

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2009-20

DATE:

From: 17 September to: 16 October 2009

VESSEL:

CCGS Louis S. St. Laurent

PROJECT(S):

JOIS

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

WaterProperties.ca

Treat this daily science log as an invaluable source of information of what happened on your research mission. Months, years, or even decades after your research has been completed, people will still consult this logbook for information and as such, one should make all efforts to complete this logbook (and any associated sheets for rosettes, fish sets, plankton tows, etc) as events unfold on a daily basis. This logbook has been supplied with extra sheets of paper for you to record any additional information.

Please remember to record such events as:

- An observed failure or strange reading of a sensor during a CTD cast
- A computer crash or software issue
- Switching of a CTD or sensor unit, including the removal or replacement of a PAR sensor
- A bottle that fails to trip or bottles that are tripped without commands being sent to the pylon during the cast
- A syringe that is left on a cell during a cast
- The cleaning (or lack thereof) of a transmissometer
- A nutrient sample from the seawater loop
- A failure of a NMEA string input into the deck unit
- Failure of the CTD pump to turn on or failure to turn on the CTD pump during a cast
- A CTD or rosette that is recovered with mud or jellyfish attached to it
- A sample bottle is removed or switched or weights are added or removed from the rosette or CTD unit
- Any unusual biological observations (e.g., large numbers of squid, jellyfish, birds, zooplankton swarms, thick waters due to phytoplankton)
- Any change in sampling protocols that either do not follow standard procedures or are using different standard procedures

***Please ensure that you have reviewed the required standardized sampling protocols prior to taking any samples.
Current copies of sampling protocols may be found on the Water Properties website at WaterProperties.ca***

The format for sample labels is:

Sample Number	124
Sample Type	Sal
Station Name	LC12
Cruise ID	2008-16
Bottle Number	Bot 1

<u>Water Properties Emergency Contacts:</u>	
CTD/Rosette:	Doug Anderson, 250.363.6305 Hugh Maclean, 250.363.6594 Ron Lindsay, 250.363.6592
Nutrients:	Janet Barwell-Clarke, 250.363.6815 Wendy Richardson, 250.363.6544
Salinities/Oxygen:	Sheila Sloman, 250.363.6300
Other Questions:	Steve Romaine, 250.363.6868

Captain: Andrew McNeil
 Second Officer: _____
 Fishing Master: —
 First Officer: Rod strawbridge
 Third Officer: _____

Mission Participants / Agencies: IOS/WHOI/NAF

[illegible][illegible]

Data logging computer:

Data acquisition program: PAC 02197
 CTD deck unit make: sea bird model: 11 serial number: 649

Primary CTD

Make: Seabird model: 9plus serial number: 756
 Primary temperature serial number: 03-4397
 Primary conductivity serial number: 04-2992
 Secondary temperature serial number: 03-4402
 Secondary conductivity serial number: 04-2984
 Transmissometer: CSTAR Model: Wetlabs s/n: 1050DR ^{sz}
 Fluorometer: Model Seapoint Cable gain: 30x s/n: 2745 ~~P~~ S or NO pump?
 Oxygen sensor: Seabird Model: SBE43 s/n: 0435 ~~P~~ S or NO pump?
 PAR sensor: — Model: — s/n: —
 Other sensors: TSVS (1000m met) s/n: 072 ~~P~~ S or NO pump?
 Other sensors: Wetlabs C-DOm Fluorometer s/n: 1076 ~~P~~ S or NO pump?
 Other sensors: Rinko III DO sensor s/n: 010 ~~P~~ S or NO pump?
 Other sensors: Benthos PSA-916 altimeter s/n: PSA-9160 ~~P~~ S or NO pump?

1161

Secondary CTD

Primary CTD

Make: Sea-bird model: 9plus serial number: 724

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):

Rosette Setup:

Number of bottles: 24
Manufacturer: Ocean Test
Volume of bottles (litres): 108

Winches:

1. Make: Hewbolt Model: _____ Serial #: _____ Used for: _____
2. Make: _____ Model: _____ Serial #: _____ Used for: _____
3. Make: _____ Model: _____ Serial #: _____ Used for: _____

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

Salinometer:

Make: AcloSal Model: 8400B 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:

Bongo fluorometers: TSK 2763 (10S), MF-315 # S6001, S6002, 3
(90° Fluors)

Captain: _____

Second Officer: _____

Fishing Master: _____

First Officer: _____

Third Officer: _____

Mission Participants / Agencies:

[illegible][illegible]

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: _____ s/n: _____
Model: _____

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? _____

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? _____

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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):

Rosette Setup:

Number of bottles: _____
 Manufacturer: _____
 Volume of bottles (litres): _____

Winches:

	Make:	Model:	Serial #:	Used for:
1.	Make: _____	Model: _____	Serial #: _____	Used for: _____
2.	Make: _____	Model: _____	Serial #: _____	Used for: _____
3.	Make: _____	Model: _____	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: _____

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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:

Date of cable termination: _____

Guide to cable terminations:

Please read and complete this form before reterminating cable. We have two standard CTD cables in use, nominal .316" and .322". This form specifically addresses these two cables; however, the same considerations apply to using other cables. The specifications for non-standard cables and associated terminations are available from Tom Juhász, IOS room 1221, phone 250.363.6598.

Please identify nominal cable diameter:

identify nominal cable diameter: _____ **Winch:** _____
Actual diameter measurements, two locations in triplicate at termination and approximately 5 metres back from termination.

At cable end:

at 5 metres:

1. _____
1. _____

2. _____

2. _____

3.

For comparison, the outer armour measurements of new cable:

Nominal .316" should be .3155 to .3165"

Nominal .322” should be .318 to .326”

Record specifications for other cables:

within:

The tolerance of the PMI Evergrip termination is tighter and only cables within these limits should be used.

For nominal .316" cable the lowest possible diameter is .309"

For nominal .322" cable the lowest possible diameter is .321"

Describe cable:

Kinks:

Birdcage

Rust flaking off cable

Cable round or oval

Does cable have loose outer armour?

(Raised wires or space between wires.)

Are outer armour wires flattened?

Remove cable that exhibits these

Remove cable that exhibits these signs of deterioration. To be authorised by Chief Scientist of the cruise or the winch shop, Phil Lobb at 250.363.6799.

Megger results by conductor (should be greater than 10,000. meg ohms)

Inner armour to conductor 1

Inner armour to conductor 2

Inner armour to conductor 3

Please identify PMI sleeve used by checking the appropriate blank:

For .316" cable, diameter of inner dimension of sleeve should be .3265" part number 9004897-13, cable diameter range .309" to .320"

For .322" cable, diameter of inner dimension of sleeve should be .3400"
part number 9004897-14, cable range .321" to .333".

Sliding the sleeve onto the cable should be difficult.

Evergrip helical Rods:

The part number is 9005-9002 and covers left hand lay cables of diameter range .309" to .333".

Presence of grit on inner surface (yes / no)

Condition of wires (damaged ends?)

Are the wires rusted?

Comments:

[illegible]

Date of cable termination: _____

Date of cable termination: _____

Winch: _____

Winch: _____

at 5 metres:

- at 5 metres:

at 5 metres:

at 5 metres:

at 5 metres:

at 5 metres:

at 5 metres:

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At cable end:

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2. _____

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Are the wires rusted?

Comments:

[illegible]

Date of cable termination: _____

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Winch: _____

Actual diameter measurements, two locations in triplicate at termination and approximately 5 metres back from termination.

At cable end: at 5 metres:

1.

2. _____

بِ

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The part number is 9005-9002 and covers left hand lay cables of diameter range .309" to .333".

Presence of grit on inner surface (yes / no)

	Condition of wires (damaged ends?)
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Are the wires rusted?

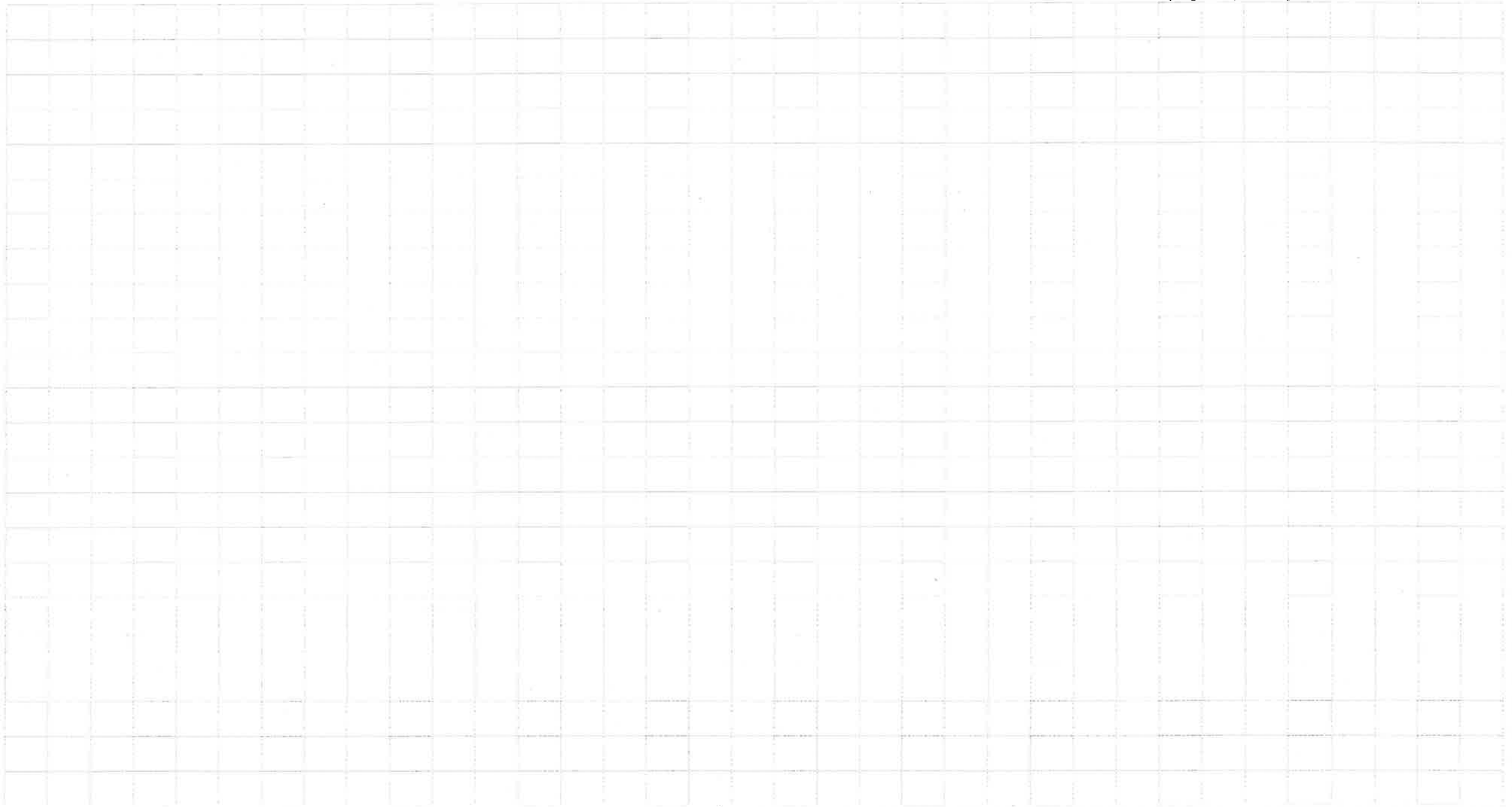
Comments:

Blank lined paper for writing.

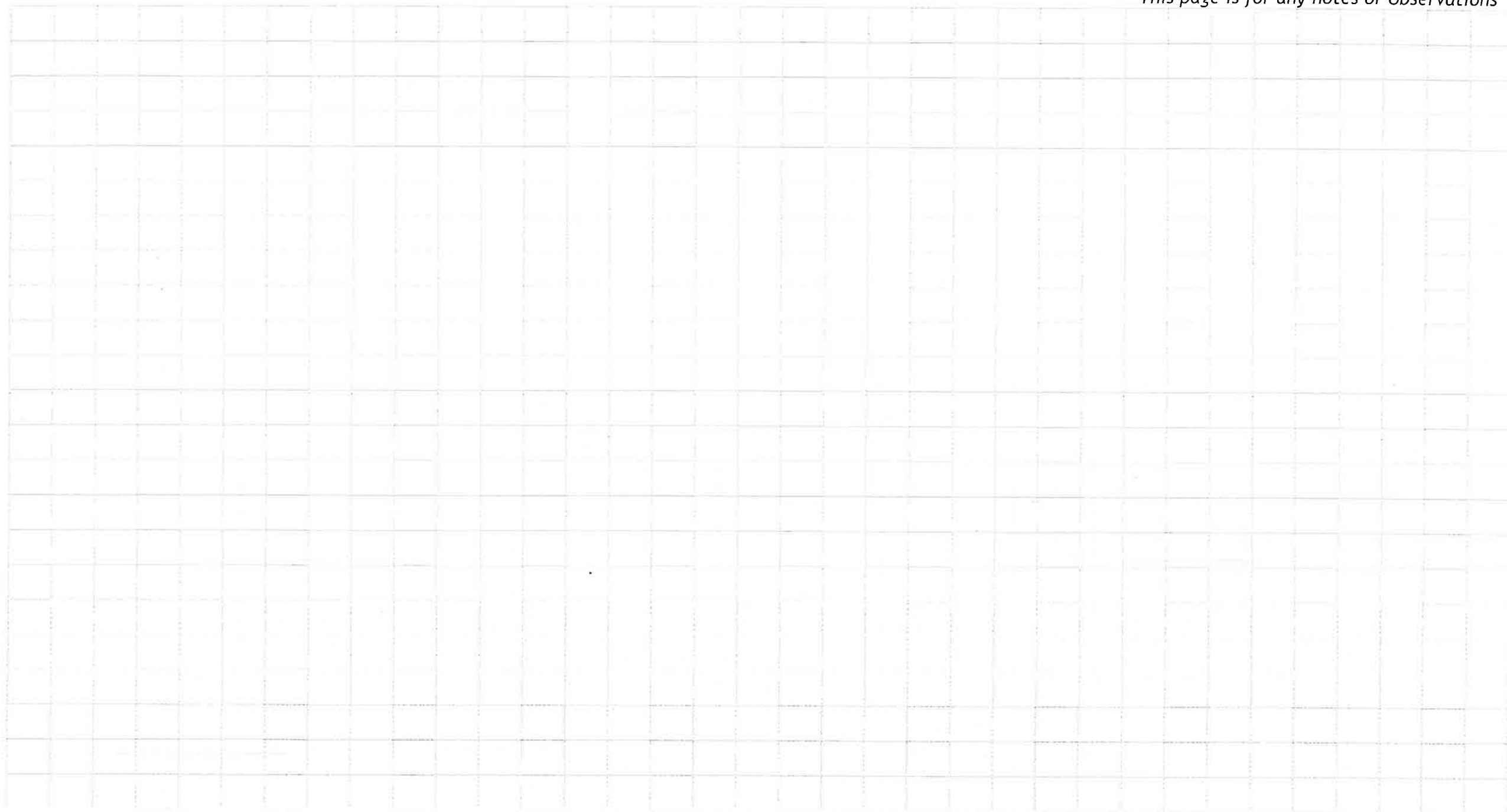
This page is for any notes or observations



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This page is for any notes or observations



DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>September</u>				Year <u>2009</u>			Ship <u>LSSL</u>			Cruise ID <u>2009-20</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							
20	AG-M	0006	BE	ROS	UN	001	71 1.896	127 45.620	~95		1-23	23	evening	✓	test cast
		0025	BO				71 1.849	127 45.554		90.7					alt
		0037	EN				71 1.841	127 45.474							
	AG-M			ADCP											guide lines installed
20	CABOS	12:40	BE	ROS	UN	002	71 49.136	131 47.734	~1100	1000	24-46	23	MD/EF/KY/SC	✓	1000m MAX!
		13:07	BO				71 49.067	131 47.839		1000					- stop @ 5, wait for data even.
		13:41	EN				71 48.835	131 47.716							UM035
				ADCP											
20	CABOS	13:20	EN	NET		NET1	71° 48.835°N	131° 47.716°W	1140	100			KY/MD		1st cast
		13:54	EN	NET		NET2	"	"	"	100			"		fixed tear in net.
						MOIR									CABOS Recovery
20	CABOS	19:08	BE	ROS	UN	003	71 49.844	131 46.723	1132		47-70	24	KY/SC EF/MC	✓	ISUs Removed
		19:41	BO				71 49.882	131 46.831		1106			GC, HM LW		
		20:08	EN				71 49.92	131 46.916							

Cast Type:

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

USW = Sea Water Loop

MOR = Mooring

NET = Plankton Net Haul

DRF = Drifter

___ = ___

Bottle Firing Method:

US = Up / Stop

UN = Up / No stop

DN = Down / No stop

Notes: _____

Time Code:

BE = Beginning Time of Cast

BO = Bottom Time of Cast

EN = End Time of Cast

DE = Deployment Time

MR = Messenger Release Time

RE = Recover Mooring Time

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 06 March 2008

CTD wire re-terminated prior to 1st cast of 2009-20

This page is for any notes or observations

ΔT seemed to be too large at times.

— ΔC more stable — may be associated with 1 T sensor.

Water T very unstable in top 30m.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>September</u>				Year <u>2009</u>			Ship <u>LSSL</u> ✓			Cruise ID <u>2009-20</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							
20	CABOS	1921	BE	PRR	—	PRR1	71° 49.846	131° 46.782	1400	114			ZJ		1 st PRR cast
21	CB-31b	0133	BE	ROS	UN	604	72° 8.918	134° 10.412	1944		71-94	24	SZ/MC	✓	Stopped at 978m
		0225	BO				72 8.735	134 10.374		1934			GC, HM, LW		to clear ice off block
		0309	EN				72 8.679	134 10.161							
	CB-31b	01:56	EN	NET		NET3	72° 08.671' N	134° 10.341' W		100			LW/Hugh		Flowmeter (MF-315) frozen.
	CB-31b	02:18	EN	NET		NET4	"	"		100			LW/Hugh		TSK appears to be working
22	CB23a	17:13	BE	ROS	UN	005	72 52.060	136 0.378	2789		95-118	24	KY/JC EF/MC	✓	Green switch @ 1500
		18:11	BO				72 51.900	136 1.105		2718			HM, GC, LW		
		19:04	EN				72 51.772	136 1.962							
		16:11	BE	PRR		PRR2	72° 52.13' N	136° 00.15' W	23000	120m			ZJ		2nd PRR Cast
		16:30		NET		5	72° 52.208' N	135° 59.951' W	2783	100			KY/MD		Flowmeter (MF-315) frozen again
		16:52		NET		6	"	"	"	100			KY/MD		
23	CB-22	01:19	BE	ROS	UN	006	73 29.050	137 57.131	3180 ^h	CTD	119-142	24	MC/HM GC, LW	✓	CTD stopped on upcast to examine winch.
		02:25	BO				73 29.090	137 56.656	3121.0	3132					
		03:26	EN				73 28.997	137 56.275							
		01:41		PRR		PRR3	73° 29.10' N	137° 56.77' W	3200	104			ZJ		Together with CTD

Cast Type:

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

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

Bottle Firing Method:

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

Notes:

Time Code:

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

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 06 March 2008

→ Bubbler on continuously during cast. Kurdsan was offline & restarted. ✓

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>September</u>				Year <u>2009</u>			Ship <u>LSSL</u>				Cruise ID <u>2009-20</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							
23	CB-27	10:11	BE	ROS	UN	007	73 0.146	139 54.131	3265		143-166	24	MD/EF/KJ	✓	
		11:16	BO				73 0.202	139 55.471		3207					
		12:20	EN				73 0.384	139 56.504							
	CB 27	12:45	EN	Net	VNH	Net 7	73 0.384	139.56.504	3265	100			KY/MD		firehose not working - no wash down BUT slowly
		13:01	EN	Net	VNH	Net 8	"	"	3265	100			"		dipped net 2X at surface to rinse (DID NOT submerge)
23	MK-07	17:01	BE	ROS	UN	008	72 29.45	139 57.139	3033		167-190	23	MITZ/KY	✓	Calibration for
		17:26	BO				72 29.41	139 57.51		1000					SALD OXY
			EN												Surface bucket sample taken (no rise in 24 → 1545)
		17:08	BE	PRR		PRR0X	72 29.41'N	139 57.69'W	3025	110		-	ZJ		Together with CTD
				TURBO											
	ITP#21		BE	ITP Recovery											ITP #21 recover
			EN												Hard stopped
		12:20	UTC	EM ON			72 35 496	141 33 879					Kazu		working properly (deployed 2008)
		0200	Local	EM OFF											
		0620	z	EM ON											

Cast Type:

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 MR = Messenger Release Time
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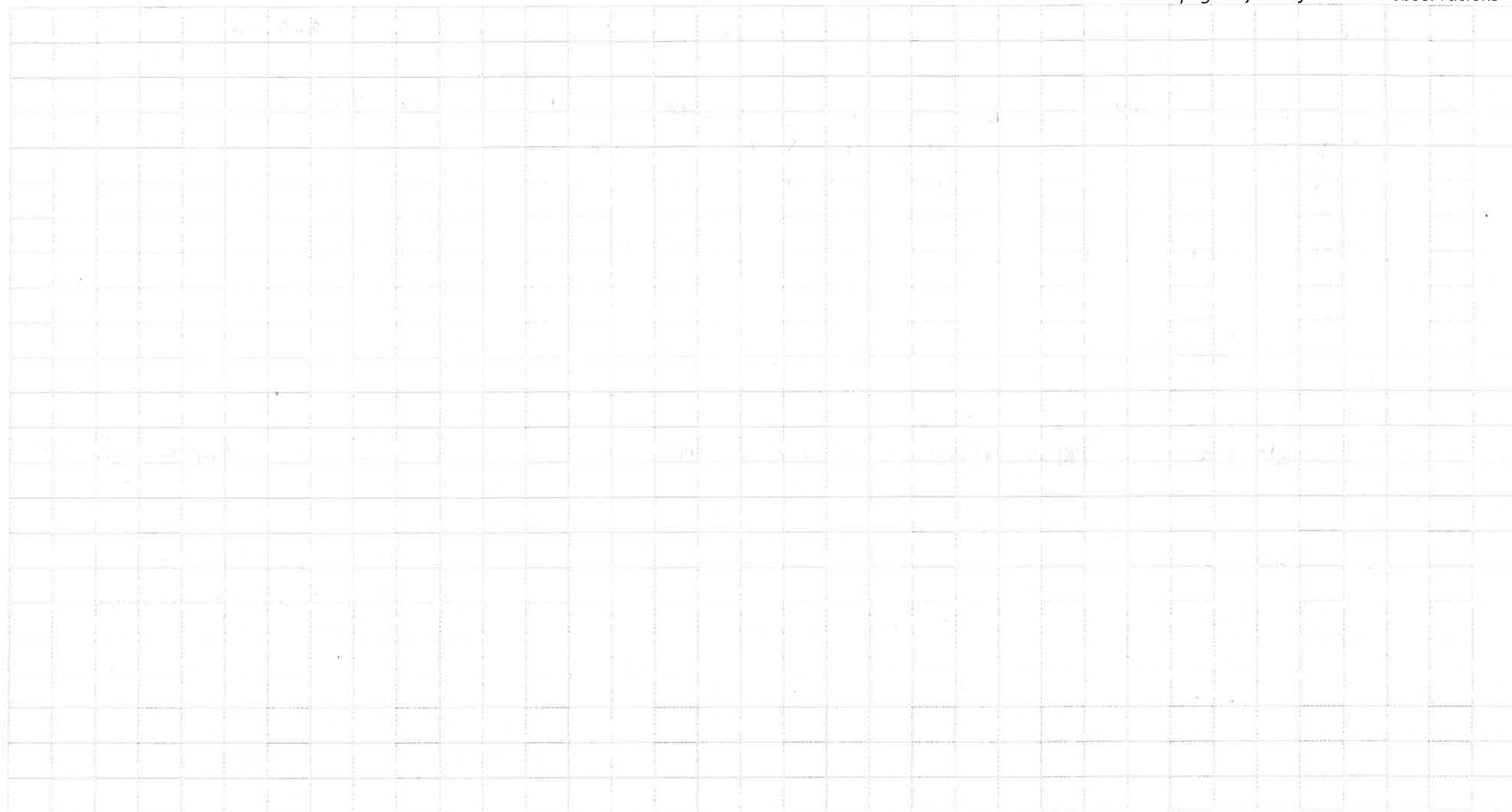
Transmissometer to be cleaned before each cast, do not use Ammonia products

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Month <u>SEP</u>				Year <u>2009</u>			Ship <u>LSS 2</u>				Cruise ID <u>2009-20</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							
24	STA-A	08:42	BE	ROS	UN	009	72 39.49	144 44.694	3505		191-214	24	MD, EF, KY, JL	✓	ice on top during soak
		09:41	BO				72 39.138	144 46.415		3440					up to 1 then go down
		10:57	EN				72 38.81	144 48.138							0 ¹⁸ Sample # 214 cracked
		11:32		NET	VNH	Net 9	72° 38.775'N	144° 48.120' W	3500	100			KY/MD		lid → replaced w/ new lid (when tightened)
		11:41		NET	VNH	Net 10	"	"	3500	100			KY/MD		
				XCTD											
				XCTD											
				TURBO											
	EM OFF			XCTD											
(CB 2)	10/630 LOCAL TIME	22:24	BE	PRR		PRR05	71° 59.13' N	140° 01.29' W	2743	120			ZJ		Back to light, sunny
24	CB-29	2254	BE	ROS		010	71 59.128	140 1.102	2747		215-238	24	MC, HM, GR, LW	✓	Silty water discharge aft of rosette at 1900m
		2356	BO				71 58.942	140 2.083	2697	2687					
			EN												
		23:32		NET	VNH	Net 11	71° 59.015' N	140° 0.1893 W	2746	100			LW/HM		Remaining flow meters (except TSK) every time → WORKS.
		23:48		NET	VNH	Net 12	71° 58.951' N	140° 0.2024 W	2747	100			LW/HM		
				CAM											camera test
	PMR OFF			TURBO											
(25 SEP 16:58 UTC) Knudsen depth sounder changed: 55 from 1500 → 1466, Add 9m draft															

Cast Type:

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 CTD = CTD without Rosette
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 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:

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 BO = Bottom Time of Cast
 EN = End Time of Cast
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Altimeter reading = 10.06 m above bottom

Knudsen reading = 2747 m depth with sound speed 1500 m/s

* correct ~~2747~~ depth 2697 m (w/ altimeter added) from CTD

→ to software so depth from Knudsen now includes draft.

25 Sept Changed seabird header to include Cruise #. SZ

DAILY SCIENCE LOG

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Month <u>September</u>		Year <u>2009</u>		Ship <u>CSSL</u>		Cruise ID <u>2009-20</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						
26														→
27	CB-28a	03:03	BE	ROS	UN	011	69.59.926	139 56.946	60	239-242	4	MC	✓	SeaSaver program crashed before launch → stopped
		03:07	BO				69 59.927	139 56.958	57 ⁽¹⁵⁾	47				reloaded computer + reloaded IMS block
		03:10	EN				69 59.923	139 56.948						panel making "pinging" noise below 20m.
27	MK-1			ADCP								HM		
27	MK-1	04:36	BE	ROS	UN	012	70 13.970	140 1.147	232 ^{CTD}	243-253	11	MC	✓	Failed start to Rosette → ADCP launched first.
		04:47	BO				70 13.967	140 1.198	238 ^K	222				
		04:57	EN				70 13.976	140 1.230						
	MK-1			NETS		Net 13	70° 14.010	140° 01.219		100			LW/HM	weight line shortened + 2 long nets attached to bottom of weight
				NETS		Net 14	70° 14.023	140° 01.171		100			LW/HM	
27	MK-3	07:17:34	BE	ROS	UN	013	70 34.337	139 58.855	808	254-272	19	ET/HM LW/HM		ISUS added on to ROS
		07:40:08	BO				70 34.37	139 58.703		792				
		08:20	EN				70 34.398	139 58.601						
	MK-3	07:45		Net		Net 15	70 34.36	139 58.654		100				53µm (#2) ripped - removed from frame
														-only 1 net tow this str
	MK-3			ADCP										

Cast Type:

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Bottle Firing Method:

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Notes:

Time Code:

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

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DA/26:

changes to CTD for Cast 11

- Surface PAR sensor installed
- problem with Isus/cdom cable fixed - prior to this cast, do not use Isus data and only use cdom when installed without Isus ($z > 1000m$).

new con file 2009-20SPAR.CON

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Month <u>09</u>				Year <u>2009</u>			Ship <u>LSS L</u>				Cruise ID <u>2009-20</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	CB-286	10:20	BE	ROS	UN	014	70 59.974	139 59.753	2089		273-296	24	ET/MD/KY/JS	✓	ISUS off
		11:06	BO				70 59 916	140 0-023		2069					no depth shown
		11:49	EN				70 59.894	140 0.385							switch gear @ 925
	CB-286			ADCP											
	CB-286	10:39		NET		Net 16	70 59.948	139 59.838		100			KY/MD		53µm #2 not repaired yet not on frame
	CB-286	10:55		NET		Net 17	70 59.933	139 59.952		100			KY/MD		"
				Buoy	-										Deploy new #POS buoy for cable Steele
		18:08		PRR		PRR06	71 06.594	143 46.467	2000	107			ZJ		midway to BL-6
				XCTD											
				XCTD											
				XCTD											
				XCTD											
				XCTD											
				XCTD											
				XCTD											
28				XCTD											

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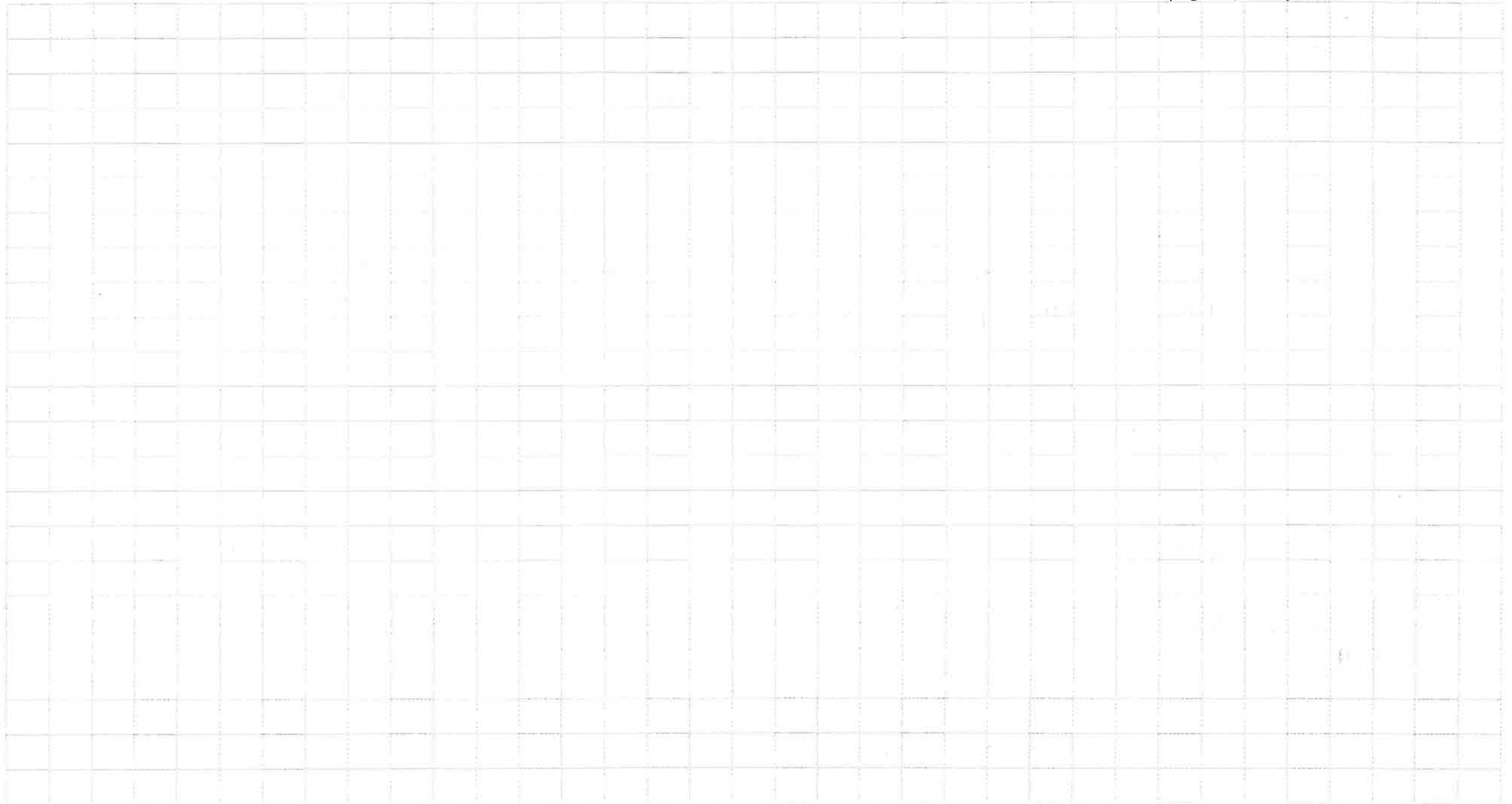
Transmissometer to be cleaned before each cast, do not use Ammonia products

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Month <u>SEPTEMBER</u>				Year <u>2009</u>			Ship <u>LSSL</u>				Cruise ID <u>LSSL 2009-20</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							
✓ 28	BL-6	0455	BE	ROS	UN	015	71 39.458	151 13.877	2022 ^K		297-320	24	MC	✓	Changed gears on winch
✓		0539	BO				71 39.473	151 13.721		2008			HM/GDLW		at ~1600m.
✓		0619	EN				71 39.569	151 13.576							
✓ 28	BL-6	0459	BE	ADCP			71 39.455	151 13.861	2022 ^K						
✓		0610	EN				71 39.544	151 13.607							
✓		0510		NETS		Net 18, 19	71 39.421	151 13.790		2x 100			LW/HM		only 1.53m net still - will note when it returns
✓ 28	BL-2	08:21	BE	ROS	UN	016	71 23.761	152 62.75	152		321-328	8	SC/KY MD/ET	✓	
✓		08:29	BO				71 23.756	152 02.88		138					
✓		08:38	EN				71 23.760	152 02.99							
✓ 28	BL-2	08:51		NET		Net 20	71 23.766	152 02.994	152	100			MD/KY		
✓ 28	BL-2			ADCP											
✓ 28	BL-2	09:10		NET		Net 21	"	"	152	100			MD/KY		Big jelly in 236m net
✓ 28	BL-4	10.53	BE	ROS	UN	017	71 29.557	151 38.318	831		329-348	20	SC/KY MD/ET	✓	Shut program down later than usual.
		11:17	BO				71 29.506	151 38.645		817					Help to bring ROS in
		11:41	EN				71 29.504	151 38.916							desk
✓ 28	BL-4	10:57	BE	ADCP											

Cast Type:

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 =

Bottle Firing Method:

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

Notes:

Time Code:

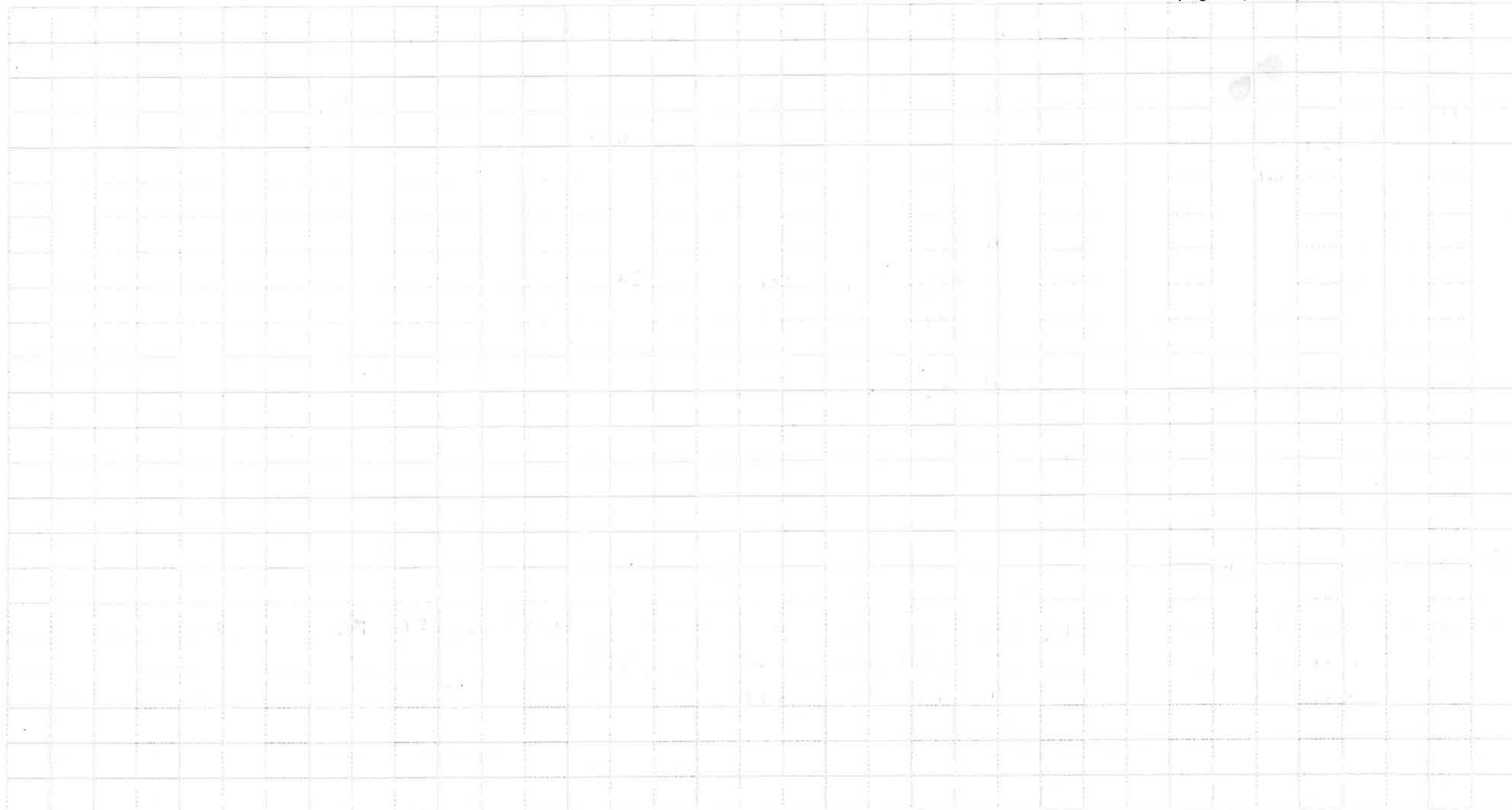
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Transmissometer to be cleaned before each cast, do not use Ammonia products

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Month <u>SEPTEMBER</u>				Year <u>2009</u>			Ship <u>LSSL</u>				Cruise ID <u>2009-20</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							
✓ 28	BL-4	11:12	BE	NET		NET #22	71°29.554	151°38.461		100			MD/KY		
		11:27	BE	NET		NET #23				100			"		Big jelly in 236µ net
✓ 28	BL-4		EN	ADCP											
				✓ EN001											
✓ 28	BL-8	15:35	BE	ROS	UN	018	71 57.186	156 10.205	2978		349-372	24	SC/KY MD/ET	✓	
		16:34	BO				71 57.196	150 9.652		2980					
		17:31	EN				71 57.169	150 8.783							
✓ 28	BL-8	15:42	BE	NET		NET 24	71°57.192	150.10.223W		100			MD/KY		
		16:10		NET		NET 25				100					
		17:15		PRR		PRR07	71 57.174	150 08.744	2980	107			ZJ		
✓ 28	BL-8		EN	ADCP											
		17:04	SET	✓ EN	✓ EN001	17									
✓ 28	CB-2a		BE	XCTD											
		21:06	EN				72 29.582	150 2.753							
✓ 28	CB-2a	21:22	BE	ROS	UN	019	72 29.605	150 2.770	3691 ^(K)		373-389	17	MC	✓	Mi Sun's cast
		21:28	BO				72 29.627	150 2.753		300			HM, GC,		ISUS on
		21:42	EN				72 29.647	150 2.678					LW		Downcast speed 60m/min

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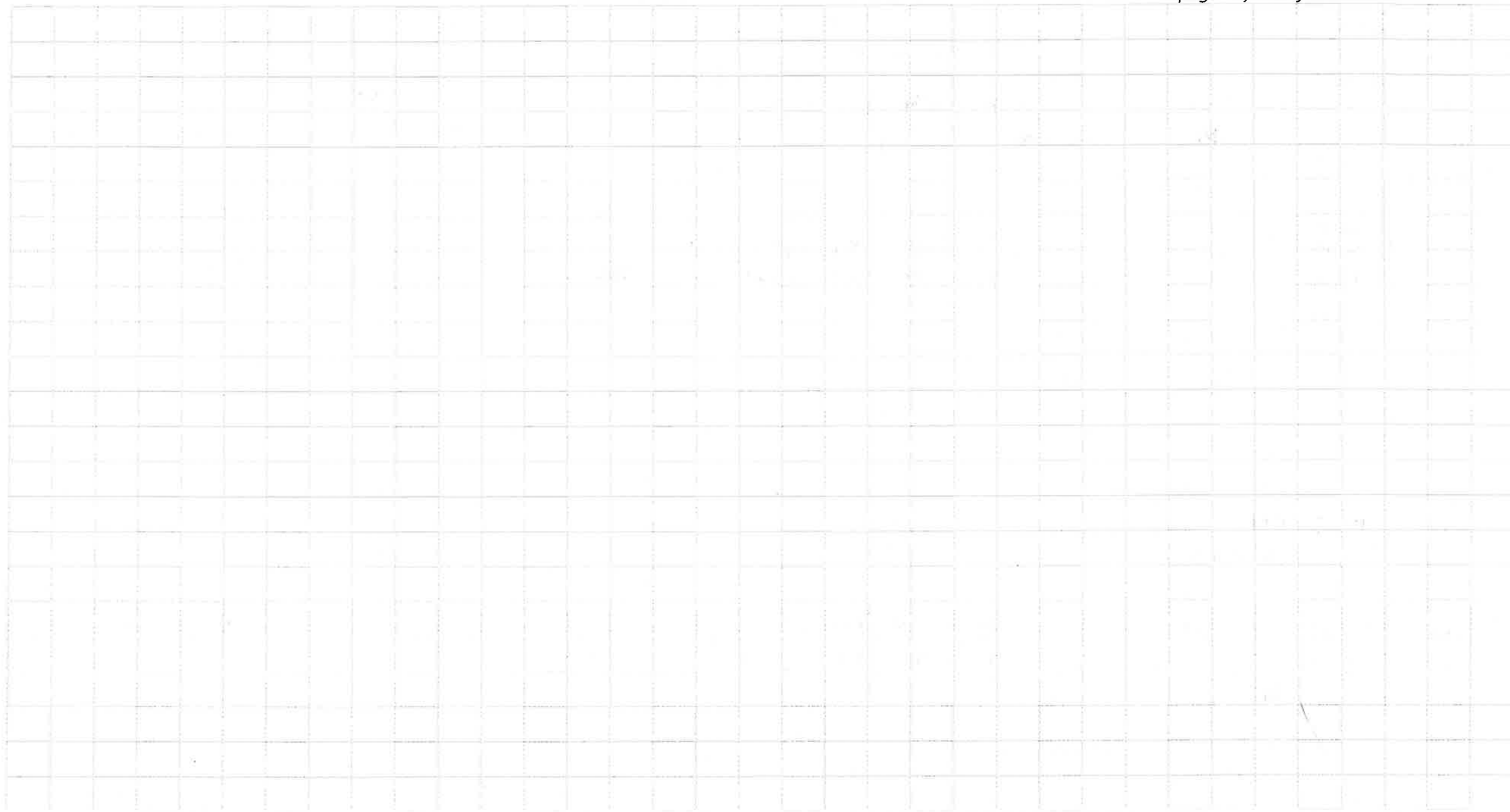
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Month September				Year 2009			Ship CSSL				Cruise ID 2009-20				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
29	CB-2			TURBO			73 0.214	149 59.782					Koji		
	CB-2			EM out		EM 31(R)									Recovery
29	CB-2	1:26	BE	ROS	UN	020	73 0.346	149 59.674	3720 ^(K)		390-413	24	MC/		(mooring release) x3 WHOI → wait @ bottom
		0242	BO				73 0.281	149 59.486		3739			HM, GC LW		Arrived @ bottom 0242, started upcast @ 0308 UTC.
		(0308) 0409	EN				72 59.969	149 59.432							Fired bottle one @ 0308 UTC. Max tension 1815 lbs
		01:29		PRR		PRR08	73 00.371	149 59.642	3720	105			ZJ		
		01:50	EN	Nets		Net 26				100			LW/HM		
		02:00	EN	Nets		Net 27				100			LW/HM		
				EM in		EM 31(D)									
29	CB-3	10:00	BE	ROS	UN	021	73 59.884	150 0.550	3793				SC/KY MD/ET	✓	Echo Sounder software crashed
		11:15	BO				73 59.861	150 0.958		3812					
		12:27	EN				73 59.905	150 1.354							
			EN	EM out											
29	CB-3			ADCP											
29	CB-3	10:14		NET		NET 28	73 59.867	150 0.582		100			MD/KY		2nd 53µm net repaired will be on until noted
	CB-3	10:29		NET		NET 29	73 59.869	150 0.727		100			"		
			BE	EM in											
29	CB-3	11466					Knudsen SS changed from				1466 to	1478	w/		dm drift correction →

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~~Diff~~ B. Horn depth is 3822 and matches depth from CTD
(max depth + altimeter)

DAILY SCIENCE LOG

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Month		SEP		Year			2009		Ship		LSSL		Cruise ID		2009-20	
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	CB3	12:16	EN	ADCP	EM OUT											
29	CB4			WHOI MOORING											Mooring Survey & Recovery WHOI	
29	CB4	16:32	BE	ROS	UN	022	74 58.736	150 0.287	3825		438 - 444	7	EF/MD KY/SC	✓		
			BO							100					too busy in lab missed putting info down	
		16:46	EN				74 58.763	150 0.120								
29	CB4	21:20	BE	ROS	UN	023	75 0.000	149 59.965	3824		445 - 468	24	MC	✓	Winch changed gear @	
		22:42	BO				75 0.317	149 58.813		3816			HM, SC, LW		2154 m (to high) on downcast	
		23:49	EN				75 0.358	149 58.842							Changed on upcast @ 647m (to low)	
29	CB4	21:24		ADCP			75 0.016	149 59.880					HM			
				FRC CTD											2x SBE 19 CTD casts	
				FRC CTD												
		23:30		PRR		PRR09	75 00.28	149 59.61		97			ZJ			
				TURBO												
29	CB4	01:13	EN	NETS		Net 30	75°00.299'N	149°59.527'W	3826	100			LW/HM			
		01:43	EN	NETS		Net 31	75°00.322'N	149°59.528'W	3825	500			LW/HM		Deep net cast 50µm net ripped again	
		01:55	EN	NETS		Net 32	75°00.298'N	149°59.618'W	3824	100			LW/HM		↳ was removed	

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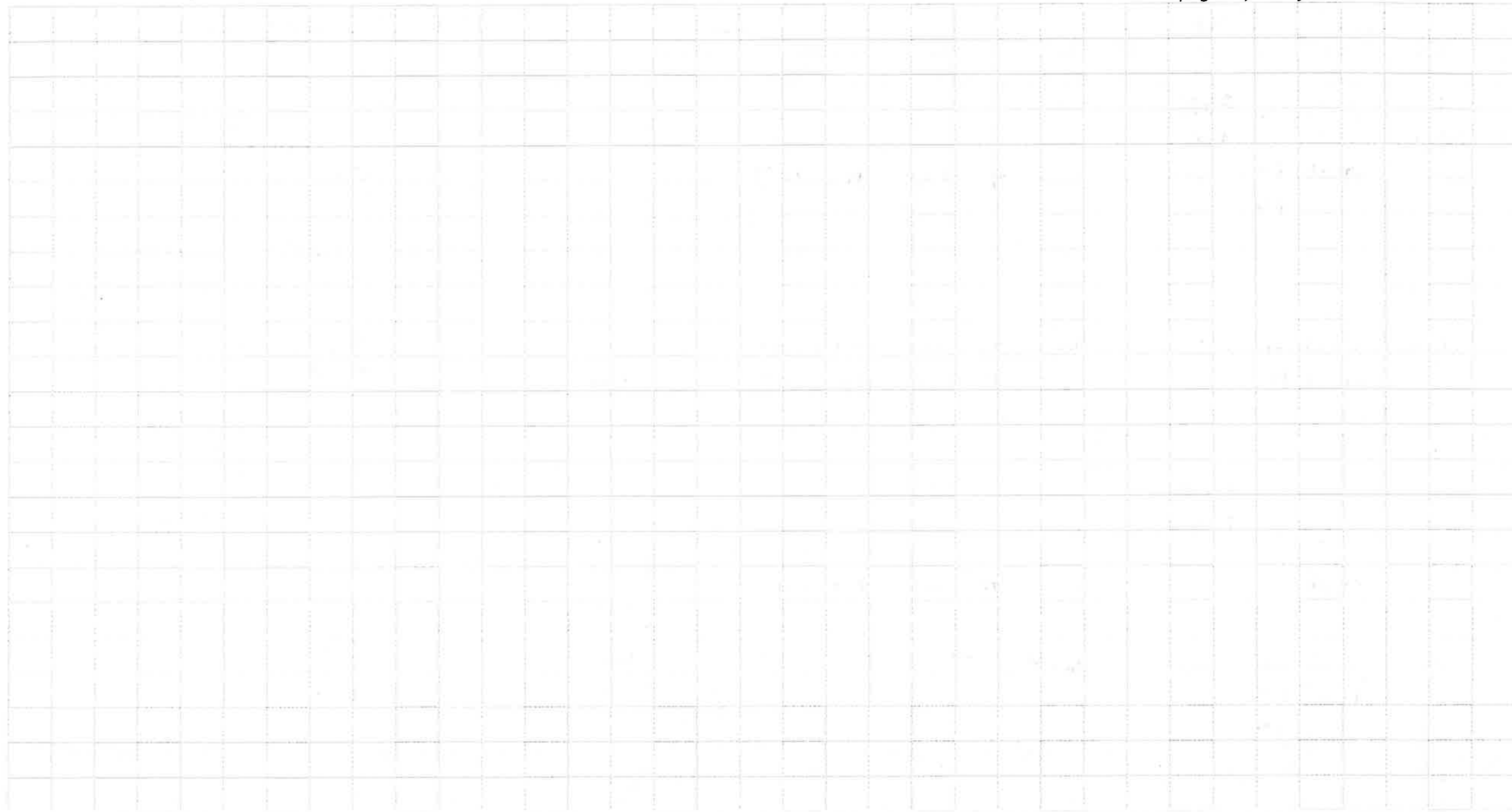
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EM IN

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Month SEPTEMBER				Year 2009			Ship LSSL				Cruise ID 2009-20				
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							
	CB-4	02:03		PRR		PRR-10	75 00.289	149 59.618		128			JP		
30	CB-5	06:10	BE	ROS	UN	024	75 18.148	153 16.588	3844		469-492	24	MC/EF	✓	
		07:23	BO				75 18.421	153 15.733		3852			SC/KY MD/		
		08:35	EN				75 18.768	153 15.398							
30	CB-5	06:17	BE	ADCP											
		08:30	GN												
	CB-5	06:27	BE	Net		Net 33	75° 18.240	153° 16.209		100			HM/LW		
	CB-5	06:53	BE	Net		Net 34	75° 18.286	153° 16.069		100			HM/LW/KY		
				EM OUT											
30	CB-4	13:48	BE	ROS	UN	025	75 0.085	150 0.130	3825	1000	493-515	23	SC/KY MD/GT	✓	Calibrate east with
		14:14	BO				75 0.140	150 0.112							ISUS
		15:09	EN				75 0.208	150 0.013							
30	CB-4	12:34	BE	NET		Net 35	74 59.921	150 00.254		1000			KY/MD/ SC		
		13:0	BO												
		13:33	EN												

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— = —

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Cast delayed @ start due to probs w spot lights + IMS block $\rightarrow$ CTD/Ros not brought to surface b/c starting downcast $\rightarrow$ communication error!

ISUS mounted but not turned on.
Ooops! mp.

DAILY SCIENCE LOG

EM OUT

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Month <u>OCTOBER</u>		Year <u>2009</u>		Ship <u>LSSL</u>		Cruise ID <u>2009-20</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							
01	CB-7	2:14	BE	TURBO			75 57.009	149 59.249	3827						
		2:33	EN	"			75 57.016	149 59.378	"						
01	CB-7	2:45	BE	ROS	UN	026	75 56.998	149 59.502	3827		516-539	24	MC	✓	WHOI - mooring release
		3:58	BO	"			75 56.796	150 0.139		3818			HM, GC, LW		test x3 (no wait on bottom → tested during downcast)
		5:04	EN	"			75 56.983	150 1.685							
01	CB-7	2:54	BE	ADCP			75 56.965	149 59.604	3827						
		04:40	EN	"											
01	CB-7	03:13	BE	NETS	-	Nets 36	- for media only - not sampling		100				LW/HM		Hydrants / hoses all frozen on foredeck, 1st net for korman
01	CB-7	03:23	BE	NETS	-	Nets 37	75° 56.867' N	149° 59.680' W	3827	100			LW/HM		only - media dumped into buckets.
01	CB-7	03:33	BE	NETS	-	Nets 38	75° 56.849' N	149. 59. 913' W	3827	100			LW/HM		
				EM IN											
	CB-7	02:40		PRR		PRR-11	75 56.911	149 59.622		118			J.Z.		
01	CB-8	10:14	BE	ROS	UN	027	76 59.984	150 0.022	3825		540-563	24	JC/KC/MD/ET	✓	wait on deck for more than 5 minutes
01		11:26	BO				77 0.041	150 0.744		3816					
01		12:37	EN				77 0.116	150 0.949							
		10:20	BE	ADCP			76 59.99	150 0.077							
		12:29	EN				77 0.116	150 0.862							

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 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

Notes:

Time Code:

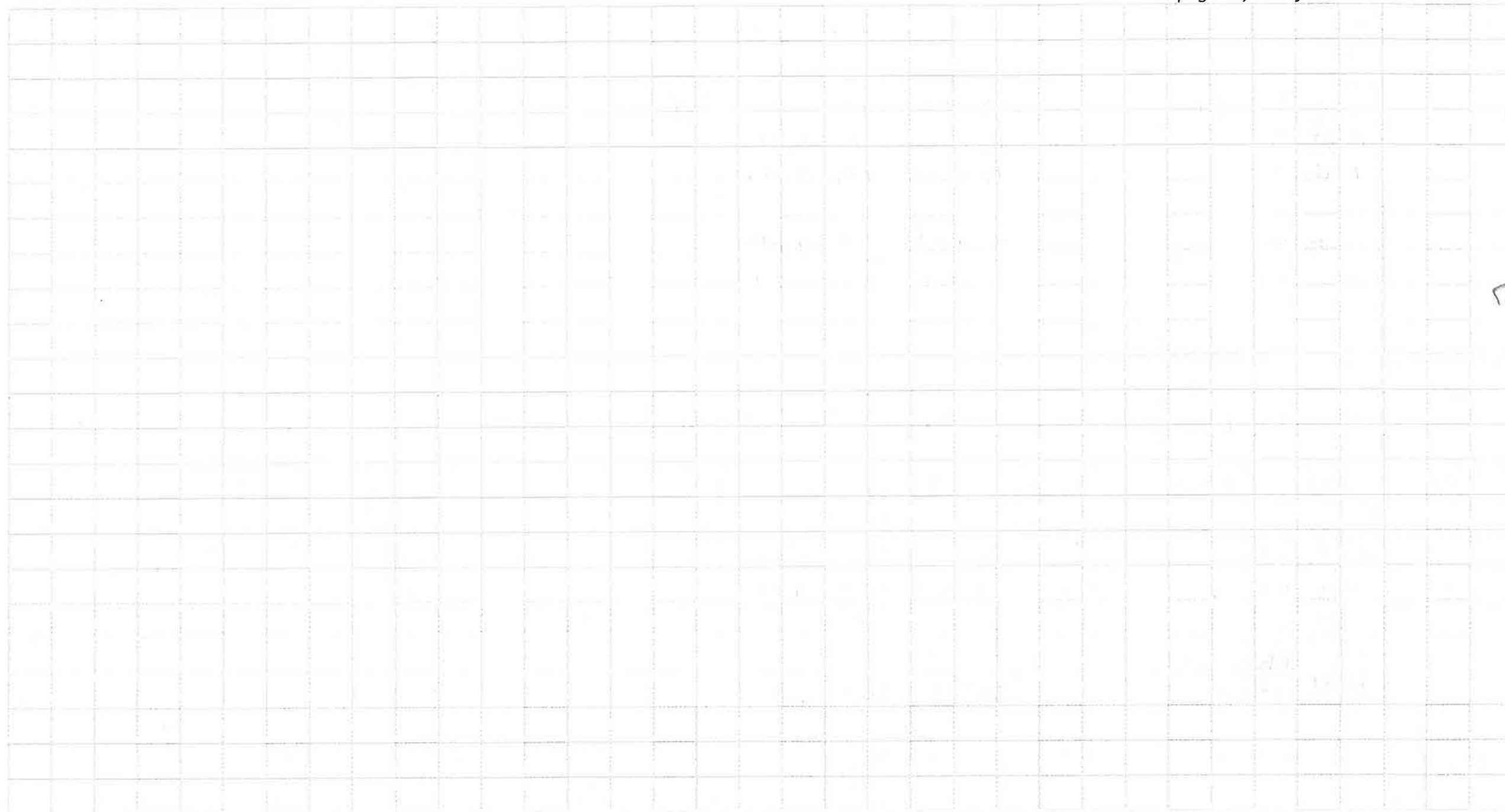
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Transmissometer to be cleaned before each cast, do not use Ammonia products

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 06 March 2008

This page is for any notes or observations



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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>OCTOBER</u>				Year <u>2009</u>			Ship <u>LSSL</u>			Cruise ID <u>2009-20</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							
01	CB-9	17:16	BE	ROS	UN	28	78 01.141	150 7.498	3825		564-586	23	JC/KY/ MB/ET	✓	ZSVS - ON
		17:43	BO				78 01.055	150 7.684		1000					
		18:06	EN				78 0.937	150 7.787							
01	CB-9	17:28	BE	ADCP			78 01.088	150 7.616							
		17:51	EN				78 01.016	150 7.711							
01	CB-9			WHOI MOORING	RECOVERY										
				EM 007											
02	CB-9	1:36	BE	TURBO			78 00.941	150 10.679							
			EN												
02	CB-9	01:55	EN	PRR		PRR-12	78 00.933	150 10.980		111			JZ		
02	CB-9	2:27	BE	ROS	UN	29	78 0.751	150 11.186	3825		587-610	24	(M)	✓	delayed launch.
		3:41	BO				78 0.562	150 11.815		3813			HM, GC, LW		Speed fluctuations in
		4:50	EN				78 0.386	150 12.156							1200m → geared down.
02	CB-9	2:33	BE	ADCP			78 0.730	150 11.249							(downcast)
	CB-9	00:37	BE	NETS		Net 39	78° 00.716'N	150° 11.322'W	4128	100			LW/HM		1 fixed 50µm net worked.
		00:44	BE			Net 40	78° 00.692'N	150° 11.394'W	4132	500					Five flow metres not working
		01:18	BE	x3		Net 41	78° 00.604'N	150° 11.693'W	4130	100					well by 3rd Cast.

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Notes:

EM IN

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ISUS noisier than previous casts.

Paused @ ~3000m on upcast to change bottle depths (one extra bottle fired).
Slowed to 30 m/min @ ~200m (usually speed is decreased @ 300m).

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCT				Year 2009			Ship LSSC				Cruise ID 2009-20				
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	CB-10	10:02	BE	ROS	UN	30	78 20-639	153 1-241	2952		611-634	24	SC/KY MD/ET	✓	Thin ice
		11:01	BO				78 20-737	153 1-483		2965					
		12:03	EN				78 20-903	153 1-805							
02	CB-10a	13:29	BE	ROS	UN	31	78 20-513	153 30-647	1725		635-658	24	SC/KY MD/ET	✓	Station name in
		14:08	BO				78 20-662	153 30-527	(CTD+ACD)	1713					hdr file is incorrect
		14:44	EN				78 20-813	153 30-372							it should be "10a"
				✓	EM OUT										not "10a"
02	CB-10a			TURBO	MAP										
				NETS									KY/MD		CANCEL -
				EM IN											WINCH FROZEN
		17:29		PRR		PRR-13	78 19-849	154 0-228		122			JZ		
02	CB-10a	17:32	BE	ROS	UN	32	78 19-765	154 0-530	1066		659-681	23	SC/KY MD/ET	✓	ISSUS on
		18:01	BO				78 19-902	154 0-20		1000					
		18:29	EN				78 20-063	153 59-944							

winch stops @ 11:11:10 after "2500" (bottle 2) is triggered. Ship moves to avoid ice.
restarts @ 11:12:48

pushed Isus to 1050m - OK.
noisy from start.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 15 of

Month <u>October</u>				Year <u>2009</u>			Ship <u>LSSL</u>			Cruise ID <u>2009-20</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							
02	CB-60	2059	BE	ROS	UN	033	78 35.628	154 13.980	1984		682-705	24	MC	X	
		2144	BO				78 35.932	154 13.765		1974			HM, CRC LW		
		22:23	EN				78 36.210	154 13.578							
02	CB-60		BE	ADCP											
		22:14	EN												
02	CB-60	22:20	BE	NET		042	78°35.781'N	154°13.895'W	1931	100	-		2W/4M	-	Lots of ice in samples - 6.2°C, blowing snow
		22:34	BE	NET		043	78°35.880'N	154°13.818'W	1918	100	-		2W/4M	-	very windy
		21:54		PRR		PRR-14	78 36.149	154 13.628		111			JZ		
03	CB-61	01:00	BE	TURBO	EM	1N				150					
		01:10	EN												
03	CB-61	1:31	BE	ADCP			78 51.636	154 15.682							
03	CB-61	0120	BE	ROS	UN	034	78 51.556	154 15.881	3074 ^(K)		706-729	24	MC	X	→ deiced block @
		0223	BO				78 51.971	154 14.641	3135 ^(K)	3095			HM, CRC LW		u 350m depth on
		03:10	EN				78 52.280	154 13.375							downcast; again @ 775m
03	CB-116	15:54	BE	ROS	UN	035	80 16.879	152 34.158	3812		730-753	24	Jelly M/T	X	Stop @ 100m for cups upcast & downcast
		17:21	BO				80 16.862	152 30.584		3796					
		18:34	EN				80 16.817	152 28.121							

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no noise on vacant ISUS V7.

De-rised again @ 11:10m (Not usually done this often).

Replaced cDOM cable prior to cast 035. Noise on ISUS channel appears removed.

#035
- noise on vacant ISUS channel V7
upper 275m. $\leftarrow 0.7V$ not seen on upcast.
cross talk from cDOM signal?