

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2010-18

DATE:

From: 01 OCT 2010

to: 19 NOV 2010

VESSEL:

W.E. RICKER

PROJECT(S):

HIGH SEAS (TRUDEL)

Book 1 of 3

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

WaterProperties.ca

Captain: Brian Pennell
 Second Officer: Morgan Chisholm
 Fishing Master: Brian West
 First Officer: Ryan Hull
 Third Officer: n/a

Mission Participants / Agencies: DFo - SAFE / BPA

Scientific Personnel:

Name	Watch	Cabin	Name	Watch	Cabin
Chief Scientist: <u>D. Marc Trudel</u>					

[illegible]

Second leg of Mission: Chief Scientist: Samuel Rogers

Name	Watch	Cabin	Name	Watch	Cabin
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[illegible]

Data logging computer:

Data acquisition program: SEA SAVE v7.19
 CTD deck unit make: SBE model: || serial number: 0471

Primary CTD

Make: Seabird model: 911 serial number: 585

Primary temperature serial number: 4054

Primary conductivity serial number: 3321

Secondary temperature serial number: 4700

Secondary conductivity serial number: 1766

Transmissometer: κ/a Model: _____

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

Oxygen sensor: SBE Model: 43 s/n: 0997 PS or NO pump? PS

PAR sensor:	n/a	Model:		s/n:	
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Other sensors: _____ s/n: _____ P, S or NO pump? _____

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

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

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

Secondary CTD

SECOND LEG

Make: SBC
model: 911
serial number: 505

Primary temperature serial number: 4054

Primary conductivity serial number: 3321

Secondary temperature serial number: 4700

Secondary conductivity serial number: 1766

Transmissometer: WET LAB
Model: 1005AR
s/n:

Fluorometer: Model SEA POINT Cable gain: 10x0.15 s/n: 2648 P S or NO pump?

Oxygen sensor: 55 Model: 43 s/n: 0997 P. S or NO pump?

PAR sensor: _____ Model: _____

Other sensors: pH SCA-BIRD s/n: 0692 P, S or NO pump?

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

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

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

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER				Year 2010				Ship W.E. RICKER				Cruise ID 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								
03	QC101	2021	BE	CTD		001	52°14.31	133°43.08	1400 ⁺			1	MT	NA	CHL, SAL, NUTS @ 10m T: 13.72 S: 32.02	
		2025	BO				52°14.21	133°43.19		150						
		2030	EN				52°14.15	133°43.22							(*) →	
		2034	BE	NET		002	52°14.04	133°43.41	1400 ⁺	150					Bongo-VNH	
		1925	BE	TOW		003	52°15.3	133°48.3							Trawl	
03	QC102	2131	BE	TOW		004	52°13.7	133°34.3							Trawl	
03	QC103	2258	BE	CTD		005	52°10.74	133°23.31	1600 ⁺			1	MT	NA	CHL, SAL, NUTS @ 10m T: 13.62 S: 32.08	
		2302	BO				52°10.66	133°23.36		250						
		2307	EN				52°10.62	133°23.50								
		2314	BE	NET		006	52°10.52	133°23.73	1600 ⁺	150					Bongo-VNH	
		2338	BE	TOW		007	52°10.35	133°22.8							Trawl	
END OF DAY																

Gulf of Alaska work scheduled for 01-10 OCT cancelled due to weather

QCID1: Order of ops changed to accomodate galley (TOW/CTD/BONGO instead)
CTD/Bongos will only be done at every other station except where noted otherwise (01-10 OCT only)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER				Year 2010			Ship W E RICKER				Cruise ID 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							
04	QCSD 01	1713	BE	CTD		008	51°33.44	130°33.59	791			1	MT	NA	SAL, CHL, NUTS @ 10m T: 11.69 S: 31.97
		1719	BO				51°33.43	130°33.64		250					
		1726	EN				51°33.40	130°33.65							
		1732	BE	NET		009	51°33.40	130°33.74	790	150					Bongo-VNH
		1757	BE	TOW		010	51°33.97	130°32.84	1360						Trawl
04	QCSD02	1940	BE	TOW		011	51°40.13	130°18.5	242						Trawl
04	QCSD03	2120	BE	CTD		012	51°46.05	130°04.23	205			1	MT	NA	SAL, CHL, NUTS @ 10m T: 12.26 S: 31.88
		2124	BO				51°46.01	130°04.32		190					⊗ →
		2128	EN				51°45.96	130°04.46							
		2134	BE	NET		013	51°45.91	130°04.57	207	150					Bongo-VNH
		2155	BE	TOW		014	51°46.33	130°04.1	199						Trawl
04	QCSD04	2316	BE	TOW		015	51°49.88	129°54.42	148						Trawl

Queen Charlotte Sound

⊗ Mistakenly saved as QCSD02 in HDR. Changed later in *.HDR and *.HEX file to correct station name.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 3 of

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							
05	QCS805	0143	BE	CTD		016	51°53.12	129°37.65	230			1	MT	NA	⊗ →
		0147	BO				51°53.11	129°37.68		220					SAL, CHL, NUTS @ 10m T: 12.21 S: 31.76
		0152	EN				51°53.10	129°37.73							
		0124	BE	NET		017	51°53.24	129°37.51	230	150					Bongo - VNH
		0038	BE	TOW		018	51°52.5	129°42.4	235						Trawl
END OF DAY															
05	QCST01	1417	BE	CTD		019	50°52.92	127°20.35	145			1	MT	NA	SAL, CHL, NUTS @ 10m T: 9.52 S: 30.42
		1421	BO				50°52.93	127°20.31		135					
		1424	EN				50°52.95	127°20.28							
		1427	BE	NET		020	50°52.96	127°20.27	147	137					Bongo - VNH
		1451	BE	TOW		021	50°52.87	127°19.03	100						Trawl
05	QCST02	1600	BE	TOW		022	50°49.2	127°12.4	150						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: 06 March 2008

⊗ QCS05: Order of ops changed to accomodate work schedule (Tow/BONGO/CTD instead of CTD/BONGO/Tow). Consecutive numbers not changed.

Queen Charlotte Strait.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER				Year 2010				Ship W E RICKER				Cruise ID 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							
05	QCST03	1721	BE	CTD		023	50°42.52	127°09.01	134			1	MT	NA	SAL, CHL, NUTS @ 10m T: 10.32 S: 30.37
		1724	BO				50°42.53	127°08.97		125					
		1727	EN				50°42.58	127°08.89							
		1730	BE	NET		024	50°42.58	127°08.86	132	125					Bongo-VNH
		1751	BE	TOW		025	50°42.36	127°07.76	129						Trawl
05	QCST04	1915	BE	TOW		026	50°41.1	126°57.2	178						Trawl
05	QCST05	2041	BE	CTD		027	50°37.33	126°47.68	130						SAL, CHL, NUTS @ 10m T: 10.45 S: 30.64
		2044	BO				50°37.28	126°47.64		120					
		2047	EN				50°37.19	126°47.61							
		2051	BE	NET		028	50°37.07	126°47.71	159	149					Bongo-VNH
		2112	BE	TOW		029	50°37.8	126°48.2	150						Trawl

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER				Year 2010				Ship W.E. RICKER				Cruise ID 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							
05	QCST06	2220	BE	TOW		030	50°40.8	126°45.2	106						Trawl
05	QCST07	2329	BE	CTD		031	50°46.22	126°51.00	159			1	MT	NA	SAL, CHL, NUTS @ 10m T: 9.41 S: 30.75
		2332	BO				50°46.24	126°51.03		150					
		2335	EN				50°46.24	126°51.04							
		2339	BE	NET		032	50°46.24	126°51.07	160	150					Bongo-VNH
06		0031	BE	TOW		033	50°45.9	126°50.5	161						Trawl
END OF DAY															
06	IBCO1	1402	BE	CTD		034	50°55.16	126°12.18	90			1	MT	NA	SAL, CHL, NUTS @ 10m T: 10.46 S: 27.3
		1404	BO				50°55.18	126°12.19		80					
		1406	EN				50°55.20	126°12.19							
		1409	BE	NET		035	50°55.24	126°12.21	86	76					Bongo-VNH
		1427	BE	TOW		036	50°55.24	126°13.14	109						Trawl

This page is for any notes or observations

Broughton Archipelago

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER			Year 2010			Ship W.E. RICKER			Cruise ID 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							
06	IBC02	1540	BE	TOW		037	50°55.7	126°24.4	278						Trawl
06	IBC03	1648	BE	CTD		038	50°54.59	126°32.88	463			1	MT	NA	SAL, CHL, NUTS @ 10m T: 10.21 S: 26.9
		1654	BO				50°54.64	126°32.82		250					
		1700	EN				50°54.66	126°32.78							
		1703	BE	NET		039	50°54.67	126°32.76	462	150					Bongo - VNH
		1722	BE	TOW		040	50°54.41	126°33.39	464						Trawl
06	IBC04	1900	BE	TOW		041	50°48.94	126°31.1	138						Trawl
06	IBC05	2059	BE	CTD		042	50°51.21	126°10.75	130			1	MT	NA	SAL, CHL, NUTS @ 10m T: 10.55 S: 23.1
		2101	BO				50°51.21	126°10.73		120					
		2104	EN				50°51.21	126°10.74							
		2107	BE	NET		043	50°51.19	126°10.81	127	117					Bongo - VNH
		2125	BE	TOW		044	50°50.7	126°11.1	129						Trawl

Month OCTOBER				Year 2010			Ship W.E. RICKER				Cruise ID 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							
06	1BC06	2253	BE	TOW		045	50°46.64	126°07.03	171						Trawl
	END OF DAY														
07	T07	—	BE	CTD		046	— cancelled		—			1	MT	NA	SAL, CHL, NUTS @ 10m T: S:
			BO												
			EN												
		—	BE	NET		047	— cancelled		—						Bongo - VNH
		1410	BE	TOW		048	50°50.97	129°14.47	91						Trawl
07	T06	1613	BE	CTD		049	50°56.10	129°00.06	58						SAL, CHL, NUTS @ 10m T: 12.37 S: 31.97
		1614	BO				50°56.12	129°00.02		48					
		1616	EN				50°56.14	128°59.98							
		1618	BE	NET		050	50°56.16	128°59.92	58	48					Bongo - VNH
		1640	BE	TOW		051	50°56.8	128°58.1	61						Trawl

Triangle Island transect: CTD & Bongos will be conducted at every station on this line.

T07: Wind/tide/current conditions forced cancellation of CTD/bongo.

T06: 2-3m swell, sloppy seas

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER				Year 2010			Ship W E. RICKER				Cruise ID 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							
7	T05	1745	BE	CTD		052	51°00.07	128°51.75	59			1	MT	NA	SAL, CHL, NUTS @ 10m T: 12.54 S: 31.91
		1746	BO				51°00.09	128°51.70		49					
		1748	EN				51°00.10	128°51.68							
		1751	BE	NET		053	cancelled								Bongo-VNH
		—	BE	TOW		054	cancelled								Trawl
7	QCST08	2330	BE	CTD		055	50°51.85	127°49.84	269			1	MT	NA	CHL, NUTS @ 10m T: 11.17 S: 31.97
		2335	BO				50°51.83	127°49.73		250					
		2340	EN				50°51.82	127°49.66							
		2343	BE	NET		056	50°51.81	127°49.64	269	150					Bongo-VNH
		2241	BE	TOW		057	50°52.9	127°54.38	170						Trawl

T05: Bongo/Trawl cancelled due to deteriorating weather conditions.

QCST08: Ops conducted out of order (TRAWL/CTD/BONGO), consecutive numbers not changed.
No salinity sample taken (rationing salinity bottles)
"Pump off" command did not work at end of cast. Seemed to reset when deck unit turned off
(Read out said "0010" when deck unit powered up again.)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 9 of

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							
8	QCST09	0120	BE	CTD		058	50°48.74	127°36.29	470			1	MT	NA	SAL, CHL, NUTS @ 10m T: 10.31 S: 31.89
		0124	BO				50°48.72	127°36.24		250					
		0130	EN				50°48.70	127°36.17							
		0133	BE	NET		059	50°48.69	127°36.14	480	150					Bongo - VNH
		0031	BE	TOW		060	50°49.7	127°40.9	331						Trawl
≡ END OF DAY															
8	QCST10	1412	BE	CTD		061	50°47.69	127°25.93	223			1	MT	NA	SAL, CHL, NUTS @ 10m T: 9.97 S: 30.53
		1417	BO				50°47.70	127°25.91		210					
		1422	EN				50°47.72	127°25.92							
		1425	BE	NET		062	50°47.73	127°25.92	210	150					Bongo
		1447	BE	TOW		063	50°48.33	127°26.64	88						Trawl
8	QCST11	1635	BE	TOW		064	50°48.2	127°21.2	136						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

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QCST09: Ops conducted out of order (TRAWL/CTD/BONGO). Consecutive numbers not changed.
CTD paused @ 7m on upcast due to kelp ball fouling
"Pump off" command did not work at end of cast [See QCST08 for remedy.]

QCST10: "Pump off" command worked...?

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 10 of

Month				Year			Ship				Cruise ID				
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							
8	QCST12	1741	BE	CTD		065	50°43.92	127°16.49	210			1	MT	NA	SAL, CHL, NUTS @ 10m T: 9.92 S: 31.19
		1746	BO				50°43.95	127°16.47		195					
		1750	EN				50°43.95	127°16.47							
		1753	BE	NET		066	50°43.94	127°16.46	210	150					Bongo - VNH
		1814	BE	TOW		067	50°43.24	127°15.96	201						Trawl
8	JS01	2100	BE	TOW		068	50°33.6	126°49.2	333						Trawl
8	JS02	—	BE	CTD		069	— cancelled —								SAL, CHL, NUTS @ 10m T: S:
			BO												
			EN												
		—	BE	NET		070	— cancelled —								Bongo - VNH
		2226	BE	TOW		071	50°31.13	126°37.88	419						Trawl
8	JS03	2330	BE	TOW		072	50°29.86	126°31.65	389						Trawl

Cast Type: **END OF DAY**
 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

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JS02: CTD/Bongo cancelled. Winds gusting >50kts.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 11 of

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							
9	G501	x1658	BE	CTD		073	x49°57.08	x125°05.85	x228			1	MARC	NA	SAL, CHL, NUTS @ 10m T: S:
		x1704	BO				x49°57.14	x125°05.93		x210					
		x1708	EN				x49°57.17	x125°05.97							
		x1713	BE	NET		074	x49°57.18	x128°05.98	x220	x150					Bongo - VNH
9	G502	x1804	BE	CTD		075	x49°53.66	x125°03.34	x140			1	MARC		SK, CHL, NUTS @ 10m T: 10.20 S: 29.58
		x1807	BO				x49°53.65	x125°03.31		x120					
		x1810	EN				x49°53.66	x125°03.31							
		x1812	BE	NET		076	x49°53.69	x125°03.32	145	135					
9	G503	1904	BE	CTD		077	49°53.99	124°56.24	147			1	MARC		CHL, NUTS @ 10m T: 11.44 S: 28.65
		1907	BO				49°53.98	124°56.24		130					
		1910	EN				49°53.99	124°56.27							
		1913	BE	NET		078	49°53.99	124°56.28	146	136					

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

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⇒ did not record the surface salinity + temperature, data file does not appear to be saved.

⇒ I may have set the station to G501. It should be G502.

⇒ started recording only at 106 m on the way down, no salinity bottle.

note: ⇒ station was set to G502. Should be G503 instead.

↳ the surface values are from the up-cast.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 12 of

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							
9	GS04	1958	BE	CTD		079	49° 50.10	124° 56.05	180			1	MARC		CHL, NUTS @ 10m T:10.67 S:29.29
		2001	BO				49° 50.08	124° 56.03		160					
		2006	EN				49° 50.08	124° 55.99							
		2009	BE	BONGO		080	49° 50.08	124° 55.94	200	150					
9	GS05	2053	BE	CTD		081	49° 49.47	124° 49.35	280			1	MARC		SAL, CHL, NUTS @ 10m T:11.41 S:29.06
		2058	BO				49° 49.52	124° 49.25		250					
		2103	EN				49° 49.54	124° 49.20							
		2106	BE	Bongo		082	49° 49.55	124° 49.18	254	150					
9	GS06	2148	BE	CTD		083	49° 48.98	124° 42.89	150			1	MARC		CHL, NUTS @ 10m T:12.59 S:28.40
		2150	BO				49° 49.04	124° 42.84		120					
		2154	EN				49° 49.09	124° 42.80							
		2157	BE	Bongo		084	49° 49.13	124° 42.73	155	140					

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

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⇒ forgot to get the surface values on the way down. Took values on the up-cast.

⇒ started to archive at about 60 m on the down cast. Hopefully, I will get the right by the end of the day.

⇒ forgot to take the temperature and salinity at surface. Will take it during the up cast.

⇒ no salinity bottle.

⇒ - Station should be GS06
- Heade should be 0085

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 13 of

Month <u>October</u>			Year <u>2010</u>			Ship <u>W.E. Richey</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							
9	GS07	2255	BE	CTD		085	49°49.93	124°34.80	240			1	MARC		CHL, NUTS @ 10m T: 12.77 S: 27.69
		2259	BO				49°49.93	124°34.76		220					
		2303	EN				49°49.94	124°34.75							
		2307	BE	Bongo		086	49°49.95	124°34.74	240	150					
10	GS08	0038	BE	CTD		087	49°44.65	124°24.13	312			1	MARC		SAL, CHL, NUTS @ 10m T: 12.63 S: 26.83
		0043	BO				49°44.61	124°24.23		250					
		0049	EN				49°44.56	124°24.27							
		0051	BE	Bongo		088	49°44.53	124°24.30	311	150					
10	GS09	0132	BE	CTD		089	49°43.11	124°19.54	300			1	MARC		CHL, NUTS @ 10m T: 12.54 S: 27.47
		0137	BO				49°43.15	124°19.50		250					
		0142	EN				49°43.19	124°19.49							
		0144	BE	Bongo		090	49°43.19	124°19.49	300	150					

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:

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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

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⇒ no salinity bottle

⇒ Header information may indicate 008, should be 0087

⇒ no salinity bottle. started anchoring at ~ 20m in the launch.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October				Year 2010			Ship WE. Kicker				Cruise ID 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		
							Latitude	Longitude								
10	GS10	1400	BE	CTD		091	48° 54.13	123° 13.37	137			1	MARC		SAL, CHL, NUTS @ 10m T: 11.33 S: 23.75	
		1402	BO				48° 54.14	123° 13.42		120						
		1406	EN				48° 54.16	123° 13.45								
		1408	BE	BONGO		092	48° 54.18	123° 13.47	138	128						
10	GS11	1459	BE	CTD		093	48° 56.68	123° 20.01	188			1	MARC		CHL, NUTS @ 10m T: 10.86 S: 29.23	
		1504	BO				48° 56.68	123° 19.98		170						
		1508	EN				48° 56.68	123° 19.96								
		1512	BE	BONGO		094	48° 56.68	123° 19.95	188	150						
10	GS12	1602	BE	CTD		095	49° 01.21	123° 17.21	148			1	MARC		CHL, NUTS @ 10m T: 11.84 S: 23.11	
		1605	BO				49° 01.20	123° 17.24		130						
		1609	EN				49° 01.19	123° 17.26								
		1613	EN	BONGO		096	49° 01.18	123° 17.28	152	142						

$\Rightarrow$ no salinity bottle

$\Rightarrow$ no salinity bottle

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER				Year 2010			Ship W.E. Ricker				Cruise ID 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							
10	GS13	1700	BE	CTD		097	49° 00.67	123° 24.02	274			1	MARC		SAL, CHL, NUTS @ 10m T: 11.84 S: 27.68
		1705	BO				49° 00.64	123° 23.96		250					
		1711	EN				49° 00.61	123° 23.91							
		1718	BE	Bongo		098	49° 00.56	123° 24.08	274	150					
10	GS14	1800	BE	CTD		099	49° 00.99	123° 30.40	210			1	MARC		CHL, NUTS @ 10m T: 11.67 S: 28.02
		1805	BO				49° 00.99	123° 30.42		190					
		1810	EN				49° 00.97	123° 30.48							
		1813	BE	Bongo		100	49° 00.95	123° 30.53	205	150					
10	GS15	1916	BE	CTD		101	49° 06.86	123° 35.70	160			1	MARC		CHL, NUTS @ 10m T: 11.64 S: 28.47
		1919	BO				49° 06.88	123° 35.73		140					
		1922	EN				49° 06.89	123° 35.75							
		1925	BE	Bongo		102	49° 06.92	123° 35.77	165	150					

⇒ no salinity bottle

⇒ no salinity bottle

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 Latitude	Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
10	GS16	2022	BE	CTD		103	49°07.15	123°28.49	320			1	MARC		CHL, NUTS @ 10m T: 12.55 S: 25.43
		2027	BO				49°07.18	123°28.58		250					
		2033	EN				49°07.18	123°28.71							
		2036	BE	Bongo		104	49°07.22	123°28.76	330	150					
10	GS17	2130	BE	CTD		105	49°07.39	123°21.19	145			1	MARC		CHL, NUTS @ 10m T: 12.04 S: 22.50
		2133	BO				49°07.39	123°21.23		130					
		2137	EN				49°07.39	123°21.29							
			BE	Bongo		106									
10	GS18	2233	BE	CTD		107	49°12.04	123°24.34	265			1	MARC		CHL, NUTS @ 10m T: 12.90 S: 23.36
		2238	BO				49°12.12	123°24.33		250					
		2243	EN				49°12.12	123°24.36							
		2245	BE	Bongo		108	49°12.12	123°24.36	275	150					

⇒ no salinity bottle

⇒ no salinity bottle

⇒ bongo cancelled for Sand and leave.

⇒ no salinity bottle, forgot to change the reader. It probably indicates 010, but should be 0107.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 17 of

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							
10	GSP	2333	BE	CTD		109	49°12.90	123°31.42	330			1	MARK		SAL, CHL, NUTS @ 10m T: 12.60 S: 26.70
		2337	BO				49°12.95	123°31.42		250					
		2342	EN				49°12.99	123°31.45							
		2346	BE	Bongo		110	49°13.09	123°31.46	333	150					
11	GSDO	0044	BE	CTD		111	49°12.25	123°42.12	338			1	MARK		CHL, NUTS @ 10m T: 11.73 S: 28.82
		0049	BO				49°12.24	123°42.19		250					
		0055	EN				49°12.22	123°42.29							
		0059	BE	Bongo		112	49°12.19	123°42.37	351	150					
13	JF01	1407	BE	CTD		113	48°17.84	123°36.35	132			1	H.M.	✓	T: 9.56 S: 31.44
		1409	BO				48°17.87	123°36.29		120					BOT @ 10m - SAL/CHL/NUTS
		1414	EN				48°17.86	123°36.12							
		1417	BE	NET		114	48°17.83	123°36.06		120					BONGO
		1414	BE	TBW		115	48°17.83	123°36.91							TRAWL

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

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

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
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$\Rightarrow$ no salinity bath

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 18 of

Month <u>OCTOBER</u>				Year <u>2010</u>			Ship <u>W. E. RICHES</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							
13	JF02	1625	BE	CTD		116	48° 20.07	123° 48.53	136			1	H.M.	✓	T: 11.73 S: 31.92
		1628	BO				48° 20.04	123° 48.52		120					BOT @ 10m - SAL/CAL/NUTS
		1631	EN				48° 20.01	123° 48.47							
		1635	BE	NET		117	48° 19.95	123° 48.44							BONGO
		1655	BE	TRAWL		118	48 20.047	123 49.216							TRAWL
13	JF03	1831	BE	CTD		119	48° 22.88	124° 02.99	106			1		✓	T: 10.96 S: 31.98
		1833	BO				48° 22.87	124° 02.99		90					BOT @ 10m - SAL/CAL/NUTS
		1836	EN				48° 22.86	124° 02.99							
		1839	BE	NET		120	48° 22.80	124° 02.90							BONGO
		19:07	BE	TRAWL		121	48 23.26	124 03.97							TRAWL
13	JF04	2021	BE	CTD		122	48° 26.01	124° 15.50	112			1		✓	T: 12.73 S: 31.69
		2024	BO				48° 26.02	124° 15.47		100					BOT @ 10m - SAL/CAL/NUTS
		2026	EN				48° 26.03	124° 15.45							
		2029	BE	NET		123	48° 26.04	124° 15.42							BONGO
		2049	BE	TRAWL		124	48 26.416	124 16.74							TRAWL

Cast Type:

USW = Sea Water Loop

Bottle Firing Method:

Time Code:

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

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Month OCTOBER				Year 2010			Ship W.E. RICHER				Cruise ID 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							
13	IF05	2205	BE	CTD		125	48° 30.31	124° 27.76	113			1	H.M.	☒	T: 11.52 S: 31.36
		2207	BO				48° 30.33	124° 27.75		100					BOT@10m - SAL/CHL/NUIS
		2210	CH				48° 30.34	124° 27.74							
		2213	BE	NET		126	48° 30.34	124° 27.70		100					BONGO
		2230	BE	TRAWL		127	48° 30.85	124° 28.62							TRAWL
14	IF06	0105	BE	CTD		128	48° 33.75	124° 46.10	97			1			T: 12.93 S: 31.58
		0107	BO				48° 33.77	124° 46.10		90					BOT@10m - SAL/CHL/NUIS
		0109	CH				48° 33.78	124° 46.12							
		0112	BE	NET		129	48° 33.82	124° 46.14		85					BONGO
		2347	BE	TRAWL		130	48° 32.9	124° 48.44							TRAWL
14	IV1 01	1419	BE	CTD		131	48° 56.04	125° 11.50	92			1		☒	T: 12.56 S: 26.85
		1421	BO				48° 56.04	125° 11.50		80					BOT@10m - SAL/CHL/NUIS
		1423	CH				48° 56.04	125° 11.49							
		1425	BE	NET		132	48° 56.04	125° 11.45		82					BONGO
		1445	BE	TRAWL		133	48° 55.43	125° 11.40							TRAWL

Cast Type:
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=

Bottle Firing Method:
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Notes:

Time Code:
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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER			Year 2010			Ship W. E. RICKER			Cruise ID 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							
14	V1 02	1531	BE	CTD		134	48° 53.16	125° 13.60	88			1	H.M.	✓	T: 12.31 S: 26.71
		1533	BO				48° 53.16	125° 13.59		80					BOT@10m - SAL/CAL/NOTS
		1535	EN				48° 53.15	125° 13.57							
		1536	BE	NET		135	48° 53.14	125° 13.55		78					BONGO
		1538	BE	TRAWL		136	48° 52.5	125° 13.821							TRAWL
14	V1 01	1717	BE	CTD		137	48° 47.72	125° 21.82	85			1		✓	T: 12.96 S: 31.06
		1719	BO				48° 47.68	125° 21.84		75					BOT@10m - SAL/CAL/NOTS
		1721	EN				48° 47.64	125° 21.87							
		1724	BE	NET		138	48° 47.60	125° 21.93		75					BONGO
		1743	BE	TRAWL		139	48° 47.20	125° 23.036							TRAWL
14	V1 02	1920	BE	CTD		140	48° 40.58	125° 35.59	167			1			T: 12.31 S: 32.02
		1923	BO				48° 40.57	125° 35.64		155					BOT@10m - SAL/CAL/NOTS
		1927	EN				48° 40.53	125° 35.64							
		1931	BE	NET		141	48° 40.48	125° 35.68		150					BONGO
		2011	BE	TRAWL		142	48° 39.93	125° 37.58							TRAWL

Cast Type:

BOT = Bottle cast, no CTD

CTD = CTD without Rosette

ROS = Rosette plus CTD

SET = Fish Set

USW = Sea Water Loop

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DRF = Drifter

_____ = _____

Bottle Firing Method:

US = Up / Stop

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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

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Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 21 of

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							
14	V103	2114	BE	CTD		143	48° 35.85	125° 42.82	58			1	H.M.	✓	T: 12.10 S: 32.05
		2115	BO				48° 35.85	125° 42.86		50					BOT @ 10m - SAL/CAL/NTS
		2116	EN				48° 35.84	125° 42.88							
		2119	BE	NET		144	48° 35.82	125° 42.92							BONGO
		2132	BE	TRAWL		145	48° 35.38	125° 43.82							TRAWL
14	V104	2253	BE	CTD		146	48° 29.01	125° 50.90	111			1		✓	T: 11.68 S: 32.11
		2255	BO				48° 29.00	125° 50.93		100					BOT @ 10m - SAL/CAL/NTS
		2257	EN				48° 28.99	125° 50.95							
		2300	BE	NET		147	48° 28.95	125° 50.99		100					BONGO
15		0007	BE	TRAWL		148	48° 27.32	125° 53.54							TRAWL
15	V105	1403	BE	CTD		149	48° 48.95	126° 27.46	202			1		✓	T: 12.38 S: 31.96
		1408	BO				48° 48.93	126° 27.52		190					BOT @ 10m - SAL/CAL/NTS
		1412	EN				48° 48.91	126° 27.49							
		1414	BE	NET		150	48° 48.92	126° 27.51		150					BONGO
		1436	BE	TRAWL		151	48° 49.39	126° 26.97							TRAWL

Cast Type:

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ROS = Rosette plus CTD
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DRF = Drifter

____ =

Bottle Firing Method:

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DN = Down / No stop

Notes: _____

Time Code:

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BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
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Transmissometer to be cleaned before each cast, do not use Ammonia products

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Version: 06 March 2008

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 22 of

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							
15	VI 06	1545	BE	CTD	153	152	48° 53.13	126° 21.51	153		* OVER	1	H.M.		T: 12.62 S: 31.87
		1548	BO		*	*	48° 53.15	126° 21.54		140					BOTEDW. SAL/CAL/NETS
		1552	EN				48° 53.17	126° 21.51							
		1554	BE	NET	154		48° 53.17	126° 21.48		143					BONGO
		1614	BE	TRAWL	155		48° 53.76	126° 20.82							TRAWL
15	VI 07	1718	BE	CTD	156		48° 57.61	126° 16.07	117			1			T: 11.04 S: 31.45
		1721	BO				48° 57.65	126° 16.07		105					BOTEDW. SAL/CAL/NETS
		1723	EN				48° 57.69	126° 16.06							
		1726	BE	NET	157		48° 57.70	126° 16.02		105					BONGO
		1744	BE	TRAWL	158		48° 58.83	126° 15.452							TRAWL
15	VI 08	1858	BE	CTD	159		49° 01.56	126° 09.63	68			1			T: 10.54 S: 31.51
		1859	BO				49° 01.56	126° 09.65		58					BOTEDW. SAL/CAL/NET
		1901	EN				49° 01.56	126° 09.66							
		1903	BE	NET	160		49° 01.55	126° 09.69		58					BONGO
		1921	BE	TRAWL	161		49° 01.907	126° 09.11							TRAWL

Cast Type:

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ROS = Rosette plus CTD
SET = Fish Set

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Bottle Firing Method:

US = Up / Stop
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DN = Down / No stop

Time Code:

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RE = Recover Mooring Time

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

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Notes:

This page is for any notes or observations

* - CAST 152 - PLOT FROZE AND THEN CONTINUED, RE CAST AS #153 BUT LEFT #152 IN FILE TO SHOW WHAT HAPPENED

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER Year 2010 Ship W.E. RICKER Cruise ID 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							
15	VI 09	2030	BE	CTD		162	49° 05.74	126° 00.90	40			1	H.M.		T: 11.71 S: 30.56
		2031	BO				49° 05.74	126° 00.91		35					BOT@10m - SAL/CHL/NUTS
		2033	EN				49° 05.74	126° 00.91							
		2035	BE	NET		163	49° 05.73	126° 00.91							BONGO
		2050	BE	TRAWL		164	49° 05.73	126° 01.76							TRAWL
15	VI 10	2207	BE	CTD		165	49° 09.55	126° 11.83	46			1			T: 11.33 S: 31.20
		2208	BO				49° 09.55	126° 11.83		40					BOT@10m - SAL/CHL/NUTS
		2210	EN				49° 09.55	126° 11.83							
		2212	BE	NET		166	49° 09.54	126° 11.84		36					BONGO
		2227	BE	TRAWL		167	49° 09.945	126° 12.64							TRAWL
16	VI 11 24	0034	BE	CTD		168	49° 15.76	126° 21.65	45			1			T: 11.52 S: 30.96
		0035	BO				49° 15.76	126° 21.66		40					BOT@10m - SAL/CHL/NUTS
		0036	EN				49° 15.75	126° 21.67							
16	300	0039	BE	NET		169	49° 15.73	126° 21.68		36					BONGO
15	15	2327	BE	TRAWL		170	49° 13.54	126° 17.94							TRAWL

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 24 of

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							
16	EP01	1359	BE	CTD		171	49° 21.06	126° 31.72	32			1	H.M.	✓	T: 12.09 S: 28.20
		1400	BO				49° 21.06	126° 31.70		25					BOT@10m - SAL/CAL/NUIS
		1402	EN				49° 21.07	126° 31.70							
		1404	BE	NET		172	49° 21.09	126° 31.65		23					BONGO
		1423	BE	TRAWL		173	49 20.423	126 33.209							TRAWL
16	EP02	1514	BE	CTD		174	49° 18.93	126° 36.36	82			1			T: 11.57 S: 29.05
		1516	BO				49° 18.93	126° 36.43		75					BOT@10m - SAL/CAL/NUIS
		1518	EN				49° 18.95	126° 36.50							
		1521	BE	NET		175	49° 18.96	126° 36.53		73					BONGO
		1541	BE	TRAWL		176	49 18.556	126 37.74							TRAWL
16	EP03	1632	BE	CTD		177	49° 16.85	126° 40.86	109			1			T: 11.29 S: 30.66
		1634	BO				49° 16.83	126° 40.89		100					BOT@10m - SAL/CAL/NUIS
		1636	EN				49° 16.80	126° 40.92							
		1639	BE	NET		178	49° 16.80	126° 41.00		99					BONGO
		1659	BE	TRAWL		179	49 16.36	126 42.08							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

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCTOBER				Year 2010			Ship W.E. RICKER				Cruise ID 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							
16	EP 04	1750	BE	CTD		180	49° 14. 78	126° 45. 30	117			1	H.M.		T: 11.10 S: 31.65
		1752	BO				49° 14. 82	126° 45. 36		105					BOT@10m. SAL/CHL/NUTS
		1755	EN				49° 14. 84	126° 45. 41							
		1757	BE	NET		181	49° 14. 86	126° 45. 44		109					BONGO
		1814	BE	TRAWL		182	49 14. 693	126 46. 723							TRAWL
16	EP 05	1908	BE	CTD		183	49° 12. 97	126° 49. 77	137			1			T: 12.42 S: 31.98
		1910	BO				49° 12. 97	126° 49. 78		125					BOT@10m. SAL/CHL/NUTS
		1913	EN				49° 12. 97	126° 49. 78							
		1915	BE	NET		184	49° 12. 96	126° 49. 80		126					BONGO
		1935	BE	TRAWL		185	49 12. 216	126 50. 47.							TRAWL
16	EP 06	2025	BE	CTD		186	49° 10. 23	126° 54. 11	179			1			T: 12.16 S: 31.47
		2028	BO				49° 10. 19	126° 54. 13		170					BOT@10m. SAL/CHL/NUTS
		2033	EN				49° 10. 15	126° 54. 14							
		2050	BE	NET		187	49° 09. 97	126° 54. 14		171					BONGO
		2110	BE	TRAWL		188	49 09. 26	126 54. 808							TRAWL