

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 41 UTC Date (ddmmYYYY) 12 JUL 2016 Ice Coverage 0/10 Water Depth(Sounder) 74 m + 6m ship draft

Station: SLIP-1 UTC Time 20:53 Weather/Sea State Calm No wind Sound Speed used by Sounder 1500

CTD File: 201617-0041.1key Lat (N) 62 0.610 Lon (W) 175 3.793 Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	CH4,N2O (Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	O-18 (Cooper)	Niskin #	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Comments
237	B-5	76	1													1						T = -1.55°C S = 31.90 ‰ 76m
238	B-5	76	2													2						
239	B-5	76	3			XX										3						
240	B-5	76	4				X	X	XX	XX	X	X	X	X	X	4		X	X			
241	50	50	5			XX										5						
242	50	50	6				X	X	XX	X	X	X	X	X	X	6		X	X			
243	35	35	7			XX										7						
244	35	35	8				X	X	XX	X	XX	X	X	X	X	8		X	X		X	
245	25	25	9			XX										9						
246	25	25	10				X	X	XX	X	X	XX	X	X	X	10		X	X			
247	15	15	11			XX										11						
248	15	15	12				X	X	XX	X	X	X	X	X	X	12		X	X			
249	5	5	13			XX										13						
250	5	5	14				X	X	XX	X	X	X	X	X	X	14		X	X			
			15													15						
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 46

UTC Date (ddmmmyyy) 13 JUL 2016

Ice Coverage 0/10

Water Depth(Sounder) 81 m +/-6m ship draft

Station: SLIP-2

UTC Time 00:42

Weather/Sea State Calm Sea, No wind

Sound Speed used by Sounder

CTD File: 201617-0046

Lat (N) 62 3.157

Lon (W) 175 12.726

Watchkeeper(s) SV/SE/DW

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	T = -1.566 } 13.46m water S = 271.903 Comments
251	8.5	7.7	V1		X			X	X	X	X	X	X	X	X	1	X	X	X	X			
252	7.5	7.5	V2					X	X	X	X	X	X			2		X	X				
253	5.0	5.0	V3					X	X	X	X	X	X	X	X	3	X	X	X	X			
254	3.5	3.5	V4					X	X	X	X	X	X	X	X	4	X	X	X	X			
255	2.5	2.5	V5					X	X	X	X	X	X	X	X	5	X	X	X	X			
256	1.5	1.5	V6					X	X	X	X	X	X	X	X	6	X	X	X	X			
257	5	5	V7		X			X	X	X	X	X	X	X	X	7	X	X	X	X			
			8													8							
			9													9							
			10													10							
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 52 UTC Date (ddmmmyy) 12 JUL 2016 Ice Coverage 0/10 Water Depth(Sounder) 72 m +6m ship draft

Station: SCLP-3 UTC Time 05:30 Weather/Sea State SSS calm N. wind. Sound Speed used by Sounder

CTD File: 201617-0052 Lat (N) 62° 23.310 Lon (W) 174° 34.220 Watchkeeper(s) SCL/SEA, DW

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Comments
258	13-5	67	✓1			XX	X			XX	XX	X	X		X	1		X	X	X			T ₂ - 1.524 S ₂ 31.897
259	13-5	67	✓2					X						X	X	2	X	X	X				
260	50	50	✓3			XX	X			XX	X	X	X		X	3		X					
261	50	50	✓4					X	X					X	X	4	X	X	X				
262	35	25	✓5			XX	XX			XX	X	X	XX		X	5							
263	35	35	✓6					X	X		X			X	X	6	X	X	X	X			
264	25	25	✓7			XX	XX			XX	X	X		X	X	7							
265	25	25	✓8					X	X					X	X	8	X	X	X	X			
266	15	15	✓9			XX	XX			XX	X	XX	X		X	9							
267	15	15	✓10					X	X		X			X	X	10	X	X	X	X			
268	5	5	✓11			XX	XX			XX	X	X	X		X	11							
269	5	5	✓12					X	X					X	X	12	X	X	X	X			
			13													13							
			14													14							
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 50 UTC Date (ddmmmyy) 13 JUL 2016 Ice Coverage 0/10 Water Depth(Sounder) 67 m + 6m ship draft

Station: SCIP-5 UTC Time 10:24 Weather/Sea State Calm, no wind Sound Speed used by Sounder

CTD File: 201617-0058 Lat (N) 62 33.630 Lon (W) 173 32.950 Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	T2 - 1.476 @ 62m Sz 31.965 Comments
270	8-5	62	1			X	X			X		X	X	X	X	1							
271	13-5	62	2					X		X	X	X	X	X	X	2	X	X	X	X			
272	50	50	3			X	X									3							
273	50	50	4					X	X	X	X	X	X	X	X	4	X	X	X	X			
274	35	35	5			X	X									5							
275	35	35	6					X	X	X	X	X	X	X	X	6	X	X	X	X		X	
276	25	25	7			X	X									7							
277	25	25	8					X	X	X	X	X	X	X	X	8	X	X	X	X			
278	15	15	9			X	X									9							
279	15	15	10					X	X	X	X	X	X	X	X	10	X	X	X	X			
280	5	5	11			X	X									11							
281	5	5	12					X	X	X	X	X	X	X	X	12	X	X	X	X			
			13													13							
			14													14							
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 64 UTC Date (admmmyy) 12 JUL 2016 Ice Coverage 0/10 Water Depth(Sounder) 72 m +6m ship draft

Station: SL1P-4 UTC Time 1503 Weather/Sea State 4km S2.5 m wind Sound Speed used by Sounder 1500(?)

CTD File: 201617-0064 Lat (N) 63° 1.782 Lon (W) 173° 27.523 Watchkeeper(s) SL/DWL52

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Comments
282	13-5	67	V1			XX	XX									1							12 -1.580 @ 67m
283	13-5	67	V2		X			X	X	XX	X	X	X	X	X	2	X	X	X	X			52 32.460
284	67	67	V3													3					X		
285	53	53	V4													4							
286	50	50	V5			XX	XX									5							
287	50	50	V6					X	X	XX	X	X	X	X	X	6	X	X	X	X			
288	50	50	V7													7							
289	50	50	V8													8							
290	35	35	V9			XX	XX									9							
291	35	35	V10					X	X	XX	X	X	X	X	X	10	X	X	X	X			
292	35	36	V11													11							
293	32	32	V12													12					X		
294	25	25	V13			XX	XX									13							
295	25	25	V14					X	X	XX	X	X	X	X	X	14	X	X	X	X			
296	25	25	V15													15							
297	22	22	V16													16					X		
298	15	15	V17			XX	XX									17							
299	15	15	V18							XX	X	X	X	X	X	18	X	X	X	X			
300	15	15	V19													19							
301	8	8	V20													20					X		
302	5	5	V21			XX	XX									21							
303	5	5	V22		X			X	X	XX	X	X	X	X	X	22	X	X	X	X			
304	0	2	V23													23					X		
305	0	2	V24													24					X		

Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If Niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 71 UTC Date (ddmm/yyyy) 13 JUL 2016 Ice Coverage 0/10 Water Depth(Sounder) 55 m ship draft

Station: BCL-6A UTC Time 22:56 Weather/Sea State Cal-Sea 2/3-4

CTD File: 201617-0071 Lat (N) 63° 55.318 Lon (W) 172° 5.858 Watchkeeper(s) _____ Sound Speed used by Sounder _____

Note!
Boat with 0.5 m/s
Ascer with 0.5 m/s

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Comments
306	B-5	50	1			X	X									1							T ₂ -0.798 @ 50m
307	B-5	50	12		X			X	X	X	X	X	X	X	X	2	X	X	X	X			S = 32.348
308	35	35	3			X	X									3							
309	35	35	4				X	X	X	X	X	X	X	X	X	4	X	X	X	X			
310	25	25	5			X	X									5							
311	25	25	6				X	X	X	X	X	X	X	X	X	6	X	X	X	X			
312	15	15	7			X	X									7							
313	15	15	8					X	X	X	X	X	X	X	X	8	X	X	X	X			
314	5	5	9			X	X									9							
315	5	5	10		X		X	X	X	X	X	X	X	X	X	10	X	X	X	X			
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 74 UTC Date (ddmmYYYY) 14_JUL_2016 Ice Coverage 0/10 Water Depth(Sounder) 49 m +6m ship draft

Station: BCL-6C UTC Time 04:53 Weather/Sea State Clear, 6/14, 6-16 Sound Speed used by Sounder

CTD File: 201617-0 Lat (N) 64° 40.390 Lon (W) 170° 38.546 Watchkeeper(s) SV

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Comments
316	B-5	44	V1					X	X	X	X	X	X	X	X	1	X	X	X	X			T = 1.134 @ 44m S = 32.725
317	35	35	V2					X	X	X	X	X	X	X	X	2	X	X	X	X			
318	25	25	V3					X	X	X	X	X	X	X	X	3	X	X	X	X			
319	15	15	V4					X	X	X	X	X	X	X	X	4	X	X	X	X			
320	5	5	V5					X	X	X	X	X	X	X	X	5	X	X	X	X			
			6													6							
			7													7							
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Bottle integrity: First test lower petcock then test top valve. Check means pass, X means fail. If Niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 80 UTC Date (admmmyy) 14 JUL 2016 Ice Coverage 0/10 Water Depth(Sounder) 49 m + 6m ship draft

Station: VTBS-5 UTC Time 0821 Weather/Sea State 15 m sea Sound Speed used by Sounder 1500

CTD File: 201617-0080 Lat (N) 64 40.873 Lon (W) 169 55.988 Watchkeeper(s) SZ / DW

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Comments
321	B-5	42	1			X X	X X			4/1000						1							T = .63
322	B-5	42	2	X						XXXX	X	X	X	X	X	2	X	X	X	X			S = 32.54
323	35	35	3			X	X									3							
324	35	35	4							XXXX	X	X	X	X	X	4	X	X	X	X			
325	25	25.6	5			X X	X X									5							
326	25	25.6	6							XXXX	X X	X	X	X	X	6	X	X	X	X		X	
327	15	14.5	7			X X	X X									7							
328	15	14.5	8							XXXX	X	X	X X	X	X	8	X	X	X	X			
329	5	4.8	9			X X	X X									9							
330	5	4.8	10	X						XXXX	X	X X	X	X	X	10	X	X	X	X			
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			24													24							

Collected Filtered samples first followed inward by the unfiltered

Sampled 322, changed filter then went to surface @ 330, 328, 326, 324 in order on same filter. First rinsed tube (while attached to filter) 3x then let run for 30 to 60 seconds, then rinsed vial 3x, then took sample. -SZ

Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 86 UTC Date (ddmmmyyy) 14 JUL 2016 Ice Coverage 1/10 Water Depth(Sounder) 47m total 6m ship draft

Station: UTBS-2 UTC Time 1206 Weather/Sea State Wind 15 knots Sound Speed used by Sounder 1500

CTD File: 201617-0086 Lat (N) 64 40.830 Lon (W) 169 5.932 Watchkeeper(s) SE

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom T : 0078 S : 32.215 Comments
331	B-5	40.5	✓	1				X	X	XXXX	X	X	X	X	X	1	X	X	X	X			
332	35	40.5	✓	2				X	X	XXXX	X	X	X	X	X	2	X	X	X	X			
333	35	35.6	✓	3				X	X	XXXX	X	X	X	X	X	3	X	X	X	X			
334	25	25.2	✓	4				X	X	XXXX	X	X	X	X	X	4	X	X	X	X		X	
335	15	15	✓	5				X	X	XXXX	X	X	X	X	X	5	X	X	X	X			
336	5	4.7	✓	6				X	X	XXXX	X	X	X	X	X	6	X	X	X	X			
				7												7							
				8												8							
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 92 UTC Date (ddmmmyy) 14 JUL 2016 Ice Coverage 0/10 Water Depth(Sounder) 38 m ~~15m~~ ship draft

Station: UTBS-2A UTC Time 15:39 Weather/Sea State Wind 10 kts Sound Speed used by Sounder

CTD File: 201617-0092 Lat (N) 64° 40.250 Lon (W) 168° 14.074 Watchkeeper(s) SV

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	1 ~ 2.6 5 ~ 31.99 } 34m Comments
337	B-5	34	✓1		XX					XX	X	X	XX	X	X	1	X	X	X	X			
338	25	25	✓2							XX	XX	XX	X	X	X	2	X	X	X	X			
339	15	15	✓3							XX	X	X	X	X	X	3	X	X	X	X			
340	5	5	✓4		X					XX	X	X	X	X	X	4	X	X	X	X			
			5													5							
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 97

UTC Date (ddmmmyyy) 14 JUL 2016

Ice Coverage 0/10

Water Depth(Sounder) 46 m ship draft

Station: DBO 2.7

UTC Time 1911

Weather/Sea State 1/6 to 5

Sound Speed used by Sounder

CTD File: 201617-0097

Lat (N) 65° 0.030

Lon (W) 168° 13.232

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	T = 2.314 } @ 41m S = 31.989 } Comments
341	B-5	41	✓1					X	X	XX	X	X	XX	X	X	1	X	X	X	X			
342	35	35	✓2					X	X	XX	X	X	X	X	X	2	X	X	X	X			
343	25	25	✓3					X	X	XX	X	X	X	X	X	3	X	X	X	X			
344	15	15	✓4					X	X	XX	X	X	X	X	X	4	X	X	X	X			
345	5	5	✓5					X	X	XX	X	X	X	X	X	5	X	X	X	X			
			6													6							
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 104 UTC Date (ddmmmyy) 14 JUL 2016 Ice Coverage 0/10 Water Depth(Sounder) 49 m ship draft

Station: UT35-2 UTC Time 23:12 Weather/Sea State 16.5 knots Sound Speed used by Sounder

CTD File: 201617-0104 Lat (N) 64° 59.45° Lon (W) 169° 0.26° Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom T: 0.040 } @ 44m S: 32.214 Comments	
346	13-5	44	1			XX	XX									1								Vent open
347	13-5	44	2					X	X	XXXX	X	X	Y	X	X	2	X	X	X	X				Vent open
348	44	44	3													3					X			Vent open
349	44	44	4													4								Vent open
350	35	35	5			XX	XX									5								
351	35	35	6					X	X	XXXX	X	X	X	X	X	6	X	X	X	X				
352	35	35	7													7								
353	35	35	8													8								
354	25	25	9	X		XX	XX									9								Vent open, sampled anyway
355	25	25	10							XXXX	X	X	X	X	X	10	X	X	X	X				
356	25	25	11													11					X			
357	19	19	12													12					X			
358	15	15	13			X	X									13								Vent open
359	15	15	14							XXXX	X	X	X	X	X	14	X	X	X	X				
360	15	15	15													15					X			
361	11	11	16													16					X			
362	5	5	17			XX	XX									17								Vent closed
363	5	5	18							XXXX	X	X	X	X	X	18	X	X	X	X				
364	0	2	19													19					X			
365	0	2	20													20								
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.

Sarah was testing vents before cast... and likey didn't shut them after it. Sorry!

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event #110

Station: UTBS-4

CTD File: 201617-0110

UTC Date (ddmmmyyy)15 JUL 2016

UTC Time0243

Lat (N)64° 57.707

Ice Coverage0/10

Weather/Sea State19 h. b.

Lon (W)169 53.156

Water Depth(Sounder)49 m (includes 5m ship draft)

Sound Speed used by Sounder1500(?)

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	44m Bottom Temperature: 1.147 °C Bottom Salinity: 32.736 PSU Comments	
366	B-5	44	✓	1		X			X	X	XXXX	X	XX	X	X	X	1	X	X	X	X				
367	35	35	✓	2					X	X	XXXX	XX	X	X	X	X	2	X	X	X	X				
368	25	25	✓	3					X	X	XXXX	X	X	X	X	X	3	X	X	X	X				
369	15	15	✓	4					X	X	XXXX	X	X	XX	X	X	4	X	X	X	X				
370	5	5	✓	5		X			X	X	XXXX	X	X	X	X	X	5	X	X	X	X				
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Bottle Integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 115 UTC Date (ddmmYYYY) 15 JUL 2016 Ice Coverage 0/10 Water Depth(Sounder) 53 m (includes 5m ship draft)

Station: BRS-2 UTC Time 08:48 Weather/Sea State 23 4..6 Sound Speed used by Sounder

CTD File: 201617-0115 Lat (N) 65° 40.145 Lon (W) 168° 23.924 Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 2.099 Bottom Salinity: 31.860 Comments
371	13-5	49	✓	1					X	X	XX XX	X	X	X	X	X	1	X	X	X	X			49~
372	35	35	✓	2					X	X	XX XX	X	X	X	X	X	2	X	X	X	X			
373	25	25	✓	3					X	X	XX XX	X	X	X	X	X	3	X	X	X	X			
374	15	15	✓	4					X	X	XX XX	X	X	X	X	X	4	X	X	X	X			
375	5	5	✓	5					X	X	XX XX	X	X	X	X	X	5	X	X	X	X			
				6													6							
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 117

Station: BRS-3

CTD File: 201617-0117

UTC Date (ddmmmyy) 15 JUL 2016

UTC Time 09:50

Lat (N) 65° 40.838

Lon (W) 168° 33.900

Ice Coverage 0/10

Weather/Sea State 204-6

Water Depth(Sounder) 53 m (includes 5m ship draft)

Sound Speed used by Sounder

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Aik (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 4.934 °C Bottom Salinity: 32.046 Comments
376	B-5	48	✓	1		X	X	X									1							
377	B-5	48	✓	2	X				X	X	X	X	X	X	X	X	2	X	X	X	X			
378	35	35	✓	3		X	X	X									3							
379	35	35	✓	4					X	X	X	X	X	X	X	X	4	X	X	X	X			
380	25	25	✓	5		X	X	X									5							
381	25	25	✓	6					X	X	X	X	X	X	X	X	6	X	X	X	X			
382	15	15	✓	7			X	X									7							
383	15	15	✓	8					X	X	X	X	X	X	X	X	8	X	X	X	X			
384	5	5	✓	9			X	X									9							
385	5	5	✓	10	X				X	X	X	X	X	X	X	X	10	X	X	X	X			
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Bottle integrity First test lower petcock then test top valve 'Check' means pass, 'X' means fail If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 119

UTC Date (ddmmmyy) 15 Jul 2016

Ice Coverage 10

Water Depth(Sounder) 52 m (includes 5m ship draft)

Station: BRS-4

UTC Time 10:50

Weather/Sea State 25 km/h

Sound Speed used by Sounder

CTD File: 201617-0119

Lat (N) 65° 42.000

Lon (W) 168° 42.706

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 1.689 Bottom Salinity: 32.040 Comments
386	B-15	47	✓	1					X	X	X	X	X	X	X	X	1	X	X	X	X			47m
387	35	35	✓	2					X	X	X	X	X	X	X	X	2	X	X	X	X			
388	25	25	✓	3					X	X	X	X	X	X	X	X	3	X	X	X	X			
389	15	15	✓	4					X	X	X	X	X	X	X	X	4	X	X	X	X			
390	5	5	✓	5					X	X	X	X	X	X	X	X	5	X	X	X	X			
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event #121

UTC Date (ddmmYYYY)15 JUL 2016

Ice Coverage10

Water Depth(Sounder)35 m (includes 5m ship draft)

Station: UTN-1

UTC Time16:46

Weather/Sea State194.6 knots

Sound Speed used by Sounder

CTD File: 201617-0121

Lat (N)66°42.600

Lon (W)168°23.833

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 3.034 Bottom Salinity: 31.961 Comments
391	8-5	30	✓	1		X			X	X	XXXX	X	X	X	X	X	1	X	X	X	X			
392	2-5	25	✓	2					X	X	XXXX	X	X	X	X	X	2	X	X	X	X			
393	15	145	✓	3					X	X	XXXX	X	X	X	X	X	3	X	X	X	X			
394	5	5	✓	4		X			X	X	XXXX	X	X	X	X	X	4	X	X	X	X			
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 126 UTC Date (ddmmmyy) 15 Jul 2016 Ice Coverage 0/10 Water Depth(Sounder) 46 m (includes 5m ship draft)

Station: UTM-2 UTC Time 20:36 Weather/Sea State 14k-6 Sound Speed used by Sounder 1500 Watchkeeper(s)

CTD File: 201617-0126 Lat (N) 67° 2.990 Lon (W) 168° 43.628

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Comments
395	B-5	41	✓	1			XX	XX									1							41m Bottom Temperature: 2.045°C Bottom Salinity: 32.209 Bu
396	B-5	41	✓	2					X	X	XXXX	X	X	X	X	X	2	X	X	X	X			
397	35	35	✓	3			XX	XX									3							
398	35	35	✓	4					X	X	XXXX	X	X	X	X	X	4	X	X	X	X		X	
399	25	25	✓	5			XX	XX									5							
400	25	25	✓	6					X	X	XXXX	X	X	X	X	X	6	X	X	X	X			
401	15	15	✓	7			XX	XX									7							
402	15	15	✓	8					X	X	XXXX	X	X	X	X	X	8	X	X	X	X			
403	5	5	✓	9			XX	XX									9							
404	5	5	✓	10					X	X	XXXX	X	X	X	X	X	10	X	X	X	X			
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 132 UTC Date (ddmmmyyy) 16 JUL 2016 Ice Coverage 0/10 Water Depth(Sounder) 50 m (includes 5m ship draft)

Station: UTV-3 UTC Time 00:41 Weather/Sea State 13 km/h, Sunny Sound Speed used by Sounder

CTD File: 201617-0132 Lat (N) 67° 19.847 Lon (W) 168° 57.05° Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 1.058 Bottom Salinity: 32.709 Comments
405	B-5	46	✓	1					X	X	XXXX	X	X	X	X	X	1	X	X	X	X			
406	35	35	✓	2					X	X	XXXX	XX	XX	XX	X	X	2	X	X	X	X			
407	25	25	✓	3					X	X	XXXX	X	X	X	X	X	3	X	X	X	X			
408	15	15	✓	4					X	X	XXXX	X	X	X	X	X	4	X	X	X	X			
409	5	5	✓	5					X	X	XXXX	X	X	X	X	X	5	X	X	X	X			
				6													6							
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 137

UTC Date (ddmmmyy) 16 JUL 2016

Ice Coverage 10

Water Depth(Sounder) 50 m (includes 5m ship draft)

Station: UTV-4

UTC Time 03:04

Weather/Sea State 5 km/h, sunny

Sound Speed used by Sounder

CTD File: 201617-0137

Lat (N) 67° 29.9°

Lon (W) 168° 54.403

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 1.273 Bottom Salinity: 32.551 Comments	
410	B-5	45	✓	1			X X	X X									1								
411	B-5	45	✓	2					X	X	X X X X	X	X	X	X	X	2	X	X						
412	B-5	45	✓	3													3					X X			
413	B-5	45	✓	4													4								
414	35	35	✓	5			X X	X X	X	X							5								
415	35	35	✓	6					X	X	X X X X	X	X	X	X	X	6	X	X	X	X				
416	35	35	✓	7													7					X X			
417	25	25	✓	8													8								
418	25	25	✓	9			X	X									9								
419	25	25	✓	10					X	X	X X X X	X	X	X	X	X	10	X	X	X	X				
420	20	20	✓	11													11					X X			
421	15	15	✓	12													12								
422	15	15	✓	13			X X	X X									13								
423	15	15	✓	14					X	X	X X X X	X	X	X	X	X	14	X	X	X	X				
424	10	10	✓	15													15					X X			
425	5	5	✓	16													16					X			
426	5	5	✓	17			X X	X X									17								
427	5	5	✓	18					X	X	X X X X	X	X	X	X	X	18	X	X	X	X				
428	0	2	✓	19													19					X X			
429	0	2	✓	20													20								
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 142 UTC Date (ddmmmyy) 16 Jul 2016 Ice Coverage 0/10 Water Depth(Sounder) 35 m (includes 5m ship draft)

Station: SEC-B UTC Time 17:09 Weather/Sea State 18 knots, Clear Sound Speed used by Sounder

CTD File: 201617-0142 Lat (N) 68° 17.280 Lon (W) 166° 56.320 Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 5.472 Bottom Salinity: 30.970 Comments
430	B-5	31	✓	1		X			X	X	XXXX	X	X	X	X	X	1	X	X	X	X			
431	25	24	✓	2					X	X	XXXX	X	X	X	X	X	2	X	X	X	X			
432	15	15	✓	3					X	X	XXXX	X	X	X	X	X	3	X	X	X	X			
433	5	5	✓	4		X			X	X	XXXX	X	X	X	X	X	4	X	X	X	X			
				5													5							
				6													6							
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 147 UTC Date (ddmmmyyy) 16 JUL 2016 Ice Coverage 0/10 Water Depth(Sounder) 43 m (includes 5m ship draft)

Station: SEC-7 UTC Time 19:11 Weather/Sea State 224-6 C/2-~ Sound Speed used by Sounder

CTD File: 201617-0147 Lat (N) 68°14.706 Lon (W) 167° 7.050 Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 38~ Bottom Salinity: 31.646 PSU Comments
434	B-5	38	✓	1			X	X									1							
435	B-5	38	✓	2		X			X		XXX	X	XX	XX	X	X	2	X	X	X	X			
436	35	35	✓	3			XX	XX									3							
437	35	35	✓	4					X		XXX	X	X	X	X	X	4	X	X	X	X			
438	25	25	✓	5			XX	XX									5							
439	25	25	✓	6					X		XXX	X	X	X	X	X	6	X	X	X	X			
440	15	15	✓	7			XX	XX									7							
441	15	15	✓	8					X		XXX	X	X	X	X	X	8	X	X	X	X			
442	5	5	✓	9			XX	XX									9							
443	5	5	✓	10		X			X		XXX	X	X	X	X	X	10	X	X	X	X			
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Bottle Integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event #152

Station: SEC-6

CTD File: 201617-0

UTC Date (ddmmmyyy)16 Jul 2016

UTC Time20:52

Lat (N)68° 11.17'

Ice Coverage0/10

Weather/Sea State18 knots Clear

Lon (W)167° 18.550

Water Depth(Sounder)48 m (includes 5m ship draft)

Sound Speed used by Sounder

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 5.685 Bottom Salinity: 31.778 Comments
444	3-5	44	✓	1		X			X	X	XXXX	X	X	X	X	X	1	X	X	X	X			
445	3-5	35	✓	2					X	X	XXXX	X	X	X	X	X	2	X	X	X	X			
446	2-5	25	✓	3					X	X	XXXX	X	X	X	X	X	3	X	X	X	X			
447	1-5	15	✓	4					X	X	XXXX	X	X	X	X	X	4	X	X	X	X			
448	5	5	✓	5		X			X	X	XXXX	X	X	X	X	X	5	X	X	X	X			
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 158 UTC Date (ddmmYYYY) 16 Jul 2016 Ice Coverage 0/10 Water Depth(Sounder) 50 m (includes 5m ship draft)

Station: SEC-5 UTC Time 22:43 Weather/Sea State 1/8 knots, clear Sound Speed used by Sounder

CTD File: 201617-0158 Lat (N) 68° 7.800 Lon (W) 167° 29.640 Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 4.848 Bottom Salinity: 31.892 Comments
449	B-5	46	✓	1			XX	XX									1							
450	B-5	46	✓	2		X			X		XXXX	X	X	X	X	X	2	X	X	X	X			
451	35	35	✓	3			X	X									3							
452	35	35	✓	4					X		XXXX	X	X	X	X	X	4	X	X	X	X			
453	25	25	✓	5			XX	XX									5							
454	25	25	✓	6					X		XXXX	XX	XX	XX	X	X	6	X	X	X	X			
455	15	15	✓	7			XX	XX									7							
456	15	15	✓	8					X		XXXX	X	X	X	X	X	8	X	X	X	X			
457	5	5	✓	9			XX	XX									9							
458	5	5	✓	10		X			X		XXX	X	X	X	X	X	10	X	X	X	X			
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 163 UTC Date (admmmyyy) 17 | JUL | 2016 Ice Coverage 0/10 Water Depth(Sounder) 53 m (includes 5m ship draft)

Station: SEC-4 UTC Time 00:53 Weather/Sea State 15 kts, clear Sound Speed used by Sounder

CTD File: 201617-0163 Lat (N) 68° 0.840 Lon (W) 167° 51.966 Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 2.813 Bottom Salinity: 32.054 Comments
459	8.5	48	✓	1		X			X	X	XXXX	X	X	X	X	X	1	X	X	X	X			
460	35	35	✓	2					X	X	XXXX	X	X	X	X	X	2	X	X	X	X			
461	25	25	✓	3					X	X	XXXX	X	X	X	X	X	3	X	✓	X	X			
462	15	15	✓	4					X	X	XXXX	X	X	X	X	X	4	X	X	X	X			
463	5	5	✓	5		X			X	X	XXXX	X	X	X	X	X	5	X	X	X	X			
				6													6							
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 168

UTC Date (ddmmmyy) 17 Jul 2016

Ice Coverage 1/10

Water Depth(Sounder) 59 m (includes 5m ship draft)

Station: SEC-3

UTC Time 03:58

Weather/Sea State 17 kts, clear

Sound Speed used by Sounder

CTD File: 201617-0

Lat (N) 67° 53.975

Lon (W) 168° 13.970

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 54m Bottom Salinity: 32.634 Comments
464	18-5	54	✓	1			XX	XX									1							
465	18-5	54	✓	2		XX			X	X	XXXX	X	X	X	X	X	2	X	X	X	X			
466	35	35	✓	3			XX	XX									3							
467	35	35	✓	4					X	X	XXXX	X	X	X	X	X	4	X	X	X	X			
468	25	25	✓	5			XX	XX									5							
469	25	25	✓	6					X	X	XXXX	X	X	X	X	X	6	X	X	X	X			
470	15	15	✓	7				X									7							
471	15	15	✓	8					X	X	XXXX	X	X	XX	X	X	8	X	X	X	X			
472	5	5	✓	9			XX	XX									9							
473	5	5	✓	10		X			X	X	XXXX	X	X	X	X	X	10	X	X	X	X			
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Bottle Integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 173 UTC Date (ddmmmyyy) 17 JUL 2016 Ice Coverage 0/10 Water Depth(Sounder) 51 m (includes 5m ship draft)

Station: UTM-6 UTC Time 06:56 Weather/Sea State 16 knots, 5 seas Sound Speed used by Sounder

CTD File: 201617-0173 Lat (N) 67° 44.316 Lon (W) 168 26.077 Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 0.995 Bottom Salinity: 32.634 Comments
474	13-5	46	✓	1			XX	XX									1							
475	13-5	46	✓	2		X			X	XXXX	XXXX	X	X	X	X	X	2	X	X	X	X			
476	35	35	✓	3			XX	XX									3							
477	35	35	✓	4					X	XXXX	XXXX	X	X	X	X	X	4	X	X	XX	X			
478	25	25	✓	5			XX	XX									5							
479	25	25	✓	6					X	X	XXXX	X	X	X	X	X	6	X	X	XX	X			
480	15	15	✓	7			XX	XX									7							
481	15	15	✓	8					X	X	XXXX	X	X	X	X	X	8	X	X	X	X			
482	5	5	✓	9			X	X									9							
483	5	5	✓	10		X			X	X	XXXX	X	X	X	X	X	10	X	X	X	X			
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 170 UTC Date (ddmmmyy) 17 JUL 2016

Ice Coverage ___/10

Station: SEC-2 UTC Time 08:40

Weather/Sea State 15 knots, Rain

CTD File: 201617-0178 Lat (N) 67° 47.008

Lon (W) 160° 36.096

Water Depth(Sounder) 51 m (includes 5m ship draft)

Sound Speed used by Sounder

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 1.041 Bottom Salinity: 32.640 Comments
484	B-5	46	✓	1					X	X	XXXX	X	X	X	X	X	1		X	X	X			
485	B-5	46	✓	2		X			X	X	XXXX	X	X	X	X	X	2	X	X	X	X			
486	35	35	✓	3					X	X	XXXX	X	X	X	X	X	3	X	X	X	X			
487	25	25	✓	4					X	X	XXXX	X	X	X	X	X	4	X	X	X	X			
488	15	15	✓	5					X	X	XXXX	X	X	X	X	X	5	X	X	X	X			
489	5	5	✓	6		X			X	X	XXXX	X	X	X	X	X	6	X	X	X	X			
				7													7							
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 183

UTC Date (ddmmmyyy) 17 JUL 2016

Ice Coverage 0/10

Water Depth(Sounder) 51 m (includes 5m ship draft)

Station: SEC-1

UTC Time 11:00

Weather/Sea State 10 kn-k, 1-2m

Sound Speed used by Sounder

CTD File: 201617-0183

Lat (N) 67° 40.246

Lon (W) 168° 57.629

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 1.262 Bottom Salinity: 32.665 Comments	
490	B-5	46	✓	1			X	X									1								
491	B-5	46	✓	2	X				X	X	X X X	X	X	X	X	X	2	X	X	X	X				
492	35	35	✓	3			X	X			X X X						3								
493	35	35	✓	4					X	X	X X X	X	X	X	X	X	4	X	X	X	X				
494	25	25	✓	5			X	X									5								
495	25	25	✓	6					X	X	X X X	X	X	X	X	X	6	X	X	X	X				
496	15	15	✓	7			X	X			X X X			X	X	X	7						X		
497	15	15	✓	8					X	X	X X X	X	X	X	X	X	8	X	X	X	X				
498	5	5	✓	9			X	X									9								
499	5	5	✓	10	X				X	X	X X X	X	X	X	X	X	10	X	X	X	X				
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 188 UTC Date (ddmmYYYY) 17 JUL 2016 Ice Coverage 0/10 Water Depth(Sounder) 60 m (includes 5m ship draft)

Station: UTA-7 UTC Time 1417 Weather/Sea State 7 kts, 1 m/slow Sound Speed used by Sounder 1500

CTD File: 201617-0188.1ex Lat (N) 68 0.030 Lon (W) 168 55.856 Watchkeeper(s) SE

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: 0.517 Bottom Salinity: 82.750 Comments
500	B-5	52.6	✓	1					✓	✓	✓✓✓	✓	✓	✓	✓	✓	1	✓	✓	✓	✓			
501	50	49.6	✓	2					✓	✓	✓✓✓	✓	✓	✓	✓	✓	2	✓	✓	✓	✓			
502	35	34.3	✓	3					✓	✓	✓✓✓	✓✓	✓✓	✓	✓	✓	3	✓	✓	✓	✓			
503	25	25.6	✓	4					✓	✓	✓✓✓	✓	✓	✓	✓	✓	4	✓	✓	✓	✓			
504	15	14.6	✓	5					✓	✓	✓✓✓	✓	✓	✓	✓	✓	5	✓	✓	✓	✓			
505	5	4.6	✓	6					✓	✓	✓✓✓	✓	✓	✓	✓	✓	6	✓	✓	✓	✓			
				7													7							
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 193

UTC Date (ddmmmyyy) 18 Jul 2016

Ice Coverage 0/10

Water Depth(Sounder) 46 m (includes 5m ship draft)

Station: DBO 4.1

UTC Time 16:11

Weather/Sea State 17 Sw 4 f2327

Sound Speed used by Sounder

CTD File: 201617-0193_hex

Lat (N) 70° 58.434

Lon (W) 161° 53.616

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Comments
506	B-5	41.5	✓	1			X X	X X									1							Bottom Temperature: -1.533 Bottom Salinity: 32.359 41.5m
507	B-5	41.5	✓	2		X			X	X	6	X	X	X	X	X	2	X	X	X	X			
508	35	35	✓	3			X X	X X									3							
509	35	35	✓	4					X	X	6	X	X	X	X	X	4	X	X	X	X		X	
510	25	25	✓	5			X X	X X									5							
511	25	25	✓	6					X	X	6	X	X	X	X	X	6	X	X	X	X			
512	15	15	✓	7			X X	X X									7							
513	15	15	✓	8					X	X	6	X	X	X	X	X	8	X	X	X	X			
514	5	5	✓	9			X X	X X									9							
515	5	5	✓	10		X			X	X	6	X	X	X	X	X	10	X	X	X	X			
				11													11						Nothing to Niskin 6 samples / Niskin	
				12													12							
				13													13							
				14													14							
				15													15							
				16													16							2 x Filtered "Up" from # 2 → 10
				17													17							
				18													18							
				19													19							
				20													20							
				21													21							2 x Filtered "Down" from # 10 → # 2
				22													22							
				23													23							
				24													24							

Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17 Ship: CCGS Sir Wilfrid Laurier

Event # 199

Station: DBO-4.2

CTD File: 201617-0

UTC Date (ddmmmyy) 19 JUL 2016

UTC Time 1949

Lat (N) 71.6.070

Lon (W) 162.15.836

Ice Coverage 3/10

Weather/Sea State 12 knots clear

Water Depth(Sounder) 48 m (includes 5m ship draft)

Sound Speed used by Sounder

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: ~1.637 Bottom Salinity: 32.236 Comments
516	B-5	43	✓	1		X			X	X	XXXX	X	X	X	X	X	1	X	X	X	X			43~
517	B-5	43	✓	2													2					X		
518	39	39	✓	3													3							
519	35	35	✓	4					X	X	XXXX	X	X	X	X	X	4	X	X	X	X			
520	35	35	✓	5													5					X		
521	32	32	✓	6													6					X		
522	25	25	✓	7					X	X	XXXX	X	X	X	X	X	7	X	X	X	X		X	
523	25	25	✓	8													8							
524	25	25	✓	9													9							
525	15	15	✓	10					X	X	XXXX	X	X	X	X	X	10	X	X	X	X		X	
526	15	15	✓	11													11					X		
527	10	10	✓	12													12					X		
528	5	5	✓	13		X				X	XXXX	X	X	X	X	X	13	X	X	X	X			
529	5	5	✓	14													14					X		
530	0		✓	15													15					X		
531	0		✓	16							↑						16					X		
				17							6 bottles, 2x on filter						17							2x on filtered
				18													18							2x filtered sampled "up"
				19													19							from Niskin #1 → 13
				20													20							same filter
				21													21							2x filtered "down"
				22													22							from Niskin #13 → 1
				23													23							same filter
				24													24							

Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 204

UTC Date (ddmmmyy) 19 Jul 2016

Ice Coverage 2/10

Water Depth(Sounder) 47 m (includes 5m ship draft)

Station: DBO-4.3

UTC Time 15 05

Weather/Sea State 8 4-6 Sunny

Sound Speed used by Sounder

CTD File: 201617-0

Lat (N) 71° 14.077

Lon (W) 62° 38.563

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: -1.656 Bottom Salinity: 32.260 Comments	
532	B-5	42	✓	1			XX	XX									1								
533	B-5	42	✓	2		X			X	X	6X	X	X	X	X	X	2	X	X	X	X				
534	35	35	✓	3			XX	XX									3								
535	35	35	✓	4					X	X	6X	XX	XX	XX	X	X	4	X	X	X	X				
536	25	25	✓	5			XX	XX	.								5								
537	25	25	✓	6					X	X	6X	X	X	X	X	X	6	X	X	X	X		X		
538	15	15	✓	7			XX	XX									7								
539	15	15	✓	8					X	X	6X	X	X	X	X	X	8	X	X	X	X				
540	5	5	✓	9			XX	XX									9								
541	5	5	✓	10		X			X	X	6X	X	X	X	X	X	10	X	X	X	X				
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'X' means fail. If niskin fails, explain this in the comments column.

Rosette Log for IOS Cruise ID 2016-17

Ship: CCGS Sir Wilfrid Laurier

Event # 209

UTC Date (ddmmmyy) 20 Jul 2016

Ice Coverage 0/10

Water Depth(Sounder) 42 m (includes 5m ship draft)

Station: D B04.6

UTC Time 0045

Weather/Sea State 15 knots

Sound Speed used by Sounder

CTD File: 201617-0

Lat (N) 71° 37.651

Lon (W) 163 46.775

Watchkeeper(s)

Samp #	Target Pressure (db)	Confirmed Pressure (db)	Confirmed Fire	Niskin #	Bottle Integrity	DIC/Alk (Vagle)	N2O (Tortell)	CH4(Tortell)	CDOM (Frey)	FDOM (Frey)	Nutrient (Vagle)	Salinity (Vagle)	O-18 (Vagle)	Barium (Vagle)	Chl-a Total (Cooper)	Nutrient (Cooper)	Niskin #	O-18 (Cooper)	SPM (Frey)	Chl-a/Phaeo Total (Frey)	Phyto-ID (Varela)	Phyto Product (Varela)	Chl-a Total (Kedra)	Bottom Temperature: ~1.651 Bottom Salinity: 32.126 Comments
542	B-5	38	✓	1		X			X	X	X	X	X	X	X	X	1	X	X	X	X			
543	35	35	✓	2					X	X	X	X	X	X	X	X	2	X	X	X	X		X	
544	25	25	✓	3					X	X	X	X	X	X	X	X	3	X	X	X	X			
545	15	15	✓	4					X	X	X	X	X	X	X	X	4	X	X	X	X			
646	5	5	✓	5		X			X	X	X	X	X	X	X	X	5	X	X	X	X			
				6													6							
				7													7							
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Bottle integrity: First test lower petcock then test top valve. 'Check' means pass, 'x' means fail. If niskin fails, explain this in the comments column.