

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2014-15

DATE:

From:

April 12 / 14

To:

VESSEL:

Vector

PROJECT(S):

WC-DC

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

WaterProperties.ca

Captain: Bob Barnett First Officer: _____
 Second Officer: _____ Third Officer: _____
 Fishing Master: _____ Chief Engineer: _____

Mission Participants / Agencies:

**** Chief Scientist to complete section below OR cut and tape from cruise plan ****

1st Leg Scientific Personnel: S. Vagle - CS Cabin.

[illegible]

2nd Leg Scientific Personnel: Chief Scientist:

[illegible]

**** The following 3 pages are VERY IMPORTANT as they document equipment and settings used on board ****

These pages are to be completed by the CTD Technician setting up the equipment, the Watch Leader on board, and the Chief Scientist MUST verify that all relevant sections are completed prior to leaving the vessel. Any mid-cruise changes to be noted by watch leader in the notes.

Data logging computer: Vector laptop

Data acquisition program: Seasave

CTD deck unit make: SBE model: 11+ serial number: 0619

Scott's cell #
(250) 858-288

Primary CTD

Make: SBE model: 9+ serial number: 0585

Primary temperature serial number: 4054 ✓

Primary conductivity serial number: 1766 ✓

Secondary temperature serial number: 4700 ✓

Secondary conductivity serial number: 3321 ✓

Transmissometer: Wetlab's ~~Star~~ Model: C-Star s/n: 1396DR ✓

Fluorometer: Model: Wetlab's Eco Cable gain: 13 s/n: 2216 ✓ P, S or NO pump?

Fluorometer: Model: SBE Cable gain: 43 s/n: 1119 ✓ P, S or NO pump?

Oxygen sensor: BIOSENTERAL Model: 200 ✓ s/n: 0692 ✓ P, S or NO pump?

PAR sensor: PTT Model: 200 ✓ s/n: 0692 ✓ Surface PAR? Y N

Other sensors: PTT s/n: 0692 ✓ P, S or NO pump?

Other sensors: PTT s/n: 0692 ✓ P, S or NO pump?

Other sensors: PTT s/n: 0692 ✓ 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?

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: _____ Surface PAR? Y / N

Other sensors: _____ s/n: _____ P, S or NO pump?

Other sensors: _____ s/n: _____ P, S or NO pump?

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Other sensors: _____ s/n: _____ P, S or NO pump?

Other sensors: _____ s/n: _____ P, S or NO pump?

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

This also includes the bottle location above the CTD on non-rosette casts (e.g. W.E. Ricker)

as same pump
on 4054 / 1776

Rosette Setup:

Number of bottles: 24
Manufacturer: 103
Volume of bottles (litres): 10L

Winches:

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

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

Salinometer:

Make: _____ Model: _____ Serial Number: _____
Comments on performance during cruise (comments should also be reflected in the post-cruise report):

Oxygen Kit(s):

Make: _____ Model: _____ Kit Number: _____
Make: _____ Model: _____ Kit Number: _____
Comments on performance during cruise (comments should also be reflected in the post-cruise report):

Thermosalinograph System (SBE21):

Program: _____ Version: _____
Sampling interval (seconds): _____
Fluorometer sensor serial number: _____
Comments on performance during cruise (comments should also be reflected in the post-cruise report):

ADCP Setup:

Computer time zone: _____ User Exits: Name: _____ Exit points: _____
Sampling interval (sec): _____ Name: _____ Exit points: _____
Bin Length: (2^x): _____ Name: _____ Exit points: _____
Pulse Length: _____ Work File: _____
Buffer (bytes): _____
Gyro Offset: _____

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

CTD Test Cast Information

Test Cast along side? Yes ☐ No ☒ Same system has been used for last
Comments *2 cruise (Chandler; Sutherland) - operating ok*

Test Cast in Saanich Inlet or other location? Yes ☐ No ☐
Comments _____

CTD pressure reading on deck (db), before cast: _____ after cast: _____

Pumps working? Yes ☐ (0011) No ☐ (0010)

Secondary Temp - Primary Temp: _____
(Average from the mixed region)

Secondary Salinity - Primary Salinity: _____
(Average from the mixed region)

Additional Comments:

Scientific Equipment Used During Cruise

This sheet allows you to enter all of the equipment used while on board. Please use the separate CTD sheet for entry for SBE 9/16/19/25.

Other CTD units:

RBR Serial Number: N/A Sensors: _____

Others: _____

Plankton Nets:

Bongo #1 Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____

Bongo #2 Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____
Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____

Multinet ☐ BIONESS ☐ Neuston ☐ Others: _____

SCOR 236 μ m

Trawl Gear:

Midwater Trawls: SOG ☐ Highseas ☐ Pelagic ☐ Other: N/A

Bottom Trawls: Atlantic Western I/A ☐ Yankee 36 Hard & Soft Bottom ☐ Other: N/A

American Shrimp Trawl ☐

Notes: _____

Trawl Doors: USA Jet ☐ Tyburon ☐

Sounders : Wesmar 380 ☐ Others: _____

Acoustics:

Echosounder #1 _____ Frequencies (KHz): 12 ☐ 18 ☐ 38 ☐ 70 ☐ 120 ☐ 200 ☐ N/A

Others: _____

Echosounder #2 _____ Frequencies (KHz): 12 ☐ 18 ☐ 38 ☐ 70 ☐ 120 ☐ 200 ☐

Others: _____

Software & Notes: _____

Other Gear in Operation:

1. Smith Mac brab

2. SB25 + turbidity = filtration studies

3. _____

4. loop for microplates

5. _____

This page is for any notes or observations

Benthic Grabs in support of CHS Seafloor Classification
Grab=Smyth Macintyre

Station	Lat	Long	Depth (m)	Colour (Munsell)	Type	Comment
Doug4	53 55.484	128 42.107	220	5Y 4/2 Olive grey	Mud	All mud, no discernable grit
Doug11	53 49.876	128 49 421	313	2.5Y 4/4 Olive brown	Mud	All mud, no discernable grit
Doug16	53 46.731	128 54.829	383	5Y 4/4 Olive	sandy mud	very low proportion of sand
Doug26	53 40.456	129 07.325	400	5Y 3/2 dark olive grey	sandy mud	low proportion of sand, polychaetes, heart urchins, bioturbated
KSK1	53 29.192	129 12.464	400	5Y 3/2 dark olive grey	Mud	all mud, high porosity/water content
ES72	53 05.892	129 33.683	173	5Y 2.5/1 black	muddy sand	higher proportion of sand, slightly sulfidic smell
Doug40	53 26.742	129 12.559	400	2.5Y 3/2 very dark grey		slightly brown, lots of ophuroids, heart urchins, polychaete. Goey with high porosity
Doug45	53 22.252	129 11.670	463	5Y 3/2 dark olive grey	sandy mud with	grabbed a rock, lots of sand with only slight mud. Grab didn't close due to rock

ES72 5305.831 129 33.687 172 m muddy sand - high porosity

Microplastic Sampling

① not logged
as events or
un sequential
sample #'s

Sampling was as
opportunity allowed
and often at the
same time of concurrent
events/casts

Samples to
Moira Galbraith.

Microplastic Sampling
2014-15

Station ID	ID	Flow Rate	Time Samp	Date/Time (local)	BE Lat	BE Long	EN Lat	EN Long	Type	
Doug26	1	10	10	April 15 13:40-13:39	53 40.463	129 07.312	NA	NA	Loop	
Doug45	2	14	10	April 15 20:40-20:50	53 22.355	129 11.634	NA	NA	Loop	
GC53 (on approach)	3	8	10	April 15 23:30-23:40	53 24.53	129 23.834	53 24.537	129 23.95	Loop	
CS84 (on approach)	4	16	10	April 16 10:06-10:16	52 59.584	129 27.237	52 58.672	129 29.949	Loop	
CS84	5	NA	NA	April 16 at 10:55	52 54.089	129 23.863	NA	NA	Niskin	
SC69	6	14	10	April 16 14:00-14:10	53 04.79	129 23.863	53 04.785	129 19.542	Loop	
WHA9	7	14	10	April 16 18:44-18:54	53 18.588	129 10.964	53 18.587	129 10.954	Loop	
UC31	8	14	10	April 16 20:33-20:43	53 32.447	128 59.801	53 32.711	128 59.704	Loop	
Fraser Reach (travelling down)	9	10	10	April 17 14:24-14:34	53 15.361	128 51.110	53 14.316	128 49 186	Loop	Ship Speed 9.5kts
QS1-QS2 (in transit)	10	11	10	April 18 10:11-10:21	50 50.003	127 16.807	50 48.849	127 15.330	Loop	Ship speed 11.2 kts
QS2	11	11	10	April 18 11:11-11:21	50 45.052	127 09.953	50 45.087	127 09.988	Loop	
Off Malcolm Is (in transit)	12	11	10	April 18 12:18-12:28	50 42.449	126 58.627	50 41.872	126 56.207	Loop	Ship speed 11.2 kts
JS-1	13	11	10	April 18 14:11-14:21	50 31.329	126 38.386	50 31.321	126 38.338	Loop	
JS-7	14	11	10	April 18 16:50-17:00	50 28.403	126 09.748	50 28.413	126 09.629	Loop	
Helmken Isl (in transit)	15	11	10	April 18 18:29-18:39	50 23.572	125 53.632	50 23.331	125 50.992	Loop	Ship Speed 10.2kt
ChP1	16	11	10	April 18 20:16-20:26	50 20.766	125 25.925	50 20.791	125 25.883	Loop	lots of chlorophyll brown

Stations samples will either be considered standard chemistry or super chemistry.

Standard Chemistry:

1 bottle fired at standard depths except for surface where 2 bottles are fired. All standard water property variables are taken out of niskins 2-XX while all carbon-type chemistry samples and salinity are taken out of the niskin 1. All carbon chemistry samples are done in duplicate

Standard depths: surface (0), 10m, 20, 30m 50, 75m, 100m, 150m, 200m, 250, 300.....to bot-5

Water property variables (in sequence): DO, nuts, salinity, chl a(phyto before salinity if taken). Salinity here is only taken in deep water (non-gradient) water and used for 911 calibrations

Carbon-type chemistry (in sequence): DIC/ALK, del 18, Salinity, TOC, CDOM, DOC. Salinity is taken from EVERY bottle and is used for chemistry, not 911 calibration. Again, each variable is taken in duplicate

SUPER Chemistry

2 bottles are fired at each of the standard depth (assumed to be the same water). All water property variables are taken from the even numbered bottles and all the carbon-type chemistry is taken from the odd numbered bottles. Duplicates are only done in 10-20% (not every bottle)

Each niskin is given a unique sequential sample number, regardless of depth.

SBE25 Protocol for Turbidity

Put 1x 1.7L Niskin immediately above SBE25

Sit @ surface (Niskin submerged) for 60sec.

Descent to 20m attach 2nd 1.7L Niskin.

Descent 5m wait 60sec.

Bung Niskin to below surface and fire, removed bottle. Ascend the final Niskin to surface and fire.

Retrieve SBE25

SBE25 - no bottles

@ surface 60sec

to 25m 60sec.

to surface 60sec.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>April</u>				Year <u>2014</u>			Vessel <u>VECTOL</u>			Cruise ID <u>2014-18</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
01	ChPI	13	20:14	BE	ROS	US	50°20.791	125°25.861	344	336.8	0-13	13	CM	☒ ☐	2-44dban@surf
			20:25	BO			50°20.803	125°25.861			-			☐ ☐	
			20:57	EN			50°20.765	125°25.876			-			☐ ☐	
02	UCTD1	13	23:10	BE	UCTD	—	50°22.22	125°45.18	175		-			☐ ☐	local time 16:10
			23:25	EN			50°22.5418	125°45.44			-			☐ ☐	local time 16:25
03	MVP1	14	21:33	BE	MVP	—	52°47.902	128°32.221	348		-			☐ ☐	
		15	01:31	EN			53°13.973	128°48.069			-			☐ ☐	
04	UC45	15	02:28	BE	CTD	—	53°18.430	128°55.489	518	495	-	0	SV	☒ ☐	3.83
			02:38	BO			53°18.421	128°55.513			-			☐ ☐	
			02:49	EN			53°18.395	128°55.525			-			☐ ☐	
05	UCTD2	15	02:57	BE	UCTD	—	53°20.994	128°54.526	460		-			☐ ☐	} along Ursula Channel.
06	UCTD3	15	03:28	BE	UCTD	—	53°26.249	128°56.18	428		-			☐ ☐	
07	UCTD4	15	03:46	BE	UCTD	—	53°29.071	128°58.761	106		-			☐ ☐	
08	UC31	15	04:18	BE	CTD	—	53°32.304	128°59.754	61	40	-		D.W.	☐ ☐	
			04:50	BO			53°32.254	128°59.659	51		-			☒ ☐	
			04:55	EN	CTD		53°32.251	128°59.657			-			☐ ☐	
09	VP24	15	05:20	BE	CTD		53°37.066	128°50.834	198	195	-		D.W.	☒ ☐	surf 2.31
			05:35	BO			53°37.075	128°50.836			-			☐ ☐	
			05:39	EN			53°37.086	128°50.821			-			☐ ☐	

Event Type:

BOT = Bottle cast (no CTD)
CTD = Standalone CTD
ROS = CTD in Rosette
SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop (default)
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

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 14 February 2013

CHPI = Chatham Point.

Cast #1 - 1st current; drifting. Raised rosette before tripping bottom bottle
rosette

20.49 on hold due to ship alarm. Hydraulic problem

NOTE: Sample 13 Chl. sample 16 13B lost ~ 10 min. Squared in 51 treatment

NOTE: as this was a "training cast" - it was a little slow on the sample taking
we treated CHPI as a "standard chem" station with 2 surface bottles

Event 2 - did not catch actual land time / ^{plan} caught mid point / UCTD cast.

Event 3 - Ash in water @ 21:31 UTC

- Start logging data at 21:37
- test run to 50m; run to 200m - constantly check a downcast vs depth rating
logs 2 files per cast; down cast vs upcast

Event 8 - lots of current / tidal rip. CTD was likely dragged diagonally on the upcast.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>APRIL</u>			Year <u>2014</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2014-15</u>							
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments	
10	DOUG4	15	07:48	BE	ROS	US	53°55.559	128°42.118	220	218	14 - 31	18	CH	☐ ☐		
			07:55	BO			53°55.536	128°42.086			-			☐ ☐		
			08:18	EN			°	°			-			☐ ☐	end not logged	
11	DOUG4	15	09:05	BE	CTD-25		53°55.641	128°42.288	220	25m	—		CH	☐ ☐	0205 local	
			—	—			°	°			-			☐ ☐		
			09:15	EN			53°55.606	128°42.281			-			☐ ☐	0215 local	
12	DOUG4	15	09:55	BE	GRAB		53°55.499	128°42.184	220	220	-		CH	☐ ☐		
			09:47	BO			53°55.484	128°42.107			-			☐ ☐		
			09:50	EN			53°55.428	128°42.035			-			☐ ☐		
13	DOUG4	15	10:07	BE	NET		53°55.622	128°42.230	220		-		CH	☐ ☐		
			10:27	BO			53°55.634	128°42.239		215	-			☐ ☐		
			10:22	EN			53°55.634	128°42.244			-			☐ ☐		
14	DOUG11	15	11:23	BE	ROS	US	53°49.790	128°49.356	326		32 - 44	13	CH	☒ ☒		
			11:38	BO			53°49.832	128°49.396		319	-			☐ ☐		
			:	EN			°	°			-			☐ ☐	end not logged	
15	DOUG11	15	12:30	BE	GRAB		53°49.869	128°49.412	309		-			☐ ☐		
			:	BO			53°49.876	128°49.421	313		-			☐ ☐		
			12:50	EN			53°50.006	128°49.°			-			☐ ☐	local 5:50	
			:				°	°			-			☐ ☐		

Event Type:

BOT = Bottle cast (no CTD)
 CTD = Standalone CTD
 ROS = CTD in Rosette
 SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop (default)
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
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 EN = End Time of Cast

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

Produced by the Water Properties Group, IOS

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This page is for any notes or observations

DOUG 4 SBE25 2 small nicks for turbidity

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DAILY SCIENCE LOG															
Month <u>April</u>				Year <u>2014</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2014-15</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
16	Doug-16	15	14:08	BE	ROS	US	53°46.706	128°54.841	381		45-58	14	CH	☒	forgot to archive
			14:18	BO			53°46.650	128°54.902		376	-			☐	or downcast.
			14:48	EN			53°46.530	128°55.176			-			☐	traces tracked well
17	Doug-16	15	13:40	BE	GRAB		53°46.734	128°54.792	383		-		CH	☐	0640 local
			13:50	BO			53°46.731	128°54.829			-			☐	0650 local
			14:00	EN			53°46.697	128°54.861			-			☐	smelly sandy mud
18	MVP2	15	14:10	BE			°	°			-			☐	Comm. unid
			:	EN			°	°			-			☐	Failure
19	D20	15	15:?	BE	CTD		53°46.530	128°55.176	355		-			☐	missed start time
			15:48	BO			53°45.484	128°57.244		352	-			☐	start location seems off
			15:54	EN			53°45.473	128°57.196			-			☐	
20	F0C1	15	16:25	BE	ROS	US	53°44.346	129° 1.222	368		59-82	24		☐	
			16:33	BO			53°44.330	129° 1.189		365	-			☐	
			17:03	EN			53°44.225	129° 1.736			-			☐	
21	F0C1	15	17:52	BE	CTD 25	—	53°44.310	129° 01.309	373		-			☐	2 small risks for turbidity
			18:00	BO			53°44.365	129° 01.408		25	-			☐	
22	Doug 26	15	19:54	BE	ROS	US	53°40.453	129° 7.271	400		83-96	14	SV	☒	p. 2.14
			20:03	BO			53°40.463	129° 7.312		393	-			☐	
			20:38	EN			53°40.421	129° 7.428			-			☐	

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Produced by the Water Properties Group, IOS

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Version: 14 February 2013

Notes:

Note that event #17 occurred before event #16

Forgot to trip 250m J. Hk, went back down to get it
shown on latex IS as event 23 not 22

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23	Doug 26	15	20:49	BE	GRAB	—	53° 40.446	129° 07.282	400		-			☐ ☐	
			20:58	BO			53° 40.456	129° 07.325		400	-			☐ ☐	
24	Doug 31	15	21:53	BE	ROS	US	53° 36.661	129° 12.739	300	3	97-107	11	SV	☒ ☐	P = 2.2
			22:00	BO			53° 36.668	129° 12.718		300	-			☐ ☐	
			22:26	EN			53° 36.638	129° 12.775			-			☐ ☐	
25	Doug 31	15	22:37	BE	NET	—	53° 36.656	129° 12.786	272		-			☐ ☐	
			22:46	BO			53° 36.651	129° 12.776		250	-			☐ ☐	
26	Doug 36	15	23:24	BE	CTD	—	53° 33.556	129° 12.644	320		-		DW	☒ ☐	P = 2.39
			23:32	BO			53° 33.550	129° 12.634		315	-			☐ ☐	
			23:38	EN			53° 33.544	129° 12.644			-			☐ ☐	
27	KSK 1	16	00:15	BE	CTD	—	53° 29.254	129° 12.415	373		-		DW	☒ ☐	P = 1.93
			00:24	BO			53° 29.251	129° 12.430		362	-			☐ ☐	
			00:31	EN			53° 29.251	129° 12.425			-			☐ ☐	
28	KSK 1	16	00:33	BE	GRAB	—	53° 29.1749	129° 12.5796	375		-		CW	☐ ☐	
			00:34	BO			53° 29.192	129° 12.564		372	-			☐ ☐	
29	Doug 40	16	01:17	BE	ROS	US	53° 26.760	129° 12.560	400		108-124	16	SV, CW, DW	☒ ☐	P = 2.31
			01:26	BO			53° 26.766	129° 12.552		392	-			☐ ☐	
			01:59	EN			53° 26.768	129° 12.569			-			☐ ☐	
							°	°			-			☐ ☐	

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 EN = End Time of Cast

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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PH buffer cap is just coming right off sensor with its ring

For Doug 40 - two extra bottles tripped in deep. Not used for analysis (using for sediment trap?) but the label maker can not accommodate this so they are still assigned sample #s even though these won't be used.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month			Year			Vessel			Cruise ID						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
30	DOUG40	16	02:14	BE	25CTD	—	53°26.757	129°12.552	396		-			☐ ☐	2 small vials
			02:20	EN			53°26.740	129°12.551		25	-			☐ ☐	for turbidity
			:				.	.			-			☐ ☐	
31	DOUG40	16	02:25	BE	GRAB		53°26.741	129°12.552	396		-			☐ ☐	
			02:32	BO			53°26.742	129°12.550		400	-			☐ ☐	
32	DOUG45	16	03:29	BE	ROS		53°22.313	129°11.680	460		125-139	15	D.W.	☒ ☐	P = 2.13
			03:40	BO			53°22.392	129°11.591		452	-			☐ ☐	
			04:17	EN			53°22.679	129°11.399			-			☐ ☐	
33	DOUG45	16	04:23	BE	GRAB		53°22.256	129°11.678	460		-			☐ ☐	
			04:31	BO			53°22.252	129°11.670		463	-			☐ ☐	
34	WC43	16	05:23	BE	CTD		53°21.035	129°16.352	515		-		DW	☒ ☒	P = 2.44
			05:33	BO			53°21.035	129°16.369		512	-			☐ ☐	
			05:43	EN			53°21.042	129°16.342			-			☐ ☐	
35	WC43	16	05:46	BE	NET		53°21.030	129°16.350	515		-			☐ ☐	
			05:48	BO			53°21.042	129°16.353		220	-			☐ ☐	
			05:52	EN			53°21.026	129°16.329			-			☐ ☐	
36	WC43	16	06:05	BE	DRIFTERS		53°24.796	129°23.945	—	—	—			☐ ☐	#21 - #25
37			:				.	.			-			☐ ☐	
			:				.	.			-			☐ ☐	

Event Type:

BOT = Bottle cast (no CTD)

CTD = Standalone CTD

ROS = CTD in Rosette

SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring

NET = Plankton Net Haul

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=

Bottle Firing Method:

US = Up / Stop (default)

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Notes:

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This page is for any notes or observations

Lots of zooplankton visible near the surface. so lets do a net tow!
+ fish & squid.

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Month <u>April</u>				Year <u>2014</u>		Vessel <u>VECTOR</u>		Cruise ID <u>2014-15</u>							
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
37	GC53	16	06:43	BE	CTD		53°24.535	129°23.957	248		-		DW	☒ ☐	P=2.18
			06:51	BO			53°24.523	129°23.963		265	-			☐ ☐	
			06:56	EN			53°24.528	129°23.976			-			☐ ☐	
38	SC58	16	08:20	BE	CTD		53°16.550	129°25.545	532		-	6	CH	☒ ☐	0120 local
			08:35	BO			53°16.525	129°25.537		525	-			☐ ☐	bottom = 8
			08:46	EN			53°16.506	129°25.532			-			☐ ☐	*see notes*
39	SC61	16	09:24	BE	ROS		53°11.953	129°25.231	506		140-163			☐ ☐	
			09:37	BO			53°11.924	129°25.223		500	-			☐ ☐	bot - 7
			10:11	EN			53°12.013	129°25.308			-			☐ ☐	
40	SC61	16	11:16	BE	NET		53°12.031	129°25.308	506		-		CH	☐ ☐	
			11:26	BO			53°11.181	129°24.141		250	-			☐ ☐	
			11:32	EN			53°11.480	129°24.562			-			☐ ☐	
41	SC61	16	11:42	BE	GRAB		53°12.106	129°25.466	502		-		CH	☐ ☐	local 4:42 am
			12:02	EN			53°12.163	129°25.771			-			☐ ☐	did not reach bottom
42	OC66	16	12:35	BE	CTD		53°12.037	129°33.434	309		-		CH	☐ ☐	05:35 local
			12:44	BO			53°12.131	129°33.472		304	-			☐ ☐	
			12:50	EN			53°12.191	129°33.476			-			☐ ☐	
			:				.	.			-			☐ ☐	
			:				.	.			-			☐ ☐	

Event Type:

BOT = Bottle cast (no CTD)
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— = —

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Notes:

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Produced by the Water Properties Group, IOS

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Incorrectly named the ^{date} file 2014-15-0040, hex. Should be 0038, hex
wrong event #

Altimeter won't give steady returns. Varies between 5-7 m and 98 m.

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Month <u>April</u>			Year <u>2014</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2014-15</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
43	PC73	16	13:45	BE	CTD		53° 16.469	129° 43.435	172		-		CH	☒ ☐	local 0645
			13:55	BO			53° 16.547	129° 43.414	187	182	-			☐ ☐	
			13:59	EN			53° 16.603	129° 43.426			-			☐ ☐	#11 - #15
44	N/A		14:40		Drifters		.	.	—	—	-			☐ ☐	0740 local
45	E572	16	15:31	BE	CTD		53° 5.723	129° 33.697	176		-		CH	☒ ☐	
			15:37	BO			53° 5.754	129° 33.652		174	-			☐ ☐	bot - 4
			15:43	EN			53° 5.767	129° 33.653			-			☐ ☐	
46	E572	16	15:48	BE	GRAB		53° 5.831	129° 33.660	172		-		CH	☐ ☐	local 0848
			15:52	BO			53° 5.892	129° 33.687		173	-			☐ ☐	→
			15:57	EN			.	.			-			☐ ☐	
47	E580	16	16:47	BE	CTD		53° 0.683	129° 28.842	123		-		CH	☒ ☐	no HET file
			16:50	BO			53° 0.671	129° 28.007		118	-			☐ ☐	must have forgotten
			16:55	EN			53° 0.642	129° 28.684			-			☐ ☐	to START ARCHIVING
48	C584	16	17:55	BE	CTD		52° 54.089	129° 23.883	254		-		CH	☒ ☐	
			:	BO			.	.		250	-			☐ ☐	2 surface bottles for microplastics
			18:10	EN			52° 54.380	129° 23.683			-			☐ ☐	NOT assigned sample #s
49	SC74	16	19:12	BE	ROS	US	53° 0.680	129° 15.925	380		164-176		Sv, Cw, pw	☒ ☐	
			19:21	BO			53° 0.684	129° 15.932		376	-			☐ ☐	
			19:50	EN			53° 0.667	129° 15.949			-			☐ ☐	

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Notes:

Dredge left by Schuer PC 73 R 2572

→ grab. ^{lots of} clam shells, a brittle star, a snail shell plus sediment. (muddy fine sand.) ^{+ shell hash etc} ~~Take~~ Pictures take.

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Month <u>April</u>				Year <u>2014</u>		Vessel <u>VECTOR</u>		Cruise ID <u>2014-15</u>							
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
50	SC74	16	20:08	BE	SBL25	—	53° 00' .657	129° 15' .981	378		←	—		☐	
			20:10	BO			53° 00' .649	129° 15' .983		25	-			☐	
			20:12	BE			53° 00' .654	129° 15' .984			-			☐	
51	SC69	16	20:56	BE	CTD		53° 4' .808	129° 19' .501	692		-		SV	☒	
			21:12	BO			53° 4' .776	129° 19' .540		686	-			☐	Trawl 130m - 5m @ 685.90db
			21:27	EN			53° 4' .744	129° 19' .481			-			☐	
52	SC69		21:40	BE	SBL25		53° 4' .813	129° 19' .814	692		-			☐	2 nettings for turbidity
			21:47	EN			53° 4' .811	129° 19' .604		25	-			☐	#16 - #20
53	SC69	16	21:59		DRIFTERS		53° 5' .188	129° 18' .877	—	—	-		SV	☒	
54	WHA3	16	23:12	BE	CTD		53° 8' .341	129° 7' .238	545		-			☐	
			23:23	BO			53° 8' .352	129° 7' .238		540	-			☐	
			23:34	EN			53° 8' .352	129° 7' .268			-			☐	
55	WHA3	16	23:38	BE	CTD		53° 8' .362	129° 7' .244	545		-			☐	
			23:40	BO			53° 8' .365	129° 7' .237		25	-			☐	
			23:42	EN			53° 8' .362	129° 7' .240			-			☐	
56	WC58	17	00:24	BE	CTD		53° 13' .296	129° 7' .288	495		-		SV, CW	☒	
			00:36	BO			53° 13' .324	129° 7' .279		490	-			☐	
			00:45	EN			53° 13' .326	129° 07' .285			-			☐	
			:				.	.			-			☐	

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Today 604m - 5 cm for No Sample with species
For whole system

Reconnect to RASAR PAR Sensor Eqp - pump off - pump on

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Month <u>April</u>			Year <u>2014</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2014-15</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
57	WC58	17	00:43	BE	255BE CTD	—	53° 13.327	129° 07.262	494		-			☐ ☐	
			00:45	Bb			53° 13.322	129° 07.249		25	—	—	aw	☐ ☐	
			00:46	EN			53° 13.320	129° 07.245			-			☐ ☐	
58	WHA9	17	01:42	BE	CTD		53° 18.588	129° 10.973	476		-			☒ ☒	comparision cast
			01:51	Bo			53° 18.586	129° 10.950		470	-			☐ ☐	
			02:00	EN			53° 18.584	129° 10.968			-			☐ ☐	
59	WHA9	17	02:04	BE	MVP		53° 18.584	129° 10.927	476		—	—		☐ ☐	
			02:08	Bo			53° 18.581	129° 10.970		400	—	—		☐ ☐	
			02:13	EN			53° 18.583	129° 10.962			-			☐ ☐	
60	WHA9	17	02:17	BE	58625 CTD		53° 18.583	129° 10.954	476		-			☐ ☐	2 small netkins
			02:19	Bo			53° 18.?	129° 10.?	476	25	-			☐ ☐	for turbidity
			02:25	EN			53° 18.575	129° 10.958			-			☐ ☐	on deck
61	VP43	17	03:09	BE	CTD		53° 24.882	129° 6.900	324		-			☒ ☐	missed recording
			:	Bo			53° 24.906	129° 6.907		310	-			☐ ☐	
			03:27	EN			53° 24.884	129° 6.877			-			☐ ☐	
62	VP43	17	03:32	BE	58625 CTD		53° 24.883	129° 6.886	324		-			☐ ☐	
			03:33	Bb			53° 24.882	129° 6.887		25	-			☐ ☐	Straight cast
			03:35	EN			53° 24.884	129° 6.895			-			☐ ☐	no netkins
			:				.	.			-			☐ ☐	

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will compare the 2 systems 911 vs MVP

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Month <u>April</u>			Year <u>2014</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2014-15</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
63	VP39	17	04:25	BE	CTD		53°30.472	129°4.036	157		-		5400 CW	☒ ☒	
			04:29	BO			53°30.485	129°4.036		153	-			☐ ☐	
			04:32	EN			53°30.486	129°4.032			-			☐ ☐	
64	VP39	17	04:40	BE	CTD		53°30.485	129°04.036	155		-			☐ ☐	straight cast
			04:42	BO			53°30.487	129°04.036		25	-			☐ ☐	no net skin
			04:44	EN			53°30.488	129°04.032			-			☐ ☐	
65	UC31	17	05:20	BE	CTD		53°32.296	128°59.712	62	55	-			☒ ☒	Strong current
			05:20	BO			53°32.291	128°59.732			-			☐ ☐	
			05:24	EN			53°32.290	128°59.738			-			☐ ☐	
66	UC31	17	05:30	BE	ADCP	ROSE	53°32.290	128°59.738	Misc. positions		-			☐ ☐	Rosette ADCP Back ad fault
	AREA	17	18:13	EN			53°31.843	129°02.321			-			☐ ☐	11:13 local
67	UC31	17	19:06	BE	CTD		53°32.266	128°59.752	50		-		5400 CW	☒ ☐	
			19:09	BO			53°32.257	128°59.750		49.87	-			☐ ☐	
			19:11	EN			53°32.255	128°59.749			-			☐ ☐	
			:				.	.			-			☐ ☐	
68	MCTD Line	17	20:08	BE	UCTD		53°25.792	128°54.921			-			☐ ☐	finished slightly
			23:56	EN			52°55.798	128°3.119		200	-			☐ ☐	earlier than
			:				.	.			-			☐ ☐	log EN time
			:				.	.			-			☐ ☐	

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This page is for any notes or observations

quick stop in NCTD activities @ 21:30 UTC - got shallow going onto Fraser Beach.

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Month <u>April</u>			Year <u>2014</u>		Vessel <u>VECTOR</u>		Cruise ID <u>2014-15</u>								
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
69	QS-1	18	16:24	BE	ROS		50°51.458	127°18.870	145		177-185	9	CH	☒	
			16:31	BO			50°51.479	127°18.874		140	-			☐	
			16:34	EN			50°51.458	127°18.886			-			☐	
70	QS-2	18	17:58	BE	ROS		50°45.012	127°10.012	182		186-194	9	CH	☒	
			18:06	BO			50°45.046	127°9.961		179	-			☐	Soth + 6
			18:26	EN			50°45.118	127°9.984			-			☐	see note →
71	JS-1	18	21:09	BE	ROS		50°31.322	126°38.392	440		195-205	11	DW	☒	p = 2.63
			21:19	BO			50°31.322	126°38.341		435	-			☐	
			21:45	EN			50°31.320	126°38.342			-			☐	
72	JS-7	18	23:48	BE	ROS		50°28.404	126°09.760	338		206-216	11	DW	☒	p = 2.39
			23:59	BO			50°28.293	126°09.712		336	-			☐	
		19	00:22	EN			50°28.454	126°09.404			-			☐	
73	CHP1	19	03:18	BE	CTD		50°20.782	125°25.890	338		-		DW	☒	p = 2.12
			03:29	BO			50°20.792	125°25.884		334	-			☐	
			03:35	EN			50°20.798	125°25.872			-			☐	See note →
			:				°	°			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	

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Produced by the Water Properties Group, IOS

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Altimeter all over the place. Has been acting strangely all cruise esp over soft sediment
Here I was getting readings 5, 2, 20, 98 m to the bottom. I think we were ~5 m.

forgot to start archiving' missed the launch again
pump status = on

Fired 1 Bottle at surface for phytoplankton, no seq ID. $p = 2.18$ @ Surface