

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2012-26

DATE:

From: 26 Mar 2012

to: 30 Mar 2012

VESSEL:

Charter - Nucleus

PROJECT(S):

Discovery Islands Sea Lice

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

WaterProperties.ca

Captain: Piper Harris First Officer: Terry
Second Officer: _____
Fishing Master: _____

Mission Participants / Agencies: _____

Scientific Personnel: Chief Scientist: Mira Galbraith
Name Watch Cabin Name Watch Cabin
Kelly Young _____

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: SBE model: 25 serial number: 334
Primary temperature serial number: 5013
Primary conductivity serial number: 3531
Secondary temperature serial number: _____
Secondary conductivity serial number: _____
Transmissometer: Model: _____ s/n: _____
Fluorometer: Model _____ Cable gain: _____ 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?

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: _____ 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): _____

TSK 3702

Rosette Setup:

Number of bottles: _____

Manufacturer: _____

Volume of bottles (litres): _____

Winches: Darreis 5/32", 950m cable

1. Make: _____

Model: _____

2. Make: _____

Model: _____

3. Make: _____

Model: _____

Serial #: _____

Serial #: _____

Used for: _____

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

Salinometer:

Make: _____

Model: _____

Serial Number: _____

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

Oxygen Kit(s):

Make: _____

Model: _____

Kit Number: _____

Make: _____

Model: _____

Kit Number: _____

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

Thermosalinograph System (SBE21):

Program: _____

Version: _____

Sampling interval (seconds): _____

Fluorometer sensor serial number: _____

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

ADCP Setup:

Computer time zone: _____

User Exits: Name: _____

Exit points: _____

Sampling interval (sec): _____

Name: _____

Exit points: _____

Bin Length: (2^x): _____

Name: _____

Exit points: _____

Pulse Length: _____

Work File: _____

Buffer (bytes): _____

Gyro Offset: _____

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

CTD Test Cast Information

Test Cast along side? _____

Yes ☐

No ☒

Comments _____

Test Cast in Saanich Inlet or other location? _____

Yes ☐

No ☒

Comments _____

CTD pressure reading on deck (db), before cast: _____ after cast: _____

Pumps working? _____

Yes ☐ (0011)

No ☐ (0010)

Secondary Temp – Primary Temp: _____

(Average from the mixed region)

Secondary Salinity – Primary Salinity: _____

(Average from the mixed region)

Additional Comments: _____

NET TOWS All net tows with SCOR, 200µm mesh
TSK 3702

Oblique surface tows close to shore / fish farms to collect Sea lice nauplii
↳ top of ring kept right below surface, skimming with net fully submerged.

Usual 20 min tows, 1-2 knot speed unless otherwise noted

* Event 013 = 15 min, rest only 10 minute tow

End of tow: with cat end off, put in water for quick wash through to rinse

Event 2-22, took flow reading AFTER RINSE

Event 25 → on, took flow FIRST, then rinsed. Rinse adds around 50-70 revs.

CTD: CTD done just outside of where net tows are, deep area. Also deep CTD at Darren's str's

Event 1-14: CTD on + in water, sit at surface for 2 minutes then start cast

Event 16 → on: CTD on + in water; send to 10 min + wait 2 minutes. Bring back to

surface to start cast. Questionable whether pump turned on for Event 1-14. Those stations

SAL calibration sample: Niskin placed 1 m above CTD

re-done at end of week.

only taken at one of Darren's deep cast stations. 3 taken.

* Boat sounder Max depth = 600 ft (200m), so deep tows estimated from chart

DAILY SCIENCE LOG

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OCEAN SCIENCES																Ocean Sciences Division, Institute of Ocean Sciences																Page 1 of 1	
Month Mar				Year 2012				Ship Charter - Nucleus						Cruise ID 2012-26																			
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	23	16:32	BE	CTD		✓001	50 15.72	125 23.02	247?	235					depth from chart																		
		16:37	BO				50 16 06	125 23 24							2 min at surface →																		
		16:44	EN												ctd file: 1226-001.hex																		
	5-BE Bay	17:17	BE	CTD		✓002	50 16 79	125 26 07	12	8					1226-002.hex																		
			BO																														
		17:19	EN																														
	5-BE Bay	17:37	BE	NET		003	50 17.03	125 25.97		1-2m	FLOW 25021				Surface oblique tow																		
		17:57	EN				50 16 56	125 25 56			30359				~1.5-2.5 km speed downing.																		
27	2-Barnes Bay	19:09	BE	CTD		✓004	50 19.341	125 15.744	50	40					2 min at surface																		
		19:12	BO												1226-004.hex																		
		19:14	EN				50 19.328	125 15.728																									
	2-Barnes Bay	19:22	BE	NET		005	50 19.444	125 15.875	50	40	30359				Surface obl.																		
		19:42	EN				50 19.287	125 15.645			36175				FARM →																		
															5x2 active pens																		

Cast Type:

USW = Sea Water Loop

Bottle Firing Method:

Time Code:

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set
 USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

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

Notes:

Time Code:

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

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

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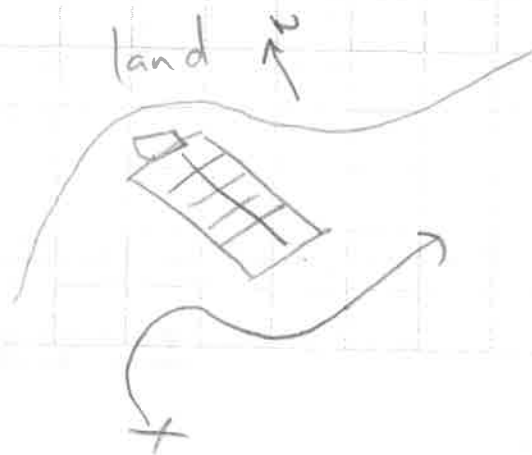
Clear weather for today, calm

This page is for any notes or observations

- uploaded data, showed either "well mixed profile" or 2) problem with flow thru sensors?

empty log sort

Stacked form, 10? pens (looks like 5×2)



DAILY SCIENCE LOG

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Month <u>Mar</u>				Year <u>2012</u>			Ship <u>Charter-Nucleus</u>				Cruise ID <u>2012-26</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							
27	Puller Bay #3	20:00	BE	CTD	✓	006	50°18.320	125°16.240	39	34					1226-006.hex
		20:02	BO												* →
		20:04	EN												cleared CTD memory
27	#3 Puller Bay	20:10	BE	NET		007	50°18.390	125°16.103			FLOW 36175				
		20:30	EN				50°18.380	125°16.766	120		42130				
27	Test	22:20	BE	CTD		✓008	50°16.897	125°23.627	290	100					1226-008.hex
			BO												Cast 1 →
			EN												CTD file: 1226-008.hex
27	OK Chan	22:54	BE	CTD		✓009	50°17.708	125°19.731	110	105					→
		22:58	BO												Cast 1
		23:01	EN				50°17.758	125°19.711							CTD file: 1226-009.hex
27	#4 Venture et.	23:09	BE	CTD		✓010	50°18.107	125°20.055	76	71					Cast 2
			BO												CTD file: 1226-010.hex
		23:16	EN				50°18.116	125°20.098							

Cast Type:

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Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
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Time Code:

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Notes:

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uploaded CTD data again for events 2-6

→ Again, straight profile temp $\sim 7.5 - 7.6$, sal $\sim 29.4 - 29.5$ PSU
Doesn't look like pump is turning on?

In ds settings, "pump on" value set at 3060

help file states should be ~ 500 ? for saltwater. Transiting to cell service range
to call Scott

→ Called Scott, changed pump limit from 3060 (factory default?) to 501
did test cast where we sat. data looked more like a profile, but still pretty well mixed, no/
very small thermocline present.

→ Watched for bubbles to clear → ✓ doesn't look like tube to oxy cell fills? Pump still not working?
continue on to next station. Will upload at end of day + try emailing files to LOS

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Month Mar Year 2012 Ship Charter - Nucleus Cruise ID 2012-26 Page 3 of

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	#4	23:24	BE	NET		011	50°18.173	125°20.055	30-40m		42130				FARM
	Venture Pt	23:44	EN				50°18.246	125°20.109			47790				circled Farm
28	#1 Okisollo	23:59	BE	CTD		012	50°17.263	125°20.924	129M	124					cast 3
		00:03	BO												old file:
		00:06	EN				50°17.257	125°20.893							1226-012. box
	Okisollo	00:13	BE	NET		013	50°17.226	125°20.674	57M		47790				* 13
		00:26	EN				50°17.190	125°21.264			52070				15min →
															FARM active
28	23	00:53	BE	CTD		014	50°15.691	125°22.970	247?	135					cast 4 old: 1226-014 box
			BO												same station
		00:59	EN				50°15.702	125°22.994							as event 001
END DAY 1															
28	BRN	16:04-16:18	BE	NET		015	50°9.782	125°22.290	30-60m		52070				from marina out
		16:19	EN								55970				→
															Brown's Bay process plant

Cast Type:

BOT = Bottle cast, no CTD
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SET = Fish Set

USW = Sea Water Loop
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DRF = Drifter

Bottle Firing Method:

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

Notes:

Time Code:

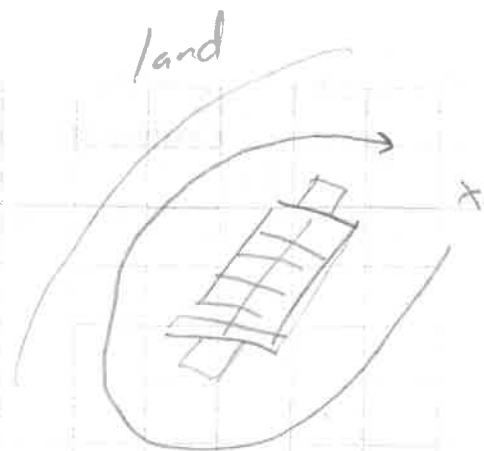
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BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

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

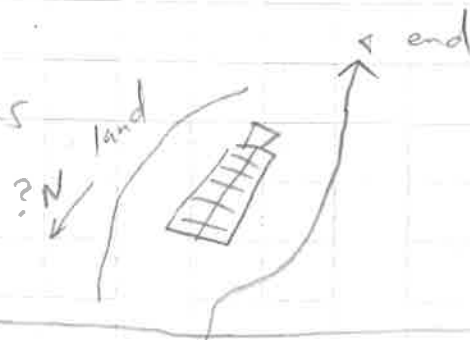
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6x2 active pens



6x2 active pens



→ redo of 1st station to check CTD.



Rain for today. Some wind (low)

(couldn't turn boat with net in water)
Had to turn south out of bay because of boat traffic

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Month <i>Mar</i>				Year <i>2012</i>			Ship <i>Charter - Nucleus</i>				Cruise ID <i>2012-26</i>				
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	JS-DP	1809	BE	CTD		V016	50°20.294	125°27.272	300M	285					cast 6 ^{10m only} ignore cast 6
		1820	BO												1226-016.hex
		1824	EN				50°20.222	125°27.889							Not sure of bottom depth ctd: 1226-016.hex
	06 B Rock Bay	1834	BE	CTD		V017	50°19.852	125°28.536	90M	75					cast 7
			BO												2min @ 10 min
		1842	EN				50°19.854	125°28.513							ship repositioned during that time 1226-017.hex
	06 B Rock Bay	1847	BE	NET		018	50°19.782	125°27.360	25		55970				Stream into Bay
		1902	EN				50°19.924	125°28.765			60260				lots of larval fish in sample
28	LBB #6 Hatteras	1950	BE	CTD		V019	50°20.603	125°31.046	144	139					cast 8
		1955	BO												1226-019.hex
		1959	EN				50°20.679	125°31.032							
	LBB #6 Hatteras	2002	BE	NET		020	50°20.559	125°30.875	50m		60260				
		2017	EN				50°20.549	125°31.261	at start		64361				

Cast Type:

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ROS = Rosette plus CTD
SET = Fish Set

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

Bottle Firing Method:

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

Notes:

Time Code:

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

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Chart bottom = 300m, Sounder = 90m, false bottom.

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Month <i>Mar</i>				Year <i>2012</i>				Ship <i>Charter - Nucleus</i>				Cruise ID <i>2012-26</i>				Page <i>5</i> of <i> </i>	
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									
<i>28</i>	<i>06C</i>	<i>2036</i>	<i>BE</i>	<i>CTD</i>		<i>✓ 21</i>	<i>50°21.538</i>	<i>125°21.538</i>	<i>54</i>	<i>53</i>					<i>cast 9</i> <i>1226-021.hex</i> <i>weight hit bottom</i> <i>wrapping</i>		
		<i>2041</i>	<i>BO</i>														
		<i>2042</i>	<i>EN</i>				<i>50°21.530</i>	<i>125°21.535</i>									
	<i>06C</i>	<i>2045</i>	<i>BE</i>	<i>NET</i>		<i>22</i>	<i>50°21.665</i>	<i>125°30.080</i>	<i>40m</i> <i>at start</i>		<i>64361</i>				<i>A lot of gammarids</i> <i>in sample</i>		
		<i>2100</i>	<i>EN</i>				<i>50°21.903</i>	<i>125°30.584</i>			<i>68640</i>						
<i>28</i>	<i>121</i>	<i>2140</i>	<i>BE</i>	<i>CTD+</i>		<i>✓ 23</i>	<i>50°22.578</i>	<i>125°35.384</i>	<i>260.</i>	<i>251</i>	<i>SPL 01</i>	<i>1</i>			<i>cast 10</i> <i>1L Niskin 1m above</i> <i>CTD</i> <i>1226-023.hex</i> →		
		<i>2149</i>	<i>BO</i>	<i>BOT</i>													
		<i>2158</i>	<i>EN</i>				<i>50°22.744</i>	<i>125°35.918</i>									
<i>28</i>	<i>Suffolk P4</i> <i>#7</i>	<i>2307</i>	<i>BE</i>	<i>CTD</i>		<i>✓ 24</i>	<i>50°21.036</i>	<i>125°26.094</i>	<i>126</i>	<i>121</i>					<i>cast 11</i> <i>1226-024.hex</i>		
		<i>2312</i>	<i>BO</i>														
		<i>2315</i>	<i>EN</i>				<i>50°21.016</i>	<i>125°26.176</i>									
	<i>Suffolk P4</i> <i>#7</i>	<i>2318</i>	<i>BE</i>	<i>NET</i>		<i>25</i>	<i>50°21.084</i>	<i>125°26.316</i>			<i>68641</i>				<i>15 min</i>		
		<i>2333</i>	<i>EN</i>				<i>50°21.128</i>	<i>125°25.972</i>			<i>72961</i>						

Cast Type:

BOT = Bottle cast, no CTD

USW = Sea Water Loop

Bottle Firing Method:

MOB = Manned Ocean Buoy

MOB = Manned Ocean Buoy

Time Code:

MOB = Manned Ocean Buoy

MOB = Manned Ocean Buoy

Cast Type:

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

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

Bottle Firing Method:

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

Notes:

Time Code:

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

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

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This page is for any notes or observations

wire went slack at bottom

Bottom depth estimated from chart. 1 SAL taken for cal.

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Month		Year		Ship		Cruise ID		Page		of				
Mar		2012		Charter - Naden's		2012-26		6		of				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information	Bottom Depth	Max Depth	Flow Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude						
28	#11 - Across Howe Is.	2351	BE	CTD		✓026	50°20.698	125°24.006	49	49				(slack wire) touched bottom
		2356	BO											cast 12
		2356	EN				50°20.692	125°24.031						1226-026.hox
29	#11	0:01	BE	NET		27	50°20.665	125°23.792			73015			polychaete
		0:16	EN				50°20.634	125°24.457			77460			
END DAY 2														
29	#10. MHYP	16:12	BE	CTD		✓28	50°21.230	125°20.256	75	68				on sampler, saw CTD at bottom for 68m so stopped
		16:16	BO											cast 13
		16:18	EN				50°21.300	125°20.348						1226-028.hox
		16:36	BE	NET		29	50°21.148	125°20.520			77495			follow FARM did complete
		16:56	EN				50°21.156	125°20.538			82800			loop around farm
29	#9 Young Passage	17:12	BE	CTD		✓30	50°21.331	125°22.361	113	108				Cast 14
		17:17	BO											1226-030.hox
		1720	EN				50°21.330	125°22.447						
Cast Type: USW - Sea Water Loop Bottle Firing Method														

Cast Type:

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 SET = Fish Set

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Month		Mar		Year		2012		Ship			Charter-Nucleus			Cruise ID			2012-26			Page		1		of	
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Flow Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments										
							Latitude	Longitude																	
29	#9 Young Passage	17:24	BE	NET		31	50°21.293	125°22.679	1209		82840				10 min tow										
		1734	EN				50°21.317	125°22.306			85901														
29	NOCKAM	1743	BE	CTD		✓ 32	50°21.770	125°22.188	225M						cast 15										
		17:50	BO												1226-032.hey										
		1756	EN				50°21.772	125°22.329																	
29	#12- Brougham Pt	1802	BE	CTD		✓ 33	50°22.294	125°22.504	166	158*					cast 16										
		18:09	BO												*Not sure if pump turned on, didn't see water movement										
		1813	EN				50°22.286	125°22.524							* touched bottom 1226-033.hey										
29	#12- Brougham Pt	1817	BE	NET		34	50°22.196	125°22.784			85970				FARM 10x2										
		1827	EN				50°22.403	125°22.547			88897				only 1/2 active →										
29	#13 Jackson Pt	1911	BE	CTD		✓ 35	50°23.404	125°23.819	60	55					Which problem										
		19:16	BO												cast 17 discard →										
		1918	EN				50°23.498	125°21.828							cast 18 use 1226-035.hey										

Cast Type:

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

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Notes:

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Cast 16

→ Questioned by farm worker

lost power to winch, CTD sat "on" on deck until actual start of cast; switched off for ~1 minute, then turned on again and started

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Month <u>May</u>				Year <u>2012</u>				Ship <u>Charter - Nucleus</u>				Cruise ID <u>2012-26</u>			
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Fluor Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
29	#13 Jackson A	1922	BE	NET		36	50°23.575	125°21.797			88940				Non-active FARM maybe 2 pens, looks old + in rough shape
		1932	BO				50°23.474	125°21.609			91330				
29	#8 Thruston Bay	2027	BE	CTD		✓37	50°23.037	125°20.090	106	91					Bottom est. from sounder, but touched at 91m cast 19
		2032	BO												
		2035	EN				50°23.074	125°20.046							1226-037.6m
29	#8	2037	BE	NET		38	50°23.011	125°20.034			91352				winds gusting
		2047	EN				50°23.100	125°20.055			94131				
29	#40	2106	BE	CTD		✓39	50°24.298	125°20.287	133	128					FARM cast 20
		2112	BO												
		2106	EN				50°24.368	125°20.256							
29	#40	2120	BE	NET		40	50°24.551	125°20.231			94145				active FARM 6x 2 pens full pine needles + twigs (windy)
		2130	EN				50°24.401	125°20.453			97227				
2	BLW-2														winds gusting

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NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
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Notes:

Time Code:

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Looks like oyster farm 500m away farther in the bay

Station close into high cliffs

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Month <u>Mar</u>				Year <u>2012</u>			Ship <u>Charter - Nucleus</u>			Cruise ID <u>2012-26</u>					Page <u>9</u> of <u> </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								
29	NOCHAN-2	2145	BE	CTD +		✓ 41	50°24.751	125°19.309	280	270	SAL 02				Niskin 1m above CTD	
		2156	BO	1 BOT											SAL sample taken	
		2203	EN				50°24.675	125°19.303							cast 21	
															1226-041, hex	
29	14A	2212	BE	NET		42	50°24.741	125°18.770			97260				Stream emptying	
		2222	EN				50°24.913	125°18.557			100311				into Bay	
															No ctd as close to # 41	
29	14 -	2234	BE	CTD		✓ 43	50°25.500	125°18.405	~200	150					cast 22	
	Sonora Pt	2242	BO												1226-043, hex	
		2245	EN				50°25.474	125°18.448								
29	#14 -	2250	BE	NET		44	50°25.442	125°18.145			320				FARM - 6x2 pens	
	Sonora Pt	23:00	EN				50°25.660	125°18.380			3189				active	
29	#16	2316	BE	CTD		✓ 45	50°26.606	125°19.006	90	74					cast 23	
	John's Pt		BO												May have gone right	
		2323	EN				50°26.603	125°19.114							to bottom, kept shallowing	
	#16	2327	BE	NET		46	50°26.517	125°19.177			3650				lots larval fish	
		2337	EN				50°26.747	125°19.226			6369					

Cast Type:

USW - Sea Water Loop

Bottle Firing Method

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— = —

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Notes: _____

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Month <u>Mar</u>				Year <u>2012</u>			Ship <u>Charter - Nucleus</u>				Cruise ID <u>2012-26</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							
29	#17 Channe Passage	2353	BE	CTD		✓47	50°27.473	125°20.445	116	104					cast 24
		2358	BO						350 FT						
		2400	EN				50°27.493	125°20.494							
30	#17 Channe Passage	0005	BE	NET		48	50°27.269	125°20.409			6420				sampled across channel
		0015	EN				50°27.440	125°20.126			8929				
30	#18 opp. Channe Pass.	0027	BE	CTD		✓49	50°27.990	125°19.937	156	150					Very windy + choppy
		32	BO												cast 25
		0039	EN				50°28.026	125°20.153							
30	#18 opp. Channe	0044	BE	NET		50	50°28.170	125°19.966			9020				
		0054	EN				50°27.966	125°19.694			11610				
END DAY 3															
30	PA1	16.11	BE	CTD		✓51	50°31.769	125°22.012	50	45					overnight in Thirlow water very brown/green
		16:15	BO												cast 26
		1618	EN				50°31.826	125°22.052							1226-051. hex

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Month Mar Year 2012 Ship Charter - Nucleus Cruise ID 2012-26 Page 11 of

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Flow Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
30	PA2	1644	BE	CTD		✓ 52	50°29.016	125°22.003	100	95					cast 27 1226-052.hex
		16:50	BO												
		1653	EN				50°29.079	125°22.054							
30	#20 FA Farm	1700	BE	NET		53	50°29.364	125°21.365			11645				FARM not on list
		1710	EN				50°29.227	125°21.264			14220				
30	#19 B FA west	1758	BE	CTD		✓ 54	50°28.521	125°16.795	150	140					cast 28 1226-054.hex
		18:05	BO												
		1808	EN				50°28.617	125°16.816							
30	#19 B FA west	1811	BE	NET		55	50°28.591	125°17.005			14269				By heli-logging drop (active)
		1821	EN				50°28.826	125°16.897			17300				lots wood debris
30	FEARM	1836	BE	CTD		✓ 56	50°29.142	125°15.465	165	160					cast 29
		18:44	BO												1226-056.hex
		1848	EN				50°29.238	125°15.504							

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Bottle Firing Method:

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Notes:

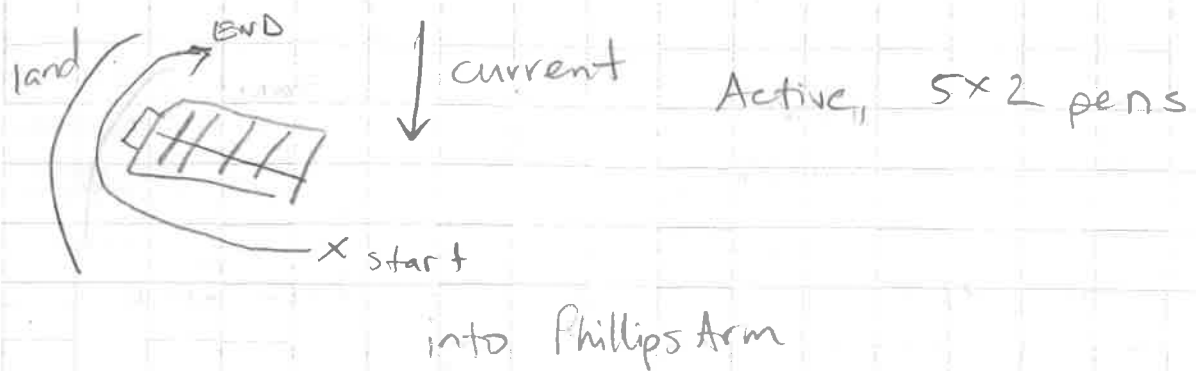
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Month <u>Mar</u>				Year <u>2012</u>			Ship <u>Charter: Nucleus</u>			Cruise ID <u>2012-26</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
30	#19 A FE cast	1943	BE	CTD		✓ 57	50°28.051	125°15.966	220	210					cast 30 1226-057.hex
		19:51	BO												
		1957	EN				50°28.000	125°15.991							
30	#19 A FE cast	2002	BE	NET		58	50°28.104	125°15.711			17340				FARM - Non active New set up? No house
		2012	EN				50°28.201	125°15.461			20635				7x2 empty pens
30	#19 Gomer Isl	2034	BE	CTD		✓ 59	50°27.215	125°15.658	280+	250					cast 31 1226-059.hex
		20:37	BO												- Windy -
		2048	EN				50°27.233	125°16.035							
	#19 Gomer Isl	2052	BE	NET		60	50°27.395	125°15.939			20776				S of Gomer, headed E along shore
		2102	EN				50°27.351	125°15.621			23544				
30	FEARM2	2117	BE	CTD		✓ 61	50°27.152	125°16.975	316?	300	SAL 03				Niskin 1m above CTD
		21:28	BO	BOT											SAL 03 cast 32
		2136	EN				50°27.300	125°17.360							1226-061.hex

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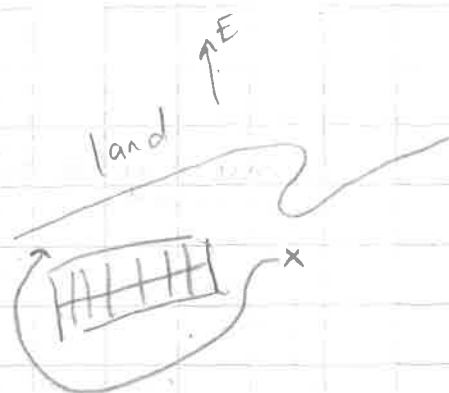
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Month <u>Mar</u>		Year <u>2012</u>		Ship <u>Charter - Nucleus</u>		Cruise ID <u>2012-26</u>									
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
30	#15 Hall Pt.	2147	BE	CTD		✓ 62	50°26.779	125°17.463	200-300m	200					cast 33 1226-062.hex
			BO												
		2158	EN				50°26.830	125°17.450							
30	#15 Hall Pt.	2203	BE	NET		63	50°26.950	125°17.315			23574				SW side of point sampled
		2213	EN				50°26.753	125°16.917			26500				
END DAY 4															
31	CACHAN	1531	BE	CTD		✓ 64	50°20.414	125°06.950	400-470?	400					Tug in the way cast 34 1226-64.hex
		1542	BO												
		1551	EN				50°20.458	125°06.946							
															re-do of earlier cast
31	#2 Barnes Bay	1658	BE	CTD		✓ 65	50°19.350	125°15.731	60	46					cast 35
		1703	BO												FARM 5x2 pens active
		1704	EN				50°19.371	125°15.756							
31	#3 Pulton Bay	1716	BE	CTD		✓ 66	50°18.404	125°16.293	109	100					Notes →
		1723	BO												cast 36 redo of earlier
		1727	EN				50°18.424	125°16.347							cast 1226-066.hex

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- low power on winch for upcast so not 1m/s. Switched battery.

→ CTD came out of water after 10m, 2min soak, so sent it back down to 10m for another ~30 sec before
cast

- low power on the winch coming up so speed not 1 m/s. Changed battery again

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Month <u>Mar</u>		Year <u>2012</u>		Ship <u>Charter - Nucleus</u>				Cruise ID <u>2012-26</u>							
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
31	#4B	1742	BE	CTD		✓ 67	50°18.480	125°18.703	120	110					farm not sampled earlier, not on list
			BO												cast 37 →
		1750	EN				50°18.468	125°18.740							1226-067.hex
31	#4B	1753	BE	NET		68	50°18.585	125°18.742			26549				FARM 5x2 active
		1803	EN				50°18.573	125°19.081			29085				feeding time at farm
31	#4	1814	BE	CTD		✓ 69	50°18.147	125°19.963	76	67					redo of earlier cast
	Venture Pt.	1818	BO												cast 38
		1821	EN				50°18.149	125°19.937	16	171					— touched bottom with the weight 1226-069.hex
31	OKCHAN	1829	BE	CTD		✓ 70	50°17.711	125°19.800	116	105					redo of earlier cast
		1834	BO												cast 39
		1837	EN				50°17.689	125°19.890							1226-070.hex
31	#1	1844	BE	CTD		✓ 71	50°17.294	125°20.859	123	82*					redo of earlier cast
	Okisullo		BO												cast 40
		1851	EN				50°17.245	125°21.032							* →
															1226-071.hex

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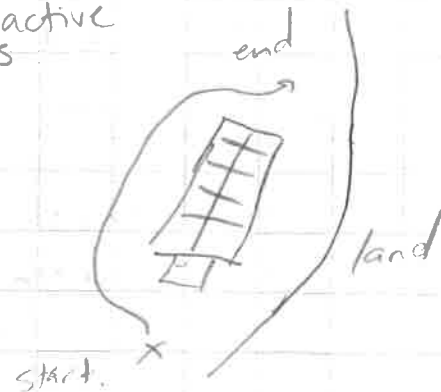
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5x2 active pens



Sounder shows 370 ft., but hit bottom? or something at 82 m. Sounder shows us still well off the bottom. Not sure what happened?

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Month <u>Mar</u>				Year <u>2012</u>				Ship <u>Charter - Nucleus</u>			Cruise ID <u>2012-26</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
31	23	1914	BE	CTD		✓ 72	50°15.718	125°23.048	247?	235					redo of earlier cast
		19:21	BO												cast 41
		1927	EN				50°15.849	125°23.084							1226-072. hex
31	DP-2	2143	BE	CTD		✓ 73	50°05.802	125°15.717	80?	70					N 3 kn. current
		21:47	BO												cast 42
		2149	EN				50°05.116	125°16.089							1226-073. hex
— FIN —															

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