DAILY LOG

CRUISE NUMBER 2001-30

INSTITUTE OF OCEAN SCIENCES

OCEAN SCIENCES AND PRODUCTIVITY DIVISION

DATE	Oct. 2 – 14, 2001
VESSEL	CCGS J.P. Tully
PROJECT	Laperouse, Covariability, Georgia Str., End. Ridge.

Middle Valley Rapid Response to Seismic Swarm Activity.

Captain: John Anderson **First Officer:** Richard

Second Officer: Mat **Third Officer:**

Mission Participants / Agencies: OSAP, DFO, NOAA, UBC, UW, UH.

Scientific Personnel: **Party Chief:** Tom Juhász / Marv Lilley / Steve Mihaly

Name	Watch	Cabin	Name	Watch	Cabin
Dave Spear					
Doug Anderson					
Doug Moore					
Jo Poole					
Luc Legault					
Alice Ortmann					
Phyllis Lam					
Eric Olson					
Geoff Lebon					
Marv Lilley					
Steve Mihaly					

Second leg of Mission: **Party Chief:**

Name	Watch	Cabin	Name	Watch	Cabin

Data logging computer: FS02

Data acquisition program:

CTD deck unit make: SBE model: 11+ serial number: # 0426

Primary CTD

Make: SBE model: 911plus serial number: 0550

Primary temperature sensor serial number: 2668 Calibration date: 18-Jul-01

Primary conductivity sensor serial number: 2102 Calibration date: 17-Jul-01

Secondary temperature sensor serial number: 2374 Calibration date: 18-Jul-01

Secondary conductivity sensor serial number: 2128 Calibration date: 17-Jul-01

Other sensors: Fluorometer, Seapoint s/n: 2229

Other sensors: Transmissometer, Seatech s/n: 192D

Other sensors: PAR, Biospherical s/n: 4615

Other sensors: DO, SBE43 s/n: .0047

Secondary CTD

Make: SBE model: 911plus serial number: 0443

Primary temperature sensor serial number: 2023 Calibration date: 31-Oct-00

Primary conductivity sensor serial number: 1764 Calibration date: 28-Sept-00

Secondary temperature sensor serial number: 2106 Calibration date: 02-Nov-00

Secondary conductivity sensor serial number: 1763 Calibration date: 31-Oct-00

Other sensors: Transmissometer - Wetlabs C-Star s/n: 333DR

Other sensors: s/n:

Other sensors: s/n:

Comments: Oxygen sensor on primary pump
Fluorometer on secondary pump

Cruise 2001-30

PDT Time Date

Oct. 2 0730 - I.O.S. - Dave Spear, Doug Moore, Tom Suhasz, Steve Mihaly, Jo Poole, Luc Legault,
- (onboard) - Doug Anderson
- U. of H. - Phyllis Lam
- U of W. - Marv. Lilley, Eric Olson
- NOAA - Geoff Lebon

all meet at I.O.S. and depart for Gold River to meet Tully
0745 - 0815 hrs.

0700 sailing Horseshoe Bay - Alice Ortmann and another UBC vehicle cross Horseshoe Bay to Nanaimo then to meet

1330-1415 - all parties arrive at ship in Gold River
- cross loading completed
- science crew exchange completed. Mackas crew depart by 1530

1800 - ship leaves Gold River for BP1
- set up + securing for sea in progress

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Year 2001 | Month OCTOBER | Ship JP TULLY | Cruise I.D. 2001-30

Day	Station I.D.	Cast Type	Time (UTC)	Time Code	Consec. Number	Latitude	Longitude	Position Code	Bottom Depth	Max Depth	Consec Sample #	# of Bottles	initials	Comments
03	LOOP 1	USW	1100			49 53.13	127 34.46		75		001			LOOP TAKEN
03	BP1	CTD			001									
			1654	BO		50°4.80'	127°52.50'		52	45				
			1657	EN		50 4.80'	127 52.80							
03	BP2	ROS	1737	BE	002	50 3.99	127 54.15		96	88	2-8	7		
			1738	BO										
			1745	EN		50.04.03	127 54.22							
	BP2	NET	1821 18	BO	003				96	90				
03	BP3	CTD	~~0657~~	BE	004	50 03.20	127 55.28		164	160				BONGO
		19	~~0703~~	BO		50 3.19	127 55.32							
		19	~~07~~07	EN		50 3.20	127 55.33							
	BP3	NET	1921	BO	005	50 3.20	127 55.33		162	155				BONGO
03	BP4	ROS	2120	BE	006	50 1.358	127 58.106		1010		9-27	19		
			2140	BO		50 1.376	127 56.048			1040				
			2215	EN		50 1.372	127 58.140							
03	BP5	CTD	2246	BE	007	49 59.970	127 59.013		1255					
			2310	BO		49 59.994	128 00.064			1261				
			2332	EN		49 59.985	127 59.798							
	BP5	NET	2340	BO	008	49 59.985	127 59.990		1255	250				BONGO

Cast type: BOT = ottle cast; CTD = CTD; MOR = mooring; ROS = Rosette; NET = net haul; DRF = drifter; USW = sea water loop

Time Code: BE = beginning time of cast; BO = bottom time of cast; EN = end of cast time; DE = deployment time; MR = messenger release time; RE = recover mooring time

Oct. 3

0735 -on station BP1 for recovery

-ranges 96 99, m we are on it
-moving off for recovery

0746 -ranges 145, 146, m
-sent ADFH
-sighted on surface

-recovered without incident

-proceed to LBP CTD/Rosette line

Notes:
-previous cruise lost one of our hand held radios and did not warn us. We are down to one radio.

-previous cruise used up most of the oxygen chemicals and again gave no notification - We are limited in the amount of oxygen we can take.

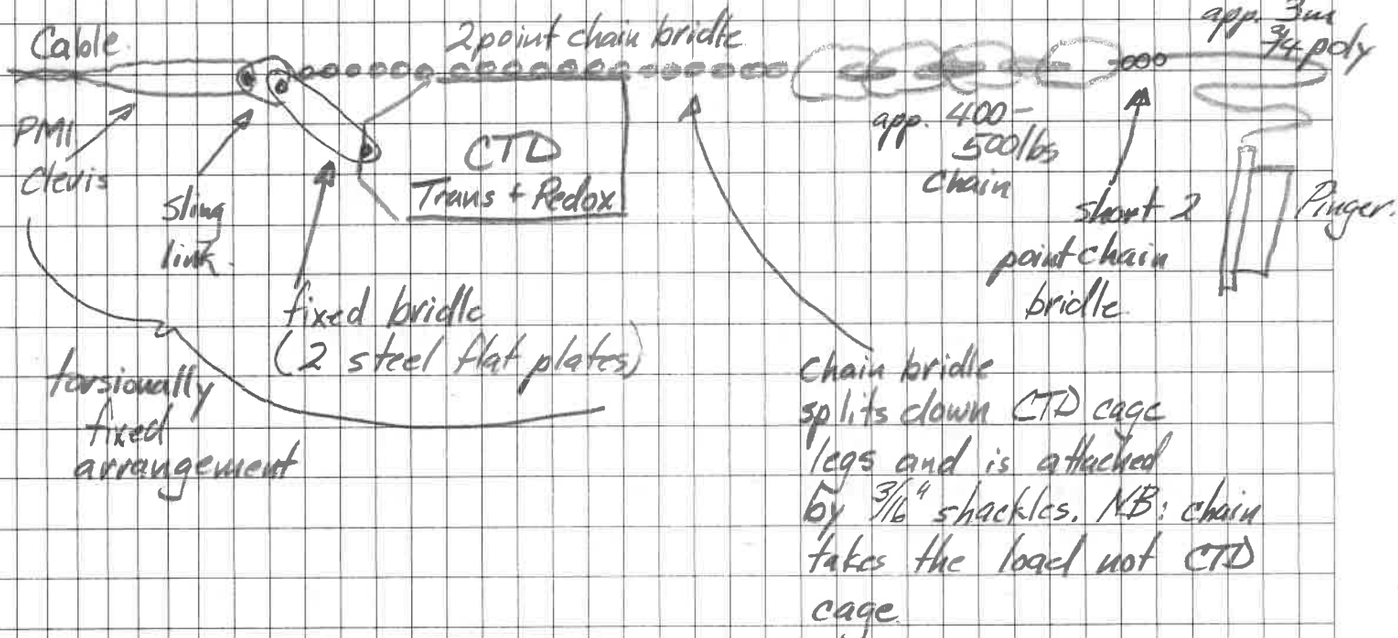
Oct. 4
1930 PDT -deployed mooring MV1-A @
48° 28.909
128° 42.830
≈ depth 2465 m
-in the dark - listened to VHF Chan. 68 on surface during deployment and tow to position.
- observed VHF signal stop 6-7 min. after launch.

04 October

0845 Begin Tow1 ~~— SE of~~ 2NM SE of Bent Hill area. Primary temperature and conductivity not working properly on surface water. Back on deck for Dave examination. Primary T and C calibration coefficients all wrong for serial number 2023. Only the serial number matches the unit on the fish (fascinating!). Conductivity and other sensors correct. Resetting calibration coefficients to correct values solves T & S problems.

0858 Begin TOW1 Again. Tow starts with a surface to bottom cast near the ridge wall to ascertain coefficients from T-S plot for temperature anomaly function of Sea-Bird.

Note: Tow-yo package configuration



Tow1 With CTD only 1600 - 2132 UTC

Consecutive files 13, 14, 15

	Lat	Long
Beginning	48° 29.400'	128° 38.840'
End	48 29.115'	128° 42.454'

SCREEN SHOTS

1 UP - fairly flat
1-D - short plot
2D -
2UP -
3D -
3U
4D - some sign on tracks 2300-2400

} REDOX, TEMP, SAL TRANS

↳ SWITCH TEMP TO POTENTIAL TEMP (ITS-90)

FILE	DEPTHS	PTA
013	0 - 2500	Using IPTS-68
↓	2400 - 2300	$A_1 = -7.4609$
↓	2300 - 2460	$A_2 = 259.93$
014	2453 - 2240	
↓	2240 - 2460	
↓	2420 - 2206	
	2200 - 2480	

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Year 2001 | Month OCTOBER | Ship TULLY | Cruise I.D. 2001-30

Day	Station I.D.	Cast Type	Time (UTC)	Time Code	Consec. Number	Latitude	Longitude	Position Code	Bottom Depth	Max Depth	Consec Sample #	# of Bottles	initials	Comments
04	BP6	ROS.	112	BE	9	49 56.161	128 05 524		776		28-44	17		
			124	BO		49 56.156	128 05 598			800				
			156	EN		49 56.202	128 05.458							
04	BP7	CTD	245	BE	010	49 52.418	128 11.178		2184	2216				Nice & close to bottom
			321	BO		49 52.406	128 11.214							Wind 30 kt.
			0348	EN		4952.43	128 11.23							
04	BP7	NET	0400	BO	011	4952.41	128 11.21		2184	250				BONGO
04	BP8	CTD	0509	BE	012	4948.53	128° 16.82'		2067	2087				Wind 30kt 355°T
			0539	BO		49 48.608	128 16.846							
			0610	EN										
04	TOW 1	CTD	1600	BE	013	48 24 400	128 38 840		2250	to 2350	TOW 1			Switch CTD * to 0443. see note.
			1629	BO		48 24 565	128 39 508		2450					
04	TOW 1A	CTD	1655		014	48 24.72	128 40.05							REDOX ATTACHED
04	TOW 1B	CTD	2004		015	48 27.83	128 43.254							
			2132	EN		48 29.115	128 42.434							
04	Vertical 1	ROS	2257	BE	016	48 28.907	128 42.863		2440		BEGINNING TOW 2			Switched back to 0550 see note **
				BO										
				EN										
04	LOOP 2	USW	2300			48 28.92	128 42.84							Thermosalinograph rolled over. Loop Taken

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* Switched to back up CTD sin 0443, using com file 0443CTD.CON. No Rosette. Towing.

** Switch back to rosette and primary CTD sn 0550, using con. file 0550CTD.CON

- use Rosette for Tow-yo continuing along track

SCREEN SHOTS

4U - trans sign 2400-2450
5D -
5U -
6D - Deep diffuse (?)
6U - strong Tr on bottom
7D -
7U - near bottom tr
8D - cut-off
8U -
9D - 1750-1800 tr signal; 1880-1950 Tr, redox, PTA → signal, prob chronic venting from Bent Hill Area. We are about 1 NM due west (WNW) from Bent Hill
9U - 2250-2350 Tr, redox, PTA signs
10D - Tr planes near bottom
10U - "
11 D a
11 D b → Hit bottom with enormous chain
11 U a
11 U b
11 U c
12 D a
12 D b bottom Tr - some other Tr signals (small)
12U bottom Tr - first big ~1400 PTA signal
13D " 2nd " " " "
13U " 3rd " " " "
14D " 4th " " " "

~1400 PTA plume: can be seen on TS plot as well. Worries about it being a permanent hydrographic feature. File 14 was created so that we could get a "new" TS plot. I took values from about 1180 down to the bottom to check. Plots were slightly different but still showed observations at ~1400 m. Making a TS diagram from values at BP8 did not show such observations

14U " 5th " " "
14U - to the surface

End Tow 1

FILE	DEPTHS	PTA
014	2480 - 1500	
	1500 - 2480	
	2450 - 2200	
	2200 - 2500	
	2480 - 2200	
	2200 - 2460	
	2460 - 2200	
	2480 - 1500	
	1600 - 2480	
	2440 - 2000	
	2060 - 2460	
	2460 - 2000	
	~1200 - 1500	
	1500 - 2480	
	2450 - 2000	
	2000 - 1120	
	1100 - 700	
	700 - 1500	
	1500 - 2500	
015	2560 - 1200	
	1200 - 2480	
	2480 - 1200	
	1200 - 2480	
	1200 - 0	

Navigation for Tow 1

Start at	48° 24.4'	128° 38.8'
T1WP1	48° 25.4'	128° 42.0'
T1WP2	48° 26.2'	128° 42.8'
T1WP3	48° 27.4'	128° 43.6'

Turn North bearing 25° T

Tows were conducted at about 1.5 to 2.0 knots and fish quickly got too far back

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05	TOW2	CTD	0401	BE	017	48 28 882	128 42 .579		2413			10		
05			1500	EN										
05	Tow2a	CTD	1500	BE	018									Started New File at 1200m
05			1948	EN		48 46.183	128 42334.					4 (14 total)		10 blank bottles Fired to
05	TOW3	ROS	2212	BE	019	48 40.020	128 46.026		2530					get to bottle 11
06	LOOP2	USW	0105			48 36.62	128 45.16							LOOP TAKEN
06	Tow4	ROS	0425	BE	020	4821.99	12845.91		2440			14		SOUTHERN MIDDLE VALLEY TOW
07	ERN	ROS		BE	021	47.59.26	129 04.34		2150					FIRST LISST TOW
			0425	BO		4759.286	129 04.335			2162		5		5m off bottom
			0506	EN		4759.281	129 04.358							Small Plume
07	ERC	ROS	0549	BE	022	4757.547	129 05.577		2100					
			0622	BO		57.544	05.600			2205	45-49	5		10m off bottom
			0657	EN		57.63	05.72							
07	ERS	ROS	~0745		023	47 56.13	129 06.16		2186			3		
			0810			47 56.10	129 6.17	~1250			10 off bottom			
			0831			47 56.12	129 6.20							
07	MV01		0958		024	48 7.01	129 12.02		2535	2541	~15ab			
			1026			48 7.00	12.00							

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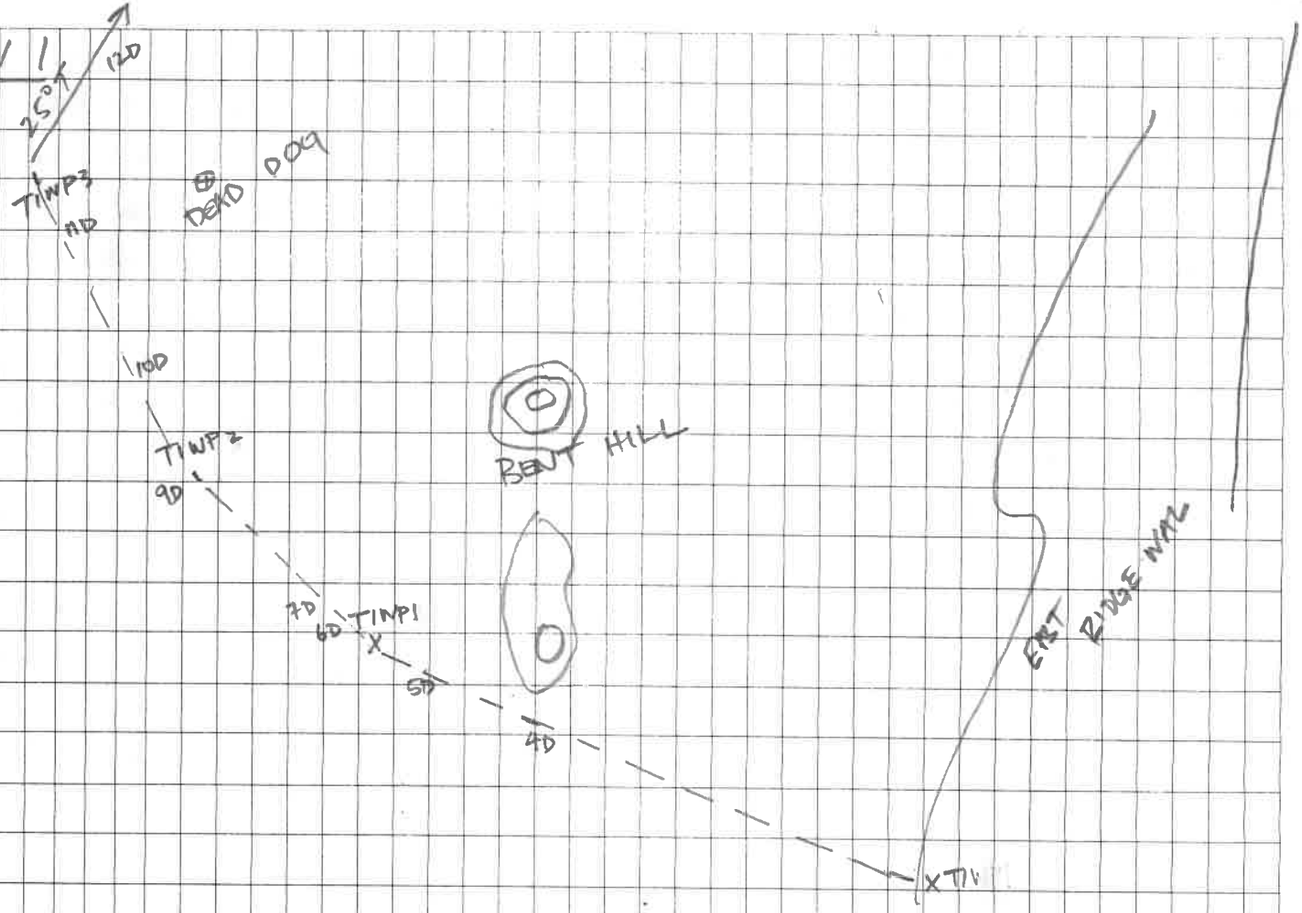


TOW 2

- SWITCHED TO ROSETTE
- "Vertical cast conducted where mooring

SCREEN SHOT		FILE	DEPTH PTA
1Da		017	1200 - 1600 (as before)
1Db	bottom Tr plume		1600 - 2480
1Ua	" "		2480 - 1600
1Ub			1600 - 1200
2Da			1200 - 1600
2Db	" "		1600 - 2480
2Ua	" "		2480 - 1600
2Ub			1600 - 1200
3Da			1200 - 1600
3Db	Tr Boundary layer type plume		1600 - 2480
3Ua	"		2500 - 1600
3Ub	1400 - 1500 PTA plume		1600 - 1200
4Da	"		1200 - 1600
4Db	Tr boundary layer type plume		1600 - 2500
4Ua	"		2500 - 1600
4Ub	?		1600 - 1200
5Da			1200 - 1600
5Db			1600 - 2400
5Ua			2400 - 1600
5Ub			1600 - 1200

Fired bottles 1 + 2
Very high methane levels
1 @ 1500m
2 @ bottom

SCREEN SHOTS	
6Da	
6Db	Bottom Tr
6Ua	"
6Ub	
7Da	some sort of mix up here
7Db	Bottom plume
7Ua	"
7Ub	
8Da	
8Db	2050 Tr signal
8Ua	" " "
8Ub	1350 PTA signal →
9Da	" " "
9Db	2000-2150 Tr signal
9Ua	" " "
9Ub	
10Da	
10Db	Remnants of above
10Ua	
10Ub	1400 PTA
11Da	
11Db	
11Ua	
11Ub	
12Da	
12Db	
12Ua	
12Ub	
13Da	
13Db	
13Ua	
13Ub	
14Da	
14Db	
14Ua	
14Ub	
15Da	
15Db	
15Ua	
15Ub	
16Da	
16Db	
16Ua	
16Ub	

FILE	DEPTH	PTA
017	1200-1600	
↓	1600-2500	
	2500-1600	
	1600-1200	
	1200-1600	
	1600-2500	
	2500-1600	
	1600-1200	
	1200-1600	
	1600-2500	
	2500-1600	
	1600-1200	
	1200-1600	
	1600-2500	
	2500-1600	
	1600-1200	
	1200-1600	
	1600-2500	
	2500-1600	
	1600-1200	
	1200-1600	
	1600-2500	
	2500-1600	
	1400-1200	
Da	1200-1600	
Db	1600-2500	
Ua	2500-1600	

bottle 7 found in bottom layer - very high methane
" 8 " " " "

TOW 2

SCREEN SHOT

FILE 017

DEPTH PTA
Da ≡ 1200 - 1600
Db ≡ 1600 - 2500 *
Ua ≡ 2500 - 1600
Ub ≡ 1600 - 1200

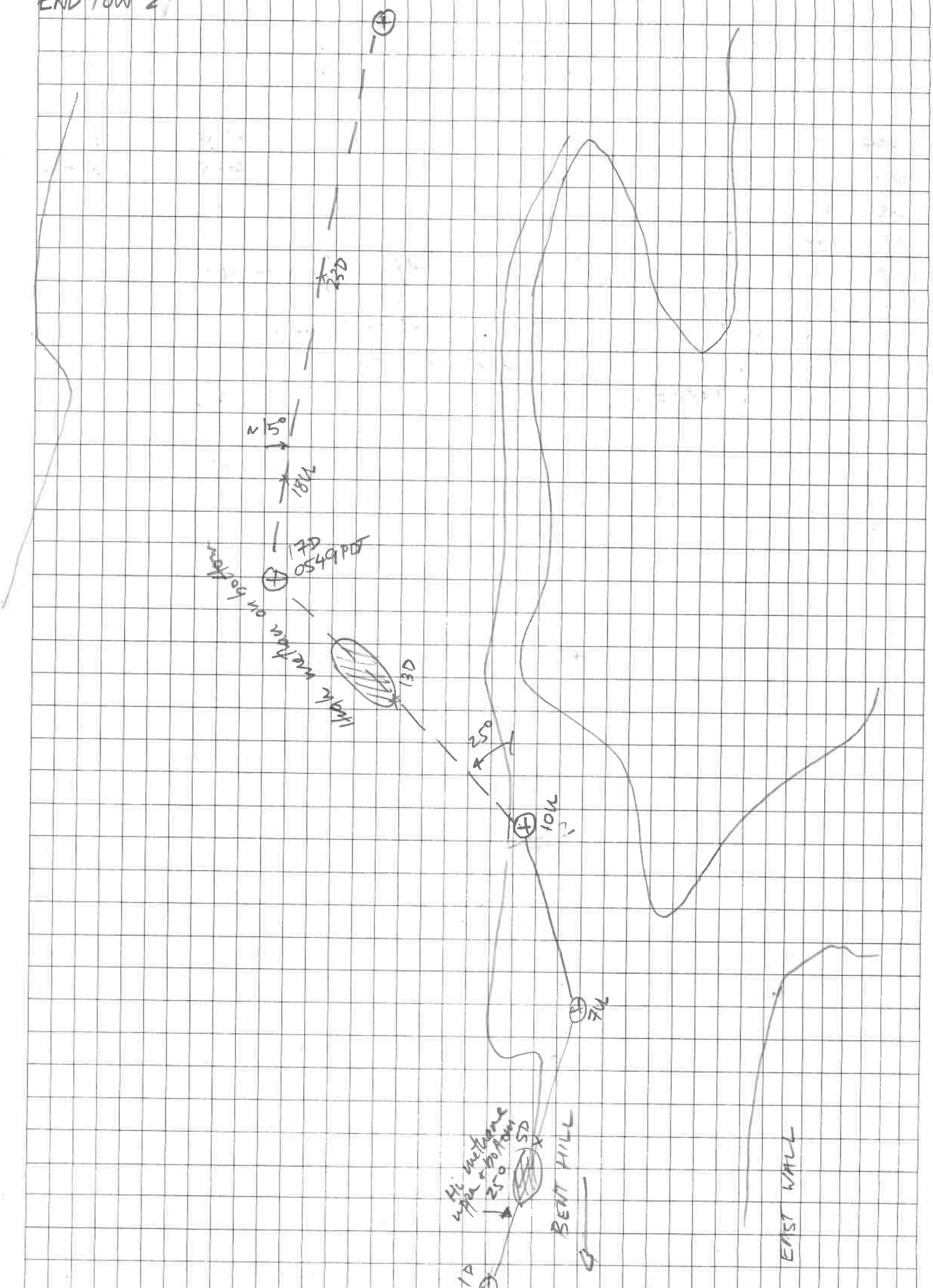
17Da		
*17Db	1700 - 1750 Large plume like spike in Tr, assoc. PTA	*
17Ua	2 - Tiered bottom plume	
17Ub	17Db feature gone	
18Da		
*18Db	2 - Tiered bottom plume. Bottom tier has PTA	*
18Ua	" "	
18Ub	1300 - 1450 PTA signal	
19Da	" "	
19Db	1 Tier bottom signal	
19Ua	" "	
19Ub	1300 - 1450 PTA signal	
20Da	stronger " "	
20Db	2 Tier Tr, no PTA	
20Ua	" "	
20Ub	1300 - 1450 PTA signal	
21Da	" "	
21Db	Bottom Tr	
21Ua	"	
21Ub	1300 - 145 PTA signal weakening	
22Da	" "	
22Db	Bottom Tr	
22Ua	"	
22Ub	Upper PTA weakening	
23Da	" " " + deepening	
23Db	weakening bottom Tr	
23Ua	"	
23Ub	→ SCREEN SHOT MISSING	
24Da	weak mid Tr and PTA	
24Db	near bottom Tr	
24Ua	→ SCREEN SHOT MISSING	
24Ub	weakening mid PTA	
25Da	broader PTA → bottle sample "	
25Db	big bottom Tr	
25Ua	"	
25Ub	} PTA signal minimal	
26Da	}	
26Db	big bottom Tr	
26Ua	"	
26Ub		
27Da	PTA back, but deeper	
27Db		
27Ua		
27Ub	PTA back + deeper	

018 Begin TOW 2a

TOW 2

SCREEN SHOT		FILE DEPTH PTA
28 Da	Deeper PTA	
28 Db		
28 Uc		
28 Ub		
28 Uc	To the surface.	

END TOW 2



Mooring

TOW 3

To investigate the upper PTA and Tr signals west of TOW 2 18 u

TOW 3 WP1 = 48° 40' 128° 46'

Directly south

TOW 3 WP2 = 48° 36 128° 46'

Linear T-S coefficients changed to values from BP8 $A_0 = 275.7$

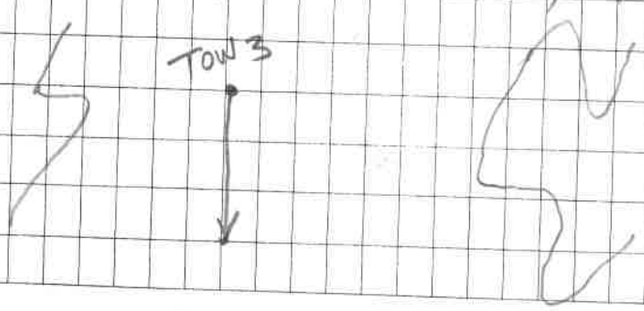
$A_1 = -7.917$

SCREEN SHOT		FILE	DEPTH
1Da		019	Da ≡ 1200-1600
1Db	Small Tr @ 1500 m	|	Db ≡
1Dc	Big Tr @ 2300 m ↓		
1Ua	"	2 bottles taken {very low methane}	

Note: bottles "up North" have so far shown no high methane

Just north of B4A and 14 east → showed methane values 300 times background

1Ub	
2Da	
2Db	Broad bottom Tr plume
2Ua	"
2Ub	
3Da	
3Db	Broad bottom Tr plume
3Ua	"
3Ub	
4Da	
4Db	Broad bottom Tr plume
4Ua	"
4Ub	
5Da	
5Db	Weakening bottom Tr plume
5Ua	"
5Ub	PTA structure ~1400
6Da	"
6Db	Two-tier bottom Tr and more bottom Tr → bottle taken #4
6Ua	bottom tier # 5, 6 ; top tier 7, 8, 9 , top 10, 11 for xtra water
6Ub	



06 Oct 01

TOW 4 in effect LISST on board. Background set to Middle Valley background levels from cast Vertical cast 1 (from mooring site)

LISST set to start 60 min from 8:30 PM

cast begun 9:25 PM

Parameters set — 50 sample average
— 6000 total samples
— 1s between samples

	SCREEN SHOT	File	Depth
1	D a	020	0 - 1200
1	D b	1450 - 1600 PTA — no tr	1200 - 1600
1	D c	near bottom Tr	1600 - 2600
1	U a	"	Da = 1200 - 1600
1	U b	1450 - 1600 PTA — no Tr	Db = 1600 - 2600
* 2	D a	" 2 bottles taken	Ua = 2000 - 1600
2	D b	near bottom Tr	Ub = 1600 - 1200
2	U a	"	
2	U b	smaller 1450-1600 PTA — no Tr → Feature (A)	
3	D a	"	
3	D b	near bottom plume Tr → Feature (B)	
3	U a	"	
3	U b	(A)	
4	D a	(A)	
4	D b	(B)	
4	U a	(B)	
4	U b	broader less strong upper PTA	
* 5	D a	" → bottle 3	
5	D b	Two-tier bottom plume	
5	U a	"	
5	U b	big (A)	
6	D a	big (A)	
6	D b	Very little near bottom	
7	U a	Alt bottom	
7	U b	big broad (A)	
* 8	D a	missing and bottles 4 + 5 fire	
8	D b	some (B)	
8	U a	" → two-tier	
8	U b	big broad (A)	
9	D a	"	
9	D b	little 2-tier (B)	
9	U a	"	
9	U b	very broad (A)	
10	D a	" bottle 6 and 7	
10	D b	2 tier bottom	
10	V a	"	

cont. 2 pages down

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Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Year 2001 **Month** OCTOBER **Ship** TULLY **Cruise I.D.** 2001-30

Day	Station I.D.	Cast Type	Time (UTC)	Time Code	Consec. Number	Latitude	Longitude	Position Code	Bottom Depth	Max Depth	Consec Sample #	# of Bottles	initials	Comments
07	MV02	ROS		BE	25	48 22.00	128 59.98		2299					
				BO		CANCELLED DUE TO SEA STATE								
				EN										
08	LOOP4	UWS	02:15			48 21.75	129 05.37		2804					LOOP TAKEN
08	MV03	CTD	11 32	BE	26	48 22.02	128 59.95		2284					
			12 15	BO		48 21.63	129 00.34			2233				Data Spikes, bottle fire indication - but no bottles → *
			1245	EN		48 21.34	129 01.02							
09	MV04	ROS	0157	BE	27	48 27.415	128 42.402		2413.			24		
			0234	BO		48 27.35	128 42.59			2442				
			0322	EN		48 27.38	128 42.62.							
09	MV05	ROS	0452	BE	28	48 32.997	128 46.979		2500			24		stopped at 1200 meters
			0511	EN		48 32.98	128 47.05			1200				data file - 29 -
09	MV05a	ROS	0512	BE	29	48 32.98	128 47.05					4		for rest of cast
			0532	BO		48 32.996	128 46.998			2525				LISST & Redox
			0614	EN		48 33.02	128 47.05							Removed From CTD
09	LOOP5	UWS	1100			48 50.92	127 50.56			2512				LOOP TAKEN → ** SEAWATER LOOP VERY BUBBLY
			0400		Thermosalinograph - loop shut down briefly, checking intake screen									

Cast type: BOT = ottle cast; CTD = CTD; ROS = Rosette; NET = net haul; USW = sea water loop; MOR = mooring; DRF = drifter

Time Code: BE = beginning time of cast; BO = bottom time of cast; EN = end of cast time; DE = deployment time; MR = messenger release time; RE = recover mooring time

Oct. 6 = 0600 completed Tow 4

- slowly head for mooring site for recovery - Rosette sampling in progress

- conditions are workable but there is a 2-3 m swell which made recovery difficult especially because the sea was a beam - Rosette came close to hitting due to hesitation by winch man.
- bottles 2 and 3 came up with spigots open. This has happened to other bottles before (see note). Spigots were replaced but the real reason is vibration during the tow. The solution is latex tubing rings behind spigot guards.

0743 - on station MVI-A mooring for recovery.
- sent 6462 rec'd + exec'd
range 1720 m not correct.
range 1440 m " "
- asked ship to come out of generator mode.
- tried XT 6000 received good range 2455 m.

0758 - sent 3000 2462, 2459, 2462 - on mooring.
- moving to release position
- sent 3000 2462, 2475, 2500

0807 - sent 6461 range 2515
+ 6484 rec'd exec'd - positive response
- ranges 2498, 2478 - rising

	2416, 2327, 2232	8:27:00	1210
	8:11:50 2192	8:30:00	825
	12:20 2155	8:32:00	668
	:35 2136		
	:50 2119		
	13:10 2093		
0914 - all onboard without incident	2017		
	14:35 1990		
	16:00 1892		
- heading for End, Ridge moorings ER 2001-W, -C, -S.	18:00 1757		
	20.30 1597		
	21:00 1567		
	21:32 1533		
	~~23:00~~ 1447		
	24:00 1395		

* Dat file 2001-800026 likely has a great deal of data spikes. Somehow the water sampler selection had reverted to 9 CO 10 15 rpm used on the stand-alone CTD cast. This affected the water sampler and likely caused the data spikes.

* Seawater loop is very bubbly - Debubbler can't keep up. Have informed engineer.

Tow 4 cont 1000 UTC

File 020

10 U b made

11 D a

11 D b bottom Tr

11 U a "

* 11 U b (A) gone 2 bottle B

12 D a

12 D b 2-tier bottom Tr.

12 U a "

12 U b

13 D a

13 D b 2-tier bottom Tr.

13 U a

13 U b

14 D a

14 D b bottom Tr

14 U a "

14 U b bottles 12, 13, 14,

14 D c → surface

Oct. 6 PDT

-1302 - 6432 sent rec'd exec'd
- ranges erratic - we are in generator mode
- gen mode off - still noisy
- switched to dunking transducer
- no improvement.

- moving to ER2001-C location
- communicated well with this mooring - will recover first.

LISST time: LISST = 13:31:19 10/06/2001
from M me = 13:35:00 10/06/2001
LISST is 3:41 slow

Parameters
Samples per average 50
Samples to acquire 6000
Time between samples 1
Battery voltage 7.61 VDC
Memory used 60000
48,000 Bytes (or KB?)

1350 - on station ER2001-C for recovery
- sent all OFF codes
- sent ON for 152 rec'd + exec'd. bad range.

1435 - sent Release rec'd + exec'd. range 2325 app. 700m distance
ranges 2306, 2274, 2199 } rising.
2137
2065

1506 - sighted on surface.

1529 - on station ER2001-S for recovery.
- sent 6422 rec'd 2249 range
2255
2254

1542 - sent 6421 + 6484 rec'd positive response.
no ranges.

1544 - ranges 2113, 2097, 2082, 2046 (1546)
1937, 1836, 1777 rising.

1621 - sighted on surface.

Oct. 6

1730 - on station ER2001-N for recovery

- range 2177

1731 - sent window + release code
rec'd + exec'd. ranger reducing
2164, 2124, 2081

1806 - sighted on surface
- recovered without incident.

2041 - operational again
- CTD cable had to be reterminated due to multiple kinks in bottom 15-20 m as a result of tow-yoing in rougher condition early morning Oct. 6.

- proceed to CTD/Rosettes at Axial Valley Endeavour Ridge sites (moorings ER2001-N, C, S) ther return to Middle Valley for CTD/Rosettes

Oct. 7

0640 - I called off operations due to wind and sea conditions. winds over 40 knots steady and seas built up to 3 m plus with spindrifts and breaking white caps. - full gale conditions.
- we were expecting this front but later. It is expected to last app. 24 hrs.

- made several attempts during day stopping on station and observing conditions but swell is too high and winds staying at 20 → 35 knots.
- put off work until 04/08 watch Oct. 8

Oct. 8

0400 - conditions the same, but we are running out of time at the vents - decided to try
- completed CTD/Rosette at MV03 station
- swell generally acceptable app 2-3m but with occasional sequence of larger ones 5m+
- wind blowing 25-35 knots — marginal
- CTD began to malfunction on deployment
- gave bottle trip indication without bottle trigger
- on recovery — no bottles were tripped
- called off operations until swell reduces
- compensator limiting out top + bottom on several occasions during cast
- swell up to 3-5m. wind rising.
- Doug is troubleshooting CTD/Rosette

- Jo has not been well (motion sick) most of the trip which makes him less alert for his watch. He keeps showing up though.
Doug M. gave him BonAmi - hopefully this helps.

0830 - conditions worse 35-40 plus winds 5-7 m swell + sea.
- hove-to

1800 - commence work in marginal, but improving conditions
- completed 4 CTD's (see log)

Oct. 9

0030 - head into Gold River, Middle Valley work complete
- Americans pack up en route

1230 - arrive Gold River
- Marv, Geoff, Eric, Phyllis, Alice & Jo leave ship. Jo too motion sick.
- no new science crew available to join ship.

1410 - depart Gold River for EO1 mooring recovery + LG CTD Line.

Oct. 9

-1839 - on station E01-GG for recovery

- range 97, 97 on top
- moving to deployment position

-1843 - range 232
- sent BCEH received positive

-1846 - sighted on surface - near dark conditions.
- top instrument vane broken - this mooring took a hit.

-1925 - Switch to CTD 0443 — vertical, no Rosette
Configuration file: 0443CTD.con
- adding Oxygen sensor and fluorometer to 0443CTD.con
OXYGEN SBE 43 Ser# 047 16-May-01
FLUOROMETER SEATPOINT

Oct 10

~0300 - Losing transmissometer on CTD#6. Re-terminated the cable on both ends.

~0400 - Called off operations due to building sea-state and ridiculously lousy conditions. Heavy rain with wind at 40 kN gusting 50 kN

-0700 - heading for E03 mooring in bad conditions

-0730 - Captain calls off operations and ship heads into Nootka to wait out weather.
- sea state 3-5m winds 40-50 kn.

-1009 - inside entrance to Nootka sheltered by Esetvan
- Ricker also sheltered in Nootka

-1300 - conditions improved - head out to E03 for recovery.

-1715 - on station for E03-GG for recovery.
- range 400, 399
- range 426 at release position

1727 - sent ABCD received positive response
ranges 314, 210 - mooring rising

1729 - on surface

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Year 2001 | Month Oct | Ship JP TULLY | Cruise I.D. 2001-30

Day	Station I.D.	Cast Type	Time (UTC)	Time Code	Consec. Number	Latitude	Longitude	Position Code	Bottom Depth	Max Depth	Consec Sample #	# of Bottles	initials	Comments
10	LG01	CTD	0324	BE	30	49 20.48	126 34.98		52					
			0325	BO	30	49 20.49	126 35.00			46				
			0326	EN	30	49 20.49	126 35.02							
10	LG02	CTD	0400	BE	31	49 18.66	126 38.15		98					
			0403	BO	31	49 18.68	126 38.12			91				
			0404	EN	31	49 18.69	126 38.12							
		Bongo	0430	BO	32	49 18.69	126 38.12		98	50				
10	LG03	CTD	0503	BE	33	49 14.97	126 43.69		116					
			0506	BO	33	49 14.98	126 43.71			106				Pressure sensor offset →
			0508	EN	33	49 14.97	126 43.70							
10	LG04	CTD	0631	BE	34	49 11.31	126 49.42		138					
			0633	BO	34	49 11.32	126 46.41			120				
			0636	EN	34	49 11.32	126 49.40							
10	LG04	Bongo	0700	BO	34a	49 11.34	126 49.56		136	100				
10	LG05	CTD	0802	BE	36	49 07.4	126 55.28		267					
			0806	BO		49 07.39	126 55.33			258				Adding +4.0 db pressure offset to config file.
			0810	EN		49 07.40	126 55.30							
10	LG06	CTD	0918	BE	37	49 03.50	127 01.14			895				Transmissometer dead @ about ~500 m
			0928	BO		49 03.59	127 00.95							

Cast type: BOT = ottle cast; CTD = CTD; MOR = mooring; ROS = Rosette; NET = net haul; DRF = drifter; USW = sea water loop

Time Code: BE = beginning time of cast; BO = bottom time of cast; EN = end of cast time; DE = deployment time; MR = messenger release time; RE = recover mooring time

Came back after we began to head up

Pressure sensor offset, pressure reads -4.6 db at surface

Oct. 10

- 1932 - deployed mooring E03-HH
  49°05.630' 126°56.099'
  depth 400.6 m
  - dark - could not observe mooring submerge.

- app. 2000 - heading for LG07 to complete stations not finished Oct. 9 night

Oct. 11

- 0730 - on station E01-HH for deployment
  - calm conditions

- 0905 - deployed E01-HH in 98 m depth
  at 49° 17.519' 126° 35.720'

- 0910 - head for recovery A1-GE app. 5 hr steam.

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Year 2001 **Month** OCTOBER **Ship** JP TULLY **Cruise I.D.** 200

Day	Station I.D.	Cast Type	Time (UTC)	Time Code	Consec. Number	Latitude	Longitude	Position Code	Bottom Depth	Max Depth	Consec Sample #	# of Bottles	initials	Comments
10	LG06	CTD	0936	EN	37	—	—							Lost transmissometer
10	LG07	CTD	0433	BE	38	48 59.48	127 07.02		1716					290–270 came back
11	"	"	0500	BO	38	48 59.60	127 07.07			1763				transmissometer looks OK Changed cable.
11	"	"	0525	EN	38	48 59.32	127 07.09							21 knot wind
11	LG07	Bongo	0600	—	39	48 59.35	127 07.10		1900	230				Swell - size small
11	LOOP 6	USW	0622	—	—	48 58.69	127 12.56							
11	LG08	CTD	0659	BE	40	48 55.34	127 13.23		2057					STOP CTD @ ~257 m
11	LG08	"	0719	BO	40	48 55.44	127 13.25			2095				to show that O_2 sensor
11	LG08	"	0739	EN	40	48 55.42	127 13.27							has to "catch up". ie need
11	LG09	CTD	0841	BE	41	48 51.25	127 19.38			2056				to use align program to put
			0900	BO		48 51.25	127 19.33							O_2 measurements at right
			0918	EN		48 51.28	127 19.41							depths, seems to have a
		NET												time delay of about ~2–5
		NET												seconds.
														Don't know where the bottom is here → 2060 is a crossover
11	LG09	NET	0944	BO	42	48 51.30	127 19.40		2057	250				BONGO
		NET	1002	BO	43	48 51.32	127 19.42		2057	150				BONGO FOR DNA

Cast type: BOT = ottle cast; CTD = CTD; MOR = mooring; ROS = Rosette; NET = net haul; DRF = drifter; USW = sea water loop

Time Code: BE = beginning time of cast; BO = bottom time of cast; EN = end of cast time; DE = deployment time; MR = messenger release time; RE = recover mooring time

Oct. 11

-1420 - on station A1-GG for recovery.
- ranges 489, 488 - mooring seems to be on station.
- moved to a release position app. knkt off.

-1428 - sent ABEG and received positive response.
- couldn't range on it to confirm rise. - too much prop noise.

-1440 - sighted on surface.

-1829 - deployed mooring A1-HH @ position 48° 31.783'
126° 12.175'
in 497 m (1a6 sounder)
503 m (bridge sounder)

-1810 - heading for offshore end of LC line LC10.

Oct. 12

- finish CTD and bongo casts at LC06 at ~0130 PDT
- 2nd Make estimates 6h to JFCN → 0730
- Weather worsening; heavy rain with 30kt ESE

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Year 2001 **Month** OCTOBER **Ship** J. P. TULLY **Cruise I.D.** 2001-30

Day	Station I.D.	Cast Type	Time (UTC)	Time Code	Consec. Number	Latitude	Longitude	Position Code	Bottom Depth	Max Depth	Consec Sample #	# of Bottles	initials	Comments
12	LC10	CTD	0301	BE	044	48° 22.4	126° 20.24		1238	1238				
			0315	BO		22.51	20.24							Loop 7 taken.
			0331	EN		22.46	20.24							
12	LC09	CTD	0417	BE	045	48° 25.93	126° 13.75		609	604				
			0424	BO		25.92	13.79							Bongo 0-250 10°C
			0430	EN		25.94	13.79							EVT 45A
12	LC08	CTD	0537	BE	046	48 29.41	126° 7.07		197	189				
			0541	BO		48° 29.40	126° 7.13							Temp Anomaly at 65m
			0544	EN		"	7.16							Loop 8 taken.
12	LC08	NET	0620		047	48 27.40	126° 07.16							Bongo 0-175
12	LC07	CTD	0702	BE	048	48 32.96	126 00.51			102			**	Note: consecutive no. was
			0703	BO		48 32.95	126 00.51							first 49, then renamed
			0706	EN		48 32.95	126 0.50							to 48 in the computer
12	LC06	CTD	0753	BE	49	48 36.49	126 53.97		~91					so values in header file
			0755	BO		48 36.50	126 53.94			82				will not match file name **
			0756	EN		48 36.50	126 53.92							
12	LC06	NET	0828		50	48 36 50	126 53.92							

Cast type: BOT = ottle cast; CTD = CTD; MOR = mooring; ROS = Rosette; NET = net haul; DRF = drifter; USW = sea water loop

Time Code: BE = beginning time of cast; BO = bottom time of cast; EN = end of cast time; DE = deployment time; MR = messenger release time; RE = recover mooring time

Oct. 12

PDT. – 0730 – on station JF2F-CV-A for deployment
– set up.

– 0850 – deployed JF2F-CV-A at
48° 26.798' 124° 32.802'
in 238 m depth.

– 0900 – proceed to JF2A site

– 1224 – deployed JF2A-CV-A at
48° 24.760' 124° 09.940'
in 104 m depth.

– Tully's release hook keeps jamming
so we switch to ours.
Tully's hook safety pin bent.

1245 – ship dispatches 733 boat with
injured engineer to drop him off in
Sooke.

– 1415 – deployed mooring JF2B-CV-A at
48° 22.917' 124° 11.058'
in 163 m depth

– 1430 – divert app 15 nm east to meet
returning 733
– set up mooring enroute.
– return to JF2C site

– 1849 – deployed JF2C-CV-A at
48° 21.224' 124° 12.364'
in 187 m.

– 1900 – head for Canadian side JFF Line
for CTD's.

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Year					Month			Ship				Cruise I.D.		
Day	Station I.D.	Cast Type	Time (UTC)	Time Code	Consec. Number	Latitude	Longitude	Position Code	Bottom Depth	Max Depth	Consec Sample #	# of Bottles	initials	Comments
13	JFF2	CTD	0346	BE	51	48°30.51	124° 30.04		139	134				
			0351	BO		30.55	30.08							
			0353	EN		30.60	30.08							
13	JFF3	CTD	0417	BE	52	48° 28.46	124° 30.08		210	199				
			0422	BO		28.47	30.08							
			0426	EN		28.51	30.09							
13	JFF4	CTD	0445	BE	53	48 26.51	124° 30.00		231	225				
			0450	BO		26.48	29.98							
			0455	EN		26.44	29.92							
13	JFF5	CTD	0510	BE	54	48 24.51	124° 29.96		210					
			0513	BO		24.50	29.95							
			0516	EN		24.51	29.99							
13	JFF6	CTD	0534	BE	55	48 22.47	124° 29.98		109	95				
				BO		22.49	30.01							
			0538	EN		22.50	30.01							
13	JFE6	CTD			56				170					
			0703	BO		48 17.66	124 15.03		155					
			0709	EN		48 17.68	124 15.03							

Cast type: BOT = ottle cast; CTD = CTD; MOR = mooring; ROS = Rosette; NET = net haul; DRF = drifter; USW = sea water loop

Time Code: BE = beginning time of cast; BO = bottom time of cast; EN = end of cast time; DE = deployment time; MR = messenger release time; RE = recover mooring time

OCT 13

-0100 TRAFFIC IN TRANSITION LANE IN JUAN DE FUCA STR.

- MOVED TWO STATION LOCATIONS TO AVOID TRAFFIC INTERRUPTION WHILE STOPPED ON STATION.

JFE4 → JFE4 I

JFE3 → JFE3 I

N/A

13 October

0400 PDT Finish JFE line, head to JF2 line for ADCP transect. Alter VM-ADCP for bottom tracking

Starting in E:PINGDATA.053

$(48.6^2 + 233.2^2)^{1/2} \cong 238 \frac{cm}{s}$ $\frac{50\ cm/s}{knot} \rightarrow 4.76\ kt$

→ Compares with ship speed of 4.6 kt

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Year 2001 **Month** October **Ship** J.P. TULLY **Cruise I.D.** 2001-30

Day	Station I.D.	Cast Type	Time (UTC)	Time Code	Consec. Number	Latitude	Longitude	Position Code	Bottom Depth	Max Depth	Consec Sample #	# of Bottles	initials	Comments
13	JFE5	CTD	0732	BE	57	48 19.22	124 14.97		208					
			0735	BO		48 19.24	124 14.97			200				
			0737	EN		48 19.26	124 14.97							
13	JFE4	CTD	0919	BE	58	48 21.28	124 15.04		222					
			0923	BO		48 21.31	124 15.07			218				
			0925	EN		48 21.32	124 15.07							
13	JFE3	CTD	0940	BE	59	48 23.23	124 15.00		180					
			0944	BO		48 23.25	124 15.00			174				
			0946	EN		48 23.25	124 15.01							
13	JFE 2	CTD	1004	BE	60	48 25.27	124 15.03		131					
				BO		48	124							
			1006	EN		48 25.28	124 15.04			120				
13	JFE1	CTD	1031	BE	61	48 27.25	124 15.07		26					
				BO										
			1033	EN		48 27.25	124 15.07							
13	JFE7	CTD	18:14	BE	62	48 11.85	123 59 99		52		50			Switch to rossette.
		↓	18:14	BO		48 11.85	123 59.99			47				Changed con. file → *
		↓	18:14	EN		48 11.85	123 59.99							Water Sampler Control non functional
														Called "JFE7" in header →

Cast type: BOT = ottle cast; CTD = CTD; MOR = mooring; ROS = Rosette; NET = net haul; DRF = drifter; USW = sea water loop

Time Code: BE = beginning time of cast; BO = bottom time of cast; EN = end of cast time; DE = deployment time; MR = messenger release time; RE = recover mooring time

Oct. 13

- 0730 on station JF2E mooring for deployment

- 0916 deployed mooring JF2E-CV-A at 48° 15.142' / 124° 09.737' in 149-150 m water.

- head for JFD line for CTD/Rosettes to calibrate system
  - CTD reconfigured en route. and standing by on station

* Switched back to rosette. Changed con file to 0443ros.con

* Wodar sampler control on 0443 not functional. We will try to trip bottles with the deck unit.

- 1512 - completed CTD/Rosettes along JFD line
  - head in to I.O.S. to pick up Georgia Str. mooring hardware + drop off science staff.

- 2230 - arrive I.O.S. Doug M. + Steve M. leave ship.
  - we pick up anchor, buoy + release for GS02 mooring.

Oct. 14

- 0025 - depart I.O.S. for Georgia Str. moorings.

- 0730 - near station TM1-B for recovery

- 0748 - on station TM1-B
  - range 248, 262, 277

- 0750 - sent ABFH received positive response
(ranges) - 282, ~~250~~, 284, 290, ~~288~~, 294
ranges after release 200, 191

- 0754 - sighted on surface - all on board but heavily fouled.

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Year					Month			Ship				Cruise I.D.		
Day	Station I.D.	Cast Type	Time (UTC)	Time Code	Consec. Number	Latitude	Longitude	Position Code	Bottom Depth	Max Depth	Consec Sample #	# of Bottles	initials	Comments
13	JFD6	CTD	18:38	BE	63	48.13.79	123 59.95		110					"JFE6" in header.
	"	"	18:40	BO	"	48 13.79	123 59.96			109				
	"	"	18:43	EN	"	48 13.79	123 59.98							
13	JFD5	ROS	19:09	BE	64	48 15.77	123.59.98		179		52			No water sampler control from seasave →
	"	"	19:14	BO	"	48 15.79	123 59.97				50-51	10/1		
	"	"	19:26	EN	"	48 15.76	123 59.89							↖ only one bottle Fired Sal taken
13	JFD4	ROS	20:04	BE	65	48 17.70	123 59.99		186					No bottle log.
	"	"	20:07	BO	"	48 17.70	123 59.94				51-61	"		We have figured out the deck unit water sampler, should work (11 bottles fired)
	"	"	20:18	EN	"	48 17.69	123 59.91							
13	JFD3	ROS	20:45	BE	66	48 19.72	124 00.00		162					
	"	"	20:56	BO	"	48 19.66	124 00.04				62-71	10		Started acquisition on deck. (10 bottles fired)
	"	"	21:07	EN	"	48 19.70	124 00.01							50 m turbidity at bottom
13	JFD2	CTD	21:34	BE	67	48 21.84	123 59.93		118					very well mixed
	"	"	21:37	BO	"	48 21.78	123 59.90			110				Current ≈ 1 Knot
	"	"	21:40	EN	"	48 21.75	123 59.87							
13	JFD1	CTD	22:01	BE	68	48 23.08	123 59.91		48					I think the pumps
	"	"	22:03	BO	"	48 23.07	123 59.87			43				were off - It's been
	"	"	22:05	EN	"	48 23.07	123 59.86							a loooonngg cruise.
14	LOOP 9		15:00			49 00.22	123 26.67							Loop Taken

Cast type: BOT = ottle cast; CTD = CTD; ROS = Rosette; NET = net haul; USW = sea water loop; MOR = mooring; DRF = drifter

Time Code: BE = beginning time of cast; BO = bottom time of cast; EN = end of cast time; DE = deployment time; MR = messenger release time; RE = recover mooring time

* Water sampling will be attempted from deck unit. There will be no .ROS file and no bottle log. Salinities will be taken from each bottle.

Oct. 14

-0831 - app. 1 cable away TM2-B for recovery
- ranges 332, 329 m

-0833 - 317 m range
- sent ABORT - received positive
- range 245 mooring rising

-0836 - mooring all on surface.
- rotor broken out of RCM4 7498
- heavily fouled with hydroids

-0909 - on station app. 1 cable away from TM3-B for recovery.

- ranges 295, 297 very weak

-0912 - 291, 289
- sent ADEF - can't hear response
- 290 range 289
264 267 - rising ? weak signals
- sent ADEF again - no response.

-0917 - sighted on surface

-0945 - all on board
- large cleanup required on the 3 moorings.

- set up GS02-CV-A for deployment
- requires selection of the best of the 3 T-chains recovered (tape translations) and the service on site

-1319 - launched GS02-CV-A in 270 m water at position:
49° 01.428' 123° 23.971'

-1330 - head for I.O.S.