

DAILY SCIENCE LOG BOOK

Book 2 of 2

Book 2 of 2

MISSION
NUMBER

2016-09

DATE:

From:

30 JUN 2016

To:

19 Aug 2016

VESSEL:

Salacia

PROJECT(S):

Strait of Georgia Zooplankton

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

WaterProperties.ca

Captain: John Platt First Officer: _____
 Second Officer: _____ Third Officer: _____
 Fishing Master: _____ Chief Engineer: _____

Mission Participants / Agencies:

**** Chief Scientist to complete section below OR cut and tape from cruise plan ****

1st Leg Scientific Personnel: _____

Chief Scientist: Scully Vance

Name	Watch	Cabin	Name	Watch	Cabin
------	-------	-------	------	-------	-------

Trip #5 - Mack Bell, Piper Hawk, John Post
(Continued)

Try #6 - NINA NEVER, OTHER TWEE, THE WAS PLANT
(continued)

2nd Leg Scientific Personnel: _____ **Chief Scientist:** _____

Name	Watch	Cabin	Name	Watch	Cabin
------	-------	-------	------	-------	-------

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

**** The following 3 pages are VERY IMPORTANT as they document equipment and settings used on board ****

These pages are to be completed by the CTD Technician setting up the equipment, the Watch Leader on board, and the Chief Scientist MUST verify that all relevant sections are completed prior to leaving the vessel. Any mid-cruise changes to be noted by watch leader in the notes.

Data logging computer: #13

Data acquisition program: _____

CTD deck unit make: _____ model: _____ serial number: _____

Primary CTD

Make: SBC model: Z5 serial number: 0456

Primary temperature serial number: 5130

Primary conductivity serial number: 3500

Secondary temperature serial number: _____

Secondary conductivity serial number: _____

Transmissometer: _____ Model: _____ s/n: _____

Transmissometer: _____ Model: _____ s/n: _____

Fluorometer: Model wet lab ECO Cable gain: 13 s/n: 2214 P, S or NO pump?

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

Oxygen sensor: SBC Model: 413 s/n: 1592 P, S or NO pump?

PAR sensor: _____ Model: _____ s/n: _____ Surface PAR? Y / N

Other sensors: Recess s/n: 0668 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: _____

Transmissometer: _____ Model: _____ s/n: _____

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

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: _____ Surface PAR? Y / 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): _____

This also includes the bottle location above the CTD on non-rossette casts (e.g., W.E. Ricker)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 3 of

Month <u>Aug</u>			Local <u> </u>			Year <u>2016</u>			Vessel <u>Salacia</u>			Cruise ID <u>2016-09</u>			
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
190	SI	15	07:42	BE	CTD	—	48° 39.125	123° 28.421	60		-	—	DT/KY	☒	test cast SI
			09:46				48° 39.132	123° 28.411		50	-			☐	-testing winch
			09:47				48° 39.133	123° 28.409			-			☐	
191	59	15	11:55	BE	CTD	—	48° 37.886	123° 14.613	225		-		N ² /DT	☐	Alum not cleaned
			12:03	BO			48° 37.911	123° 14.597		215	-			☐	
			12:09	EN			48° 37.957	123° 14.613			-			☐	
192	59	15	12:14	BE	NET		48° 37.982	123° 14.629	225		-		N ² /DT	☐	TSK = 7129
			12:22	BO			48° 38.043	123° 14.640		215	-			☐	80028
			12:27	EN			48° 38.159	123° 14.677			-			☐	0° wire angle
193	46	15	14:20	BE	CTD	—	48° 51.425	123° 10.810	176		-		N ² /DT	☒	81518
			14:27	BO			48° 51.434	123° 10.892		166	-			☐	
			14:32	EN			48° 51.457	123° 10.983			-			☐	
194	46	15	14:34	BE	NET		48° 51.447	123° 11.002	176		-		N ² /DT	☐	~5° angle
			14:39	BO			48° 51.484	123° 11.098		166	-			☐	
			14:44	EN			48° 51.518	123° 11.214			-			☐	82632
195	41	15	16:22	BE	CTD	US/MSG	49° 03.317	123° 22.331	245		69-	1	N ² /DT	☒	2x salinities ^{low} above
			16:31	BO			49° 03.332	123° 22.349		235	-			☐	75 sec messenger
			:	EN			.	.			-			☐	
196	41	15	16:45	EN	BOT	MSG	49° 03.356	123° 22.377	245	5	70-71		N ² /DT	☐	70-5m 2x chl 71-surf phyto-surf

Event Type: LOOP = Sea Water Loop
 BOT = Bottle cast (no CTD)
 CTD = Standalone CTD
 ROS = CTD in Rosette
 SET = Fish Set

Bottle Firing Method:
 US = Up / Stop (default)
 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

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 14 February 2013

New gear box on winch
CTD SBE 25 0456 Vmain 12.5 VDC
- uploaded first cast. Looks good

N 190
cast ~~0~~ - Saanich Inlet test cast 50m

Aug 16 Download CTD data - 191 -

SI = 190

59 = 191

46 = 193

41 = 195

GEOL = 198

- 60 mls for all 4 chls

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 4 of

Month <u>AUGUST</u> <u>LOCAL</u>			Year <u>2016</u>			Vessel <u>SALACIA</u>			Cruise ID <u>2016-09</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
197	41	15	16:48	BE	NET		49° 03.358	123° 22.375	245		-		N ² /DT	☐ ☐	
			16:56	BO			49° 03.372	123° 22.378		235	-			☐ ☐	84082
			17:03	EN			49° 03.389	123° 22.395			-			☐ ☐	0 angle
198	GEO1	15	19:12	BE	CTD ✓		49° 15.006	123° 44.992	400		-		N ² /DT	☐ ☐	
			19:26	BO			49° 14.936	123° 44.888		394	-			☐ ☐	
			19:39	EN			49° 14.878	123° 44.667			-			☐ ☐	
199	GEO1	15	19:43	BE	BOT		49° 14.861	123° 44.596	400	5	72-73		N ² /DT	☐ ☐	72-5m 120mls 73-5m 2x ch + phyt.
200	GEO1	15	19:53	BE	NET		49° 14.990	123° 44.963	400		-		N ² /DT	☐ ☐	60mls
			20:05	BO			49° 14.935	123° 44.812		390	-			☐ ☐	5° angle
			20:19	EN			49° 14.897	123° 44.730			-			☐ ☐	86669
	DAY	16	N O	SCIENCE			20-25	kts tied up	Nanaimo	all day				☐ ☐	
201	CPF1	17	09:38	BE	CTD ✓		49° 22.079	124° 04.958	245		-		N ² /DT	☐ ☒	windy!
			09:46	BO			49° 22.094	124° 04.817		235	-			☐ ☐	very willy
			09:52	EN			49° 22.119	124° 04.718			-			☐ ☐	20+ kts
202	CPF1	17	09:55	BE	NET		49° 22.125	124° 04.675	245		-		N ² /DT	☐ ☐	good angle ~ 0°
			10:04	BO			49° 22.154	124° 04.547		235	-			☐ ☐	despite crazy
			10:10	EN			49° 22.172	124° 04.483			-			☐ ☐	weather 8840s
			:				°	°			-			☐ ☐	not rinsed lightly
			:				°	°			-			☐ ☐	too windy

Event Type:

BOT = Bottle cast (no CTD)
 CTD = Standalone CTD
 ROS = CTD in Rosette
 SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop (default)
 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

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time
 MR = Messenger Rele.
 RE = Recover Mooring

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 14 February 2013

Aug 15 2016 - during net cast on SIN 41 backwrap on winch in broke pinch
1500 wire $\approx$ 5m up from CTD has 2 or more broken strands & slight
bend. No crimps or crimpers on board. Attached light line strain relief
doubled above crimped section & attached to CTD for safety.
Heading to GEO1 then Nanaimo & fix cable

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 5 of

Month <u>AUGUST</u>			Year <u>2016</u>			Vessel <u>SALACIA</u>			Cruise ID <u>2016-09</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
203	CPF2	17	12:13	BE	CTD	MSG	49° 28.009	124° 30.041	325		74-	1	N ² /DT	☒	2x SAL 1m
			12:23	BO			49° 27.967	124° 29.880		318	-			☐	above bridle
			12:32	EN			49° 27.916	124° 29.591			-			☐	logging?
204	CPF2	17	12:39	BE	NET		49° 27.913	124° 29.683	325		-		N ² /DT	☐	0° angle
			12:49	BO			49° 27.902	124° 29.588		315	-			☐	didn't log exact EN position
			13:00	EN			✓ ° . ✓	° . 826			-			☐	90580
205	BS11	17	14:10	BE	CTD	✓	49° 29.012	124° 45.987	58		-		N ² /DT	☐	Argo to clean fluor.
			14:13	BO			49° 29.021	124° 46.004		48	-			☐	
			14:15	EN			49° 29.022	124° 46.004			-			☐	
206	BS11	17	14:16	BE	NET		49° 29.025	124° 46.004	58		-			☐	
			14:19	BO			49° 29.031	124° 46.005		48	-			☐	
			14:20	EN			49° 29.034	124° 46.012			-			☐	90882
207	11	17	16:37	BE	CTD	✓	49° 42.418	124° 43.242	290		-		N ² /DT	☒	
			16:46	BO			49° 42.372	124° 43.183		280	-			☐	
			16:52	EN			49° 42.354	124° 43.168			-			☐	
208	11	17	16:55	BE	BOT		49° 42.333	124° 43.127	290	5	75-76		N ² /DT	☐	75-5m ch 2 76-0m phyto
209	11	17	16:59	BE	NET		49° 42.305	124° 43.083	290		-		N ² /DT	☐	0° angle
			17:07	BO			49° 42.286	124° 43.054		280	-			☐	
			17:13	EN			49° 42.282	124° 43.045			-			☐	9 2625

Event Type:

BOT = Bottle cast (no CTD)
 CTD = Standalone CTD
 ROS = CTD in Rosette
 SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop (default)
 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

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 14 February 2013

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 6 of

Month			LOCAL		Year			Vessel			Cruise ID				
AUGUST					2016			SALACIA			2016-09				
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
210	22	18	08:19	BE	CTD	✓	49° 40.242	124° 16.144	353		77-	1	N ² /DT	☒	2xSAZ 1m above pottle
			08:28	BO			49° 40.212	124° 16.030		343	-			☐	-forgot to send msg
			08:39	EN			49° 40.166	124° 15.897			-			☐	came up few meters then back down
211	22	18	08:41	BE	NET		49° 40.145	124° 15.860	353		-		N ² /DT	☐	~5° angle
			08:50	BO			49° 40.097	124° 15.785		343	-			☐	946%
			08:58	EN			49° 40.082	124° 15.771			-			☐	
212	24	18	10:38	BE	CTD	✓	49° 30.351	124° 06.067	425		-		N ² /DT	☒	battery problems
			10:50	BO			49° 30.212	124° 06.005		415	-			☐	on pump not holding charge
			11:00	EN			49° 30.095	124° 05.972			-			☐	
213	24	18	11:10	BE	NET		49° 30.397	124° 06.091	425		-		N ² /DT	☐	steamed back to
			11:21	BO			49° 30.300	124° 05.994		415	-		97222	☐	reposition 25° angle
			-	EN			0.0PS	-			-			☐	slow ascent due to battery issue
214	28	18	13:16	BE	CTD	✓	49° 24.137	123° 45.400	134		-		N ² /DT	☒	lumpy seas
			13:21	BO			49° 24.199	123° 45.445		124	-			☐	big rolls
			13:25	EN			49° 24.240	123° 45.477			-			☐	
215	28	18	13:26	BE	NET		49° 24.258	123° 45.486	134		-		N ² /DT	☐	big swell
			13:32	BO			49° 24.310	123° 45.541		124	-			☐	5-10° angle
			13:35	EN			49° 24.333	123° 45.572			-			☐	98271 2chls
216	Hutchinson	18	14:11	BE	BUCKET		49° 20.403	123° 43.714			78-		N ² /DT	☐	yucky out 60m

Event Type:

BOT = Bottle cast (no CTD)
CTD = Standalone CTD
ROS = CTD in Rosette
SET = Fish Set

LOOP = Sea Water Loop

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

Bottle Firing Method:

US = Up / Stop (default)
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

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 14 February 2013

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 7 of

Month <u>AUGUST</u>				Year <u>2016</u>		Vessel <u>SALACIA</u>				Cruise ID <u>2016-09</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
<u>217</u>	<u>38</u>	<u>18</u>	<u>15:49</u>	<u>BE</u>	<u>CTD</u> ✓		<u>49° 12.014</u>	<u>123° 26.473</u>	<u>300</u>		-		<u>N²/DT</u>	☒	<u>very lumpy,</u>
			<u>15:58</u>	<u>BO</u>			<u>49° 12.078</u>	<u>123° 26.382</u>		<u>290</u>	-			☐	<u>big NW west</u>
			<u>16:05</u>	<u>UN</u>			<u>49° 12.168</u>	<u>123° 26.327</u>			-			☐	<u>cancelled net!</u>
<u>218</u>	<u>90</u>	<u>19</u>	<u>09:42</u>	<u>BE</u>	<u>CTD</u>		<u>49° 08.666</u>	<u>123° 36.968</u>	<u>146</u>		-		<u>N²/DT</u>	☒	<u>major lump!</u>
			<u>09:48</u>	<u>BO</u>			<u>49° 08.635</u>	<u>123° 36.872</u>		<u>136</u>	-			☐	<u>YUCK massive</u>
			<u>09:51</u>	<u>EN</u>			<u>49° 08.614</u>	<u>123° 36.813</u>			-			☐	<u>Seas</u>
<u>219</u>	<u>46</u>	<u>19</u>	<u>09:54</u>	<u>BE</u>	<u>NET</u>		<u>49° 08.576</u>	<u>123° 36.766</u>	<u>146</u>		-			☐	<u>ridiculous</u>
			<u>10:00</u>	<u>BO</u>			<u>49° 08.558</u>	<u>123° 36.671</u>		<u>145</u>	-			☐	<u>conditions!</u>
			<u>10:03</u>	<u>EN</u>			<u>49° 08.548</u>	<u>123° 36.631</u>			-		<u>99565</u>	☐	<u>30° angle</u>
<u>220</u>	<u>CBE 2</u>	<u>19</u>	<u>13:28</u>	<u>BE</u>	<u>CTD</u>		<u>48° 44.242</u>	<u>123° 34.429</u>	<u>65</u>		-		<u>N²/DT</u>	☒	
			<u>13:31</u>	<u>BO</u>			<u>48° 44.258</u>	<u>123° 34.452</u>		<u>55</u>	-			☐	
			<u>13:33</u>	<u>EN</u>			<u>48° 44.269</u>	<u>123° 34.443</u>			-			☐	
<u>221</u>	<u>CBE 2</u>	<u>19</u>	<u>13:35</u>	<u>BE</u>	<u>NET</u>		<u>48° 44.291</u>	<u>123° 34.452</u>	<u>65</u>		<u>NO -</u>		<u>N²/DT</u>	☐	<u>cyanea in net</u>
			<u>13:37</u>	<u>BO</u>			<u>48° 44.306</u>	<u>123° 34.444</u>		<u>55</u>	<u>SAMPLE</u>			☐	<u>wound around</u>
			<u>13:38</u>	<u>EN</u>			<u>48° 44.312</u>	<u>123° 34.436</u>			-			☐	<u>flowmeter, dumped</u>
<u>222</u>	<u>CBE 2</u>	<u>19</u>	<u>13:51</u>	<u>BE</u>	<u>NET</u>		<u>48° 44.371</u>	<u>123° 34.463</u>	<u>65</u>		-		<u>N²/DT</u>	☐	<u>99879</u>
			<u>13:53</u>	<u>BO</u>			<u>48° 44.379</u>	<u>123° 34.447</u>		<u>55</u>	-			☐	<u>00939</u>
			<u>13:55</u>	<u>EN</u>			<u>48° 44.378</u>	<u>123° 34.448</u>			-			☐	<u>00250?</u>
			<u>:</u>				<u>.</u>	<u>.</u>			-			☐	

Event Type:

BOT = Bottle cast (no CTD)
CTD = Standalone CTD
ROS = CTD in Rosette
SET = Fish Set

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

Bottle Firing Method:

US = Up / Stop (default)
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

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 14 February 2013

Notes:

Cow Bay - ^{TBK} net # looks like first 2 dogs not moving?
had to recast & dip net to wash out jelly. flo #s questionable
deer drown here

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 8 of

Month <u>AUGUST</u>			Year <u>2016</u>			Vessel <u>SALACIA</u>			Cruise ID <u>2016-09</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
223	SC04	19	14:49	BE	CTD		48° 43.499	123° 25.061	90		-		N ² /DT	☐ ☒	
<i>cast 15</i>			14:53	BO			48° 43.522	123° 25.092		80	-			☐ ☐	
			14:54	EN			48° 43.520	123° 25.104			-			☐ ☐	
224	SC04	19	14:57	BE	BOT		48° 43.541	123° 25.131	90	5	79-80	2	N ² /DT	☐ ☐	60mls; 79-80m 2 x chg 80-90m phyto
225	SC04	19	15:02	BE	NET		48° 43.566	123° 25.195	90		-			☐ ☐	
			15:05	BO			48° 43.569	123° 25.227		80	-			☐ ☐	5° angle
			15:07	EN			48° 43.566	123° 25.248			-			☐ ☐	00738
226	GI01	19	15:43	BE	CTD		48° 45.943	123° 20.614	65		-		N ² /DT	☐ ☒	
<i>cast 16</i>			15:46	BO			48° 46.025	123° 20.705		55	-			☐ ☐	
			15:48	EN			48° 46.073	123° 20.752			-			☐ ☐	
227	GI01	19	15:53	BE	NET		48° 45.867	123° 20.577	65		-		N ² /DT	☐ ☐	
			15:55	BO			48° 45.927	123° 20.615		59	-			☐ ☐	5-10° angle
			15:56	EN			48° 45.951	123° 20.654			-			☐ ☐	01197
			:				° .	° .			-			☐ ☐	→
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

Event Type:
 BOT = Bottle cast (no CTD)
 CTD = Standalone CTD
 ROS = CTD in Rosette
 SET = Fish Set
 LOOP = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter
 _____ = _____

Bottle Firing Method:
 US = Up / Stop (default)
 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

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Notes: _____

Produced by the Water Properties Group, IOS
 WaterProperties.ca
 Version: 14 February 2013

→ date and time on all hex files off by about a week. Upload all data in order 16 casts renaming by event number.