DAILY SCIENCE LOG BOOK

MISSION NUMBER

2013-[redacted]43

DATE: From: 26 JUNE 2013 to: 21 JULY 2013

VESSEL: W.E. RICKER

PROJECT(S): Salmon Marine Interactions

Book 1 of 2

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

WaterProperties.ca

Captain: Brian Pennell First Officer: Nicola Mancey
Second Officer: Ryan Andersen Third Officer: _____
Fishing Master: Brian West

Mission Participants / Agencies: DFO, CFIA, NOAA, UVic

Scientific Personnel: Chief Scientist: Chrys Neville

Name	Watch	Cabin	Name	Watch	Cabin
Brian Recalma			Lindsay ? Patterson Lab		
Stephen Phillips-UVic			BArcey		
			Nic Dedeluk - CFIA		
			Carol Cooper		
			Mary Thiess		
			Meredith Journey - NOAA		
			Lisa Thompson - Patterson Lab		

Second leg of Mission: Chief Scientist: Rusty Sweeting

Name	Watch	Cabin	Name	Watch	Cabin

Data logging computer: PAC 0251
Data acquisition program: Seasave
CTD deck unit make: SBE model: 11+ serial number: 0424

Primary CTD
Make: SBE model: 9+ serial number: 506
Primary temperature serial number: 2106
Primary conductivity serial number: 1764
Secondary temperature serial number: 2663
Secondary conductivity serial number: 2424
Transmissometer: _____ Model: _____ s/n: _____
Fluorometer: Model Wetlabs Eco Cable gain: 13 s/n: 2215 **P, S or NO** pump?
Oxygen sensor: SBE Model: 43 s/n: #1438 **P, S or NO** pump?
PAR sensor: _____ Model: _____ s/n: _____
Other sensors: pH SBE18 s/n: 0852 **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?
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): _____

Captain: Brian Pennell First Officer: Nicola Mancey
Second Officer: Ryan Andersen Third Officer: _____
Fishing Master: _____

Mission Participants / Agencies: _____

Third Leg
Scientific Personnel: Chief Scientist: John Morris

Name	Watch	Cabin	Name	Watch	Cabin
Nic Dedeluk			Tyler Zubkowski		
Mary Thiess			Yeongha Jung		
Louise di Mistral Bezanson					
Brittney					

Second leg of Mission: Chief Scientist: _____

Name	Watch	Cabin	Name	Watch	Cabin

Data logging computer: _____
Data acquisition program: _____
CTD deck unit make: _____ model: _____ serial number: _____

Primary 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?**
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Other sensors: _____ s/n: _____ **P, S or NO pump?**
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Make: _____ model: _____ serial number: _____
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Fluorometer: Model _____ Cable gain: _____ s/n: _____ **P, S or NO pump?**
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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?**

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JUNE | **Year** 2013 | **Ship** W.E. RICKER | **Cruise ID** 2013-43

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							
26	1	1335	BE	SET		001	48° 52.598	123° 13.919	214						SURFACE
26	2	1522	BE	SET		002	48°54.60	123° 19.61	145						SURFACE
26	GS01	1622	BE	CTD		003	48° 56.13	123° 24.01	135			1	MT	✓	BOT @ 10 m NUTS, CHL & SAL
		1625	BO				48°56 15	123°23.98		130					T: 11.8 S: 26.2
		1628	EN				48°56.20	123°23.92							
26	GS01	1638	BE	NET		004	48°56.18	123°23.87	166	150					BONGO
26	3	1713	BE	SET		005	48°57.83	123°26.96	136						30m HEAD DEPTH
26	4	1811	BE	SET		006	49° 00.42	123° 31.27	149						SURFACE
26	5	1941	BE	SET		007	49° 04.14	123° 34.77	202						15m
26	6	2045	BE	SET		008	49° 06.12	123° 37.17	184						SURFACE

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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
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RE = Recover Mooring Time

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

Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

T/S measurements taken from real-time display just prior to start of downcast.

Fish sets are numbered consecutively and independent of bongos/CTDs. (i.e. StationName)
Bongos/CTDs follow High Seas Salmon station naming convention.

No transmissometer, "TRANS. CLEANED" column indicates if fluorometer was cleaned prior to each cast.

GS01: CTD paused for ~30sec @ ~60m due to inboard lead on CTD wire

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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							
26	GS02	2138	BE	CTD		009	49°10.26	123°36.61	252			1	MT	✓	BOT@10m NUTS, CHL & SAL
		2142	BO				49°10.32	123°36.54		240					T:13.9 S:21.0
		2147	EN				49°10.35	123°36.53							
26	GS02	2151	BE	NET		010	49°10.38	123°36.56	285	150					BONGO
26	7	2218		SET		011	49°04.38	123°34.59	300						45m HEAD DEPTH
26	8	2321	BE	SET		012	49°08.469	123°28.921	320						SURFACE
27	GS03	0037	BE	CTD		013	49°08.16	123°25.94	268			1	MT	✓	BOT@10m NUTS, CHL & SAL
		0042	BO				49°08.16	123°25.96		250					T:14.1 S:23.8
		0047	EN				49°08.16	123°25.95							
27	GS03	0051	BE	NET		014	49°08.259	123°25.94	271	150					BONGO
= END OF DAY															

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JUNE | **Year** 2013 | **Ship** W.E. RICKER | **Cruise ID** 2013-43

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							
27	9	1322	BE	SET		015	49°08.35	123°19.14	109						SURFACE
27	GS04	1415	BE	CTD		016	49°11.24	123°18.23	92			1	MT	✓	BOT @ 10m NUTS, CHL & SAL
		1417	BO				49°11.23	123°18.22		85					T: 13.6 S: 20.2
		1419	EN				49°11.23	123°18.23							
27	GS04	1424	BE	NET		017	49°11.22	123°18.23	91	80					BONGO
27	10	1445	BE	SET		018	49°11.94	123°18.40	105						15m
27	11	1603	BE	SET		019	49°19.55	123°20.05	106						SURFACE
27	12	1700	BE	SET		020	49°25.5	123°17.62	233						15m
27	GS05	1752	BE	CTD		021	49°25.65	123°18.22	245			1	MT	✓	BOT @ 10m NUTS, CHL & SAL
		1756	BO				49°25.65	123°18.25		240					T: 15.5 S: 8.6
		1801	EN				49°25.64	123°18.27							
27	GS05	1806	BE	NET		022	49°25.63	123°18.26	245	150					BONGO

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Notes: _____

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JUNE | **Year** 2013 | **Ship** WE RICKER | **Cruise ID** 201343

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information: Latitude	Positional Information: Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
27	13	1916		SET		023	49°17.73	123°22.23	249						SURFACE
27	14	2013		SET		024	49°14.23	123°28.01	295						45m
27	15	2110		SET		025	49°12.27	123°33.48	359						SURFACE
27	16	2208		SET		026	49°12.33	123°39.31	378						15m
27	17	2308		SET		027	49°12.62	123°42.98	367						SURFACE
28	18	0030		SET		028.	49°14.72	123°50.1	300						15m
= END OF DAY															
28	19	1906		SET		029	49°14.86	123°45.62	402						SURFACE
28	20	2008		SET		030	49°18.42	123°42.97	293						30m

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

Evening June 28 - Morning June 29: At PBS for ship repairs.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JUNE **Year** 2013 **Ship** WE RICKER **Cruise ID** 2013 43

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							
28	GS06	2046	BE	CTD		031	49°19.98	123°43.66	50			1	MT	✓	BOT@10m NUTS, CHL & SAL
		2047	BO				49°19.99	123°43.68		45					T: 15.5 S: 10.2
		2048	EN				49°20.00	123°43.70							
28	GS06	2053	BE	NET		032	49°20.02	123°43.75	44	34					BONGO
28	21	2112	BE	SET		033	49°20.39	123°42.14	167						15m
28	22	2210	BE	SET		034	49°19.87	123°35.54	143						SURFACE
28	23	2311	BE	SET		035	49°21.26	123°32.94	181						15m (20 min.)
28	24	2353	BE	SET		036	49°22.83	123°36.77	169						SURFACE
29	GS07	0052	BE	CTD		037	49°24.25	123°41.46	166						BOT@10m NUTS, CHL & SAL
		0054	BO				49°24.24	123°41.47		160					T: 15.8 S: 12.7
		0057	EN				49°24.23	123°41.48							
29	GS07	0101	BE	NET		038	49°24.23	123°41.47	168	150					

END OF DAY

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Notes:

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GSO6: Very low salinity surface layer (rain? Fraser plume?)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JUNE **Year** 2013 **Ship** W E RICKER **Cruise ID** 201343

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
29	25	1308		SET		039	49° 33.97	124° 05.50	225						SURFACE
29	GS08	1357	BE	CTD		040	49° 34.29	124° 05.65	256			1	MT	V	BOT @ 10m NUTS, CHL & SAL
		1402	BO				49° 34.28	124° 05.64		250					T: 16.1 S: 17.0
		1407	EN				49° 34.27	124° 05.63							
29	GS08	1412	BE	NET		041	49° 34.25	124° 05.62	254	150					BONGO
29	26	1433	BE	SET		042	49° 35.66	124° 06.29	286						15m
29	27	1526	BE	SET		043	49° 38.03	124° 11.02	185						SURFACE
29	28	1620	BE	SET		044	49° 39.70	124° 17.82	292						60m
29	29	1726	BE	SET		045	49° 43.68	124° 18.52	149						30m
29	30	1821	BE	SET		046	49° 45.17	124° 24.29	236						SURFACE

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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 JUNE | **Year** 2013 | **Ship** WE RICKER | **Cruise ID** 201343

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							
29	GS09	1912	BE	CTD		047	49°45.89	124°28.30	316			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1916	BO				49°45.89	124°28.32		250					T:16.5 S:18.5
		1921	EN				49°45.89	124°28.34							
29	GS09	1925	BE	NET		048	49°45.89	124°28.37	317	150					BONGO
29	31	1956	BE	SET		049	49°44.51	124°26.84	260						15m
29	32	2056	BE	SET		050	49°46.09	124°32.39	260						SURFACE
29	33	2157	BE	SET		051	49°48.90	124°34.22	238						30m
29	34	2253	BE	SET		052	49°52.30	124°36.62	130						15m
29	GS10	2343	BE	CTD		053	49°53.84	124°38.94	100			1	MT	✓	BOT @ 10m NUTS, CHL & SAL
		2345	BO				49°53.85	124°38.93		90					
		2347	EN				49°53.85	124°38.93							
29	GS10	235	BE	NET		054	49°53.86	124°38.92	96	86					BONGO

END OF DAY

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

Notes: _____

GS09 Salinity spike on downcast ~110m

GS10: Missed taking surface sal/temp.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JUNE **Year** 2013 **Ship** WE RICKER **Cruise ID** 2013-43

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	35	1307	BE	SET		055	49°26.93	124°37.55	97						SURFACE
30	GS11	1358	BE	CTD		056	49°29.02	124°34.17	104			1	MT	✓	BOT @ 10m NUTS, CHL & SAL
		1400	BO				49°29.03	124°34.17		95					T: 13.7 S: 25.5
		1402	EN				49°29.05	124°34.17							
30	GS11	1406	BE	NET		057	49°29.06	124°34.16	105	95					BONGO
30	36	1429	BE	SET		058	49°29.45	124°32.16	209						30m
30	37	1537	BE	SET		059	49°32.31	124°27.93	124						15m
30	38	1632	BE	SET		060	49°35.32	124°24.33	237						SURFACE
30	39	1732	BE	SET		061	49°38.72	124°30.62	332						45m
30	40	1830	BE	SET		062	49°41.77	124°35.68	239						SURFACE

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Notes: _____

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JUNE/JULY **Year** 2013 **Ship** W.E. RICKER **Cruise ID** 201343

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	GS12	1915	BE	CTD		063	49°43.16	124°39.07	352			1	MT	✓	BOT @ 10m NUT, CHL & SAL (X) NOTE →
		1919	BO				49°43.17	124°39.13		250					T: 16.5 S: 17.2
		1924	EN				49°43.17	124°39.17							
30	GS12	1928	BE	NET		064	49°43.17	124°39.20	353	150					BONGO
30	41	1951	BE	SET		065	49°42.4	124°40.75	305						60m
30	42	2049	BE	SET		066	49°38.88	124°40.64	130						15m
30	43	2150	BE	SET		067	49°34.81	124°43.06	76						SURFACE
01	44	2243	BE	SET		068	49°37.50	124°45.92	54						15m
01	GS13	0036	BE	CTD		069	49°40.33	124°47.76	73						BOT @ 10m NUTS, CHL & SAL
		0038	BO				49°40.35	124°47.77		68					T: 15.4 S: 23.4
		0040	EN				49°40.36	124°47.77							
01	GS13	0046	BE	NET		070	49°40.41	124°47.77	70	60					BONGO

END OF DAY

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GS12: pH buffer solution left off between GS11 & GS12.

GS13: Messenger didn't trip Niskin on 1st attempt. Stopped archiving data, then sent CTD back down to 15m to get BOT@10m.

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							Latitude	Longitude							
01	45	1310	BE	SET		071	49°49.97	124°45.37	182						SURFACE
01	GS14	1405	BE	CTD		072	49°49.00	124°49.76	333			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1410	BO				49°49.00	124°49.81		250					T:17.1 S: 18.6
		1415	EN				49°49.02	124°49.86							
01	GS14	1419	BE	NET		073	49°49.01	124°49.88	337	150					BONGO
01	46	1441	BE	SET		074	49°48.24	124°51.17	307						15m
01	47	1536	BE	SET		075	49°49.12	124°56.08	62						30m
01	48	1636	BE	SET		076	49°49.85	125°00.30	87						SURFACE
01	49	1734	BE	SET		077	49°52.39	125°04.06	96						60m
01	50	1829	BE	SET		078	49°53.11	124°58.29	201						15m

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
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

Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** WE RICKER **Cruise ID** 201343

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
01	GS15	1927	BE	CTD		079	49°54.22	124°54.81	219			1	MT	✓	BOT@10m NUTS, CHL, SAL
		1931	BO				49°54.26	124°54.84		210					T: 17.9 S: 20.3
		1935	EN				49°54.29	124°54.89							
01	GS15	1939	BE	NET		080	49°54.33	124°54.92	216	150					BONGO
01	51	2010	BE	SET		081	49°54.76	124°52.34	141						SURFACE
01	52	2102		SET		082	49°56.93	124°55.78	151						45m
01	53	2158		SET		083	49°58.99	124°59.70	142						30m
01	54	2257		SET		084	49°58.55	125°04.75	263						SURFACE
01	GS16	2351	BE	CTD		085	49°57.82	125°05.05	246			1	MT	✓	BOT@10m NUTS, CHL&SAL
		2355	BO				49°57.87	125°05.09		235					T: 17.4 S: 22.5
02		0000	EN				49°57.88	125°05.13							
02	GS16	0005	BE	NET		086	49°57.91	125°05.16	239	150					BONGO

END OF DAY

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

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

Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** W E RICKER **Cruise ID** 201343

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							
02	55	1345	BE	SET		087	49° 59.77	125° 06.28	157						SURFACE
02	GS17	1440	BE	CTD		088	50° 01.94	125° 08.47	180			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1444	BO				50° 01.93	125° 08.47		170					T: 17.4 S: 22.1
		1448	EN				50° 01.92	125° 08.48							
02	GS17	1453	BE	NET		089	50° 01.88	125° 08.49	178	150					BONGO
02	56	1520	BE	SET		090	50° 03.32	125° 09.10	169						15m
02	57	1615	BE	SET		091	50° 06.56	125° 08.21	201						30m
02	58	1717	BE	SET		092	50° 08.80	125° 03.57	382						SURFACE (20min TOW)
02	59	1811	BE	SET		093	50° 12.28	125° 00.44	493						15m (29 min TOW)
02	GS18	1901	BE	CTD		094	50° 14.57	125° 00.48	472			1	MT		BOT@10m NUTS, CHL & SAL
		1906	BO				50° 14.57	125° 00.44		250					T: 16.4 S: 20.3
		1910	EN				50° 14.56	125° 00.43							

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
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

Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** W.E. RICKER **Cruise ID** 201343

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							
02	GS18	1915	BE	NET		095	50°14.57	125°00.44	462	150					BONGO
02	60	1937	BE	SET		096	50°15.90	125°01.00	492						SURFACE
02	61	2041	BE	SET		097	50°19.44	125°05.72	330						SURFACE (5 min. tow)
02	62	2156	BE	SET		098	50°26.89	125°05.34	474						SURFACE (20 min. tow)
02	GS19	2239	BE	CTD		099	50°28.93	125°04.84	646			1	MT	V	BOT @10m NUTS, CHL & SAL
		2243	BO				50°28.95	125°04.85		250					T:11.9 S:23.7
		2248	EN				50°28.96	125°04.87							
02	GS19	2252	BE	NET		100	50°28.94	125°04.88	646	150					BONGO
03	63	0031	BE	SET		101	50°19.51	125°01.28	279						SURFACE

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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes:

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** WE RICKER **Cruise ID** 2013-43

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	GS20	0124	BE	CTD		102	50° 21.94	124° 57.88	423			1	MT	✓	BOT@10m NUTS, CHL & SAL
		0129	BO				50°21.94	124°57.87		250					T: 15.7 S: 23.4
		0134	EN				50°21.95	124°57.86							
03	GS20	0138	BE	NET		103	50°21.97	124°57.87	422	150					BONGO
= END OF DAY															
03	64	1308	BE	SET		104	50°10.59	124°38.98	578						SURFACE
03	GS21	1403	BE	CTD		105	50°09.13	124°43.54	758			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1408	BO				50°09.13	124°43.59		250					T: 18.0 S: 18.1
		1413	EN				50°09.14	124°43.65							
03	GS21	1418	BE	NET		106	50°09.18	124°43.66	758	150					BONGO
03	65	1441	BE	SET		107	50°08.61	124°45.22	406						15m
03	66	1538	BE	SET		108	50°05.54	124°48.80	507						30m

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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes: _____

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

GS21 O_2 minimum @ ~120m (~2.0mL/L) ⇒ 2.9mL/L @ depth

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** WERICKER **Cruise ID** 2013-43

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	67	1638	BE	SET		109	50°01.18	124°52.85	262						SURFACE
03	GS22	1731	BE	CTD		110	49°58.62	124°49.54	190			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1734	BO				49°58.61	124°49.54		180					T: 15.0 S: 24.4
		1738	EN				49°58.60	124°49.53							
03	GS22	1742	BE	NET		111	49°58.60	124°49.507	188	150					BONGO
03	68	1819	BE	SET		112	49°56.92	124°44.83	91						15m
03	69	1929	BE	SET		113	49°51.29	124°43.25	145						SURFACE
03	70	2023	BE	SET		114	49°47.57	124°42.06	204						15m
03	GS23	2111	BE	CTD		115	49°45.04	124°42.65	352						BOT@10m NUTS, CHL & SAL
		2116	BO				49°45.03	124°42.63		250					T: 16.7 S: 22.8
		2121	EN				49°45.02	124°42.59							
03	GS23	2124	BE	NET		116	49°45.02	124°42.57	352	150					BONGO

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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes:

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

GS22 Messenger tripped @~14m.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** W E RICKER **Cruise ID** 201343

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	71	2147	BE	SET		117	49°45.21	124°44.35	354						60m
03	72	2250	BE	SET		118	49°42.97	124°48.72	119						SURFACE
END OF DAY															
04	73	1310	BE	SET		119	49°26.49	124°37.36	73						SURFACE
04	GS24	1403	BE	CTD		120	49°24.81	124°33.71	98			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1405	BO				49°24.81	124°33.72		93					T: 19.2 S: 20.1
		1407	EN				49°24.81	124°33.73							
04	GS24	1411	BE	NET		121	49°24.80	124°33.76	97	87					BONGO
04	74	1434	BE	SET		122	49°23.83	124°31.31	100						15m
04	75	1530	BE	SET		123	49°22.94	124°26.61	113						45m
04	76	1632	BE	SET		124	49°24.83	124°21.76	346						SURFACE

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
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

Notes: _____

This page is for any notes or observations

COPRA Stns.

CPF1	49.3666	-124.0833	South of Texada
CPF2	49.4666	-124.5000	Off Hornby
GE01	49.2500	-123.7483	NE Entrance Is

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** W.E. RICKER **Cruise ID** 201343

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	77	1733	BE	SET		125	49°24.23	124°16.00	324						15m
04	78	1828	BE	SET		126	49°20.84	124°14.11	249						SURFACE
04	GS25	1918	BE	CTD		127	49°22.22	124°11.49	327			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1923	BO				49°22.20	124°11.50		256					T: 16.1 S: 22.9
		1927	EN				49°22.20	124°11.51							
04	GS25	1931	BE	NET		128	49°22.20	124°11.50	325	150					BONGO
04	79	1952	BE	SET		129	49°23.00	124°10.83	352						60m
04	80	2047	BE	SET		130	49°24.09	124°06.88	241						SURFACE
04	GS26 (COPRASTN CPF1)	2217	BE	CTD		131	49°21.99	124°05.00	242						BOT@10m NUTS, CHL & SAL
		2222	BO				49°22.00	124°05.00		232					T: 18.7 S: 20.1
		2226	EN				49°22.00	124°05.01							
04	GS26	2230	BE	NET		132	49°21.99	124°04.99	242	150					BONGO

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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes: _____

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

GS26: On site at COPRA Stn CPF1

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** WE RICKER **Cruise ID** 2013 43

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	81	2328	BE	SET		133	49° 28.03	124° 03.48	369						30m
=END OF DAY															
05	82	1307	BE	SET		134	48°48.39	123°20.99	71						SURFACE
05	83	1404	BE	SET		135	48°44.47	123°23.52	79						15m (20min)
05	84	1455	BE	SET		136	48°43.05	123° 26.70	51						15m
05	GS27	1546	BE	CTD		137	48°42.09	123°29.41	72			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1547	BO				48°42.10	123°29.39		67					T: 13.1 S: 26.7
		1549	EN				48°42.10	123°29.38							
05	GS27	1554	BE	NET		138	48°42.10	123°29.36	72	62					BONGO
05	85	1726	BE	SET		139	48°51.68	123° 35.11	195						SURFACE (20min)

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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes: _____

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** W.E. RICKER **Cruise ID** 2013 43

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	86	1812	BE	SET		140	48°54.15	123°38.02	138						15m (20min)
05	GS28	1936	BE	CTD		141	49°00.43	123°43.93	65						BOT@10m NUTS, CHL & SAL
		1937	BO				49°00.43	123°43.95		60					T:16.4 S:22.5
		1939	EN				49°00.43	123°43.94							
05	GS28	1944	BE	NET		142	49°00.42	123°43.95	65	55					BONGO
05	87	2003	BE	SET		143	48°59.70	123°44.03	77						SURFACE (20min)
05	88	2223	BE	SET		144	48°44.68	123°33.54	98						SURFACE (15min)
END OF DAY															
06	89	1309	BE	SET		145	49°26.61	123°56.90	201						SURFACE
06	GS29	1357	BE	CTD		146	49°26.07	123°52.25	216						BOT@10m NUTS, CHL & SAL
		1401	BO				49°26.06	123°52.30		210					T:14.0 S:21.5
		1406	EN				49°26.05	123°52.32							

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
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

Notes: _____

GS 29: Peculiar pH spike @ ~130m on upcast. Bottle tripped @ ~9m.

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month JULY **Year** 2013 **Ship** WESTERN **Cruise ID** 2013-43

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information: Latitude	Positional Information: Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
⇒	START OF LEG	2	(Rusty as Chief Scientist)												
07	GS30	1428	BE	CTD		153	48° 56.50	123° 31.72	50.5m			-	SP		
		1429	BO				48° 56.50	123° 31.72		40m					
		1430	EN				48° 56.50	123° 31.75							
07	GS31	1814	BE	CTD		154	48° 45.46	123° 18.98	105m			-	SP		
		1815	BO				48° 45.46	123° 18.96		95m					
		1817	EN				48° 45.45	123° 18.95							
=	END OF DAY														
08	GS32	1347	BE	CTD		155	48° 44.33	123° 34.68	63m			-	SP		* I don't think files for event saved correctly.
		1348	BO				48° 44.36	123° 34.62		55m					
		1349	EN				48° 44.39	123° 34.57							
08	GS33	1807	BE	CTD		156	48° 45.07	123° 19.64	65			-	SP		
		1809	BO				48° 45.02	123° 19.66		55m					
			EN				48° 45	123° 19.							
=	END OF DAY														

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
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 produ

Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** W.E. PICKER **Cruise ID** 2013-13

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
09	GS34	1418	BE	CTD		157	47° 31.84	122° 24.63	196m			—	SP		
		1421	BO				47° 31.86	122° 24.64		150m					
		1425	EN				47° 31.86	122° 24.64							
09	GS35	1803	BE	CTD		158	47° 21.08	122° 26.24	170m			—	SP		
		1806	BO				47° 21.10	122° 26.23		150m					
		1809	EN				47° 21.11	122° 26.23							
09	GS36	2327	BE	CTD		159	47° 28.25	122° 30.76	99m			—	SP		
		2329	BO				47° 28.26	122° 30.77		90m					
			EN				47° 28.26	122° 30.77							
	END OF DAY														
10	GS37	1418	BE	CTD		160	47° 44.00	122° 24.97	204m			—	SP		
		1421	BO				47 43.98	122° 24.99		150m					
		1424	EN				47 43.97	122° 24.99							

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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes: _____

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

Page ~~2~~ of ____

Month JULY **Year** 2013 **Ship** W. PICKER **Cruise ID** 2013-13

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
10	GS38	1809	BE	CTD		161	47° 53.90	122° 30.42	77m			–	SP		
		1810	BO				47° 53.91	122° 30.42		65m					
		1811	EN				47° 53.94	122° 30.43							
10	GS39	2102	BE	CTD		162	48° 00.15	122° 39.44	64m			–	SP		* File doesn't appear to have recorded properly!
		2104	BO				48° 00.16	122° 39.44		55m					
		2105	EN				48° 00.16	122° 39.44							
//	END OF DAY														
11	~~JFA01~~ JFA02	1400	BE	CTD		163	48° 24.79	124° 37.17	123m			–	SP		
		1402	BO				48° 24.80	124° 37.25		110m					
		1404	EN				48 24.80	124° 37.25							
11	JFA02 ~~JF02~~	1813	BE	CTD		164	48° 18.36	124° 21.03	71m			–	SP		
		1814	BO				48° 18.37	124° 21.04		60m					
		1816	EN				48° 18.39	124° 21.09							
	JFA03														
11	~~JF03~~	2212	BE	CTD		165	48° 11.67	123° 54.48	53m			–	SP		
		2213	BO				48° 11.66	123° 54.46		40m					
		2214	EN				48° 11.66	123° 54.45							

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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes: ____

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** W.E RICKER **Cruise ID** 2013 43

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							
START OF LEG 3:															
12	JF01	1439	BE	CTD		166	48°17.32	123°39.34	167			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1442	BO				48°17.32	123°39.31		160					T:10.1 S:30.6
		1446	EN				48°17.32	123°39.31							
		1450	BE	NET		167	48°17.35	123°39.28	166	150					BONGO
		1517	BE	SET		168	48 17.38	123 40.64			TOW AT SURFACE				TRAWL
12	JF02	1629	BE	CTD		169	48°20.24	123°51.16	133			1	MT		BOT@10m NUTS, CHL & SAL
		1631	BO				48°20.25	123°51.25		125					T:10.6 S:30.6
		1634	EN				48°20.25	123°51.34							
		1638	BE	NET		170	48°20.28	123°51.44	131	121					BONGO
		17:00	BE	SET		171	48 20.58	123 53.27			TOW AT	15m			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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes: _____

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

T/S Differences between sensors: −0.089 (T) and 0.078 (S)

T/S Differences −0.092 (T) & 0.082 (S)

JF02: Bottle tripped @ ~9m

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY | **Year** 2013 | **Ship** WE RICKER | **Cruise ID** 201343

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							
12	JF03	1812	BE	CTD		172	48°23.26	124°05.08	110			1	MT		BOT @ 10m NUTS, CHL & SAL
		1814	BO				48°23.29	124°05.16		105					T: 10.4 S: 31.2
		1816	EN				48°23.32	124°05.26							
		1820	BE	NET		173	48°23.37	124°05.41	107	95					BONGO
		18:40	BE	SET		174	48 23.87	124 7.67		TOW AT SURFACE					TRAWL.
12	JF04	1939	BE	CTD		175	48°25.74	124°12.40	90			1	MT		BOT @ 10m NUTS, CHL & SAL
		1940	BO				48°25.75	124°12.48		80					T: 10.3 S: 31.5
		1943	EN				48°25.78	124°12.60							
		1947	BE	NET		176	48°25.83	124°12.76	90	80					BONGO
		20:04	BE	SET		177	48 26.07	124 14.51		TOW AT 30 M					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
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

Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

T/S difference: -0.104 (T) & 0.078 (S)
Bottle tripped @ ~9m

T/S difference: -0.120 (T) & 0.089 (S)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** WE RICKER **Cruise ID** 2013 43

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							
12	JF05	2110	BE	CTD		178	48°28.21	124°20.85	98			1	MT		BOT @10m NUTS, CHL & SAL
		2112	BO				48°28.21	124°20.87		90					T: 11.1 S: 31.0
		2114	EN				48°28.21	124°20.89							
		2118	BE	NET		179	48°28.21	124°20.92	99	89					BONGO
		2139	BE	SET		180	48 28.55	124 22.51		TOW AT SURFACE					TRAWL
12	JF06	2307	BE	CTD		181	48°31.61	124°30.15	72			1	MT	✓	BOT @10m NUTS, CHL & SAL
		2308	BO				48°31.58	124°30.14		65					T: 12.0 S: 30.7
		2310	EN				48°31.55	124°30.11							
		2316	BE	NET		182	48°31.35	124°30.08	90	80					BONGO
		2325	BE	SET		183	48 31.21	124 30.13		TOW AT SURFACE					TRAWL
	END OF DAY														

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
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

Notes: _____

T/S Difference: −0.089 (T) & 0.079 (S)

T/S Difference: −0.119 (T) & 0.090 (S)
Ship moved to avoid crab trap after cast data aquisition was started. Stopped archiving & over-wrote file once ship was in position.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** WE RICKER **Cruise ID** 201343

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	IVI01	1308	BE	CTD		184	48°57.78	125°06.90	93			1	MT	✓	BOT @ 10m NUTS, CHL & SAL
		1310	BO				48°57.79	125°06.90		85					T: 16.6 S: 28.6
		1312	EN				48°57.81	125°06 90							
		1317	BE	NET		185	48°57.82	125°06.91	94	84					BONGO
		1340	BE	SET		186	48 57.06	125 7.74			TOW AT SURFACE				TRAWL
13	IVI02	1434	BE	CTD		187	48°54.73	125°12.29	95			1	MT	✓	BOT @ 10m NUTS, CHL & SAL
		1436	BO				48°54.72	125°12.29		90					T: 14.4 S: 30.4
		1439	EN				48°54.73	125°12.31							
		1442	BE	NET		188	48°54.73	125°12.33	95	85					BONGO
		1455	BE	SET		189	48 54.7	125 12.6			TOW AT 15m				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
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

Notes: _____

T/S Difference: −0.085 (T) & 0.083 (S)

T/S Difference: −0.084 (T) & 0.065 (S)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** WERICKER **Cruise ID** 201343

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information: Latitude	Positional Information: Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
13			BE												
			BO												
			EN												
			BE				DID	NOT							
			BE												
							USE								
13			BE												
			BO												
			EN												
			BE												
			BE												

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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes:

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

DAILY SCIENCE LOG BOOK

MISSION NUMBER: 2013-43

DATE: From: 26 JUN 2013 to: 21 JUL 2013

VESSEL: W.E. RICKER

PROJECT(S): Salmon Marine Interactions

Book 2 of 2

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

WaterProperties.ca

Captain: Brian Pennell First Officer: Nicola Mancey
Second Officer: Ryan Andersen Third Officer: —
Fishing Master: Brian West

Mission Participants / Agencies: DFO, NOAA, CFIA, UVic

Scientific Personnel: Chief Scientist: _____

Name	Watch	Cabin	Name	Watch	Cabin
Set Book 1					

Second leg of Mission: Chief Scientist: Rusty Sweeting

Name	Watch	Cabin	Name	Watch	Cabin

Data logging computer: PAC02511
Data acquisition program: Seasave
CTD deck unit make: SBE model: 11+ serial number: 0424

Primary CTD
Make: SBE model: 9+ serial number: 506
Primary temperature serial number: 2106
Primary conductivity serial number: 1764
Secondary temperature serial number: 2663
Secondary conductivity serial number: 2424
Transmissometer: _____ Model: _____ s/n: _____
Fluorometer: Model WetLabs ECO Cable gain: 13 s/n: 2215 **P, S** or **NO** pump?
Oxygen sensor: SBE Model: 43 s/n: 1438 **P, S** or **NO** pump?
PAR sensor: _____ Model: _____ s/n: _____
Other sensors: pH SBE 18 s/n: 0852 **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?
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): _____

T/S Difference is reported due to concerns about the agreement between the temp & sal sensors on this CTD (G. Gatien, July 9th email). Difference reported is sensor 2 − sensor 1 in both cases. Although a single (visual inspection "average") value is provided, the differences observed during the cast ranged widely.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** W E RICKER **Cruise ID** 201343

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
13	VI01	1601	BE	CTD		190	48°50.41	125°16.09	95			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1603	BO				48°50.42	125°16.09		90					T: 11.4 S: 31.6
		1605	EN				48°50.43	125°16.08							
		1609	BE	NET		191	48°50.46	125°16.07	95	85					BONGO
		1628	BE	SET		192	48 49.69	125 15.86			SURFACE	TOW			TRAWL
13	VI02	1742	BE	CTD		193	48°47.26	125°21.86	88			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1744	BO				48°47.27	125°21.86		80					T: 13.1 S: 31.1
		1746	EN				48°47.29	125°21.86							
		1750	BE	NET		194	48°47.31	125°21.85	87	77					BONGO
		1816	BE	SET		195	48 46.70	125 23.38			TOW AT 30m				

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
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

Notes: _____

T/S Difference: -0.113 (T) & 0.095 (S)

T/S Difference: -0.094 (T) & 0.077 (S)
Bottle tripped at ~9m.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** W E RICKER **Cruise ID** 201343

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	VI03	1948	BE	CTD		196	48°41.02	125°34.33	175			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1952	BO				48°41.02	125°34.35		170					T:13.0 S:31.3
		1955	EN				48°40.99	125°34.35							
		2000	BE	NET		197	48°40.97	125°34.34	177	150					BONGO
		20:23	BE	SET		198	48 40.24	125 35.35			TOW AT	SURFACE			TRAWL
13	VI04	2143	BE	CTD		199	48°35.49	125°43.56	64			1	MT	✓	BOT@10m NUTS, CHL & SAL
		2145	BO				48°35.48	125°43.56		59					T:13.8 S:31.4
		2146	EN				48°35.48	125°43.56							
		2151	BE	NET		200	48°35.45	125°43.53	64	54					BONGO
		22.10	BE	SET		201	48 34.83	125 44.29			TOW AT	15m			TRAWL
13	VI05	2338	BE	CTD		202	48°28.90	125°51.24	116			1	MT	✓	BOT@10m NUTS, CHL & SAL
		2340	BO				48°28.91	125°51.24		110					T:13.2 S:31.3
		2342	EN				48°28.91	125°51.23							
		2346	BE	NET		203	48°28.92	125°51.17	116	105					BONGO
14		00:06	BE	SET		204	48 28.29	125 52.02			TOW AT	SURFACE			TRAWL
= END OF DAY															

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
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

Notes: _____

T/S Difference: -0.104 (T) & 0.077 (S)

T/S Difference: -0.101 (T) & 0.082 (S)

T/S Difference: -0.090 (T) & 0.080 (S)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY | **Year** 2013 | **Ship** W.E. RICKER | **Cruise ID** 201343

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	VI06	1309	BE	CTD		205	49°05.79	126°01.39	42			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1310	BO				49°05.80	126°01.40		35					T: 10.5 S: 31.5
		1311	EN				49°05.81	126°01.40							
		1315	BE	NET		206	49°05.80	126°01.35	44	34					BONGO
		1334	BE	SET		207	49°05.18	126°02.34			TOW AT	SURFACE			TRAWL
14	VI07	1451	BE	CTD		208	49°03.23	126°06.50	59			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1452	BO				49°03.24	126°06.51		54					T: 12.3 S: 31.5
		1454	EN				49°03.26	126°06.51							
		1458	BE	NET		209	49°03.25	126°06.47	58	48					BONGO
		1519	BE	SET		210	49 02.88	126 07.40			TOW AT	15M			TRAWL
14	VI08	1623	BE	CTD		211	48°59.39	126°12.92	95			1	MT		BOT@10m NUTS, CHL & SAL
		1625	BO				48°59.41	126°12.93		90					T: 13.2 S: 31.3
		1628	EN				48°59.44	126°12.94							
		1631	BE	NET		212	48°59.48	126°12.98	95	85					BONGO
		1658	BE	SET		213	48 59.33	126 14.07			TOW AT	SURFACE			

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
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

Notes: _____

T/S Difference: -0.088 (T) & 0.080 (S)

T/S Difference: -0.090 (T) & 0.080 (S)
Bottle tripped @ ~9m

T/S Difference: -0.092 (T) & 0.082 (S)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** WERICKER **Cruise ID** 2013-43

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information: Latitude	Positional Information: Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
14	VI09	1805	BE	CTD		214	48°55.10	126°19.38	137			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1808	BO				48°55.09	126°19.41		130					T:13.4 S:31.5
		1811	EN				48°55.09	126°19.43							
		1815	BE	NET		215	48°55.12	126°19.45							BONGO
		1836	BE	SET		216	48°55.03	126°19.69		TOW	AT 30M				TRAWL
14	VI10	1943	BE	CTD		217	48°50.86	126°24.66	175			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1946	BO				48°50.86	126°24.69		170					T:13.1 S:31.9
		1950	EN				48°50.85	126°24.71							
		1954	BE	NET		218	48°50.83	126°24.71	174	150					BONGO
		2017	BE	SET		219	48°51.01	126°25.6		TOW	AT SURFACE				TRAWL
14	VI11	2132	BE	CTD		220	48°47.95	126°30.55	262			1	MT	✓	BOT@10m NUTS, CHL & SAL
		2137	BO				48°47.93	126°30.51		250					T:12.7 S:32.1
		2142	EN				48°47.93	126°30.50							
		2146	BE	NET		221	48°47.91	126°30.46	262	150					BONGO
		2207	BE	SET		222	48°48.19	126°31.31		TOW	AT 15M				TRAWL
= END OF DAY															

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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes:

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

T/S Difference: -0.093 (T) & 0.081 (S)

T/S Difference: -0.090 (T) & 0.081 (S)

T/S Difference: -0.90 (T) & 0.082 (S)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** W E RICKER **Cruise ID** 2013-43

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	EP01	1329	BE	CTD		223	49°20.61	126°32.54	44			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1330	BO				49°20.61	126°32.55		39					T: 9.8 S: 32.0
		1331	EN				49°20.62	126°32.55							
		1335	BE	NET		224	49°20.62	126°32.59	43	33					BONGO
		1352	BE	SET		225	49°20.80	126°33.63			TOW AT SURFACE				TRAWL
15	EP02	1443	BE	CTD		226	49°18.61	126°37.13	93			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1445	BO				49°18.61	126°37.12		88					T: 11.2 S: 31.7
		1448	EN				49°18.61	126°37.12							
		1451	BE	NET		227	49°18.63	126°37.10	93	83					BONGO
		1513	BE	SET		228	49°18.37	126°37.73			TOW AT 15m				TRAWL.
15	EP03	1607	BE	CTD		229	49°16.53	126°40.80	112			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1609	BO				49°16.53	126°40.79		105					T: 12.2 S: 31.6
		1611	EN				49°16.52	126°40.81							
		1615	BE	NET		230	49°16.51	126°40.80	112	102					BONGO
		1640	BE	SET		231	49°16.15	126°41.39			TOW AT	SURFACE			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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes: _____

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

T/S Difference: -0.092 (T) & 0.083 (S)

T/S Difference: -0.094 (T) & 0.078 (S)

T/S Difference: -0.094 (T) & 0.082 (S)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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							
15	EP04	1736	BE	CTD		232	49°14.71	126°45.22	117			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1738	BO				49°14.68	126°45.18		114					T: 12.5 S: 31.8
		1741	EN				49°14.67	126°45.17							
		1746	BE	NET		233	49°14.63	126°45.11	118	108					BONGO
		1806	BE	SET		234	49°14.12	126°45.86			TOW AT 30m				TRAWL
15	EP05	1921	BE	CTD		235	49°12.14	126°49.72	146			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1924	BO				49°12.13	126°49.70		140					T: 11.6 S: 32.1
		1928	EN				49°12.13	126°49.70							
		1932	BE	NET		236	49°12.12	126°49.65	146	136					BONGO
		1954	BE	SET		237	49°12.56	126°50.49			TOW AT SURFACE				TRAWL
15	EP06	2106	BE	CTD		238	49°09.80	126°54.83	196			1	MT	✓	BOT@10m NUTS, CHL & SAL
		2110	BO				49°09.76	126°54.81		190					T: 11.6 S: 32.2
		2114	EN				49°09.72	126°54.80							
		2119	BE	NET		239	49°09.68	126°54.79	196	150					BONGO
		2141	BE	SET		240	49°09.28	126°55.53			TOW AT	15			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
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

Notes: _____

T/S Difference: -0.091 (T) & 0.081 (S)

T/S Difference: -0.091 (T) & 0.084 (S)
Bottle tripped @ ~9m

T/S Difference: -0.095 (T) & 0.088 (S)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY | **Year** 2013 | **Ship** WE RICKER | **Cruise ID** 2013-43

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	EP07	2250	BE	CTD		241	49°08.72	126°59.60	436			1	MT	✓	BOT@10m NUTS, CHL & SAL
		2255	BO				49°08.69	126°59.60		250					T: 11.7 S: 32.2
		2300	EN				49°08.66	126°59.63							
		2306	BE	NET		242	49°08.65	126°59.66	446	150					BONGO
		2327	BE	SET		243	49°09.10	127°00.52			TOW AT	SURFACE			TRAWL
= END OF DAY															
16	VI12	1307	BE	CTD		244	49°49.75	127°19.88	80			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1309	BO				49°49.75	127°19.92		70					T: 11.9 S: 31.9
		1311	EN				49°49.75	127°19.96							
		1314	BE	NET		245	49°49.76	127°20.00	79	69					BONGO
		1335	BE	SET		246	49°50.35	127°21.26			TOW AT	SURFACE			TRAWL
16	VI13	1450	BE	CTD		247	49°55.10	127°29.83	66			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1451	BO				49°55.10	127°29.84		60					T: 11.4 S: 32.0
		1453	EN				49°55.10	127°29.87							
		1456	BE	NET		248	49°55.10	127°29.85	66	56					BONGO
		1520	BE	SET		249	49°55.37	127°31.28			TOW AT	15m			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
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

Notes: _____

T/S Difference: -0.114 (T) & 0.082 (S)

T/S Difference: -0.091 (T) & 0.082 (S)

T/S Difference -0.095 (T) & 0.081 (S)
Bottle tripped ~ 9m

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** W.E. RICKER **Cruise ID** 2013-43

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	VI14	1635	BE	CTD		250	50°00.05	127°40.27	83			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1637	BO				50°00.04	127°40.28		78					T: 11.3 S: 32.1
		1639	EN				50°00.04	127°40.30							
		1643	BE	NET		251	50°00.03	127°40.32	85	75					BONGO
		1702	BE	SET		252	50°00.04	127°41.65			TOW AT SURFACE				TRAWL
16	VI15	1854	BE	CTD		253	50°04.80	127°59.99	180			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1857	BO				50°04.81	127°59.99		175					T: 10.1 S: 32.5
		1900	EN				50°04.82	128°00.02							
		1905	BE	NET		254	50°04.83	128°00.05	179	150					BONGO
		1927	BE	SET		255	50°05.56	128°00.23			TOW AT 30m				TRAWL
16	VI16	2033	BE	CTD		256	50°10.21	128°00.04	87			1	MT	✓	BOT@10m NUTS, CHL & SAL
		2035	BO				50°10.20	128°00.06		80					T: 11.0 S: 32.4
		2037	EN				50°10.20	128°00.08							
		2041	BE	NET		257	50°10.15	128°00.05	88	78					BONGO
		2058	BE	SET		258	50°10.9	128°00.6			TOW AT SURFACE				TRAWL
= END OF DAY															
	↳ into Quatsino Sd.														

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
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

Notes: _____

T/S Difference: -0.091 (T) & 0.076 (S)
Bottle tripped @ ~9m.

T/S Difference: -0.086 (T) & 0.084 (S)
Bottle tripped @ ~9m.

T/S Difference: -0.090 (T) & 0.084 (S)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** WE RICKER **Cruise ID** 2013-43

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	IVI03	1308	BE	CTD		259	50°31.65	127°36.65	~~65~~55 (?)			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1310	BO				50°31.65	127°36.62		~~60~~55					T:11.6 S:31.5
		1313	EN				50°31.64	127°36.59							
		1317	BE	NET		260	50°31.68	127°36.58	51	41					BONGO
		13 36	BE	SET		261	50° 31. 73	127° 37. 89.			TOW AT SURFACE				TRAWL.
17	IVI04	1429	BE	CTD		262	50°29.85	127°45.16	121			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1431	BO				50°29.86	127°45.18		115					T:12.1 S:31.6
		1434	EN				50°29.86	127°45.21							
		1438	BE	NET		263	50°29.86	127°45.23	125	115					BONGO
		1459	BE	SET		264	50° 29 86	127° 45. 19			TOW AT 15M				TRAWL
17	IVI05	1607	BE	CTD		265	50°29.09	127°50.94	158			1	MT		BOT@10m NUTS, CHL & SAL
		1610	BO				50°29.09	127°50.95		153					T:11.7 S:31.8
		1613	EN				50°29.11	127°50.97							
		1617	BE	NET		266	50°29.14	127°51.01	153	140					BONGO
		1639	BE	SET		267	50°29.064	127°50.86			TOW AT SURFACE				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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes: _____

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

T/S Difference −0.177 (T) & 0.077 (S) [HIGHLY VARIABLE]
Sounder problems... depth readings stopped @ ~57m. Very likely touched bottom.
CTD appears to be ok, but will note any anomalies in sensor readings on subsequent casts.

T/S Difference: −0.110 (T) & 0.084 (S)

T/S Difference: −0.154 (T) & 0.097 (S)
Depth rose from 178m to 158m during cast pH spike at ~105m on downcast.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month | **Year** | **Ship** | **Cruise ID**

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
17	IVI06	1740	BE	CTD		268	50°28.10	127°56.62	~~222~~ 210			1	MT	✓	BOT@ 10m NUTS, CHL & SAL
		1753	BO				50°28.13	127°56.69		205					T: 12.1 S: 31.8
		1757	EN				50°28.17	127°56.74							
		1801	BE	NET		269	50°28.18	127°56.77	197	150					BONGO
		1826	BE	SET		270	50° 28.21	127°55.30			TOW AT 30m				TRAWL
17	VI17	1949	BE	CTD		271	50°25.43	127°59.90	135			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1952	BO				50°25.44	127°59.90		130					T: 10.8 S: 32.5
		1954	EN				50°25.45	127°59.89							
		1959	BE	NET		272	50°25.47	127°59.88	134	124					BONGO
		2019	BE	SET		273	50° 24.8	128°00.55			TOW AT SURFACE				TRAWL
17	VI18	2122	BE	CTD		274	50°21.58	128°05.98	85			1	MT	✓	BOT@ 10m NUTS, CHL & SAL
		2123	BO				50°21.58	128°05.96		80					T: 11.1 S: 32.2
		2125	EN				50°21.58	128°05.95							
		2130	BE	NET		275	50°21.62	128°05.94	84	74					BONGO
		2147	BE	SET		276	50°20.85	128°06.54			TOW AT 15m				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
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

Notes: _____

T/S Difference -0.210 (T) & 0.084 (S) [HIGHLY VARIABLE]
at depth: -0.087 (T) 0.088 (S) [CONSISTENT]
Bottle tripped @ n gm.

T/S Difference: -0.087 (T) & 0.087 (S) [AT DEPTH ⇒ CONSISTENT]

T/S Difference: -0.087 (T) & 0.085 (S) [CONSISTENT]

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** W.E. RICKER **Cruise ID** 2013-43

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	VI19	2250	BE	CTD		277	50°18.15	128°11.92	172			1	MT	✓	BOT@10m NUTS, CHL & SAL
		2253	BO				50°18.15	128°11.90		165					T: 10.6 S: 32.3
		2257	EN				50°18.15	128°11.85							
		2301	BE	NET		278	50°18.15	128°11.80	172	150					BONGO
		2321	BE	SET		279	50°17.62	128°12.00			TOW AT SURFACE				TRAWL
END OF DAY															
18	T08	1309	BE	CTD		280	50°42.65	129°27.91	1514			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1314	BO				50°42.67	129°27.94		250					T: 13.7 S: 31.6
		1319	EN				50°42.71	129°27.99							
		13	BE	NET		281	50°42.74	129°28.02	1515	150					BONGO
		1345	BE	SET		282	50°43.42	129°27.64			TOW AT SURFACE				TRAWL
18	T07	1505	BE	CTD		283	50°49.42	129°13.34	~~853~~	96		1	MT	✓	BOT@10m NUTS, CHL & SAL
		1507	BO				50°49.40	129°13.25		100					T: 14.4 S: 31.4
		1510	EN				50°49.39	129°13.20							
		1516	BE	NET		284	50°49.32	129°12.99	92	82					BONGO
		1530	BE	SET		285	50°49.88	129°12.27			TOW AT	15m			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
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

Notes: _____

T/S Difference (at depth): -0.085 (T) & 0.087 (S)
⇒ Sensors to be replaced after this trip so will not track differences further.

T08: Bottle tripped @ ~9m.
Discovered this station was actually T08 (originally called T07). CTD header info changed in *hdr & * hex files.

T07: Sounder glitch — read 850m when there was only 96m of water. CTD stopped @ 100m strong current, wire never went slack, but definitely touched bottom. No obvious signs of damage on CTD.

Discovered this station was actually T07 (originally called T06). CTD header info changed in *.hdr & *.hex files.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY | **Year** 2013 | **Ship** W.E. RICKER | **Cruise ID** 2013 43

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	T06	1707	BE	CTD		286	50°55.69	129°00.38	60			1	MT	✓	BOT @ 10m NUTS, CHL & SAL
		1708	BO				50°55.68	129°00.37		55					T: 13.7 S: 31.4
		1709	EN				50°55.66	129°00.36							
		1714	BE	NET		287	50°55.60	129°00.37	60	50					BONGO
		17 33	BE	SET		288	50° 56.25	128° 59.39			TOW AT	SURFACE			TRAWL
18	T05	1857	BE	CTD		289	51°01.38	128°53.45	67			1	MT	✓	BOT @ 10m NUTS, CHL & SAL
		1858	BO				51°01.37	128°53.47		62					T: 13.6 S: 31.2
		1900	EN				51°01.38	128°53.50							
		—	BE	NET		290	—	—							BONGO
		1921	BE	SET		291	51° 01.82	128 53.05			TOW AT	30m			TRAWL
18	T04	2041	BE	CTD		292	51°05.05	128°44.04	61			1	MT	✓	BOT @ 10m NUTS, CHL & SAL
		2042	BO				51°05.05	128°44.05		56					T: 13.6 S: 31.1
		2043	EN				51°05.05	128°44.06							
		2047	BE	NET		293	51°05.06	128°44.09	60	50					BONGO
		2104	BE	SET		294	51° 05.67	128 42.99			TOW AT	SURFACE			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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes: _____

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

Remainder of Triangle transect stations were correctly named.

T05: Bongo cancelled — winch counter malfunction

T04 Bottle tripped @ ~9m.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY | **Year** 2013 | **Ship** WERICKER | **Cruise ID** 2013-43

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	T03	2213	BE	CTD		295	51°08.63	128°36.18	141			1	MT	✓	BOT @10m NUTS, CHL & SAL
		2215	BO				51°08.61	128°36.22		135					T: 14.3 S: 31.3
		2218	EN				51°08.60	128°36.26							
		2222	BE	NET		296	51°08.57	128°36.33	139	129					BONGO
		2240	BE	SET		297	51°08.96	128°35.87			TOW AT	15m			TRAWL
19	T02	0053	BE	CTD	(#2)	298	51°12.79	128°28.37	192			1	MT	✓	BOT @10m NUTS, CHL & SAL
		0056	BO				51°12.78	128°28.43		187					T: 14.2 S: 31.4
		0059	EN				51°12.78	128°28.47							
		0103	BE	NET	(#3)	299	51°12.77	128°28.52							BONGO
18		2348	BE	SET	(#1)	300	51°12.65	128°28.77			TOW AT	SURFACE			TRAWL
=END OF DAY															
19	QCST01	1306	BE	CTD		301	50°47.19	127°30.52	348			1	MT	✓	BOT @10m NUTS, CHL & SAL
		1311	BO				50°47.22	127°30.67		250					T: 12.1 S: 30.8
		1316	EN				50°47.22	127°30.74							
		1321	BE	NET		302	50°47.21	127°30.74	344	150					BONGO
		1346	BE	SET		303	50°47.14	127°29.71			TOW AT	SURFACE			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
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

Notes: _____

T03: Bottle tripped @ ~9m

T02: Trawl first, then CTD/bongo. Consecutive numbers not changed.
Bottle tripped @ ~9m

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY | **Year** 2013 | **Ship** WE RICKER | **Cruise ID** 201343

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	QCST02	1451	BE	CTD		304	50°49.06	127°22.35	168			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1454	BO				50°49.04	127°22.26		160					T: 11.3 S: 30.6
		1458	EN				50°49.00	127°22.17							
		1503	BE	NET		305	50°49.00	127°22.10	161	150					BONGO
		1528	BE	SET		306	50°48.46	127°20.30			TOW AT 15m				TRAWL
19	QCST03	1630	BE	CTD		307	50°47.74	127°12.06	148			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1632	BO				50°47.72	127°12.08		140					T: 11.2 S: 30.8
		1635	EN				50°47.71	127°12.12							
		1639	BE	NET		308	50°47.70	127°12.19	146	136					BONGO
		1704	BE	SET		309	50°47.09	127°13.125			TOW AT SURFACE				TRAWL
19	QCST04	1802	BE	CTD		310	50°44.89	127°18.85	248			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1806	BO				50°44.92	127°18.88		244					T: 11.3 S: 30.9
		1811	EN				50°44.91	127°18.89							
		—	BE	NET		311	—	—	—	—					BONGO
		1816	BE	SET		312	50°44.53	127°18.12			TOW AT	30m			TRAWL

Cast Type:
BOT = Bottle cast, no CTD
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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
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

Notes: _____

QCST03: Bottle tripped @ ~9m.

QCST04: Bongo cancelled due to net repairs.
Bottle tripped @ ~9m.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** WE RICKER **Cruise ID** 2013 43

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	QCST05	1935	BE	CTD		313	50° 39.72	127°12.49	27			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1936	BO				50° 39.72	127°12.49		22					T: 11.1 S: 30.7
		1936	EN				50°39.72	127°12.49							
		1941	BE	NET		314	50°39.74	127°12.51	27	17					BONGO
		1957	BE	SET		315	50° 40.30	127° 11.84			TOW AT	SURFACE			TRAWL
19	QCST06	2131	BE	CTD		316	50°47.24	126°59.71	128			1	MT	✓	BOT @ 10m NUTS, CHL & SAL
		2133	BO				50°47.24	126°59.75		123					T: 10.7 S: 30.0
		2135	EN				50°47.24	126°59.79							
		2139	BE	NET		317	50°47.23	126°59.85	128	118					BONGO
		2158	BE	SET		318	50°46.75	126°59.19			TOW AT	15 m			TRAWL
19	QCST07	2304	BE	CTD		319	50°42.79	126°56.85	137			1	MT	✓	BOT @ 10m NUTS, CHL & SAL
		2306	BO				50°42.79	126°56.86		132					T: 10.6 S: 29.8
		2309	EN				50°42.80	126°56.90							
		2313	BE	NET		320	50°42.84	126°56.89	130	120					BONGO
		2337	BE	SET		321	50°43.61	126°55.39			TOW AT	SURFACE			TRAWL
= END OF DAY															

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
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

Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

QCST06: Bottle tripped @ ~9m.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY **Year** 2013 **Ship** WE RICKER **Cruise ID** 201343

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information: Latitude	Positional Information: Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
20	QCST08	1316	BE	CTD		322	50°40.25	126°47.24	163			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1319	BO				50°40.36	126°47.25		155					T:9.1 S:31.5
		1322	EN				50°40.42	126°47.27							
		1326	BE	NET		323	50°40.55	126°47.29	155	145					BONGO
		—	BE	SET		324	—	—							
											No TOW DOLPHINS.				TRAWL
20	JS01	1500	BE	CTD		325	50°33.63	126°49.22	345			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1504	BO				50°33.66	126°49.24		250					T:10.2 S:30.6
		1509	EN				50°33.69	126°49.27							
		1513	BE	NET		326	50°33.75	126°49.31	350	150					BONGO
		—	BE	SET		327	—	—							
											NO TOW KILLER WHALES.				TRAWL
20	JS02	1701	BE	CTD		328	50°30.39	126°29.45	386			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1706	BO				50°30.40	126°29.33		250					T:10.2 S:30.5
		1711	EN				50°30.43	126°29.19							
		1717	BE	NET		329	50°30.42	126°29.08	386	150					BONGO
		1749	BE	SET		330	50°30.23	126°26.53							
											TOW AT SURFACE				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
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes:

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

QCST08: 3kt current
Bottle tripped @ ~9m.
Trawl cancelled due to whales & dolphins in area

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JULY | **Year** 2013 | **Ship** WE RICKER | **Cruise ID** 201343

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							
20	JS03	1858	BE	CTD		331	50°29.33	126°21.28	381			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1903	BO				50°29.32	126°21.29		250					T: 10.5 S: 30.2
		1908	EN				50°29.32	126°21.26							
		1911	BE	NET		332	50°29.31	126°21.23	386	250					BONGO
		1938	BE	SET		333	50°29.33	126°19.72			TOW AT SURFACE				TRAWL
20	JS04	2035	BE	CTD		334	50°29.50	126°13.05	293			1	MT	✓	BOT @10m NUTS, CHL & SAL
		2039	BO				50°29.50	126°13.08		250					T: 9.9 S: 30.7
		2045	EN				50°29.50	126°13.07							
		2050	BE	NET		335	50°29.51	126°13.06	293	150					BONGO
		2106	BE	SET		336	50°29.40	126°17.87			TOW AT SURFACE				TRAWL
20	JS05	2206	BE	CTD		337	50°28.72	126°07.00	282			1	MT		BOT@10m NUTS, CHL & SAL
		2211	BO				50°28.73	126°07.06		250					T: 9.7 S: 30.7
		2216	EN				50°28.74	126°07.12							
		2221	BE	NET		338	50°28.77	126°07.17	262	150					BONGO
		2241	BE	SET		339	50°28.53	126°06.50			TOW AT SURFACE				TRAWL.
=END OF SURVEY															

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
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Time Code:
BE = Beginning Time of Cast
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EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Notes: _____

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

JS03 BONGO: No preserved sample.