

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2017-47

DATE:

From: 22 April 2017

To:

VESSEL:

Neocaligus

PROJECT(S):

SOG zooplankton

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

WaterProperties.ca

**** 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: #32

Data acquisition program: Seasave

CTD deck unit make: _____ model: _____ serial number: _____

Primary CTD *Note: should be same set up as 2017-07*

Make: SBE model: 25+ serial number: 1123

Primary temperature serial number: 4888

Primary conductivity serial number: 4573

Secondary temperature serial number: _____

Secondary conductivity serial number: _____

Transmissometer: _____ Model: _____ s/n: _____

Transmissometer: _____ Model: _____ s/n: _____

Fluorometer: Model ECO Cable gain: 13 s/n: 2214 P, S or NO pump?

Fluorometer: Model _____ Cable gain: _____ s/n: _____ P, S or NO pump?

Oxygen sensor: SBE Model: 43 s/n: 3234 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?

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: _____

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?

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): 1 m

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

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: _____ 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

230 μ m 056m 4SK4279

Trawl Gear:

Midwater Trawls: SOG ☐ Highseas ☐ Pelagic ☐ Other: _____

Bottom Trawls: Atlantic Western IIA ☐ Yankee 36 Hard & Soft Bottom ☐ Other: _____

American Shrimp Trawl ☐

Notes: _____

Trawl Doors: USA Jet ☐ Tyburon ☐ _____

Sounders : Wesmar 380 ☐ Others: _____

Acoustics:

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

Others: _____

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

Others: _____

Software & Notes: _____

Other Gear in Operation:

1. _____
2. _____
3. _____
4. _____
5. _____

Procedure: CTD. Turn on, 2 minute timer, down 10m + return to surface to wait for 2 minute end.

If doing deep SAL sample, Niskin attached above CTD during 2 minute soak.

Complete CTD, 10m off bottom.

If Chl-a-phyto samples, done next. Water collected + left in sealed Niskin until Net started.
volume filtered depends on amount chl-a. filter until colour (range 60-240mL)

Sample 0+5m, chl-a in dup. Phyto (Lugol's) @ 10m. filtered with syringe + swinex filter, 25mm GF/F
Net tow last. 10m off bottom.

Chl-a samples filtered while net in water. Filters wait until net processed before going to freezer (up to 20 mins?)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 1 of 6

Month <u>April</u>		Year <u>2017</u>		Vessel <u>Neocaligus</u>		Cruise ID <u>2017-47</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
1	GEO1	22	20:14	BE	CTD		49° 14.976	123° 45.015	406		1 -	1	KY	☐	Sal - Niskin 1m above CTD
			20:24	BO	MR		49° 14.967	123° 45.027		396	-			☐	MR 290
			20:38	EN			49° 14.951	123° 45.014			-			☐	calm.
2	GEO1	22	20:44	MR	BOT		49° 14.988	123° 44.998			2 - 3	2		☐	chl a Om#2 phyto Sm#3 →
3	GEO1	22	20:49	BE	NET		49° 14.976	123° 45.000	405		-			☐	
			20:58	BO			49° 14.983	123° 45.016		395	-			☐	wpt.
			21:04	EN			49° 14.976	123° 45.022			-			☐	2
4	CPF1	22	22:52	BE	CTD		49° 22.005	124° 4.987	247		-	-	KY	☐	3 windy +
			22:59	BO			49° 22.015	124° 5.001		237	-			☐	4 swell
			23:03	EN			49° 22.016	124° 4.989			-			☐	
5	CPF1		23:06	BE	NET		49° 22.023	124° 4.991	247		-			☐	5
			23:11	BO			49° 22.025	124° 4.969		237	-			☐	6
			23:15	EN			49° 22.027	124° 4.933			-			☐	→
6	BS-11	23	14:24	BE	CTD		49° 28.990	124° 45.994	61		-			☐	
			14:27	BO			49° 28.186	124° 46.013		51	-			☐	
			14:28	EN			49° 28.984	124° 46.019			-			☐	
7	BS-11	23	14:30	BE	NET		49° 28.979	124° 46.032	61		-			☐	Brown water
			14:31	BO			49° 28.978	124° 46.029		51	-			☐	
			14:32	EN			49° 28.980	124° 46.027			-			☐	

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

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 14 February 2013

2 min soak at start of CTD

This page is for any notes or observations

Problems with messenger getting caught on wire markings, had to stop several times on upcast to clear the tape/rope off the wire. Messenger released @ 240 m and CTD kept coming up @ 1 m/s need to calculate at what depth it fired.
CTD came out of water during 2 min soak at start of cast

→ 70 mL filtered

→ Heading into deep bay for night 19:30pm

Start 7am 23 Apr 2017

✗ Need weatherp. of logbooks

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 2 of 6

Month April				Year 2017			Vessel Neocaligus			Cruise ID 2017-47					
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							
8	CPF2	23	15:55	BE	CTD		49° 28. 003	124° 30 . 019	329		- 4	1	KY	☐ ☐	sal 4m above
			16:04	BO		MR	49° 28. 015	124° 29 . 986		319	-			☐ ☐	
			16:13	EN			49° 28. 033	124° 30 . 019			-			☐ ☐	
9	CPF2	23	16:16	BE	NET		49° 28. 002	124° 30 . 009	329		-			☐ ☐	lost cod end
			16:21	BO			49° 28. 001	124° 30 . 008		319	-			☐ ☐	
			-	EN			-	-			-			☐ ☐	
10	CPF2	23	16:40	BE	NET		49° 28 . 016	124° 30 . 046	307		-			☐ ☐	
			16:45	BO			49° 28 . 008	124° 30 . 020		319	-			☐ ☐	
			16:52	EN			49° 28 . 006	124° 30 . 003			-			☐ ☐	
11	11	23	19:04	BE	CTD		49° 42 . 415	124° 43 . 427	303		-			☐ ☐	
			19:11	BO			49° 42 . 458	124° 43 . 451		293	-			☐ ☐	
			19:17	EN			49° 42 . 472	124° 43 . 424			-			☐ ☐	
12	11	23	19:21	MR	BOT		49° 42 . 516	124° 43 . 453	303	5	5 - 6	2	KY	☐ ☐	chla on #5 phyto 5m #6
13	11	23	19:27	BE	NET		49° 42 . 415	124° 43 . 426	303		-			☐ ☐	
			19:33	BO			49° 42 . 431	124° 43 . 409		293	-			☐ ☐	
			19:39	EN			49° 42 . 423	124° 43 . 381			-			☐ ☐	
14	22	23	22:40	BE	CTD		49° 40 . 202	124° 16 . 315	357		-			☐ ☒	
			22:48	BO			49° 40 . 249	124° 16 . 291		347	-			☐ ☐	
			22:55	EN			49° 40 . 245	124° 16 . 267			-			☐ ☐	

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

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

Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 3 of 6

Month April				Year 2017			Vessel Neocaligus			Cruise ID 2017-47					
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							
15	22	23	22:59	BE	NET		49° 40.216	124° 16.303	357		-		KY	☐ ☐	Whale blow to E
			23:05	BO			49° 40.224	124° 16.273		347	-			☐ ☐	
			23:12	EN			49° 40.217	124° 16.256			-			☐ ☐	
✓ 16	15-2	24	00:14	BE	CTD		49° 38.210	124° 5.008	29		-			☐ ☐	Cit Sci station
			00:16	BO			49° 38.212	124° 4.987		20	-			☐ ☐	
			00:17	EN			49° 38.212	124° 4.986			-			☐ ☐	
17	15-2	24	00:18	BE	NET		49° 38.213	124° 4.974	31		-			☐ ☐	
			00:19	BO			49° 38.213	124° 4.964		20	-			☐ ☐	
			00:19	EN			49° 38.208	124° 4.956			-			☐ ☐	End of day →
✓ 18	24	24	15:34	BE	CTD		49° 30.315	124° 5.999	428		- 7	1		☐ ☒	SAL 1 m above
			15:44	BO		MR	49° 30.315	124° 5.985		419	-			☐ ☐	flat calm
			15:56	EN			49° 30.301	124° 5.979			-			☐ ☐	
19	24	24	15:58	BE	NET		49° 30.308	124° 5.983	428		-			☐ ☐	
			16:07	BO			49° 30.311	124° 5.980		419	-			☐ ☐	
			16:16	EN			49° 30.291	124° 5.965			-			☐ ☐	
✓ 20	28	24	18:11	BE	CTD		49° 24.105	123° 45.315	135		-			☐ ☒	flat calm overcast
			18:16	BO			49° 24.095	123° 45.362		125	-			☐ ☐	
			18:18	EN			49° 24.092	123° 45.402			-			☐ ☐	
21	28	24	18:24	MR	BOT		49° 24.090	123° 45.327	135	5	8 - 9	2		☐ ☐	clim on + phyto #8 5m #9

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

This page is for any notes or observations

→ Transit to Pender Harbour, done by 6pm
→ on water Tam, heading to stn 24

70 ml filtered for both

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 4 of 6

Month <u>April</u>			Year <u>2017</u>			Vessel <u>Neocaligus</u>			Cruise ID <u>2017-47</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							
22	28	24	18:27	BE	NET		49° 24.089	123° 45.340	135		-	-	KY	☐ ☒	
			18:30	BO			49° 24.093	123° 45.360		125	-			☐ ☐	
			18:32	EN			49° 24.103	123° 45.352			-			☐ ☐	
23	38	24	20:37	BE	CTD		49° 12.018	123° 26.407	309		-			☐ ☒	sunny + some wind mostly calm
			20:45	BO			49° 12.100	123° 26.379		299	-			☐ ☐	
			20:51	EN			49° 12.140	123° 26.380			-			☐ ☐	
24	38	24	20:56	BE	NET		49° 12.006	123° 26.394	309		-			☐ ☐	
			21:02	BO			49° 12.039	123° 26.381		299	-			☐ ☐	
			21:14	EN			49° 12. —	123° 26. —			-			☐ ☐	didn't get end
25	40	24	22:11	BE	CTD		49° 8.602	123° 36.758	151		-			☐ ☒	just outside plume
			22:15	BO			49° 8.607	123° 36.749		141	-			☐ ☐	
			22:18	EN			49° 8.618	123° 36.761			-			☐ ☐	
26	40	24	22:20	BE	NET		49° 8.620	123° 36.770	151		-			☐ ☐	
			22:22	BO			49° 8.623	123° 36.777		141	-			☐ ☐	
			22:25	EN			49° 8.635	123° 36.806			-			☐ ☐	end of day →
27	41	25	16:52	BE	CTD		49° 3.294	123° 22.308	243		-			☐ ☒	
			16:58	BO			49° 3.223	123° 22.258		233	-			☐ ☐	
			17:03	EN			49° 3.187	123° 22.250			-			☐ ☐	
28	41	25	17:09	MR	BOT		49° 3.273	123° 22.289	243	5	10-11	2		☐ ☐	data on photo #10 5m #11

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

This page is for any notes or observations

→ Heading into Nanaimo, tied up @ 5:30pm

→ Left Nanaimo. 7:10am morning 25 Apr

→ 70mL water filtered

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 5 of 6

Month <u>April</u>			Year <u>2017</u>			Vessel <u>Neocaligus</u>			Cruise ID <u>2017-47</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							
29	41	25	17:14	BE	NET		49° 3.315	123° 22.300	243		-		K7	☐ ☐	
			17:18	BO			49° 3.268	123° 22.291		233	-			☐ ☐	
			12:23	EN			49° 3.225	123° 22.278			-			☐ ☐	
✓ 30	46	25	19:04	BE	CTD		48° 51.411	123° 10.810	177		-			☐ ☒	
			19:09	BO			48° 51.414	123° 10.808		167	-			☐ ☐	
			19:12	EN			48° 51.413	123° 10.802			-			☐ ☐	
31	46	25	19:13	BE	NET		48° 51.414	123° 10.805	177		-			☐ ☐	
			19:17	BO			48° 51.416	123° 10.807		167	-			☐ ☐	
			19:20	EN			48° 51.420	123° 10.803			-			☐ ☐	
✓ 32	GI-01	25	22:10	BE	CTD		48° 45.859	123° 20.512	65		-			☐ ☒	flat calm
			22:13	BO			48° 45.867	123° 20.534		55	-			☐ ☐	
			22:14	EN			48° 45.870	123° 20.542			-			☐ ☐	
33	GI-01	25	22:16	BE	NET		48° 45.882	123° 20.564	65		-			☐ ☐	
			22:17	BO			48° 45.889	123° 20.583		55	-			☐ ☐	
			22:18	EN			48° 45.900	123° 20.616			-			☐ ☐	
✓ 34	SC-04	25	22:50	BE	CTD		48° 43.504	123° 25.001	95		-			☐ ☒	flat calm
			22:53	BO			48° 43.480	123° 25.050		85	-			☐ ☐	
			22:55	EN			48° 43.470	123° 25.082			-			☐ ☐	
35	SC-04	25	22:58	MR	BOT		48° 43.469	123° 25.123	96	5	12-13	2		☐ ☐	chl a 0m + phyto #12 5m #13

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

This page is for any notes or observations

70 ml filtered

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 6 of 6

Month <u>April</u>				Year <u>2017</u>			Vessel <u>Neocaligus</u>			Cruise ID <u>2017-47</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							
36	SC-04	25	23:04	BE	NET		48° 43.507	123° 25.042	97		-		KY	☐ ☐	
			23:06	BO			48° 43.523	123° 25.063		87	-			☐ ☐	
			23:07	EN			48° 43.538	123° 25.083			-			☐ ☐	
37	CBE2	25	23:56	BE	CTD		48° 44.207	123° 34.439	64		-			☐ ☐	
			23:59	BO			48° 44.211	123° 34.438		54	-			☐ ☐	
			00:00	EN			48° 44.211	123° 34.439			-			☐ ☐	
38	CBE2	26	00:02	BE	NET		48° 44.219	123° 34.458	64		-			☐ ☐	
			00:03	BO			48° 44.221	123° 34.460		54	-			☐ ☐	
			00:04	EN			48° 44.220	123° 34.463			-			☐ ☐	
39	59	26	15:52	BE	CTD		48° 37.709	123° 14.520	232		-			☐ ☒	end →
			15:58	BO			48° 37.387	123° 14.270		222	-			☐ ☐	start →
			16:03	EN			48° 37.160	123° 14.141			-			☐ ☐	3kn current 15-20° wire angle
40	59	26	16:15	BE	NET		48° 37.793	123° 14.545	234		-			☐ ☐	old station location
			16:19	BO			48° 37.565	123° 14.358		224	-			☐ ☐	lots of current!
			16:23	EN			48° 37.344	123° 14.260			-			☐ ☐	repositioned for cast
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	

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

CTD Voltage 16.0V

→ finished for day, heading to IOS, Tied up @ 18:10
→ left IOS 7:10 am

CTD batteries @ 15.6V

Finished @ heading for Nanaimo. Tied up @ 15:30. Unloaded + departed by 16:00