DAILY LOG BOOK

MISSION NUMBER: CR 2003-08

DATE: From: MARCH 31, 2003 to: APRIL 12, 2003

VESSEL: CCG VECTOR

PROJECT: CFCAS/DFO

INSTITUTE OF OCEAN SCIENCES
OCEAN SCIENCES AND PRODUCTIVITY DIVISION
SIDNEY, BC, CANADA

Captain: DON HARPY First Officer: Steve Kennedy
Second Officer: MARK Meester Third Officer: _____

Mission Participants / Agencies: _____

Scientific Personnel: Party Chief: Richard Thomson

Name	Watch	Cabin	Name	Watch	Cabin
Richard Thomson					
DAVID SPEAR					
Heath Maclean					
AUDREY DALIMORE					
CINDY WRIGHT					
RANDY ENEIN					
DAVID THORNHILL					

Second leg of Mission: Party Chief: _____

Name	Watch	Cabin	Name	Watch	Cabin

Data logging computer: FSDZ
Data acquisition program: _____
CTD deck unit make: SeaBird model: SBE11+ serial number: 0619

Primary CTD
Make: SeaBird model: 911+ serial number: 0585
Primary temperature serial number: 2023
Primary conductivity serial number: 1763
Secondary temperature serial number: 2106
Secondary conductivity serial number: 1764
Transmissometer: Wet Labs Model: C-Star s/n: 333DR
Fluorometer: Model SEAPoint Cable gain: 10 s/n: 2229 **P, S or NO pump?**
Oxygen sensor: SeaBird Model: 43 s/n: 0047 **P, S or NO pump?**
PAR sensor: — Model: — s/n: —
Other sensors: pH SeaBird s/n: 0160 **P, S or NO pump?**
Other sensors: ORP SeaBird s/n: 0160 **P, S or NO pump?**
Other sensors: _____ s/n: _____ **P, S or NO pump?**
Other sensors: _____ s/n: _____ **P, S or NO pump?**

Secondary CTD
Make: _____ model: _____ serial number: _____
Primary temperature serial number: _____
Primary conductivity serial number: _____
Secondary temperature serial number: _____
Secondary conductivity serial number: _____
Transmissometer: _____ Model: _____ s/n: _____
Fluorometer: Model _____ Cable gain: _____ s/n: _____ **P, S or NO pump?**
Oxygen sensor: _____ Model: _____ s/n: _____ **P, S or NO pump?**
PAR sensor: _____ Model: _____ s/n: _____
Other sensors: _____ s/n: _____ **P, S or NO pump?**
Other sensors: _____ s/n: _____ **P, S or NO pump?**
Other sensors: _____ s/n: _____ **P, S or NO pump?**
Other sensors: _____ s/n: _____ **P, S or NO pump?**

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

March 31/03 Alongside for loading, CSI — inspection.
April 1 White Crew on after annual refit. Service engines.

April 2: 0900 PST - Complete loading 600 lbs of dry-ice loaded.
depart 0930 - Saanich Inlet 40 swing Compasses, test 2x CTDS and bottles. CTS (Dave Thornhill Peter, Doug, Alan -) continued to work on Multibeam system. I was working the day before when ship was alongside. Ship in Saanich Inlet, off IOS. Around 1600, CTS began to change power supply and boards. Following phone calls to the Simrad technical support man in Halifax, it was found that TRX4 was not working. The board was replaced and system worked. Off load CTS (except Thornhill) at around 1800 PST. Proceed to Jervis Inlet stations via Active Pass.

Apr 3, Mooring. Jervis Inlet - Release send 1606 UTC.
Mooring on Surface @ 1609 UTC

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month April **Year** 2003 **Ship** VECTOR **Cruise ID** 2003 08

Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
2	—	~~0930~~	Saanich Inlet to Swy Compass & test CTD/Rosette											
2	S I	1949	ROS	BG	001	48 38 70	123 30 27	194		0-3	3			TEST CAST
				BO		48 38 76	123 30 23							180/150/80
		2001		EN		48 38 79	123 30 18							
2	SI Test 2		CTD	BE	002	48 38 81	123 30.09	194						Testing CTD 050c
				BO		48 38 84	123 30.13							Diff between S1 & SO
				E2		48 38.84	123 30.12							TOBT1 look good.
														Pressure looks good
3	JE 01	1401	CTD	BE	003	49 42 82	124 14 41	291						CTD ONLY
		1408		BO		49 42 79	124 14 44		275					
		413		EN		49 42 78	124 14 44							
3	JE02	15:01	CTD	BE	004	49 46.190	124 10.005	610						
		1517		BO		49 46.182	124 09.958		605					
		1527		EN		49 46.165	124 10.018							
	Mooring Jervis Inlet. Respond @ 1605. On surface @ 1609 UTC													
3	JI01-	1849	anchor away.			49° 45.191	124 14.199							
3	Ripple Rock	094	SVP16		005	50°05.860	125°17.700							Sound velocity profile for multi beam.

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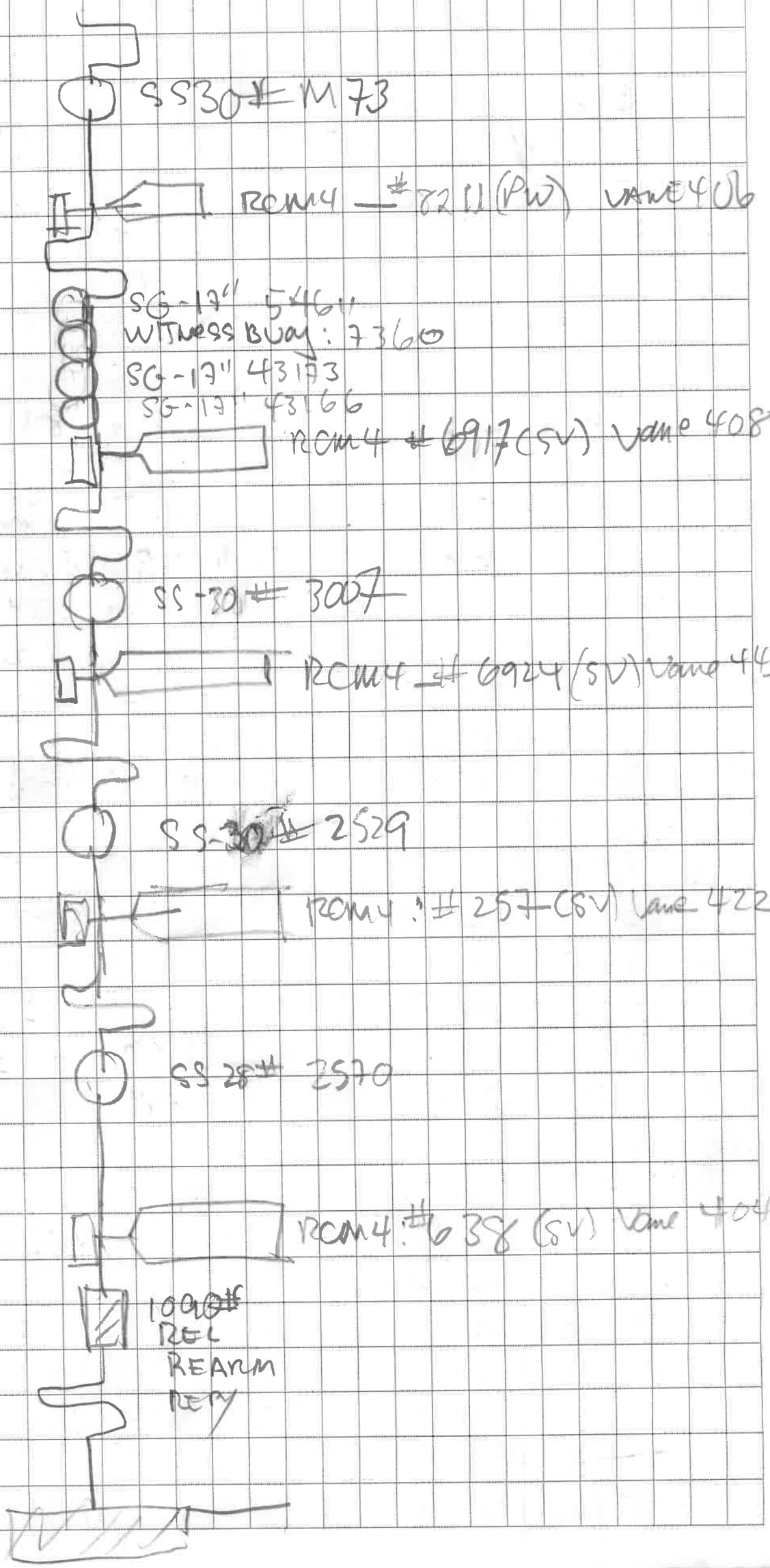
Transmissometer to be cleaned for each cast, do not use Ammonia products

Anvil 3/03

Jervis Inlet



- 5m pickup line
- M73 SS30.
  ½" shackle, ½" shackle, swivel, ½" shackle, pinger (#86 / 19.9 v), ½" shackle; 1m ½" wire

1 RCM4 8211 VANE #406
- 45.85 m of 5/16" wire
- ½" shackle
- SG17-5461
- WB 7360
- SG17 # 43173
- SG17 # 43166
- ½" shackle
- 1 m 5/16" wire

2. RCM4 8917 408 vane
- 217.25 m ¼" wire
- SS30 #3007
- ½" shackle, 1 m 5/16" wire

3. RCM4 #6924 vane 443 in water @ 1042 PST
- 22.25 m of ¼" wire
- ½" shackle
- SS30 # 2529
- ½" shackle
- 1 m 5/16" wire

4. RCM4 257 vane 422 in water at 1044 PST
- 21.45 m ¼" wire
- ½" shackle
- SS 28 #2570
- ½" shackle, ½" shackle, swivel, ½" shackle
- Ringer #798c, 19.0 V
- ½" shackle
- 1 m 5/16" wire

5 · RCM4 #638 vane 404 In water @ 1048 PST
- ½" SS shackle, isolator to a ½" shackle
- 5/8" Rear Link 3/4" Shackle

JO 1090 # 314

IOAR codes
Rel. BCDF
Recv CDFG
Rpdy 8 kHz

Anchor Away at: 1849 UTC
Depth sounder: 345 m
LAT: 4945.191
LONG: 12414.199

1" drop shackle
2.3 m poly
1" shackle
2200 lb with 1m heavy chain

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month April					Year 2003			Ship Vector				Cruise ID 2003-08		
Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
4	—	1718	MB			51 03.841	127 40.530	Calibration lines						START Multibeam calibration 1 mi seaward of CO9?
"	Cool, slightly overcast. Light swell													
"	QSC1 ~~OCS~~		SVP		006									
	NSØ	2005	ROS	BE	007	51 05.57	127 28 59	85		1-8	8	H.M.		Nuts/oxy
		2007		BO		51 05 51	127 28 58		80					
		2015		EN		51 05 53	127 28 56							
	NSØ	2020	SVP		008	51 05 46	127 28 47	80	75					
04	SE01	2059	ROS	BE	009	51 04 51	127 26 50	102		9-16 *	8	H.M		NUTS/OXY
		2102		BO		51 04 52	127 26 51					←		NOTE *
		2110		EN		51 04 49	127 26 39							
04	SE01	2130	NET		0010	51 04	127 26	102	75	—	—		Net	2 SAMPLE (16 & 16+)
										*				
04	SE 02	2147	ROS	BE	011	51 03 51	127 23 52	98		16+ - 23	8	R.T.		we had two #16 label so called the 2nd one 16+
		2150		BO		51 03.516	127 23 559							
		2158		EN		51 03.496	127 23.645							
04	SE02A	2228	ROS	BE	012	51° 02.303	127 20.040	72		24 - 30	7	H.M		Net tow CANCELLED Do at SE03
		2231		BO		51 02.296	127 20.069		68					Hit Bottom?
		2239		EN		51 02.279	127 20.140							Sounder not working well in PASSIVE mode

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Additional comments

APRIL 4/03: 0915 PST. Run calibration lines for pitch & roll multibeam. Steam one line at constant speed in opposite directions. Repeat but this time at increasing ship speed.

1831 PST Enter Strings by channel.

We completed stn SE03 using both O_2 & nutrients but found that we would not have enough glass/plastic test tubes to complete all stations. CANCELLED nutrient stations and focused instead on shallow arms or heads of inlets. Nutrients taken at NSO, SE01, SE02, SE2A, SE03 ——→ end detailed nutrient samplings.

AUDREY'S LIST

Alison Sound: ALS2 Freeze + Gravity

ALS3 (to east) Freeze + Gravity →

Add ALS4 stn CTD (Freshwater sample + Randy samples)

3.5 kHz like ALS7 → ALS3.

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month APRIL **Year** 2003 **Ship** VECTOR **Cruise ID**

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04	SE03	2311	ROS	BE	013	51 02.869	127 15.489	451		31-47	17			sounding good.
		2321		BO		51 02.896	127 15.510		436					
		2345		EN		51 02.936	127 15.512							
05	SE03	0003	NET	BE	014	51 02.90	127 15.33	411	150	—	—			
05	SE04	0047	ROS	BE	015	5103.134	127 08.040	550						Had to cut back on nutrients
		0059		BO		5103.057	127 08.089		540	48-65	18			
		0121		EN		5103.003	127 08.187							
05	SE05	0214	ROS	BE	016	5104.305	127 00.714	616		66-85	20			
		0225		BO		51 04.346	127 00.811		610					
		0249		EN		51 04.389	127 00.912							
05	SE05	0256	NET		017	5104 36	127 00 93	610	250					④ 3.5 kHz transect line N/S (photo 125-126)
	3.5 kHz Soundings from south-to-north through STN SE05 [Anya Roy & Randy]													End @ 2000 PST
11	SE06	0431	ROS	BE	018	51 04.285	126 52.421	538		86-104				
		0441		BO		51 04.247	126 52.418		532					
		0502		EN		51 04.179	126 52.438							
05	SE06		Neuston Tow	BE	019	5104294	126 52 335		Surface tow					
				EN		5104284	126 51 625							

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DAILY LOG — Ocean Sciences and Productivity Division — **INSTITUTE OF OCEAN SCIENCES**

Month April **Year** 2003 **Ship** VECTOR **Cruise ID** 2003-08

Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
05	SE07	0625	ROS	BE	020	51° 06.013	126° 45.001	258		105-118	14			
		0631		BO		51 06.031	126 45.025		255					
		0644		EN		51 06.060	126 45.039							
05	SE07	0646	NET		021	51 06.065	126 45 036	254	150					
05	SE08	0754	ROS	BE	022	51 10.995	126 39.487	133		119-142				
		0758		BO		51 10.977	126 39.450							
		0808		EN		51 10.938	126 39.409							
05	SE08	0817	NET	BE	023	51 10977	126 39 495	132	100					
05	SE08	0822	SVP	BE	024	51 10960	126 39 504	132	—					
05	Frederick	Sound	Mooring	recovery		@ 0700	PST							
	SAlmon	ARM	Multibeam	Survey		up/back	@ 0900 PST							
05	Frederick Sound					51.01.819	126 43.141							seismic line (photo 116 and 117)
05	PGC LINE 5	21:45	Gravity Core		025	51 01 823	126 43028	241						VEC03-08-1 Gravity core #1
05	11	22:15	1		026	51 01831	126 43043	241						VEC03-08-02
05	Soflin 5	22:39	11		027	51 01 357	126 42.770	241						VEC03-08-03
05	Frs02	23:37	Box core	BE	028	51 00.412	126. 42.380	211						Failed
[illegible]														

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Frederick Sound B Recovery

Additional comments

2003/04/05

1525 On Station 239m 234m
Moved off station to release
1536 325m 459 453 465

1537 ACDF Sent - Positive Response
1538 On Surface
1613 On Deck

April 6/03
MOORING FR
Sound

SS 28 #

Pinger #

20m

RCM 4 # 7996
VANE 416

SG 17 #
SG 17 #
SG-17 #

75m

RCM 7 # 9049
Vane 704

SG 17 #
SG 17 #

RCM 7 # 9360
VANE 705

Seacat SBE 16+ # 4201

SG 17
SG 17
SG 17

RCM 7 # 9143
VANE 706

1090 #

① 45th CM in 1444 UTC
water: 0742 PDT
② ANCHOR 1450 UTC
away
③ Depth: 213 m
anchor away

April 5/03

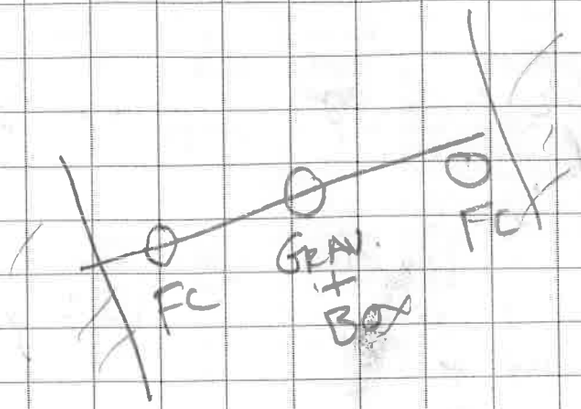
FREDERICK SOUND CORES

FREEZE CORE

GRAVITY CORE

BOX CORE

FREEZE CORE



DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month APRIL **Year** 2003 **Ship** VECTOR **Cruise ID** 08

Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
06	FRS3	0016	ROS	BE	029	50 59.916	126 43.686	58		143-148	6			Cool/Rain
		0023		BOT		50 59.910	126 43.690							
		0028		EN		50 59.901	126 43.667							
06	FRS3	0034	Net	BE	030	50 59.913	126 43.663	58	50	—	—			
06	FRS2	0056	ROS	BE	031	51 00 54	126 42 22	214		149-160	12			BOT # 6 MISFIRE
		0100		BOT		51 00 54	126 42 21		203					
		0113		EN		51 00 54	126 42 26							
06	FRS02	0119	Net	BE	032	51 00.53	126 42.269	214	1500	—	—			
06	FRS1	0153	ROS	BE	033	51 02.232	126 42.986	241		161-174				low oxygen
		0159		BOT		51 02.229	126 42.976							
		0211		EN		51 02.236	126 43.045							
06	FRS1	0214	NET	BE	034	51 02.233	126 43.024	241	200					
06	FRS0	0253	ROS	BE	035	51 03.813	126 44.600	160		175-184				low O2 at bottom
		0259		BOT		51 03.815	126 44.602							but not bottle #2!
		0306		EN		51 03.818	126 44.609		150					
06	FRS0	0312	NET	BE	036	5103823	126 44 612	160	125					
06	FRS0	0331	Net haul	BE	037	5103857	126 44 614	160	0					surface tow
		0346		EN		51 03 508	126 44 345							
	CHANGE TO PDT (ADD 1 Hour)													

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SBE 16+

Additional comments

Sunday April 6 AM: PDT (from PST to PDT).
Leave SBE 16+ sampling at hourly with 15 second averaging. We did not fill memory for both April-Oct 2002 + Oct 2002 - May 2003 deployments. Instrument takes 8 Mbyte memory. Roughly 4.2 MB remaining. Keep all data in memory.
Flushed cell with Tris on Water.

STRANGE HAPPENINGS — Bottle # 1 at FRS0 had very low O_2 (based on white precip on dock pickling. But the next bottle, #2 only 10 m shallower, had much higher O_2 based on on-dock pickling. Bottle #3 was low again.

DAILY LOG

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Month APRIL **Year** 2003 **Ship** VECTOR **Cruise ID** 2003-08

Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
06	FRS	1441	MOOR		038									Last CM in water
	FRS	1450	MOOR		038	51 03.068	126 44.010	213						Anchor away
06	FRS1		Freeze		039	51 01.799	126 43.323	155						Last one - Tube on bedrock
	Ended Line 5	1651	Freeze		040	51 01.764	126 43.480	120		30 minute wait - failed				Good Core! 12003-08-04
06	FRS	1816	Freeze		041	51 01.55	126 42.32	211						
06	FRS02	1928	Box		042	5100567	126 42 412	211	211					-arm caught
	FRS02	1959	Box		043	51 00571	126 42432	211	211					-bolt did not release
	FRS02	20:13	Box		044	51 00569	126 42 428	220	220					-bolts did not release
	FRS02	20:20	Box		045	5100 598	126 42 353	219		Box core kept failing on us. twigs, line snags, ...				-too many snaps
	Search for	lost		UBC	freeze core. Not sure it surfaced.				No luck.					doors won't close.
06	SE02		SVP		046									
	BE01		SVP		047									
07	BE06	0555	ROS	BE	048	51 06.564	127 02.154	334		185 - 199				Windy Downcast @ 35+ knots
		0600		BOT		51 06.575	127 02.155		323					
		0616		EN		51 06.628	127 02.137							
07	Be06	06:20	SVP		049	5106.596	127 02053							
07	Be07	0715	ROS	BE	050	51 06.316	126 55.836	262		200 - 212				
		0721		BOT		51 06.327	126 55.85		240					
		0732		EN		51 06.267	126 55.85							

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Additional comments

April 6/03: ALS3C freeze core around 0800. Looked fine going down but stopped when hooked slowly over the floating line and line was caught in the prop. Line parted and freeze core cut loose. No sign of bubbles, ...

APRIL 6/03: Audrey's list for ALISON SD.

① ALS2 freeze + gravity cores
② ALS3 + (+6 east of ALS3) Freeze + gravity cores
③ ALS4 NEW CTD/Rosette (Freshwater for Emmy; rocks for Randy)
④ Conduct 3.5 kHz line from ALS1 → ALS3

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month APRIL **Year** 2003 **Ship** Vector **Cruise ID** 2003-08

Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
07	Be7	0748	NET		51	51 06328	126 55 844	262	200					
07	Be 5	1415	ROS	BE	52	51 07 20	127 08 80	280		213-226	14			
		1422		BO		51 07 22	127 08 80		275					
		1441		EN		51 07 26	127 08 76							
07	Be5	1449	NET		53	51 07 239	127 08 755	280	250					
07	ALS1	1606	ROS	BE	54	51 10.126	127 05.831	155		227-236	10			Light rain / misty / Bubblehead Ducks
		1605		BO		51 10.127	127 05.858		144					
		1617		EN		51 10.129	127 05.865							
07	ALS1	1625	NET		55	51 10 139	12705 865	155	125					
07	ALS2	1701	ROS	BE	56	5110.201	12702.497	110	[redacted]	237-244				
		1705		BOT		51 10.215	127 02. 48		100					
		1715		EN		51 10.196	12702.501							
07	ALS2	1720	NET		57	51 10 192	127 02 483	105	100					
07	ALS3	1758	ROS	BE	58	5 1 09.997	126 56.824	136		245-253				transmissometer cleaned. Bottom 3 bottles smelled of H2S
		1804		BOT		51 09.984	126 56.860		128					
		1814		EN		51 09.985	126 56.830							
07	ALS3	1822	NET		59	51 10003	126 56.838							

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DAILY LOG — Ocean Sciences and Productivity Division — INSTITUTE OF OCEAN SCIENCES

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07	ALS4	1841	ROS	Be	060	51 10.834	126 55.449	74		254-260				Smell of H_2S on bottles 1, 2 and 3(?)
		1844		Bot		51 10.833	126 55.455		70					
		1853		EN		51 10.831	126 55.459							
07	ALS4	1859	Net	BE	061	51 10.827	126 55.470	70	65					
					062									
07	ALS4	1948	Recvt		062	51 10.777	126°55.486	78	onboard at 2020 UTC					1/2 hr down VECO3-08-05
	ALS4-3	2030	3.5 kHz		063	" TO								ALS4-ALS3
07	ALS3	2042	Recvt		064	51 10.005	126 56.782	131						VECO3-08-06
07	ALS3	2055	3.5 kHz			TO								ROS 2 VE 7 ALS3 → Mooring
07	ALS1	2313	Moor		065	51 10.102	127 06.059	154						
	MOORING 1st CM in water @ 1600 PST (2300 UTC). Anchor away at 1613 PST. SAME LOCATION AS PREVIOUS													
	MOORING. CMS RCM7 10320 @ 20 m depth; RCM7 10321 @ 20 m off bottom.													
08	ALS2	0151	Recvt		066	51 10.192	127 02.493	151						VECO3-08-07
08	ALS2	1:06:23	BOX		067	51 10.158	127 02.458	151						VECO3-08-08 pinger
08	ALS2	123	"		068	"	"	157						"
08	ALS2	137	"		069	"	"	"						one more time!
08	ALS2	214	Recvt		070	51 10.181	127 02.476	151						at 08 VECO3-08-09 SUCCESS

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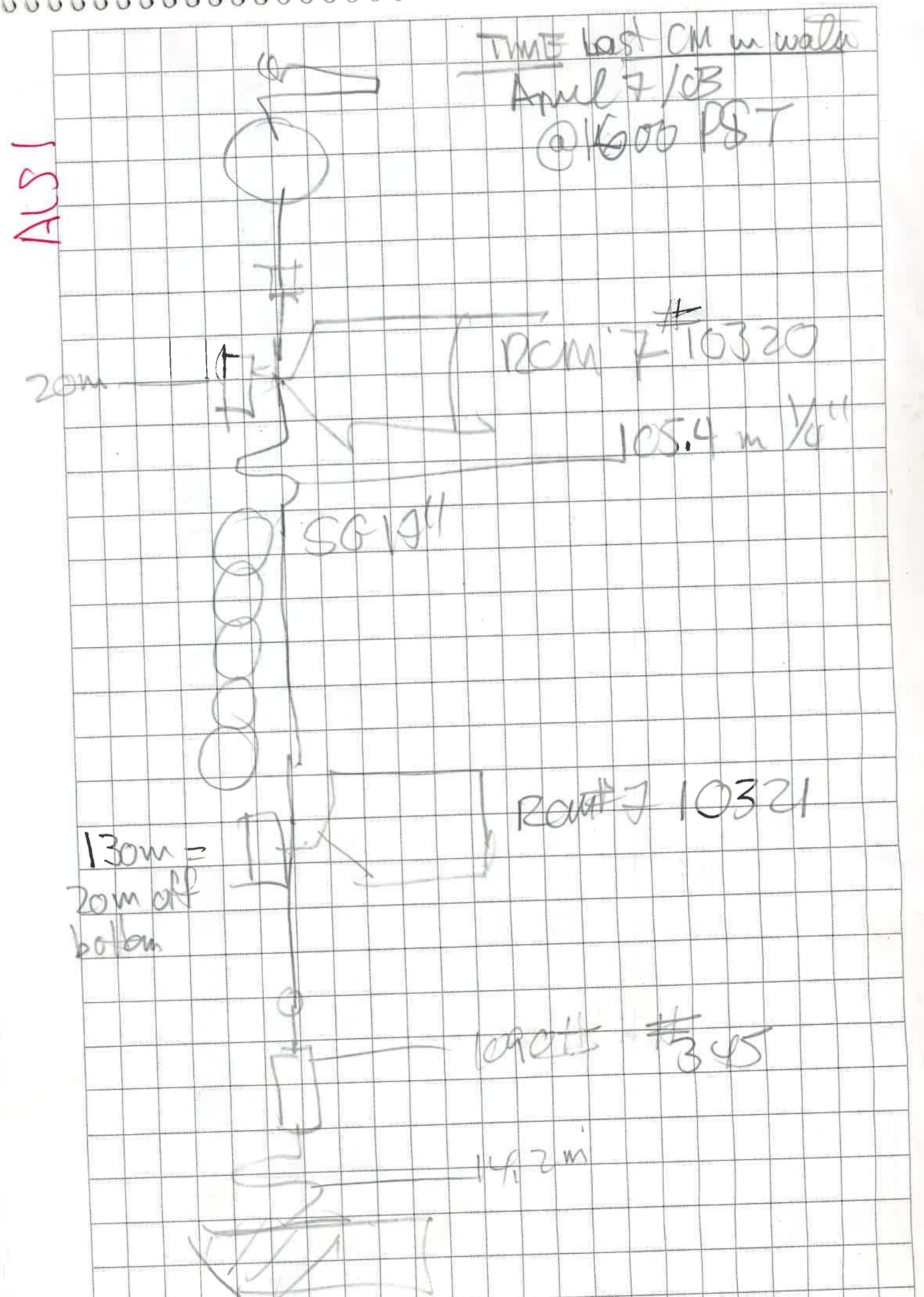
Alison - B - Recovery

Additional comments

April 7, 2003

1941 - on station 160 161
UTC
1950 - BCEH sent 308 306 - on surface

ALSJ



RCM 7 in water: 51 10.157 127 05.827
Anchor Away: 51 10.102 127 06.059
Depth Sounder 154m
(lab)
Time: 1613 PST

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month April **Year** 2003 **Ship** VECTOR **Cruise ID** 2003-08

Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
08	BE5	0355	SVP		071	51 07 194	127 08 675	275	270	—				
	BE5	0410	NET		072	51 07 170	127 08 681	275	270					
08	BE4	1416	ROS		073	51 07 80	127 15 27	384		261-274	14		✓	35-45 kt wind from E
		1424				51 07 80	127 15 17		373					Rain Rain Rain
		1447				51 07 81	127 15 04							
08	BE4	1500	NET		074	51 07 807	127 15 389	372						
08	BE3	1545	ROS	Be	075	51 07.848	127 22.184	282		275-288				No Pinger trace
		1553		Bot		51 07.879	127 22.146		275					2x DO_2 at 275 m.
		1615		En		51 07.899	127 22.066							2x SALINITY (BOT 1 & 2)
08	3.5kHz	1635	Sounding Line	Be	076	3.5 kHz Sounding Line from Entrance to Merry worth Sound								51 08.104 / 127 24.895
08	Me01	1649	ROS	Be	077	51 08.860	127 24.788	80		289-295				wind from North + ebb
		1653		BOT		51 08.855	127 24.800		75					
		1700		En		51 08.844	127 24.821							
08	Me02	1720	ROS	Be	078	5109.935	127 25.149	91		296-302				
		1724		BOT		51 09.930	127 25.159		87					
		1730		En		51 09.913	127 25.120							
08	Me02	1738	NET	Be	079	51 09892	127 25 124	95	90					

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Month APRIL **Year** 2003 **Ship** Vector **Cruise ID** 2003 08

Day	Station Name	Time (UTC)	Cast type	Firing Method	Event Number	Position Latitude	Position Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keeper	Trans. cleaned	Comments
08	MeØ3	1802	ROS	BE	080	51 11 58	127 24 74	92		303-309	7			
		1804		BOT		51 11 59	127 24 73							
		1812		EN		51 11 57	127 24 72							
08	Me03	1818	NET	BE	081	51 11 565	127 24 715	87	80					
08	Me 04	1845	ROS	BE	082	51 11.838	127 21.114	163		310-319	10			
		1850		BO		51 11.828	127 21.101		159					
		1901		EN		51 11 79	127 21 02							
08	Me04	1908	NET	BE	083	51 11 781	127 21 013	163	150					
08	ME05	1942	ROS	BE	084	51 11 63	127 16 35	134		320-327	8			
		1945		BO		51 11 63	127 16 36							
		1953		EN		51 11 62	127 16 35							
08	MeOS	1959	NET	BE	085	51 11 62	127 16.36	130	125					- lots of fresh H2O
08	MEO4	2035	Gravity		086	51 11 84	127 21.11	164	164					VEC03-08-10
08	MEO4	2054	Box		087	51 11 84	127 21 086	164	164					VEC03-08-11
08	MEO4	2124	Grav		088	51 11.84	127 21.11	164	164					VEC03-08-12
08	MESØ	2317	ROS	Be	090	51 07.788	127 25.294	209		328-338	11			Pinger still not working
		2322		BOT		51 07.783	127 25.305		200					
		2334		EN		51 07	127 25,							
08	MeSØ	2344	NET	BE	091	51 07 811	127 25 335	209	200					

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09	Be 2	0044	ROS	BE	092	51 07.890	127 30.528	191		339-349	11			Pinger still not working
		0049		BOT		5107.900	127 30.510		180					NUTRIENTS/ALKALINITY
		0102		EN		5107.905	127 30.453							
09	Be 2	0107	NBT	BE	093	51 07 895	127 30 467	191	190					
09	Be 1	0140	ROS	BE	094	51 07 69	127 34 28	225	220	350-361	12			
		0144		BOT		51 07 69	127 34 26							
		0158		EN		51 07 67	127 34 25							
09	Be 1	0202	SVP	BE		51 07 67	127 34 25	195	190					
09	SEQ 1	0110	CTD	BE	095	51 04.50	127 26 50	106		—	—			CTD ONLY
		0113		BO		51 04 51	127 26 51		99					
		0115		EN		51 04 51	127 26 50							
09	SEQ 1	0334	Niskin	BE	096	51 04 47	127 26 43	106	0m					surface tow
				EN		5104 28	127 25 77							
09	Fox 1	1615	ROS	BE	097	51 04 21	127 41 21	134		362-369	8			
		1618		BO		51 04 25	127 41 30		130					
		1628		EN		51 04 35	127 41 43							
09	QCS6	1928	ROS	BE	098	50 52 45	127 21 66	151		370-377	8			DARIO STATION
		1931		BO		50 52 46	127 21 65		139					* CALLED QCS 1
		1940		EN		50 52 46	127 21 64							IN FILE

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SHOULD BE QCS 6

22 March 2002
Daily_log_book.doc

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09	QCS 2	2140	ROS	BE	099	50 46 60	127 02 34	225						DARIO'S STATION
		2145		BO		50 46 60	127 02 35		216					
		2159		EN		50 46 61	127 02 36							
9	QCS 1	2338	ROS			50 40 05	126 46 26	155						DARIO'S STATION
		2344				50 40 10	126 46 25		154					
		2351				50 40 22	126 46 32							

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