033	EH				51° 08.16	128° 35.69							
		2036	BE	NET		256	51° 08.12	128° 35.67							BONGO
		2054	BE	TRAWL		257	51 08.26	128 35 120							TRAWL
20	T02B	2203	BE	CTD		258	51° 12.34	128° 27.93	186			1			T: 12.09 S: 31.69
		2206	BO				51° 12.31	128° 27.91		175					BOT@10m - SAL/CAL/NUIS
		2210	EH				51° 12.29	128° 27.92							
		2213	BE	NET		259	51° 12.26	128° 27.94		150					BONGO
		2233	BE	TRAWL		260	51 12.52	128 26.85							TRAWL

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							Latitude	Longitude							
20	T 01B	2340	BE	CTD		261	51° 17.08	128° 20.33	76			1	H.M.		T: 11.90 S: 31.72
		2341	BO				51° 17.08	128° 20.37		65					BOT 10W - SAL/CAL/NUTS
		2343	EN				51° 17.09	128° 20.36							
		2345	BE	NET		262	51° 17.07	128° 20.34		64					BONGO
20		0030	BE	TRAWL		263	51 17.23	128 20 54							TRAWL
21	IBC 07	1505	BE	CTD		264	51° 17.17	127° 43.96	102			1		✓	T: 10.07 S: 29.81
		1507	BO				51° 17.16	127° 43.99	97	85					BOT 10W - SAL/CAL/NUTS
		1509	EN				51° 17.15	127° 44.03							
		1512	BE	NET		265	51° 17.14	127° 44.04		85					BONGO
		1529	BE	TRAWL		266	51 16.708	127 44.892							TRAWL
21	QCSD 06	1724	BE	CTD		267	51° 08.34	127° 54.86	113			1			T: 10.18 S: 30.75
		1726	BO				51° 08 31	127° 54.84		105					BOT 10W - SAL/CAL/NUTS
		1729	EN				51° 08 31	127° 54.77							
		1732	BE	NET		268	51° 08 30	127° 54.75		103					BONGO
		1749	BE	TRAWL		269	51 07 51	127 56 433							TRAWL

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 MR = Messenger Release Time
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Transmissometer to be cleaned before each cast, do not use Ammonia products

Notes:

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month <u>OCTOBER</u>				Year <u>2010</u>			Ship <u>W.E. RICKER</u>				Cruise ID <u>2010-18</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
21	QCSD07	1902	BE	CTD		270	51° 02.29	127° 51.29	143			1	W.M		T: 11.55 S: 31.39
		1904	BO				51° 02.29	127° 51.24		135					BOT 10m SAL/CHL/NUIS
		1907	EN				51° 02.29	127° 51.19							
		1910	BE	NET		271	51° 02.29	127° 51.10		133					BONGO
		1932	BE	TRAWL		272	51 01.52	127 50.20							TRAWL
21	QCST13	2037	BE	CTD		273	50° 57.95	127° 45.36	221			1			T: 10.83 S: 31.54
		2041	BO				50° 57.94	127° 45.32		210					BOT 10m SAL/CHL/NUIS
		2046	EN				50° 57.94	127° 45.29							
		2048	BE	NET		274	50° 57.95	127° 45.26		150					BONGO
		2110	BE	TRAWL		275	50 57.327	127 44.309							TRAWL
21	QCST14	2210	BE	CTD		276	50° 53.55	127° 37.84	426			1			T: 11.58 S: 31.44
		2215	BO				50° 53.51	127° 37.81		250					BOT 10m SAL/CHL/NUIS
		2220	EN				50° 53.49	127° 37.80							
		2223	BE	NET		277	50° 53.46	127° 37.76		150					BONGO
		2244	BE	TRAWL		278	50 53.126	127 36.785							TRAWL

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 DRF = Drifter

Bottle Firing Method:
 US = Up / Stop
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 DN = Down / No stop

Time Code:
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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month		Year		Ship		Cruise ID									
OCTOBER		2010		W.E. RICKER		2010-18									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
22	GS 21	2203	BE	CTD		279	49° 45.95	124° 49.03	235			1	H.M.	✓	T: 10.92 S: 28.91
		2207	BO				49° 45.93	124° 48.94		225					BOT@10m - SAL/CHL/NUTS
		2212	EN				49° 45.94	124° 48.87							
		2214	BE	NET		280	49° 45.94	124° 48.84		150					BONGO
22	GS 22	2256	BE	CTD		281	49° 42.81	124° 43.77	298			1			T: 11.42 S: 28.37
		2300	BO				49° 42.86	124° 43.69		250					BOT@10m - SAL/CHL/NUTS
		2306	EN				49° 42.86	124° 43.63							
		2308	BE	NET		282	49° 42.90	124° 43.57		150					BONGO
22	GS 23	2354	BE	CTD		283	49° 38.04	124° 40.59	120			1			T: 11.63 S: 28.45
		2356	BO				49° 38.04	124° 40.56		110					BOT@10m - SAL/CHL/NUTS
		2359	EN				49° 38.04	124° 40.53							
23		0002	BE	NET		284	49° 38.04	124° 40.51		108					BONGO
23	GS 24	0042	BE	CTD		285	49° 36.53	124° 33.94	131			1			T: 11.82 S: 28.08
		0045	BO				49° 36.52	124° 33.92		120					BOT@10m - SAL/CHL/NUTS
		0048	EN				49° 36.52	124° 33.89							
		0051	BE	NET		286	49° 36.51	124° 33.86		124					BONGO

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month <u>OCTOBER</u>			Year <u>2010</u>				Ship <u>W.E. RICKER</u>				Cruise ID <u>2010-18</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
23	GS 25	0123	BE	CTD		287	49° 33.00	124° 34.92	171			1	U.M.		T: 11.30 S: 23.34
		0126	BO				49° 32.99	124° 34.91		160					BOT@10m - SAL/CAL/NUTS
		0130	EN				49° 32.98	124° 34.88							
		0133	BE	NET			288	49° 32.95	124° 34.86		150				
23	GS 26	0218	BE	CTD		289	49° 31.06	124° 27.74	187			1			T: 11.47 S: 23.44
		0222	BO				49° 31.07	124° 27.69		175					BOT@10m - SAL/CAL/NUTS
		0226	EN				49° 31.08	124° 27.63							
		0230	BE	NET			290	49° 31.10	124° 27.49		150				
23	GS 27	1400	BE	CTD		291	49° 38.41	124° 14.13	336			1		✓	T: 11.65 S: 27.39
		1405	BO				49° 38.41	124° 14.14		250					BOT@10m - SAL/CAL/NUTS
		1410	EN				49° 38.41	124° 14.10							
		1413	BE	NET			292	49° 38.40	124° 14.09		150				
23	GS 28	1504	BE	CTD		293	49° 33.35	124° 07.60	356			1			T: 11.64 S: 27.83
		1509	BO				49° 33.31	124° 07.59		250					BOT@10m - SAL/CAL/NUTS
		1515	EN				49° 33.30	124° 07.55							
		1518	BE	NET			294	49° 33.32	124° 07.52		150				

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
23	GS 29	16 24	BE	CTD		295	49° 25.85	124° 01.91	384			1	H.M.		T: 11.84 S: 26.39
		16 29	BO				49° 25.84	124° 01.93		250					BOT@10m SAL/CAL/NUTS
		16 34	EN				49° 25.85	124° 01.93							
		16 36	BE	NET		296	49° 25.86	124° 01.94		150					BONGO
23	GS 30	17 10	BE	CTD		297	49° 22.30	124° 04.02	242			1			T: 11.76 S: 27.76
		17 15	BO				49° 22.31	124° 03.97		230					BOT@10m SAL/CAL/NUTS
		17 20	EN				49° 22.29	124° 03.88							
		17 22	BE	NET		298	49° 22.27	124° 03.86		150					BONGO
23	GS 31	17 55	BE	CTD		299	49° 22.22	123° 58.44	309			1			T: 11.90 S: 26.82
		18 00	BO				49° 22.19	123° 58.37		250					BOT@10m SAL/CAL/NUTS
		18 06	EN				49° 22.19	123° 58.33							
		18 08	BE	NET		300	49° 22.17	123° 58.29							BONGO
23	GS 32	19 00	BE	CTD		301	49° 22.61	123° 48.28	179			1			T: 11.60 S: 27.95
		19 03	BO				49° 22.60	123° 48.24		170					BOT@10m SAL/CAL/NUTS
		19 07	EN				49° 22.61	123° 48.22							
		19 12	BE	NET		302	49° 22.65	123° 48.16		150					BONGO

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month <u>OCTOBER</u>			Year <u>2010</u>				Ship <u>W.E. RICHER</u>				Cruise ID <u>2010-18</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
23	GS 33	2037	BE	CTD		303	49° 18.46	123° 32.25	161			1	H.M.		T: 11.81 S: 25.60
		2040	BO				49° 18.48	123° 32.21		150					BOT@10m - SAL/CHL/NUIS
		2043	EM				49° 18.49	123° 32.18							
		2046	BE	NET		304	49° 18.50	123° 32.16		150					BONGO
23	GS 34	2133	BE	CTD		305	49° 18.86	123° 40.67	121			1			T: 11.85 S: 27.31
		2135	BO				49° 18.88	123° 40.66		110					BOT@10m - SAL/CHL/NUIS
		2138	EM				49° 18.91	123° 40.60							
		2140	BE	NET		306	49° 18.89	123° 40.58	145	135					BONGO
23	GS 35	2224	BE	CTD		307	49° 18.11	123° 48.98	395			1			T: 11.47 S: 28.28
		2229	BO				49° 18.12	123° 48.96		250					BOT@10m - SAL/CHL/NUIS
		2234	EM				49° 18.14	123° 48.94							
		2237	BE	NET		308	49° 18.15	123° 48.91		150					BONGO
23	GS 36	2313	BE	CTD		309	49° 18.95	123° 54.45	392			1			T: 11.16 S: 28.61
		2317	BO				49° 18.98	123° 54.40		250					BOT@10m - SAL/CHL/NUIS
		2323	EM				49° 19.01	123° 54.36							
		2325	BE	NET		310	49° 19.03	123° 54.31							BONGO

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month		Year		Ship		Cruise ID									
OCTOBER		2010		W. E. RICKER		2010-18									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
30	GS 37	1755	BE	CTD		311	49° 22.151	124° 14.88	295			1	H.M.	✓	T: 10.64 S: 28.57
		1801	BO				49° 22.20	124° 14.81		250					BOT@10m - SAL/CHL/NUTS
		1807	EN				49° 22.20	124° 14.83							↗
		1808	BE	NET		312	49° 22.21	124° 14.80		150					BONGO
30	GS 38	1921	BE	CTD		313	49° 26.44	124° 28.40	323			1			T: S:
		1926	BO				49° 26.46	124° 28.34		250					BOT@10m - SAL/CHL/NUTS
		1931	EN				49° 26.48	124° 28.32							
		1934	BE	NET		314	49° 26.51	124° 28.29		150					BONGO
31	1BC 08	1534	BE	CTD		315	51° 28.94	127° 51.43	148			1		✓	T: 9.55 S: 25.76
		1537	BO				51° 28.93	127° 51.40		140					BOT@10m - SAL/CHL/NUTS
		1541	EN				51° 28.94	127° 51.36							
		1544	BE	NET		316	51° 28.93	127° 51.32		138					BONGO
		1603	BE	TRAWL		317	51° 29.4	127° 51.23	162						TRAWL

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Notes:

This page is for any notes or observations

* CTD NOT LOGGED -oops

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month <u>OCTOBER</u>				Year <u>2010</u>			Ship <u>W.E. RICKER</u>			Cruise ID <u>2010-18</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
31	1BC 09	1700	BE	CTD		318	51° 33.91	127° 52.25	209			1	H.M.		T: 9.39 S: 24.98
		1703	BO				51° 33.89	127° 52.18		195					BOTOM-SAL/CHL/NO3
		1708	EN				51° 33.86	127° 52.07							
		1711	BE	NET		319	51° 33.84	127° 52.01		150					BONGO
		1731	BE	TRAWL		320	51° 34.28	127° 52.11	245						TRAWL
31	1BC 10	1847	BE	CTD		321	51° 41.15	127° 55.77	322			1			T: 9.54 S: 25.94
		1851	BO				51° 41.12	127° 55.74		250					BOTOM-SAL/CHL/NO3
		1857	EN				51° 41.10	127° 55.71							
		1859	BE	NET		322	51° 41.08	127° 55.69		150					BONGO
		1918	BE	TRAWL		323	51° 41.74	127° 55.67	323						TRAWL
31	1BC 11	2019	BE	CTD		324	51° 47.35	127° 56.57	331			1			T: 8.96 S: 25.72
		2024	BO				51° 47.35	127° 56.54		250					BOTOM-SAL/CHL/NO3
		2029	EN				51° 47.37	127° 56.49							
		2032	BE	NET		325	51° 47.36	127° 56.46		150					BONGO
		2052	BE	TRAWL		326	51° 48.15	127° 56.66	304						TRAWL

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Ocean Sciences Division, Institute of Ocean Sciences

Month		Year		Ship		Cruise ID									
OCTOBER/NOVEMBER		2010		W.E. RICKER		2010-18									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
31	1BC 12	21 49	BE	CTD		327	51° 52.28	127° 56.63	308			1	H.M.		T: 8.98 S: 24.77
		21 53	BO				51° 52.23	127° 56.60		250					BOTOM - SAL/CHL/NUTS
		21 58	EN				51° 52.19	127° 56.59							
		22 01	BE	NET		328	51° 52.17	127° 56.59		150					BONGO
		22 20	BE	TRAWL		329	51° 53.00	127° 56.74	314						TRAWL
31	1BC 13	23 09	BE	CTD		330	51° 56.68	127° 56.23	335			1			T: 8.95 S: 25.28
		23 14	BO				51° 56.68	127° 56.14		250					BOTOM - SAL/CHL/NUTS
		23 20	EN				51° 56.69	127° 56.07							
		23 23	BE	NET		331	51° 56.67	127° 56.06		150					BONGO
		23 41	BE	TRAWL		332	51° 57.33	127° 56.08	330						TRAWL
1	1BC 14	14 37	BE	CTD		333	51° 54.69	127° 53.48	139			1		✓	T: 9.17 S: 25.74
		14 39	BO				51° 54.68	127° 53.46		130					BOTOM - SAL/CHL/NUTS
		14 43	EN				51° 54.65	127° 53.38							
		14 46	BE	NET		334	51° 54.62	127° 53.37		132					BONGO
		15 08	BE	TRAWL		335	51° 55.135	127° 52.38	133						TRAWL

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 43 of

Month <u>NOVEMBER</u>				Year <u>2010</u>			Ship <u>W. E. RICKER</u>				Cruise ID <u>2010-18</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments	
							Latitude	Longitude								
1	IBC 15	1642	BE	CTD		336	52°02.23	127°40.23	260			1	H.M.		T: 8.38 S: 23.14	
		1647	BO				52°02.30	127°40.15		250					BOT@10m - SAL/CAL/MUTS	
		1654	EN				52°02.39	127°40.12								
		1656	BE	NET		337	52°02.39	127°40.05		150						BONGO
		1715	BE	TRAWL		338	52°03.09	127°39.75	335							TRAWL
1	IBC 16	1903	BE	CTD		339	52°12.99	127°25.87	569			1			T: 8.28 S: 16.42	
		1908	BO				52°12.97	127°25.83		250					BOT@10m - SAL/CAL/MUTS	
		1914	EN				52°12.94	127°25.84								
		1916	BE	NET		340	52°12.92	127°25.83		150						BONGO
		1936	BE	TRAWL		341	52°13.36	127°24.59	569							TRAWL
1	IBC 17	2055	BE	CTD		342	52°17.67	127°13.34	548			1			T: 8.48 S: 17.74	
		2100	BO				52°17.66	127°13.39		250					BOT@10m - SAL/CAL/MUTS	
		2105	EN				52°17.65	127°13.44								
		2108	BE	NET		343	52°17.65	127°13.45		150						BONGO
		2128	BE	TRAWL		344	52°18.27	127°12.6	498							TRAWL

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Notes:

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 44 of

Month <u>NOVEMBER</u>			Year <u>2010-</u>				Ship <u>W.E. RICKER</u>				Cruise ID <u>2010-18</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments	
							Latitude	Longitude								
1	IBC 18	22.59	BE	CTD		345	52° 27. 27	127° 15. 72	499			1	H.M.		T: 8.87 S: 18.37	
		23 04	BO					52° 27. 26	127° 15. 66		250					BOTOM. SAL/CAL/NUTS
		23 09	EN					52° 27. 27	127° 15. 62							
		23 12	BE	NET			346	52° 27. 27	127° 15. 59		150					BONGO
		23 33	BE	TRAWL			347	52° 26. 70	127° 16. 75	399						TRAWL
2	IBC 19	01 36	BE	CTD		348	52° 20. 76	127° 28. 37	499			1			T: 9.00 S: 16.21	
		01 41	BO					52° 20. 76	127° 28. 26		250					BOTOM. SAL/CAL/NUTS
		01 46	EN					52° 20. 77	127° 28. 24							
		01 49	BE	NET			349	52° 20. 78	127° 28. 21		150					BONGO
		00 49	BE	TRAWL			350	52° 22. 66	127° 27. 30	453						TRAWL
2	IBC 20	14 43	BE	CTD		351	52° 15. 15	128° 33. 45	250			1		✓	T: 10.52 S: 29.65	
		14 48	BO					52° 15. 17	128° 33. 39		240					BOTOM. SAL/CAL/NUTS
		14 54	EN					52° 15. 15	128° 33. 35							
		14 57	BE	NET			352	52° 15. 16	128° 33. 32		150					BONGO
		15 24	BE	TRAWL			353	52° 15. 61	128° 33. 32	261						TRAWL

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter
 _____ = _____

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes: _____

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 before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

IBC19: Trawl first, then CTD & bongo.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month		Year		Ship		Cruise ID										
NOVEMBER		2010		W.E. RICKER		2010-19										
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments	
							Latitude	Longitude								
2	IBC 21	1627	BE	CTD		354	52° 21.59	128° 32.05	220			1	HM		T: 10.21 S: 29.05	
		1630	BO					52° 21.60	128° 32.05		210					Bottom - SAL/CHL/NTS
		1635	EN						52° 21.59	128° 32.03						
		1639	BE	NET			355	52° 21.56	128° 32.04		150					BONGO
		1700	BE	TRAWL			356	52° 22.02	128° 31.65	222						TRAWL
2	IBC 22	1807	BE	CTD		357	52° 27.73	128° 26.19	528			1			T: 10.08 S: 28.69	
		1811	BO					52° 27.73	128° 26.15		250					Bottom - SAL/CHL/NTS
		1817	EN						52° 27.74	128° 26.13						
		1819	BE	NET			358	52° 27.74	128° 26.13		150					BONGO
		1839	BE	TRAWL			359	52° 28.69	128° 26.65	662						TRAWL
2	IBC 23	1951	BE	CTD		360	52° 35.77	128° 27.69	649			1			T: 10.31 S: 29.20	
		1955	BO					52° 35.78	128° 27.65		250					Bottom - SAL/CHL/NTS
		2001	EN						52° 35.78	128° 27.62						
		2003	BE	NET			361	52° 35.78	128° 27.60		150					BONGO
		2023	BE	TRAWL			362	52° 36.83	128° 27.87	578						TRAWL

Cast Type:

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- MOR = Mooring
- NET = Plankton Net Haul
- DRF = Drifter
- =

Bottle Firing Method:

- US = Up / Stop
- UN = Up / No stop
- DN = Down / No stop

Notes:

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 before each cast, do not use Ammonia products

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month <u>NOVEMBER</u>			Year <u>2010</u>				Ship <u>W.E. RICKER</u>				Cruise ID <u>2010-18</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments	
							Latitude	Longitude								
2	IBC 24	2135	BE	CTD		363	52° 44. 47	128° 27. 94	677			1	H.M		T: 9.41 S: 27.87	
		2140	BO				52° 44. 45	128° 27. 89		250					BOT@10m - SAL/CHL/NUIS	
		2145	EN				52° 44. 44	128° 27. 86								
		2147	BE	NET		364	52° 44. 43	128° 27. 89		150						BONGO
		2207	BE	TRAWL		365	52° 45. 08	128° 27. 82	636							TRAWL
3	IBC 25	0047	BE	CTD		366	52° 57. 09	128° 30. 82	404			1			T: 8.50 S: 24.30	
		0052	BO				52° 57. 12	128° 30. 80		250					BOT@10m - SAL/CHL/NUIS	
		0057	EN				52° 57. 13	128° 30. 84								
		0100	BE	NET		367	52° 57. 14	128° 30. 86		150						BONGO
		2338	BE	TRAWL		368	52° 54. 48	128° 30. 64	425							TRAWL
3	IBC 26	1438	BE	CTD		369	53° 05. 86	129° 07. 58	530			1		✓	T: 10.09 S: 29.13	
		1443	BO				53° 05. 90	129° 07. 59		250					BOT@10m - SAL/CHL/NUIS	
		1449	EN				53° 05. 95	129° 07. 55								
		1451	BE	NET		370	53° 05. 97	129° 07. 53		150						BONGO
		1521	BE	TRAWL		371	53° 06. 945	129° 07. 53	550							TRAWL

Cast Type:

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 =

Bottle Firing Method:

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Time Code:

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 EN = End Time of Cast
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Transmissometer to be cleaned before each cast, do not use Ammonia products

Notes:

This page is for any notes or observations

IBC25: Trawl before dinner break, CTD/bongo after dinner

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 47 of

Month		Year		Ship		Cruise ID									
NOVEMBER		2010		W.E. RICKER		2010-18									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
3	IBC 27	1638	BE	CTD		372	53° 14. 51	129° 07. 61	515			1	H.M.		T: 9.86 S: 28.68
		1643	BO				53° 14. 54	129° 07. 63		250					BOT@10m - SAL/CAL/NTS
		1649	EN				53° 14. 56	129° 07. 67							
		1651	BE	NET		373	53° 14. 57	129° 07. 69		150					BONGO
		1710	BE	TRAWL		374	53° 15. 087	129° 07. 954	515						TRAWL
3	IBC 28	1826	BE	CTD		375	53° 20. 77	129° 09. 73	421			1			T: 9.24 S: 26.51
		1831	BO				53° 20. 81	129° 09. 77		250					BOT@10m - SAL/CAL/NTS
		1836	EN				53° 20. 82	129° 09. 82							
		1839	BE	NET		376	53° 20. 82	129° 09. 84		150					BONGO
		1901	BE	TRAWL		377	53° 21. 67	129° 09. 94	415						TRAWL
3	IBC 29	2021	BE	CTD		378	53° 28. 28	129° 04. 56	193			1			T: 8.85 S: 25.16
		2025	BO				53° 28. 27	129° 04. 58		180					BOT@10m - SAL/CAL/NTS
		2029	EN				53° 28. 24	129° 04. 58							
		2032	BE	NET		379	53° 28. 22	129° 04. 59		150					BONGO
		2052	BE	TRAWL		380	53° 28. 66	129° 04. 53	180						TRAWL

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USW

- = Sea Water Loop
- MOR = Mooring
- NET = Plankton Net Haul
- DRF = Drifter
- =

Bottle Firing Method:

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- UN = Up / No stop
- DN = Down / No stop

Time Code:

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- BO = Bottom Time of Cast
- EN = End Time of Cast
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Transmissometer to be cleaned before each cast, do not use Ammonia products

Notes:

Produced by the Water Properties Group, IOS

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month		Year		Ship		Cruise ID										
NOVEMBER		2010		W. E. RICKER		2010-13										
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments	
							Latitude	Longitude								
3	IBC 30	22.27	BE	CTD		381	53° 32.80	128° 55.68	212			1	H.M.		T: 7.94 S: 18.72	
		22.31	BO					53° 32.83	128° 55.68		200					BOT@10m SAL/CHL/NUIS
		22.35	EN						53° 32.87	128° 55.72						
		22.37	BE	NET			382	53° 32.88	128° 55.71		150					BONGO
		22.59	BE	TRAWL			383	53° 33.02	128° 54.75	213						TRAWL
4	IBC 31	01.10	BE	CTD		384	53° 42.20	128° 48.79	306			1			T: 7.97 S: 19.81	
		01.14	BO					53° 42.23	128° 48.76		250					BOT@10m SAL/CHL/NUIS
		01.20	EN						53° 42.23	128° 48.74						
		01.22	BE	NET			385	53° 42.25	128° 48.72		150					BONGO
		00.22	BE	TRAWL			386	53° 40.038	128° 51.21	271						TRAWL
4	IBC 32	14.38	BE	CTD		387	53° 58.76	128° 40.32	133			1			T: 8.07 S: 20.70	
		14.41	BO					53° 58.78	128° 40.32		120					BOT@10m SAL/CHL/NUIS
		14.44	EN						53° 58.80	128° 40.32						
		14.47	BE	NET			388	53° 58.80	128° 40.33		120					BONGO
		15.24	BE	TRAWL			389	53° 58.222	128° 40.52	159						TRAWL

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Bottle Firing Method:
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Time Code:
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 EN = End Time of Cast
 DE = Deployment Time
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Transmissometer to be cleaned before each cast, do not use Ammonia products

Notes:

This page is for any notes or observations

IBC 31: Trawl first then CTD/Bongo.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month <u>NOVEMBER</u>			Year <u>2010</u>				Ship <u>W. E. RICKER</u>			Cruise ID <u>2010-18</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
4	IBC 33	1628	BE	CTD		390	53°52.79	128°45.44	270			1	H.M.		T: 8.01 S: 17.98
		1633	BO				53°52.77	128°45.48		250					BOT@10 - SAL/CHL/NOTS
		1638	EN				53°52.78	128°45.50							
		1641	BE	NET		391	53°52.78	128°45.49		150					BONGO
		1700	BE	TRAWL		392	53°52.234	128°45.92	285						TRAWL
4	IBC 34	1808	BE	CTD		393	53°47.29	128°53.41	374			1			T: 7.73 S: 17.11
		1813	BO				53°47.25	128°53.49		250					BOT@10 - SAL/CHL/NOTS
		1819	EN				53°47.20	128°53.47							
		1822	BE	NET		394	53°47.20	128°53.44		150					BONGO
		1840	BE	TRAWL		395	53°46.84	128°54.32	372						TRAWL
4	IBC 35	2006	BE	CTD		396	53°42.57	129°05.70	393			1			T: 8.42 S: 22.07
		2011	BO				53°42.54	129°05.71		250					BOT@10 - SAL/CHL/NOTS
		2017	EN				53°42.51	129°05.68							
		2019	BE	NET		397	53°42.50	129°05.68		150					BONGO
		2038	BE	TRAWL		398	53°42.05	129°06.22	397						TRAWL

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Bottle Firing Method:
 US = Up / Stop
 UN = Up / No stop
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Time Code:
 BE = Beginning Time of Cast
 BO = Bottom Time of Cast
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Notes:

Time Code:
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month		Year		Ship		Cruise ID									
NOVEMBER		2010		W.E. RICKER		2010-18									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
4	IBC 36	2201	BE	CTD		399	53° 35.68	129° 12.90	235			1	H.M.		T: 8.33 S: 20.74
		2205	BO				53° 35.65	129° 12.89		225					BOT@10m - SAL/CAL/NUTS
		2211	EN				53° 35.64	129° 12.88							
		2213	BE	NET		400	53° 35.64	129° 12.89		150					BONGO
		2232	BE	TRAWL		401	53° 35.12	129° 12.81	253						TRAWL
5	IBC 37	0034	BE	CTD	2 nd	402	53° 24.97	129° 13.19	387			1			T: 8.53 S: 22.44 (2)
		0039	BO				53° 24.92	129° 13.14		250					BOT@10m - SAL/CAL/NUTS
		0044	EN				53° 24.89	129° 13.10							
		0046	BE	NET	3 rd	403	53° 24.07	129° 13.08		150					BONGO (3)
4		2348	BE	TRAWL	1 st	404	53° 27.69	129° 12.65	374						TRAWL (1)
5	IBC 38	1446	BE	CTD		405	53° 16.77	129° 16.91	525			1		✓	T: 9.28 S: 27.14
		1451	BO				53° 16.77	129° 16.98		250					BOT@10m - SAL/CAL/NUTS
		1456	EN				53° 16.80	129° 17.01							
		1458	BE	NET		406	53° 16.82	129° 17.01		150					BONGO
		1519	BE	TRAWL		407	53° 16.47	129° 17.50	417						TRAWL

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Notes: _____