

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2010-22

DATE:

From: 1 DEC 2010 to: 5 DEC 2010

VESSEL:

CCGS VECTOR

PROJECT(S):

STRAIT OF GEORGIA/JUAN DE FUCA STRAIT
WATER PROPERTIES SURVEY

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

WaterProperties.ca

Captain: MIKE McCULLOUGH
 Second Officer: SCOTT SHAVE
 Fishing Master: _____
 First Officer: IAN GILES
 Third Officer: _____

Mission Participants / Agencies:

Scientific Personnel:		Chief Scientist:	
Name	Watch	Name	Watch
Row UJSSAN	0-12	PETER CHADLER	Cabin
MEISSA HENKES	0-12		
DAVID TIMOTHY	0-12		
KENNY SCORAFANA	12-24		
DANE SPEAR	12-24		

[illegible]

Data logging computer:

_____ 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: _____ **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?** _____

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):

Guide to cable terminations:

Date of cable termination: _____

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:

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

At cable end:

1. _____
2. _____
3. _____

at 5 metres:

1. _____
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"

Winch:

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? _____

_____ (flaking, not just looks rusty)

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:

- have remote needed to winch show its within the depth
- winch 1483 has no roller on top guide + when 1-frame
- checked the cable can rise up + over roller guide
- need backup GTO computer
- need new frayer

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 1 of 13

Month <u>DEC</u>				Year <u>2010</u>			Ship <u>VECTOR</u>				Cruise ID <u>2010-22</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							
1	SI	21:05	BE	ROS	US	1	48°39.38	123°29.99	179		1-8	8	R,D,M	✓	
		21:13	BO				48°39.37	123°30.01		100					
		21:23	EN				48°39.38	123°30.02							
1	58	22:52	BE	ROS		2	48°42.97	123°14.30	330					✓	
		22:59	BO				48°42.94	123°14.26		320					max depth ^{now} 325
		23:06	EN				48°42.95	123°14.25							
1	59	23:48	BE	ROS		3	48°37.78	123°14.59	231		9-21	13	R+D+M		
		23:53	BO				48°37.76	123°14.52		227					Bottom bottle 221m
		00:10	EN				48°37.65	123°14.47							
2	60	00:42	BE	ROS		4	48°33.87	123°12.78	293				R+D+M		
		00:48	BO				48°33.84	123°12.77		288					
		00:56	EN				48°33.76	123°12.78							
2	61	01:30	BE	ROS		5	48°29.14	123°09.15	282				R+D+M		
		01:35	BO				48°29.04	123°09.17		288					Bottom Depth increase to 291
		01:41	EN				48°28.312	123°09.06							
2	101	09:26	BE	ROS		6	48°25.45	124°44.88	236				PC/DS		weights on
		09:29	BO				48°25.45	124°44.88		225					
		09:34	EN				48°25.46	124°44.82							

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: 16 April 2010

① transmembrane postcard ~~bag~~ soapy water + wipe

② new lines used for salinity bottles

Depart 12:35 1 Dec 2010 PST, cloudy + calm

4642

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 2 of 13

Month DEC				Year 2010			Ship VECTOR				Cruise ID 2010-22				
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							
2	102	10:21	BE	ROS		7	48 29.99	124 43.91	253		22-35	14	RE/DS	✓	
		10:29	BO				30.00	43.67		240					
		10:46	EN				30.00	45.51							
2	103	11:19	BE	ROS		8	48 33.02	124 42.88	120				RE/DS	✓	
		11:23	BO				33.06	42.82		111					
		11:26	EN				33.08	42.78							
2	76	12:25	BE	ROS		9	48 31.32	124 30.29	95				RE/DS/KS	✓	9°C air temp
		12:28	BO				31.29	30.38		91					
		12:30	EN				31.29	30.42							
2	75	13:02	BE			10	48 28.23	124 32.69	220		36-48		RE/DS/KS	✓	
		13:07	BO				28.18	32.69		212					
		13:22	EN				28.19	32.44							
2	74	13:55	BE			11	48 25.03	124 35.56	173				RE/DS/KS	✓	
		14:00	BO				24.98	35.55		165					
		14:03	EN				24.96	35.55							
2	73	16:16	BE			12	48 14.99	124 6.56	165						weights off
		16:23	BO				14.97	6.64		159					6°C air temp
		16:26	EN				14.92	6.58							

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: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 3 of 13

Month <u>DEC</u>				Year <u>2010</u>			Ship <u>VECTOR</u>					Cruise ID <u>2010-22</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom		Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments	
							Latitude	Longitude	Depth								
2	72	16:57	BE	ROS	US	13	48 18.58	124 3.98	189			49-60	12	RL/BS/KS	✓	pH cap left on	
		17:02	BO				18.57	3.97		186							
		17:15	EN				18.47	3.99									
2	71	17:52	BE	ROS		14	48 22.16	123 59.83	112					RL/BS/KS	✓		
		17:54	BO				22.16	59.84		107							
		17:56	EN				22.16	59.85									
2	70	19:06	BE	ROS		15	48 19.19	123 43.23	154					RL/BS/KS	✓		
		19:10	BO				19.19	43.24		149							
		19:13	EN				19.19	43.24									
2	69	19:40	BE	ROS	US	16	48 15.57	123 43.13	178			61-71	11	RL/DT/MH	✓		
		19:45	BO				48 15.53	123 43.14		174							
		19:57	EN				48 15.50	123 43.15								Event time + 10s estimated →	
2	68	20:30	BE	RDS		17	48 12.21	123 42.918	141					RL/DT/MH	✓		
		20:34	BO				48 12.18	123 42.82		135							
		20:36	EN				48 12.17	123 42.78									
2	105	22:10	BE	RDS		18	48 10.98	123 18.97	85					RL/DT/MH	✓		
		22:12	BO				10.95	18.99		83							
		22:14	EN				10.94	18.99									

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: 16 April 2010

EVENT

#16 Computer crashed at the surface. "Reset". prior to last bottle firing. Fired surface bottle manually using sbc 11 "Fire" Control. Event finish time + position is an estimate.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 4 of

Month <u>Dec</u>				Year <u>2010</u>			Ship <u>Vector</u>				Cruise ID <u>2010-22</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							
2	ADCP	22:42	BE	ROS	US	19	48° 14.02	123° 18.04	122		72-80	9	RL/DT MH	✓	
		22:44	BO				14.02	18.06		116					
		22:54	EN				14.03	18.20							
2	104	23:37	BE	ROS		20	48° 19.92	123° 18.06	88			—	RL/DT MH	✓	
		23:39	BO				19.93	18.13		84					
		23:41	EN				19.92	18.17							
3	67	00:08	BE	ROS		21	48° 22.78	123° 18.20	107			—	RL/DT MH	✓	
		00:10	BO				22.77	18.24		103					
		00:13	EN				22.78	18.26							
3	66	00:51	BE	ROS		22	48° 19.27	123° 14.42	101			—	RL/DT MH		
		00:52	BO				19.25	14.42		96					Computer: Reset on UP
		00:53	EN				19.25	14.42							cast.
3	65	01:33	BE	ROS	US	23	48 15.86	123 09.81	125		81-89	9		✓	
		01:36	BO				48 15.86	123 09.84		121					
		01:49	EN				15.60	10.03							
3	64	02:35	BE	ROS		24	48 12.77	123 5.78	109						
		02:38	BO				48 12.75	123 5.80		105					Computer: Reset
		02:40	EN				48 12.75	123 5.80							@ Surface

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: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 5 of 13

Month <u>Dec</u>				Year <u>2010</u>			Ship <u>Vector</u>				Cruise ID <u>2010-22</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							
3	63	03:20	BE	ROS		25	48° 14.62	122° 58.5	151			✓	RL/DT MH	✓	
		03:24	BO				14.63	58.5		147					
		03:26	EN				14.62	58.4							
3	62	04:28	BE	ROS	US	26	48 22.78	123° 2.58	148		90-99	10	RL/DT MH	✓	
		04:32	BO				48 22.80	123 2.58		144					
		04:48	EN				48 22.80	123 2.62							
3	54	06:19	BE	ROS		27	48 26.61	122° 44.32	80				RL/DT MH	✓	
		06:21	BO				26.61	44.30		74					
		06:23	EN				26.61	44.29							
3	53	07:02	BE	ROS		28	48 33.21	122 44.99	62			✓	RL/DT MH	✓	
		07:04	BO				33.22	44.99		56					
		07:05	EN				33.23	44.98							
3	52	07:40	BE	ROS		29	48 38.91	122 43.24	83			✓	RL/DT MH	✓	
		07:43	BO				38.94	43.22		79					
		07:44	EN				38.97	43.21							
3	51	08:48	BE	ROS		30	48 46.74	122 51.59	165				RL/DT MH	✓	
		08:51	BO				46.77	51.65		161					
		08:55	EN				46.75	51.67							

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: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 6 of 13

Month DEC				Year 2010			Ship VECTOR				Cruise ID 2010 22				
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							
3	57	10:32	BE	ROS		31	48 43.99	123 8.19	162				PC/DS/KS	✓	bottom depth decreased during time on station
		10:38	BO				44.11	7.90	153	148					
		10:41	EN				44.17	7.77							
3	56	11:30	BE	ROS	US	32	48 46.31	123 1.64	220		101-113	13	PC/DS/KS	✓	
		11:36	BO				46.44	1.51		210					
		11:49	EN				46.77	1.24							
3	47	12:31	BE	ROS		33	48 49.28	123 6.16	184				PC/DS/KS	✓	
		12:37	BO				49.24	6.11		180					
		12:41	EN				49.19	6.07							
3	48	13:08	BE	ROS		34	48 51.71	123 3.26	220				PC/DS/KS	✓	
		13:13	BO				51.71	3.42		219					
		13:18	EN				51.74	3.56							
3	49	13:51	BE	ROS		35	48 54.970	122° 59.641	134				PC/DS/KS	✓	
		13:55	BO				48 54.976	122. 59.780		129					
		13:58	EN				48 54.958	122 59.779							
3	50	14:31	BE	ROS		36	48 57.689	122 56.120	29				PC/DS/KS	✓	
		14:33	BO				48 57.684	122 56.153		24					
		14:34	EN				48 57.678	122 56.176							

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: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 7 of 13

Month <u>DEC</u>				Year <u>2010</u>			Ship <u>VECTOR</u>				Cruise ID <u>2010-22</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							
03	44	1520	BE	ROS		37	48 56.773	123 5.987	122				PC/DS/KS	✓	
		1523	BO				48 56.784	123 5.993		117					
		1525	EN				48 56.788	123 6.002							
03	45	15:51	BE	ROS		38	48 53.888	123 8.435		129			PC/DS/KS	✓	
		15:53	BO				48 53.886	123 8.443	124						
		15:56	EN				48 53.891	123 8.442							
03	46	16:18	BE	ROS	US	39	48 51.40	123 10.82	180				R/DS/KS	✓	6°C on temp
		16:21	BO				51.39	10.84		176					#6 bottle misfired
		16:35	EN				51.39	10.83							
03	106	17:37	BE	ROS		40	49 1.02	123 13.20	76				R/DS/KS	✓	SPAR looks low
		17:40	BO				1.02	13.24		72					yeel varies with dist
		17:42	EN				1.01	13.26							
03	107	18:09	BE	ROS		41	48 58.39	123 18.01	183				R/DS/KS	✓	
		18:14	BO				58.43	18.06		180					
		18:17	EN				58.45	18.14							
03	43	19:05	BE	ROS		42	49 0.14	123 30.03	198				R/DS/KS	✓	interesting T profile
		19:09	BO				0.13	30.01		192					
		19:13	EN				0.11	30.13							

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: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 8 of 13

Month DEC				Year 2010			Ship VECTOR				Cruise ID 2010-22				
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							
03	42	19:35	BE	ROS	US	43	49 1.81	123 26.22	319		125-139	15	RL DT MH	✓	
		19:43	BO				1.83	26.22		315					
		20:02	EN				1.81	26.24							
03	41	20:31	BE	ROS		44	49 3.31	123 22.29	242			—	RL DT MH	✓	
		20:37	BO				3.31	22.32		239					
		20:42	EN				3.29	22.31							
03	108	21:05	BE	ROS		45	49 4.40	123 19.08	90				RL DT MH	✓	
		21:08	BO				4.38	19.07		85					
		21:10	EN				4.38	19.06							
03	37	22:12	BE	ROS		46	49 13.58	123 20.66	214				RL DT MH	✓	
		22:17	BO				13.56	20.64		212					
		22:21	EN				13.56	20.63							
03	38	22:54	BE	ROS		47	49 11.94	123 26.43	308				RL DT MH	✓	
		23:00	BO				11.93	26.45		303					
		23:05	EN				11.90	26.44							
03	39	23:42	BE	ROS	US	48	49 9.76	123 33.03	376		140-155	16	RL DT MH	✓	
		23:46	BO				09.77	33.02		375					
		00:06	EN				9.79	32.99							

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: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 9 of 13

Month <i>December</i>				Year <i>2010</i>			Ship <i>Vector</i>				Cruise ID <i>2010-22</i>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
<i>04</i>	<i>40</i>	<i>00:29</i>	<i>BE</i>	<i>ROS</i>		<i>49</i>	<i>49° 8.60</i>	<i>123° 36.79</i>	<i>142</i>		<i>—</i>	<i>—</i>	<i>RL, DT MH</i>	☒	
		<i>00:33</i>	<i>BO</i>				<i>8.58</i>	<i>36.82</i>		<i>148</i>					<i>Depth increase to 152.</i>
		<i>00:35</i>	<i>EN</i>				<i>8.58</i>	<i>36.83</i>							
<i>04</i>	<i>26</i>	<i>01:44</i>	<i>BE</i>	<i>ROS</i>		<i>50</i>	<i>49° 14.29</i>	<i>123° 50.79</i>	<i>250</i>		<i>—</i>	<i>—</i>	<i>RL, DT MH</i>	☒	
		<i>01:49</i>	<i>BO</i>				<i>14.28</i>	<i>50.78</i>		<i>247</i>					
		<i>01:54</i>	<i>EN</i>				<i>14.27</i>	<i>50.79</i>							
<i>04</i>	<i>27</i>	<i>02:28</i>	<i>BE</i>	<i>ROS</i>	<i>US</i>	<i>51</i>	<i>49° 19.09</i>	<i>123° 47.99</i>	<i>344</i>		<i>156-170</i>	<i>15</i>	<i>RL, DT MH</i>	☒	
		<i>02:35</i>	<i>BO</i>				<i>19.07</i>	<i>47.99</i>		<i>341</i>					
		<i>02:54</i>	<i>EN</i>				<i>19.09</i>	<i>47.98</i>							
<i>04</i>	<i>28</i>	<i>03:29</i>	<i>BE</i>	<i>ROS</i>		<i>52</i>	<i>49 24.10</i>	<i>123 45.25</i>	<i>135</i>				<i>RL DT MH</i>	☒	
		<i>03:33</i>	<i>BO</i>				<i>24.08</i>	<i>45.21</i>		<i>132</i>					
		<i>03:36</i>	<i>EN</i>				<i>24.09</i>	<i>45.23</i>							
<i>04</i>	<i>24</i>	<i>05:16</i>	<i>BE</i>	<i>ROS</i>		<i>53</i>	<i>49 30.28</i>	<i>124 05.97</i>	<i>421</i>			<i>—</i>	<i>RL DT MH</i>	☒	
		<i>05:24</i>	<i>BO</i>				<i>30.28</i>	<i>05.99</i>		<i>420</i>					
		<i>05:31</i>	<i>EN</i>				<i>30.28</i>	<i>06.03</i>							
<i>04</i>	<i>25</i>	<i>05:56</i>	<i>BE</i>	<i>ROS</i>		<i>54</i>	<i>49 27.69</i>	<i>124 07.52</i>	<i>293</i>			<i>—</i>	<i>RL DT MH</i>	☒	
		<i>06:02</i>	<i>BO</i>				<i>27.68</i>	<i>7.51</i>		<i>293</i>					<i>Press. Reading.</i>
		<i>06:07</i>	<i>EN</i>				<i>27.68</i>	<i>7.54</i>							

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: 16 April 2010

This page is for any notes or observations

ALT. Reading $\approx 7m$ off bottom.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 10 of 13

Month <u>DEC</u>				Year <u>2010</u>			Ship <u>VECTOR</u>				Cruise ID <u>2010-27</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							
04	2	06:35	BE	ROS	US	55	49 24.09	124 9.32	277		171-184	14	RL DT MH	✓	
		06:40	BD				24.10	9.32		274					
		06:56	EN				24.11	9.30							
04	1	07:26	BE	ROS		56	49 20.30	124 12.11	244			-	RL DT MH	✓	
		07:30	BD				20.28	12.07		238					
		07:35	EN				20.28	12.07							
04	3	08:27	BE	ROS	US	57	49 26.59	124 20.26	322		185-199		R/DS/KS	✓	
		08:34	BD				26.61	20.30		318					
		08:51	EN				26.61	20.26							
04	4	09:12	BE	ROS		58	49 24.52	124 22.06	342				R/DS/KS	✓	
		09:19	BD				24.50	22.07		339					
		09:25	EN				24.51	22.08							
04	5	10:08	BE	ROS		59	49 27.40	124 30.80	319				R/DS/KS	✓	
		10:15	BD				27.41	30.81		312					
		10:21	EN				27.40	30.85							
04	6	10:48	BE	ROS	US	60	49 30.62	124 27.78	192		200-211	12	R/DS/KS	✓	
		10:54	BD				30.60	27.82		189					
		11:06	EN				30.55	27.84							

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: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 11 of 13

Month DEC				Year 2010			Ship VECTOR				Cruise ID 2010-22				
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							
04	7	11:38	BE	ROS		61	49 34.39	124 24.17	351				R/DS/KS	✓	
		11:46	BO				34.38	24.13		349					
		11:52	EN				34.42	24.12							
04	9	12:54	BE	ROS	US	62	49 35.45	124 38.26	171		212-222	11	R/DS/KS	✓	
		13:00	BO				35.44	38.23		167					
		13:12	EN				35.40	38.26							
04	8	13:49	BE	ROS		63	49 39.36	124 33.02	340				R/DS/KS	✓	computer system crash
		13:58	BO		0231	64	39.40	33.18		338					reboot in event 64
		14:06	EN		m		39.46	33.33							
04	10	15:11	BE	ROS		65	49 40.69	124 47.32	95				R/DS/KS	✓	
		15:14	BO				40.70	47.23		92					
		15:16	EN				40.70	47.29							
04	11	15:38	BE	ROS		66	49 42.42	124 43.39	300				R/DS/KS	✓	
		15:44	BO				42.41	43.40		297					
		15:49	EN				42.39	43.40							
04	12	16:05	BE	ROS	US	67	49 43.58	124 40.79	360		223-236	14	R/DS/KS	✓	
		16:12	BO				43.55	40.82		352					
		16:29	EN				43.55	40.78							

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: 16 April 2010

computer crash @ 231 m during descent, reboot Ltl event #64 + finish descent + then to surface

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 12 of 13

Month <u>DEC</u>				Year <u>2010</u>			Ship <u>VECTOR</u>				Cruise ID <u>2010-22</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								
04	21	19:19	BE	ROS		68	50 1.97	125 13.57	80				RL, DT, MH	✓		
		19:21	BO				1.92	13.52		71						
		19:23	EN				1.89	13.49								
04	13	20:50	BE	ROS		69	49 55.37	124 55.243	243		—	—	RL, DT, MH	✓		
		20:55	BO				55.31	55.26		232						
		20:59	EN				55.32	55.29								
04	14	21:26	BE	ROS	US	70	49 53.02	124 59.60	315		237-251	15	RL, DT, MH	✓		
		21:32	BO				53.01	59.55		310						
		21:51	EN				52.96	59.57								
04	15	22:16	BE	ROS		71	49 51.57	125 1.58	128				RL, DT, MH			
		22:19	BO				51.57	1.57		123						
		22:22	EN				51.60	1.59								
04	16	23:16	BE	ROS	US	72	49 57.71	125 8.74	158		252-261	10	RL, DT, MH			
		23:19	BO				57.72	8.71		152						
		23:31	EN				57.71	8.62								
04	17	23:57	BE	ROS		73	49 58.80	125 4.30	265		—	—	RL, DT, MH			
		00:01	BO				58.81	4.30		260						
		00:06	EN				58.80	4.29								

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: 16 April 2010

This page is for any notes or observations

~~925~~
~~579~~

20968
- 5
20963

32623
- 5
32618

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 13 of 13

[illegible]

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

Time Code:

BE = Beginning Time of Cast DE = Deployment Time
BO = Bottom Time of Cast MR = Messenger Release Time
EN = End Time of Cast 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: 16 April 2010