

CRUISE
NUMBER

9704

DAILY LOG

INSTITUTE OF OCEAN SCIENCES

OCEAN PHYSICS

DATE

March 10 - 16 1997

VESSEL

J.P. Tully

PROJECT

2nd CTD make: _____ model: _____ serial no.: _____
Temperature sensor model: _____ serial no.: _____
coefficients: slope: _____ offset: _____
Conductivity sensor model: _____ serial no.: _____
coefficients: slope: _____ offset: _____
Pressure sensor range: _____ psi serial no.: _____
coefficients: FSP: _____ dB offset: _____
Transmissometer model: _____ serial no.: _____
coefficients: slope: _____ offset: _____

Winches:

1. make: Swann model: 329 serial no.: 1482 use: CTD
2. make: _____ model: 410 serial no.: 1433 use: CTD
3. make: _____ model: 331 serial no.: 1231 use: coring
4. make: 100HP model: 660 serial no.: 1209 use: _____
5. make: _____ model: _____ serial no.: _____ use: _____
6. make: _____ model: _____ serial no.: _____ use: _____
7. make: _____ model: _____ serial no.: _____ use: _____

Salinometer: make: _____ model: _____ serial no.: _____

SAIL System:

Program version: _____ Time zone: _____

Sampling interval: _____ sec

CTF module no.: _____ serial no.: _____

Remote temperature model: _____ serial no.: _____

Flow sensor model: _____ serial no.: _____

Other sensors: (special for this cruise)

Name: _____ module ID: _____ serial no.: _____

Name: _____ module ID: _____ serial no.: _____

Name: _____ module ID: _____ serial no.: _____

Comments: _____

ADCP Setup:

Program version: _____ number of depth bins: _____

Time zone: _____ bin length (2x): _____

Sampling interval: _____ sec pulse length: _____

Blank beyond transmit: _____ pings per ensemble: _____

Pulse cycle time: _____

% pings good threshold: _____

Comments: _____

DEPART 0001 MARCH 11/97 (POT)

Proceed to INNER BASIN EFFINGHAM INLET
[OUTFLOW winds $\pm$ 5-10 knots in Juan de Fuca;
overcast, low ceiling NO rain]

SAWL OPERATING 2 min sampling.
ADCP @ 2 MINUTE SAMPLING

ADCP SET UP:

RATE = 2 MINUTE

BINS =

BOTTOM TRACKING ON

E: PING DATA. 097

HAIL ON DECK @ 1130. Squall went through

Enter Barrington Sound @ 1240 PDT

Overcast, cold onshore wind. Sled $\pm$ snow. Freezing
level quite low. FIRE $\pm$ BOAT STATION IN BS.

1520 PDT Arrive CORING SITE INNER BASIN

Box CORE SIO Group. 49 04.20N 125 09.37W

Depth $\sim$ 122 m.

Mud was extruded. NOT ACCEPTABLE SAMPLE.

Dump SAMPLE ARMY FROM SITE, HEADED DOWN INLET
to MAIN BASIN for PISTON CORE. DID SOUNDING LINE ON
Rope to determine mud thickness ($\sim$ 8 m) based on 1/2 kHz
Sounder.

FIRST BOX CORE DUMPED. H_2S smell strong. Twigs $\pm$ roots
in mud.

1630 PDT Return to 1ST BOX CORE SITE 49 04.20N

REPEAT CORE

ON STATION 1645 PDT

Fewer weights used. Core O.K. kept. Hung to drain

1800 PISTON CORE, MAIN BASIN. 10 m length
+ Pilot Core

@ 49 02.55 N 125 09.13 W

CORE ON SIDE @ 1840 PDT. Bottom @ 1850 PDT

BOX Core had methane gas bubble.

Piston Core aboard @ 1915 PDT.

Some gas in barrel. It pushed at $\sim$ 1/2 m when
opened.

Need to lift box core sample at; add dry ice

CTD/KOSATEL STN E FDS

Effingham Inlet, March 1997, Cruise 9704

EFF01	49 05.56	125 11.66	35
EFF02	49 05.00	125 10.31	68
EFF02A	49 04.50	125 09.75	100
EFF03	49 04.25	125 09.40	113
EFF03A	49 03.80	125 09.08	100
EFF04	49 03.13	125 08.59	55
EFF04A	49 02.90	125 09.15	200
EFF05	49 02.54	125 09.15	202
EFF05A	49 02.80	125 09.15	200
EFF06	49 01.77	125 09.18	150
EFF07	49 01.25	125 09.40	115
EFF07A	49 00.90	125 09.80	33
EFF08	49 00.67	125 10.23	87
EFF09	49 00.10	125 10.85	60
EFF10	48 59.84	125 11.23	101
EFF11	48 59.11	125 11.05	83
EFF12	48 58.00	125 10.50	92
EFF13	48 56.50	125 10.70	105

YEAR		MONTH			SHIP		CRUISE		PAGE		OF			
1997		March			Tully		97-04		1					
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
12	EFO5	CTD	0435	UTC	001	49 2.55	125 9.16		207	195.5				DO, 4 nutrients
		ROS	0442		002	49 02.53	125 09.13		1		1-18	18		ASRTED 1st attempt
12	EFO4A	CTD	0620	UTC	003	49 2.88	125 9.14		190	188.2				HIT Bottom
		02	0627		004	49 02.88	125 09.14				19-36	18	1	
12	EFO3		0720	UTC	005	49 4.23	125 9.41		122	116.8				SNOW! O ₂ , nut.
			0729		6	49 04.24	125 09.38				37-48	12	1	
12	EFO2		0818		7				72m	63.4				O ₂
			0821		8	49 04.96	125 10 36				49-56	8		HEAD OF INLET
12	EFO1	ROS	0858		9				30m	29.0				✓ O ₂
			0900		10	49 05.53	125 11 68				57-61	5		
13	EFO2A	CTD	0457		11	49 04.50	125 09.75		101	96.2				Prope to 99m. Still no bottom
		02			12						62-71	10		
13	EFO3A	CTD	0545		13	49 03.80	125 09.08		82	79.6				HIT Bottom. Mud sample
		02			14						72-81	10		
13	EFO4	CTD	0600		15	49 03.13	125 08.59		77	47.5				
			0630		16						82-87	6		

STATION EF05 FIRST CTD-Rotello
DO₂ + Nutrients + SKIMMERS. All Depth
Transmissometer not working on first Cast.
Abort. Repeat cast. DID NOT SAVE 1st
attempt.

@ 2035 PST to 207m
Onp and @ 2110 PST.

Bottle @ 110 m (#7) did not trap.

RAIN/SNOW Nutrients + O₂

STATION EF04A @ 1015 PST
Into Bottom; O₂ at 10m increments from 185m

Proceed to EF03, Miss EF04 EF03A
because they are in Narrows. They requested
officers did not want to operate in narrow
waters.

EF03: O₂ + NUTRIENTS to 120 m
Snow, cold

Distinct Anoxic layer / well mixed T/S.

STN EF02 End @ 1230 March 12 PST
D₂ + CTD

STN EF01 O₂ + CTD. Shallow cont.

Another Ship at head of inlet @ 2 AM.

MARCH 12 PST [sunny; snow to waterline trees
Thick ice on water.]

0800 Begin Seismic Survey
@ 2 knots using 85 kHz Air Gun @ 1 second
Air gun just below surface on Port Side
Transducer Array on Starboard side. Shallow.

End Survey 1630 PST.

Seismic Survey started at head of inlet; went to
Barber Sound "M" site on chart. turned around and
repeated line. Return line included X-lines in central
Basin & Inner Basin.

Proceed to inner basin for Box Core
A SW EF03

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13	EFO5A	CTD	0646		17	49 02.80	125 09.15		200	193.2				Bottle #11 did not trip, hung up on hose cover.
		O ₂	0651		18	49 02.83	125 09.12				88-106	19		
13	EFO6	CTD	0740		19	49 01.77	125 09.18		150	160.3				Cerroan to be close to bottom on sounder but no O ₂ trace.
		O ₂	0743		20	49 01.83	125 09.21				107-121	15		
13	EFO7	CTD	0820		21	49 01.25	125 09.40		125	121.7				HIT Bottom. Mud.
		O ₂	0825		22	49 01.29	125 09.42				122-133	12		
13	EFO7A	CTD	0900		23	49 00.90	125 09.80		142	126.0				Bottom @ 126+?
		O ₂	0904		24	49 00.90	125 09.83				134-147	14		
14	E13	CTD	0040		25	48 56.50	125 10.70		105	101.0				Nutrients + zooplankton @ 0, 10, 20, 30 m Near Rotan Core Site #4
		O ₂	0044		26	48 56.53	125 10.69				148-158	11		
14	E12	CTD	0120		27	48 58.00	125 10.50		92	93.0				
		O ₂	0129		28	48 57.98	125 10.49				159-168	10		

MARCH 12/ PST

1630 PST ON site for Box Core, near ~~EFO3~~
INNER BASIN
START Box after dinner

1st Box Core had major "stick" caught in opening.
Push out. Re DO.

Box Core onboard @ 1900 PST. Good Core.

Surface intact.

SET up for Piston Core for tomorrow.

Kasten Core onboard @ 2015 PST
(Snowing!)

Proceed to EFO2A

ENB @ 2120 PST. Stopped snowing

Bottoms. Stopped probe at 96 m. Windman
stopped and then went down another 3m
before stopping. Did not hit bottom.
Sonde depth = 100 m.

Proceed to EFO3A onboard @ 1200 PST
I O? detail near bottom. It was shallower than
I thought so had to adjust scheme. HIT bottom
so lots of mud in transducer trace on way
up. Stopped snowing.

STN EFO4: 1015 PST, March 12 K7
shallow cast. To 47 m. Did not hit.
ON Board @ 1030

STN EFO5A. Senth end of the conifer
basin. Lost bottle #11. One caught up on
Rovello.

STN EFO6

no % increase near bottom even
though Sander saup we were on it.
HIT mud.

STN EFO7

STN EFO7A

Misread chart depth. Actual
Depth = 142 m.

We had snow at beginning of this evening shift
Fold

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14	EF11	CTD	0205		29	48 59.07	125 11.02		86	82.3	165-176	8		CTD + O ₂ missed Bottle at 2.10m.
		O ₂	0208		30	48 59.10	125 11.00				169-176	8		Sequence = 30, 20, 0
14	EF10	CTD	0241		31	48 59.82	125 11.26		82	80.4				Beams set to west, Rocks coming up, strong surface inflow.
		O ₂	0249		32	48 59.86	125 11.34				177-187	11		Roughly 1/2 knot.
14	EF09	CTD	0316		33	49 00.15	125 10.90		60	62.8				
		O ₂	0320		34	49 00.13	125 10.85				188-194	7		
14	EF08	CTD	0349		35	49 00.68	125 10.24		87	84.5				
		O ₂	0355		36	49 00.65	125 10.31				195-204	10		
14	EF07A	CTD	0420		37	49 00.92	125 09.73		142	135.5				
			0425		38	49 00.92	125 09.74							
14	EF01	CTD	2015		39	49 05.56	125 10.31		38	31.4	204-207	4		Zooplankton, O ₂ , Nutrients.
		O ₂	2024		40	49 05.52	125 11.68				204-207	4		Good surface
	EF03	CTD	2108		41	49 04.30	125 09.37		121	119.3	208-			Zooplankton, O ₂ , Nutrients.
		O ₂	2115		42	49 04.20	125 09.46				208-220	13		

CAST TYPE - BOT - bottle 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
 DE - deployment time
 MR - messenger release
 RE - recover mooring
 POSITION CODE - RAD - RADAR
 GPS - GLOBAL
 LOR - LORAN

MARCH 13/97

0800 PISTON Core near EFFS Northern inner basin.

0900 Piston Core underway. Full core.

Deag informed me that the good box core from the previous evening did not freeze to the centre. When they opened it, the core collapsed! Dry Ice is short! Kasten Core also failed.

SUMMARY 0930 PST MARCH 13

	Box	KASTEN	PISTON
INNER	2 (2) ✓	1 (2)	1 (1) ✓
CENTRAL	0 (1)	0 (0)	2 (2) ✓
OCEAN	0 (0)	0 (0)	1 (1) ✓

1030 Complete 2nd successful BOX core. Use all available dry ice to freeze core.

1040 Proceed to EFFS for 2nd PISTON Core in Central Basin. This is PC #3.

1130 PST. Lower Piston Core. Central basin near EFFS.

1200 Recover Piston Core, Overpacked.

Proceed to KASTEN Core. EFFS. Complete onboard @ 1300 PST!

Proceed to Piston Core site in Barkley Sound near EFFS. PC #4. Launched 1530 PST. Core onboard @ 1600 PST.

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14	EFOS	CTD	2154		43	49 02.53	125 09.10		204	50.6				200m haul; N/A Oxygen CTD					
			2157		44	49 02.54	125 09.14				221-225	5		50m CAST only					
15	L1	USW	2024			49 02.98	125 08.66							log sal sample					
	L2		2120.27																
	L3	USW	2125			49 05.52	125 11.69												
	L4		2337			48 49.52	125 15.84												
15	1830	PST	EM	Bottom Core Sampling for J.P. Gault at Head of Inlet.															
	Dro 4 of 5 Homeward bound @ 1830. Snowing HEAVILY. COLD & Blowing all day.																		
	Outflow winds.																		

May ch 13 CONT'D
(PST)

STATION EF13 (Boulding Sound)

① CTD

② O_2

③ Nutrients

④ Zooplankton
cans #

EF13. 158 (0 m); 159 (10 m)
160 (20 m); 161 (30 m)

STN EF12. O_2 + CTD

STN EF11. O_2 . Missed O_2 @ 10 m. Tied going
back down to 10 m but hit F1 instead of
F3.

STN EF10. ✓

STN EF09. ✓ O_2

STN EF08. ✓ O_2

STN EF07A

"strong" westward surface current

NO OXYGEN. Overlap with last night

NOTE: STILL TO DO

① Nutrients @ EF03

② Zooplankton @ EF05 & EF03

MAY 14/97 (sunny / clear / "warm")

- 0800 Box Core, near EF03.
1st attempt — too sloppy. Dropped.
2nd attempt @ 0900
GPS 49°04.221 125°09.418 W

- 1015 Test Tonnage; Bottom Sampler
with Sea-Plane & Sackie.

- 1100 Box Core at EF05. Successful.
Hang & keep

- Proceed to EF01. Zooplankton; Nutrients; Oxygen
+ CTD to 35 m (bottom)

- Station EF03. Zooplankton. Nutrients, Oxygen
to Bottom Core / O_2

- Station EF05. Zooplankton @ 30, 20, 10, 0,
But Oxygen @ 40, 30, 20, 10, 0
Nutrients @ 30, 20, 10, 0

March 14 Cont'd

Proceed to SN EF03 For Kristen CORE
Kum & Bill left ship @ 1230 for Uluksut

Kristen core aboard @ 1840 PST
we let T-SOURCE down at 50m depth
from 1630-1830.

Proceed to head of inlet to do J.P. Bottom
sampling grid —

START Plot Core Sampling Along J.P. Guilbaud's
grid. @ 1900 PST.
Repth / location. Foramin depth dependence.
Cool, clear, CALM

Return to IOS (and Snow), Sunday
Morning @ 0600 PST

John Green taken to hospital with hurt
of heart attack.