

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

T/S Difference is reported due to concerns about the agreement between the temp & sal sensors on this CTD (G. Gatién, 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

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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	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
		1626	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

Notes:

Time Code:

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

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

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

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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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
		2210	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															

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

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

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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							
14	VIO6	1309	BE	CTD		205	49°05.79	126°01.39	42			1	MT	✓	BOT@10m NUTS, CHL & SAL T: 10.5 S: 31.5
		1310	BO				49°05.80	126°01.40		35					
		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	VIO7	1451	BE	CTD		208	49°03.23	126°06.50	59			1	MT	✓	BOT@10m NUTS, CHL & SAL T: 12.3 S: 31.5
		1452	BO				49°03.24	126°06.51		54					
		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	VIO8	1623	BE	CTD		211	48°59.39	126°12.92	95			1	MT		BOT@10m NUTS, CHL & SAL T: 13.2 S: 31.3
		1625	BO				48°59.41	126°12.93		90					
		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				

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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

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

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

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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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							
14	V109	1805	BE	CTD		214	48°55.10	126°19.38	137			1	MT	✓	BOT@10m NUTS, CHL & SAL T:13.4 S:31.5
		1808	BO				48°55.09	126°19.41		130					
		1811	EN				48°55.09	126°19.43							
		1815	BE	NET		215	48°55.12	126°19.45							
		1836	BE	SET		216	48°55.03	126°19.69		Tow	AT 30m				BONGO TRAWL
14	V110	1943	BE	CTD		217	48°50.86	126°24.66	175			1	MT	✓	BOT@10m NUTS, CHL & SAL T:13.1 S:31.9
		1946	BO				48°50.86	126°24.69		170					
		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	V111	2132	BE	CTD		220	48°47.95	126°30.55	262			1	MT	✓	BOT@10m NUTS, CHL & SAL T:12.7 S:32.1
		2137	BO				48°47.93	126°30.51		250					
		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															

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

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

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

T/S Difference: -0.090 (T) & 0.082 (S)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>JULY</u>				Year <u>2013</u>			Ship <u>WE RICKER</u>				Cruise ID <u>2013-43</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	EPO1	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	EPO2	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	EPO3	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

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

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

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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 15m				TRAWL

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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

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

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

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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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

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WaterProperties.ca
 Version: 16 April 2010

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

T/S Difference $-0.095 (T)$ & $0.081 (S)$
Bottle tripped $\approx 9m$

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Ocean Sciences Division, Institute of Ocean Sciences

Page 33 of

Month <u>JULY</u>				Year <u>2013</u>				Ship <u>WE RICKER</u>				Cruise ID <u>2013-43</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	VI14	1635	BE	CTD		250	50°00.05	127°40.27	83			1	MT	✓	BOT@10m NUTS, CHL & SAL T: 11.3 S: 32.1
		1637	BO				50°00.04	127°40.28		78					
		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							TRAWL
										TOW AT SURFACE					
16	VI15	1854	BE	CTD		253	50°04.80	127°59.99	180			1	MT	✓	BOT@10m NUTS, CHL & SAL T: 10.1 S: 32.5
		1857	BO				50°04.81	127°59.99		175					
		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							TRAWL
										TOW AT 30m					
16	VI16	2033	BE	CTD		256	50°10.21	128°00.04	87			1	MT	✓	BOT@10m NUTS, CHL & SAL T: 11.0 S: 32.4
		2035	BO				50°10.20	128°00.06		80					
		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							TRAWL
										TOW AT SURFACE					
= END OF DAY															
	↳ INTO Quatsino Sd.														

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WaterProperties.ca
Version: 16 April 2010

T/S Difference: -0.091 (T) & 0.076 (S)
Bottle tripped @ 19m.

T/S Difference: -0.086 (T) & 0.084 (S)
Bottle tripped @ 19m.

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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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	IUI03	1308	BE	CTD		259	50°31.65	127°36.65	655 (?)			1	MT	✓	BOT@10m NUTS, CHL & SAL
		1310	BO				50°31.65	127°36.62		6055					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
		1336	BE	SET		261	50°31.73	127°37.89			Tow AT SURFACE				TRAWL
17	IUI04	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	IUI05	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

Notes:

Time Code:

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

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

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

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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							
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°56.30			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
		2142	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

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
 EN = End Time of Cast

DE = Deployment Time

MR = Messenger Release Time

RE = Recover Mooring Time

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

T/S Difference - 0.210 (T) & 0.084 (S) [HIGHLY VARIABLE]
at depth: - 0.087 (T) 0.088 (S) [CONSISTENT]
Bottle tripped @ 9m.

T/S Difference: - 0.087 (T) & 0.087 (S) [AT DEPTH $\Rightarrow$ CONSISTENT]

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>JULY</u>				Year <u>2013</u>			Ship <u>WE RICKER</u>				Cruise ID <u>2013-43</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
17	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

Notes:

Time Code:

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

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

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 @ ~ 9 m.

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

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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							
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
		1733	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

Notes:

Time Code:

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

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

Remainder of Triangle transect stations were correctly named.

T05: Bongo cancelled — winch counter malfunction.

T04: Bottle tripped @ 49m.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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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							
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°29.41			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

Notes:

Time Code:

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

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

T03: Bottle tripped @ 19m

T02: Trawl first, then CID/bongo. Consecutive numbers not changed.
Bottle tripped @ 19m

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Ocean Sciences Division, Institute of Ocean Sciences

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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
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

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

Notes:

Time Code:

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

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

QCST03: Bottle tripped @ 10m

QCST04: Bongo cancelled due to net repairs.
Bottle tripped @ 19m

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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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	W		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

Notes:

Time Code:

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

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

QCST06: Bottle tripped @ ~9m.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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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
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					
		—	PE	SET		324	—	—							BONGO
											No Tow	Don't pull			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					
		—	PE	SET		327	—	—							BONGO
											No Tow	King's 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					
		1749	BE	SET		330	50°30.23	126°26.53							BONGO
											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:

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

QCST08: 3kt current
Bottle tripped @ 19m.
Trawl cancelled due to whales & dolphins in area

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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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
 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

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 Version: 16 April 2010

This page is for any notes or observations

JS03 BONGO: NO preserved sample.